

**TO TPP OR NOT TO TPP,  
THAT IS THE QUESTION**

The Trans-Pacific Partnership (TPP) was signed by the twelve participating countries on February 4, 2016. — p. 4,6

**MACHINIST'S CHOICE —  
MOM & POP VS. BIG COMPANY SHOP**

Every machinist has their favorite tools and technologies they love to work with. Most also have a strong preference about the type and size of companies for which they'll work. — p. 16

**LMC HOSTS HANSON TECHNOLOGY  
CENTER GRAND OPENING**

The Hanson Technology Center will house LMC's energy production, engineering, machine tool, mechatronics, skilled trades and welding production programs. — p. 19

**CULTURECORNER:  
WANT ENGAGEMENT?  
CHAMPION A CAUSE**

On any given Tuesday or Wednesday, even the most motivated, enthusiastic individuals can struggle with being engaged & focused at work. — p. 25

**IMTS 2016**

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## PRESIDENT'S UPDATE

DAVE TILSTONE / NTMA PRESIDENT

The NTMA, NRL, Woman in Manufacturing, Tech Tours, Additive Manufacturing and so much more at IMTS 2016.  **IMTS2016**

As expected, IMTS 2016 showcased new technologies by machine tool builders, metal cutting suppliers and numerous software providers. With over 115,600 visitors, the 1.3 million square feet of exhibition space felt crowded at McCormick Place. NTMA had a booth that welcomed our members with comfortable seating, a cold drink and a list of NTMA members who were exhibiting at the show. It was also our opportunity to meet some of our members and introduce them to the NTMA team. We had the latest videos highlighting NTMA U as well as an NRL robot demo. The highlight for me was meeting the two young woman and their coach from the all-woman NRL team attending Beaumont High School. This team and their enthusiasm for our industry brings to the forefront the reasons we support and want to continue to support the NRL program across the US. These are bright, energetic students who describe their NRL experience as life changing. They are articulate as they describe the importance of their STEM education and the practical learning experience offered through their association with our member shops. Designing and making components for their robots will have a positive and lasting impression throughout their lives. These young women in manufacturing are our future and are excited to become part of what makes America great.

With over 25 Tech Tours at IMTS, our members experienced a high-level over-

view from the industry's leading providers of technology. In many cases, the CEOs and presidents of the NTMA National Associate Member companies greeted and escorted NTMA members through their booths. When speaking to some of the largest machine tool builders, it was clear that they were excited to see the large crowds but most importantly they had some of their best days ever at IMTS.

About 5% of the total floor space was occupied by Additive Manufacturing (AM) Technologies. This dedicated area of the show was always crowded and displayed some of the more practical applications of AM such as medical implants "printed" specific to the physiology of the patient to the outer limits with a printed house. Regardless, the AM solid metal parts displayed were very impressive. The materials issues with AM are being solved and companies like GE are investing heavily in this technology with two recent acquisitions of Arcam and SLM Solutions for \$1.4 billion. This reinforces their commitment to AM in the medical and aircraft engine businesses, as well as their recent announcement with their new AM Research Center in Pittsburgh. With some of their aircraft engine, they are claiming 845 parts will be produced using AM. Another interesting forecast is that 20% of the IMTS 2018 exhibition space will be dedicated to AM. One of my more interesting advisory board assignments involves a NIST (National Institute of Standards and Technology) study to help identify the barriers facing adoption by industry of AM. Great work is being done to not only to identify but provide solutions to make it more applicable to

US manufacturing.

I've been attending IMTS since 1980, and it has traditionally been a show of "hardware" and cutting tools. In 2016, the conversations by NTMA members were focused on systems and processes. In the past, those exhibitors that had the latest and greatest products were the focus of IMTS, now NTMA members want process technology and technical support. The "system" has also been redefined. Being mindful of costs and the lack of available skilled labor, our members are purchasing pallet systems, monitoring and gaging hardware/software, robots and material handling. Many have successfully implemented new systems and run their machines untended for the night shift or over part of the weekend. The integration of all these components has made the discussions between members and their suppliers more complex and requires more and more sophistication at NTMA member shops. This innovation revolution is catching on and those left behind will not survive in the face of local and foreign competition making attendance at IMTS and other international shows a must.

I hope those who attended IMTS enjoyed their experience, and I look forward to welcoming you all to the Fall Conference in Charlotte.

DAVE TILSTONE / NTMA PRESIDENT





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# TO TPP OR NOT TO TPP, THAT IS THE QUESTION

BY HARRY MOSER, RESHORING INITIATIVE. REPRINTED FROM QUALITY MAGAZINE.  
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## YOUR ATTITUDE TOWARDS TPP DEPENDS ON YOUR PRIORITIES.

The Trans-Pacific Partnership (TPP) was signed by the twelve participating countries on February 4, 2016. The 5,544 page (2,056,560 words, about three times the King James Version of the bible) document was then submitted to the U.S. Congress for approval. The U.S. Trade Representative's website makes TPP sound good: "Leveling the playing field for American workers & American businesses." This article will explore whether TPP achieves

that objective.

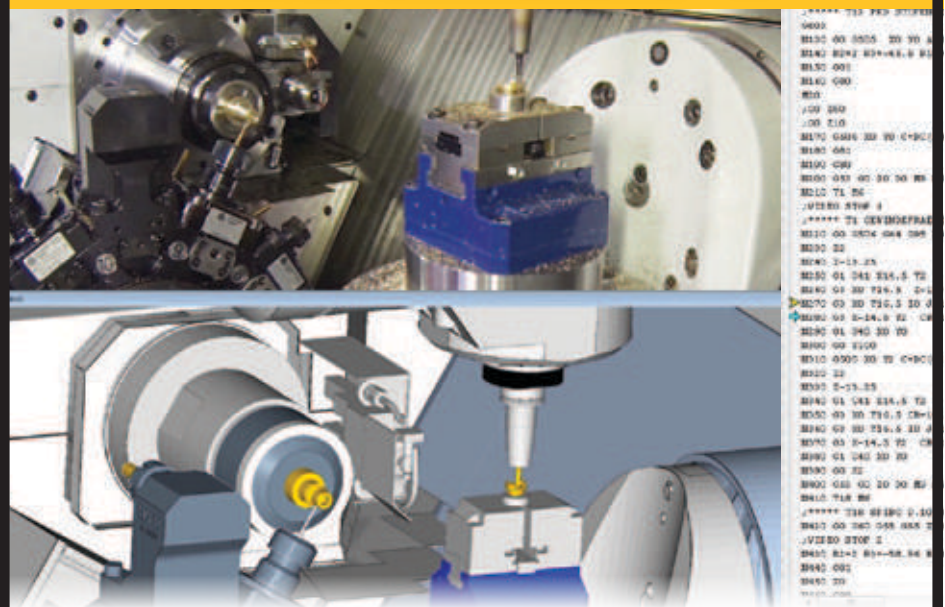
TPP has become one of the most visible issues of the 2016 presidential campaign. Donald Trump and Bernie Sanders aggressively promised to reject TPP. Hillary Clinton is now opposing TPP after referring to it as the "Gold Standard" for trade agreements during her years as Secretary of State.

One's attitude towards TPP depends on one's priorities. I will simplify to two views:

Reject: Any trade agreement must move

CONTINUE ON PAGE 6

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dramatically towards eliminating the trade deficit, resulting in a 25% increase in U.S. manufacturing, cutting the budget deficit in half and reducing unemployment and income inequality. Exporting to the U.S. market is the target for all other countries. Only provide that access on a basis that eliminates our trade deficit. Reducing imports is the key.

Support: The U.S. needs to offer the Pacific region an alternative to Chinese economic dominance and strengthen the economies of Pacific Rim developing countries. Encourage labor and environmental standards in other countries. U.S. manufacturing is a lower priority. Jobs would mainly be achieved by increasing exports.

#### **HISTORICAL PERSPECTIVE**

After WWII, the U.S. was the world's economic Colossus, producing about 60% of the world's manufacturing<sup>1</sup> and providing a standard of living far above other countries. We established a pattern of providing to other countries favorable access to U.S. markets to achieve our diplomatic or humanitarian aims: democratization, stability, capitalism, allegiance against the Soviet Union, or later North Korea and Iran. Sacrificing U.S. manufacturing to achieve U.S. diplomatic goals for 60 years has played an important role in making the U.S. uncompetitive in world trade. Our trade deficit is about 4.5 times<sup>2</sup> as large as that of any other country. Our current agreements typically are either biased against the U.S. or are not enforced in developing countries, e.g. many countries practice domestic content requirements, IP theft, currency manipulation, etc. We can no longer afford agreements that do not address the underlying causes of our trade deficit.

#### **CURRENT CONDITION**

The last U.S. trade surplus was in 1975. We now routinely average trade deficits of about \$700 billion per year counting just goods, i.e. tangible items, and about \$500 billion after allowing for a \$200 billion surplus in services. I believe that this huge deficit is unsustainable, especially in conjunction with a \$500 billion federal budget deficit that will mushroom to \$1 trillion as more baby boomers retire. Since 1975 we have accumulated an aggregate trade deficit of almost \$11 trillion, approximately equal to the current value of all stocks traded on the NASDAQ4 (including Apple, Alphabet and Microsoft) exchange or about one third of the value of all U.S. homes. Foreign countries hold these dollars as a call on a huge percentage of U.S. assets.

#### **PAST TRADE AGREEMENTS**

Almost all of our trade agreements have resulted in our trade deficit with the other coun-

try rising faster than our trade deficit rose with the world. The deficits rose faster because our imports accelerated and our exports only increased slowly. For example Mexico (NAFTA) cost the U.S. about 400,000 jobs and China (PNTR) cost 3,200,000 jobs as measured by the resulting increases in trade deficits.

There is no evidence that TPP will be any more effective than these earlier agreements. In fact the official study by the U.S. International Trade Commission concluded that TPP would reduce U.S. manufacturing by \$245 billion in 15 years. That negative result was arrived at despite unrealistic assumptions such as that displaced workers will immediately find equivalent jobs.

#### **FRICITION**

Elimination of tariffs and other barriers to trade makes more foreign products competitive in our market, just like reducing friction in a pipe increases flow through the pipe. Our huge trade deficit shows the U.S. is not price competitive in foreign markets and, too often, even in our home market. So lowering barriers will reduce the "friction" on imports, increasing our trade deficit. As has been proven by past trade agreements, lower barriers help our exports less than our imports.

#### **OUR RECOMMENDATIONS**

Before exposing the U.S. to more imports, take the actions needed to make us competitive. The following list is a good place to start:

Strengthen our skilled workforce by shifting resources from university education, especially liberal arts, to training of toolmakers, precision machinists, welders and similar professionals.

Lower the USD. As the world's reserve currency, the USD is consistently too high. In addition, especially in times of global uncertainty, funds flow from other countries seeking the U.S. safe haven. By becoming the home for financial investments we have raised the USD to the point that manufacturing is not competitive here.

Institute a VAT (Value Added Tax) as in almost all other countries. Offset the VAT by reductions in domestic taxes to keep the price of domestic products stable. A VAT subsidizes exports and taxes imports.

Lower the corporate tax rate to about 20%, eliminating all special deals.

Train corporations and MBAs to make sourcing and siting decisions based on product Total Cost<sup>6</sup> instead of wage rates and price.

Once we are competitive, proceed with TPP or other trade agreements. Until then, reject any agreements that do not flatten the playing field.



## **OKUMA WELCOMES NEWEST MEMBER VELOCITY/BRINEY TO PARTNERS IN THINC**

Okuma America Corporation, a world-leader in CNC machine tools announces that Velocity/Briney is the newest member to join Partners in THINC. Velocity/Briney supplies CNC machine toolholding solution Velocity SMART Tool™ exclusively for Okuma machining centers.

Velocity SMART Tool is a collaboration of four U.S. suppliers: Velocity Products, Briney Tooling Systems, BlueSwarf and Fullerton Tool. SMART Tool is fully assembled, balanced, preset and ready to run. It removes toolholding guesswork for optimal cutting. BlueSwarf Dashboard™ is included and allows machining at maximum speeds, feeds and cutting depths for a specific operation or part on an Okuma machine tool.

"Velocity/Briney works closely with Okuma and its distributor network to deliver products that are designed, tuned and optimized for specific Okuma machining center models. Combined, our areas of expertise in toolholding, cutting tools, and machining dynamics enable us to produce the highest quality, complete intelligent toolholder assemblies. Our singular focus makes us uniquely qualified to help Okuma customers maximize return on investments in technology," says Robert Bauer, vice president at Morris Group, Inc. and head of its Velocity Products division.

Members of Partners in THINC provide superior technologies that are integrated with Okuma's CNC machines and controls to deliver advanced manufacturing system solutions.

For more information on Velocity/Briney and other members of Partners in THINC, visit <http://www.okuma.com/partners-in-thinc>.





## GF MACHINING SOLUTIONS NAMES NEW DISTRIBUTORS IN NORTHWEST AND WEST

GF Machining Solutions recently named three new distributors to serve customers in the Northwest and West regions. Effective September 1, 2016, Ellison Technologies is serving GF Machining Solutions customers in California, Oregon, Washington and Nevada. D&R Machinery is covering Arizona, and the current territory for Hartwig, Inc. has been expanded to serve those customers in Colorado, New Mexico, Wyoming, Montana and Idaho.

GF Machining Solutions selected the new distributors based on their proven abilities to provide extensive service and support to customers as well offer more complete market coverage in the states they serve. Customers will benefit from easier access to dem-

onstration centers and larger sales and support teams that can work in conjunction with GF Machining Solutions to provide timely front-line service and application support on equipment.

"These distributors have set the benchmark in offering the highest level of service and support to their customers," explained Scott Fosdick, president of GF Machining Solutions. "Partnering with these market leaders better reflects our position as a comprehensive solutions provider and enhances our ability to support customers throughout the entire cycle of their machine tool."

The new technologies available to these distributors through their partnerships with GF Machining Solutions include EDM, milling and laser textur-

ing. With access to such technologies, the distributors will be able to provide solutions that address specialized needs of all customers in the automotive, aerospace, biomedical, die-mold and other industries.

Current GF Machining Solutions customers in the Northwest and West regions can expect a streamlined transition to these new distributors. For more information, visit [www.gfms.com/us](http://www.gfms.com/us).



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## 4 IDEAS TO REDUCE SHIPPING COSTS

### AM I OVERPAYING FOR SHIPPING?

Shipping can be one of the most complicated – and costly – activities for any small business. Poor or no planning can result in overpaying, as well as losing sales if the business can't provide consistent and cost-effective delivery to its customers.

Do you negotiate competitive discounts with your shipping providers? Do your purchase invoices include shipping and handling charges? If you answered "yes" to either of these questions, then you could very well be overpaying for your shipping.

Here are four ideas for you to consider to reduce your overall shipping costs:

#### #1 OBTAIN DISCOUNTS WITH CARRIERS

Most carriers – whether express, parcel or freight – provide discounts to businesses that routinely ship or receive merchandise. The old adage "everything is negotiable" is an immutable fact when it comes to shipping fees. The challenge, however, for small businesses is how to go about obtaining the same, steep discounts that are normally reserved for large businesses and heavy freight shippers.

One tactic a small business should consider is joining an industry trade association. Often times, industry trade associations are able to aggregate the buying clout of its members to negotiate and provide better shipping rates to all the businesses that participate in the program. PartnerShip LLC is an example of a third party logistics provider that specializes in working with industry trade associations across the country to create

discounted shipping programs for participating members.

Another approach a small business can take is to work directly with a third-party logistics provider (3PL), or even directly with your carriers, to see if you can get better discounts than you presently have today. Often times if you simply "ask for better pricing" you will get it because 3PLs and carriers are always looking to retain and grow their business. Be prepared to share example shipping invoices or manifests with your 3PL or carrier to help them best assess your shipping patterns and provide you with the best pricing.

#### #2 DEVELOP AN INBOUND SHIPPING MANAGEMENT PROGRAM

One of the simplest and easiest ways to immediately cut your inbound freight costs is to change your shipping terms from "prepaid and add" to "inbound collect." Having your vendor or supplier ship collect on your recommended carrier eliminates any handling charges, thus saving you money.

When you gain more control over your inbound shipping, you can save on small package and freight shipments coming into your business every day. As the buyer and receiver of the goods, you can and should designate the carrier and arrange for shipping charges to be billed directly to you at your discounted rate. This is called routing shipments inbound "Collect."

In general, there are many benefits to having your inbound shipments routed collect. But even if you don't have shipping discounts that are better than your vendor, their handling mark-up could

still make the overall shipping costs higher than your own.

Inbound shipping programs are often best managed through a third-party logistics provider. A good 3PL can help you develop routing instructions for your vendors, monitor compliance, and audit invoicing to ensure you're saving the most on your inbound shipping.

#### #3 USE THE CORRECT MODE & SERVICE LEVEL

A common dilemma for small businesses is deciding the appropriate shipping mode to use for their important shipments. Shipping mode choices include LTL freight, small package, ground, air, ocean, rail, intermodal, and others. When deciding whether to use a small package or LTL freight carrier, for example, shippers must take into consideration the weight and characteristics of the shipment, the shipment destination (e.g., business, residence, etc.), service needs, pricing and fees, and loss or damage concerns.

Each mode carries with it a certain level of cost, speed, and liability protection. Choosing the right mode will help your business maximize shipping costs and customer satisfaction.

#### #4 CONSOLIDATE ORDERS WHEN POSSIBLE

As a general rule of thumb, one big order ships for less than three smaller orders. That means small businesses should consider consolidating multiple orders into a single shipment whenever possible, and always striving to minimize the number of packages it sends. All too often, shipments are arranged as they come in from sales or order process-

ing. However, a little planning and visibility goes along ways towards shipping savings.

Consolidating orders provides additional benefits to both shippers and receivers of small package and freight shipments, including:

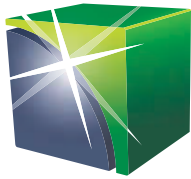
- Reduced shipping supply expenses
- Greater fuel efficiency (better on the environment)
- Less time needed to receive, handle, and restock orders

One strategy for shipment consolidation is to create a simple shipping guide that takes into consideration all of your business rules for carriers, weight breaks, orders, and shipping contacts. Distribute this guide to your vendors and discuss it with your customers. A little communication can often go a long way towards small business savings.

#### IN SUMMARY

Shipping is an important cost factor for any small business that ships or receives materials or merchandise. It is often possible to reduce these costs with a little planning and effort. Utilizing some or all of these four tips to control shipping costs can eliminate the strain shipping expenses put on your business. If you're not sure where to start, consider finding a reputable third-party logistics provider that specializes in working with small businesses to help you with the process. There's a good chance your shipping costs will go down and your bottom line will improve! For more information, visit [www.partnership.com](http://www.partnership.com).





# IMTS2016

International Manufacturing Technology Show  
September 12 - 17, 2016 · McCormick Place · Chicago

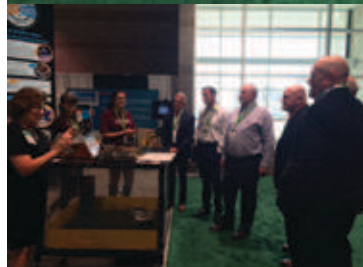
With more than 2,000 exhibiting companies and over 114,000 registrants, the International Manufacturing Technology Show is one of the largest industrial trade shows in the world. Held every two years during September in Chicago, IMTS offers a unique networking opportunity and learning environment.

During this year's IMTS, September 12th to the 17th, members were welcomed to our NTMA booth to re-charge, refresh and relax. Members from California, Florida, Illinois, Indiana, Maryland, Missouri, New Mexico, Ohio, Pennsylvania, Tennessee, Texas and Utah, as well as some potential new members interested in learning more about NTMA, stopped by to say hello and discuss some of the great new technology being showcased around the exhibit.

Many members and attendees stopped by to see a live demonstration from the all-girls National Robotics League from Beaumont. The girls and their robot were around the booth Monday and Tuesday to answer questions and talk about the manufacturing skills they've developed while creating their competition bot.

NTMA also led Technology Tours throughout the week, stopping by National Associate Member booths for a more in-depth and guided discussion. Each stop showcased the latest technology in a intimate setting allowing for one-on-one interactions without the sales pitch. Members who participated in these tours shared positive feedback, saying they were a great way to be introduced and start a conversation with booth owners.

Thank you to all the members and National Associates who attended IMTS and visited the NTMA booth. We look forward to the next show, September 10 - 15, 2018.







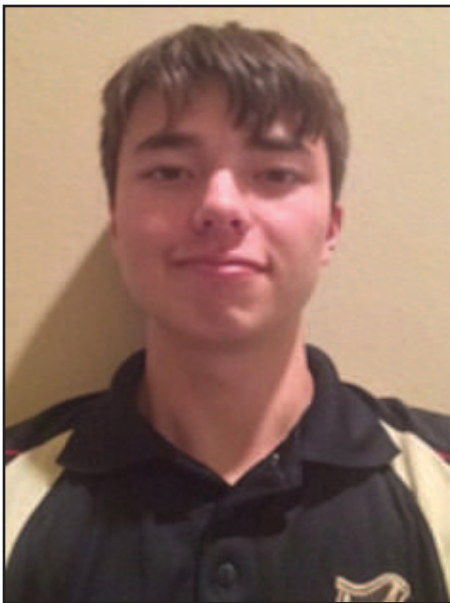


# NCDMM AND AMT ANNOUNCE MTCONNECT STUDENT CHALLENGE — APPLICATION COMPETITION WINNER AT IMTS 2016

GEORGIA INSTITUTE OF TECHNOLOGY'S ETHAN WESCOAT WINS \$10K AWARD FOR SUBMISSION COMBINING MTCONNECT WITH MICROSOFT EXCEL TO TRACK MACHINE UTILIZATION



The National Center for Defense Manufacturing and Machining (NCDMM) and the Office of the Secretary of Defense (OSD) Defense-wide Manufacturing Science and Technology (DMS&T) Program, along with the U.S. Army Benét Labs, AMT – The Association For Manufacturing Technology, and the MTConnect Institute, in partnership with SME and the National Tooling and Machining Association, proudly announce that Ethan Wescoat of the Georgia Institute of Technology (Georgia Tech) is the first-place, \$10k winner of the MTConnect®



Ethan Wescoat of the Georgia Institute of Technology

Student Challenge — Application Competition. In addition to naming Wescoat as the first-place winner, the second- and third-place winners and one finalist were also named.

The announcement was made in Chicago on the opening day of IMTS — International Manufacturing Technology Show, which is owned and managed by AMT.

Sponsored by OSD DMS&T, managed by the U.S. Army Benét Labs, ex-

ecuted by NCDMM, in conjunction with project partner AMT, the MTConnect Student Challenge sought to better develop manufacturing's digital capabilities by using student creativity to find industry solutions. It was structured as one challenge with two competitions, awarding cash prizes at the conclusion of each stage. Ideation, the first competition, involved the identification of ambitious yet achievable ideas that capture the public's imagination and harness innovation and manufacturing intelligence breakthroughs.

Application, the second competition, involved the submission of an actual software application, using either an independent idea/solution, or the solution from the Ideation contest if student participated. With the Application competition, participating students were required to develop and demonstrate a software application that harnessed innovation and manufacturing intelligence breakthroughs that could benefit the Department of Defense and its industrial manufacturing supply chain.

"On behalf of all of us involved with the MTConnect Student Challenge, we congratulate our Application Competition first-place winner, Ethan, and all the finalists, for participating in this opportunity to leverage the MTConnect standard to advance the manufacturing industry with their innovative ideas and unique perspectives of their tech-savvy generation," said NCDMM President and Executive Director Ralph Resnick.

Wescoat's winning submission, "Monitoring CNC Machines Using MTConnect and Microsoft® Excel," tracks machine utilization using off-the-shelf products to capture and analyze machine operating data from the shop floor. Through his submission, Wescoat was able to develop innovative and inexpensive approaches to how the application allowed the captured data to serve multiple requirements, including

the ability to provide current machine status information to the operator and utilization information for management. As demonstrated in his application, combining the data capture capabilities of MTConnect with the data handling capabilities of Microsoft Excel provided an interface for operators and engineers alike to monitor and gather data effectively and efficiently from their machines during production.

**THE OTHER RECOGNIZED FINALISTS, LISTED WITH THEIR SCHOOLS AND TITLES OF SUBMISSIONS, ARE:**

- Second-place, \$7.5k Winner: Kathryn Lovell of Rensselaer Polytechnic Institute for "NC.js: The Smart Machining Advisor," which enabled machining on the Cloud with StepNC data and MTConnect data

- Third-place, \$5k Winner: Shaurabh Kumar Singh of North Carolina State University for "Real-Time Digital Verification of Product Manufacturing Data," which enabled real-time geometry verification

- Finalist: Yansen Zhou of Rice University for "MTLogger," a real-time data visualization creation tool for machine tool data

MTConnect is an open, royalty-free communications standards intended to foster greater interoperability and information sharing between manufacturing equipment, devices, and software applications. To date, harnessing the wealth of available information and data across equipment and devices has been challenging due in large part to the disparate nature of software programs. NCDMM, the U.S. Army Benét Labs, and the MTConnect Institute are overseeing the Challenge. The MTConnect Institute manages the development and further adoption of the standard.



## JERGENS NEW CENTER BRINGS TECHNOLOGY, TRAINING AND DEVELOPMENT TO NORTHEAST OHIO



Jergens 'FastForward' Machining Efficiency Technology Center to be the hot-spot for education and advancements in the evolving Maker/Manufacturing movement

Jergens Inc. of Cleveland, Ohio, continues its initiatives for workforce development and process improvement through their newly-dedicated Machining Efficiency Technology Center. The launch of the new regional center – called FastForward™ to describe their objective, vision and pace for industry – will focus on the Maker/Manufacturing movement and its significance to the nation's economy.

"With this dedicated space, we are further stepping up our efforts to promote training and education across the board including customers, suppliers, partners, students and the community that serves Manufacturing," says Jack Schron, president of Jergens. "We are looking to expand the knowledge base for the vocational workforce and those pursuing a career in manufacturing, and to encourage creativity to Think, Make and Grow," Schron continues.

HAAS Automation, the largest machine tool company in the United

States, is partnering with Jergens by providing their newest VF4 SS Vertical Machining Center and the process technology that goes with it. In addition, Parlec, an industry-leader in toolholding and measuring equipment is providing their solutions. Add to that Jergens Quick-Change Fixturing and Clamping solutions, and FastForward boasts some of the most sophisticated manufacturing technology available today for demonstration and education. The center will regularly host events such as seminars, classes, think tanks and more.

For more information on FastForward, visit [www.jergensinc.com](http://www.jergensinc.com).



## STUDENTS AWARDED \$12,000 IN SCHOLARSHIPS FOR PRECISION MANUFACTURING

Four students from St. Louis area have been awarded a combined total of \$12,000 in scholarships this year through the St. Louis Chapter of the National Tooling and Machining Association (NTMA).

The St. Louis Chapter awards scholarships to students who are furthering their education to pursue a career in the tooling and machining industry. Since its inception in 2007, the Chapter's scholarship program has awarded more than \$65,700 in scholarships to students throughout the St. Louis region. The Scholarship program is funded by one primary fundraiser, an annual June golf tournament.

### AWARDS WERE DISTRIBUTED AS FOLLOWS:

- Michael Hutter from St. Louis, Missouri, who attends Ranken Technical College, studying Precision Machine Technology.
- Devon Bledsoe from Worden, Illinois, who is enrolled in the Precision Machining Technology program at Southwestern Illinois College's (SWIC) Granite City Campus.
- Matthew Budnicki of Collinsville, Illinois is also studying Precision Machining Technology at SWIC.
- Todd Feldmann, Washington, Missouri, is enrolled in State Technical College of Missouri (Linn, Missouri), studying in the Machine Tool Program.

Through their various training programs, the students are engaged in theoretical and practical hands-on training, building on knowledge in the areas commonly referred to as STEM (science, technology, engineering and math). Most of the practical applications prepare them for employment in machining, Computerized Numerical Control (CNC) programming, inspection/ quality control, maintenance and machine tool building.

# OPEN POSSIBILITIES



## HOT TOPICS AND HEADLINES FROM **IMTS 2016**

There was plenty of action in the Okuma booth at IMTS 2016. In case you missed the show – or perhaps you were there, but overwhelmed with the onslaught of information! – we'll recap just a few of the headlines from Okuma. In the days and weeks to come, we'd like to continue the dialogue on these subjects, to fully explore their potential in your shop.

## GET CONNECTED: IIOT

The concept of the connected manufacturing shop, or the Industrial Internet of Things (IIoT), was a big topic at the Okuma booth, and in our conference presentations. This will continue to have a huge impact on our industry for years to come, so now's the time to get up to speed.

The good news is, for Okuma users with a OSP-P control, connecting your machine tool is as simple as plugging into the USB port on your controller. That's it!

It's your choice what you connect to; maybe it's a smartphone or tablet for the operator, or perhaps a centralized computer that compiles metrics from around the shop. In an even bigger picture, you can connect with cloud-based systems that compute predictive and prescriptive analytics.

The insights you obtain by looking at machine data provide the intelligence you need to lower your cost of production while improving quality.



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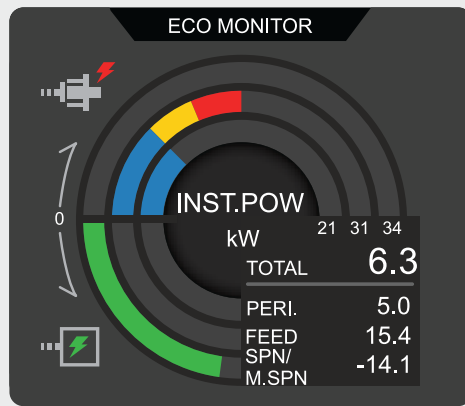
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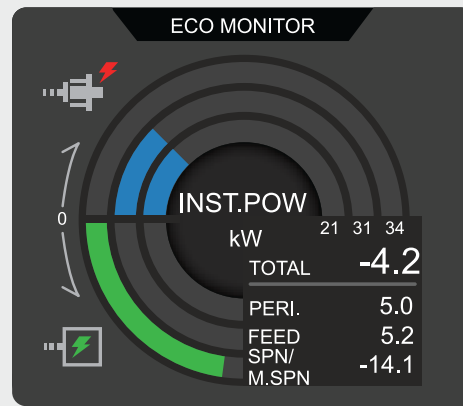
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## OPEN POSSIBILITIES





BEFORE ECO SUITE



AFTER ECO SUITE

## SUPPORT: A HISTORY OF CONSISTENCY

Our booth contained a dramatic “Before & After” transformation of a crashed machine spindle, from utter destruction to fully functioning, which typically takes about 32 hours. Thanks to our longstanding partnership with our distribution network—a relationship that’s remained steady and stable for 35 years—we can get you up and running before this repair is complete through our Mechanical Exchange program.



## *ECO suite* RUN SMARTER AND SAVE ENERGY

We showed that saving energy isn’t always about scrimping on usage: it can simply be a matter of using smarter control functionality. Let’s say you have a part with a 5-hour cycle time. While you leave it running, does the machine light really need to be on, inside the machine? ECO suite is a control system that allows you to set parameters for various machine functionalities (or auxiliary equipment) that automatically turn off unnecessary energy wasters. You can even see how much energy you’re saving by viewing the ECO Power Monitor on the machine’s display. ECO suite is an easy and smart way to save on energy expenses.

---

**All of these technology enhancements are simply a part of the Okuma experience. We put quality in your hands so you can efficiently produce quality parts.**

**Contact us and let’s discuss next steps.**  
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Every machinist has their favorite tools and technologies they love to work with. Most also have a strong preference about the type and size of companies for which they'll work. Some prefer the smaller 'mom and pop' businesses where they enjoy the opportunity to work on a variety of projects and products. Others gravitate towards the bigger companies where they can specialize in one particular thing, and get very good at it. We explore what makes a machinist choose one type of work over another and the different natures of their job and career satisfaction.

## JOB VS. PRODUCTION SHOP

As we listened to the rich and varied conversation among machinists across online forums, a common theme emerged: When you're first starting out as a young machinist, it can be very helpful to work at a smaller 'job shop' over a strictly 'production shop', since it's a better bet for learning more diverse skills and techniques. This piece of advice from a conversation on the popular subreddit *r/Machinist* sums it up nicely, "I've worked at a 15 man shop and a 200 man shop. At the larger shop we made our own product ... over and over. The smaller shop I work at now is a job shop. Job shop work is tough stuff but you will really hone your skills in that type of environment whether it's a big or small shop. Just make sure they are doing challenging work..."

## GROWING PAINS

We found and followed another interesting thread on The Practical Machinist forum where one son from a small family-owned machining shop was seeking advice about how to manage growing from a small shop to a bigger shop. His original post detailed the challenges of rethinking the way the small shop did everything from recruiting and training to quality assurance and work process documentation. For any machinist thinking of starting out on their own, joining a family-owned shop or throwing in with a shop in the throes of growth, it's an insightful read. Our key takeaway is that, like any small business, machinist shops going through accelerated growth present both challenges and opportunities for the machinists who work there.

## SPECIALIZATION, RISK AND SKILLS BUILDING IN THE NEW ECONOMY

From another subreddit we tapped into a conversation sparked by one machinist operator in a large manufacturing company who was outsourcing its main product and seriously downsizing its workforce. The machinist

received a job offer from a small startup company to become the lone CNC programmer, and was seeking advice from his peers about making a potentially risky, decisive career move. The majority of forum members urged him to take the leap, even into the uncertainty of a startup business. One sage poster's advice best summed up the mix of factors weighing the most heavily on a young professional in almost any trade planning their next best career move — "Get wild experience now. Be the one guy the shop relies on, learn everything about programming, tool sourcing, different operations, working with designers and assembly staff to make better parts. ... This kind of experience

will take you far in life, if it works out."

Whether it's about career advancement, perfecting new skills, job satisfaction or salary requirements we sense a key takeaway from our listening tour of machinist forums — the machinist trade is evolving very rapidly as it adapts to market demands, emergent technologies and entrepreneurial opportunities. If you're a machinist encountering any of these challenges and opportunities, we'd love to hear from you.

For more information, visit [www.aerotek.com](http://www.aerotek.com).



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## LEADING MACHINE MONITORING SOFTWARE PROVIDER MACHINEMETRICS ANNOUNCES 'REAL-TIME PARTNER PROGRAM'

MachineMetrics today announced their 'Real-time Partner Program.' The program is a collaborative effort between MachineMetrics and partner organizations to provide cutting-edge machine monitoring and real-time analytics software to manufacturers across the globe. The partner program is open to machine tool companies, distributors, advocacy groups and IIoT/lean consultants committed to delivering value to their clients and shaping the future of manufacturing through smart technology.

"Through a partnership with MachineMetrics, our program members are able to help the clients they serve adapt to critical new Industry 4.0 and IIoT technology," said MachineMetrics CEO and Co-Founder Bill Bither. "Our software helps manufacturers to stay competitive through real-time data collection, improved OEE, and deep analytics. MachineMetrics offers the perfect foundation for any lean program or smart manufacturing initiative."

MachineMetrics is actively seeking new partnership opportunities. Organizations interested in learning more about the benefits of MachineMetrics' Real-time Partner Program and becoming a member of the program can email [info@machinemetrics.com](mailto:info@machinemetrics.com).



## WAGE PRESSURES IN TODAY'S POLITICAL ENVIRONMENT: WAGES UP, PROFIT DOWN

NTMA members need high-quality, dependable compensation benchmarking more today than at any time in recent history. The 2016 election is being fueled by middle-class economic insecurities. Americans are worried about jobs, stagnant wages, and income equality.

In today's political environment there is a push to encourage pay transparency. Few things in the workplace are as closely guarded as wages and salaries. Employees that are shown their wages compared how they measure up to others income generally work harder and are more productive. On the other hand, pay secrecy is often associated with decreased performance.

Some economist point out that rising wages can help stimulate the economy by giving workers more spending power. But rising labor costs may eventually hurt corporate profits and job opportunities.

The NTMA Operating Costs Report reveals that for the last 5 years profits and ROI have been declining, from 6% pre-tax profit down to 3.5%. If employee compensation increases, profits will decline even further to inadequate levels.

Employee compensation and benefits account for one-half of the costs that

NTMA shops experience. One of the most important issues in manufacturing, at the moment, is ensuring that employees are adequately compensated while at the same time avoiding spending excessive amounts on compensation. In walking this tightrope, specific benchmarks are essential.

The NTMA Wage & Fringe Benefit Report provides just such information. Simply stated, benchmarking with the Wage & Fringe Benefits Report is one of the most powerful tools available to NTMA manufacturers to address today's political and economic environment with clear, systematic, comparative data.

The purpose of a wage and fringe benefit survey is to help companies determine what competitive rates of pay are and to determine what benefit programs are expected by today's employees. With this information, you will be better equipped to control payroll expenses while maximizing employee productivity.

For more information, contact Kelly LaMarca at [klaamarca@ntma.org](mailto:klaamarca@ntma.org).



# SAVE THE DATE

**11.02.2016**  
**Philadelphia, PA**

**REGISTRATION**  
**Early Bird \$450**  
(Deadline 10/19/16)

**Member \$525**

**Non-Member \$650**



**SALES & MARKETING WORKSHOP**

**Philadelphia, PA**

**NTMA SALES & MARKETING WORKSHOP**

**Wednesday, November 2, 2016**

Connect with NTMA Sales and Marketing professionals and industry experts to learn how to boost your business and increase leads. With sessions that include a best practices presentation, a buyer panel with industry experts, and a sales workshop that will drill down into each attendees' sales techniques and processes, you won't want to miss this opportunity.

**Tuesday, November 1st - Networking Reception**

For registration information or questions contact:  
Brittany Belko • [bbelko@ntma.org](mailto:bbelko@ntma.org) • 216-264-2848





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# LMC HOSTS HANSON TECHNOLOGY CENTER GRAND OPENING

Lake Michigan College celebrated the grand opening of its new Hanson Technology Center on August 23. The public was invited to tour the facility and learn more about technology education and career opportunities.

The Hanson Technology Center (HTC) will house LMC's energy production, engineering, machine tool, mechatronics, skilled trades and welding production programs. It features a Fab Lab, simulation classroom and Virtual Manufacturing Floor with state-of-the-art CNC and robotics equipment.

The center is located on LMC's Benton Harbor campus and replaces the former M-TEC facility on Klock Road. College officials anticipate the new location will expose more students to technology programs and inspire many to pursue careers in one of southwest Michigan's most crucial industries.

"Manufacturing careers have evolved remarkably with advances in technology, but some people still have outdated ideas about the profession," said Dean of Career and Workforce Education, Dr. Ken Flowers. "We've created a beautiful, bright and modern space where all kinds of students can get excited about transforming ideas into reality. It will be a wellspring for invention and innovation. This is where the next generation of makers are made."

Manufacturing provides an estimated 17,500 jobs and has a \$2.1 billion impact on Berrien, Cass, and Van Buren Counties. A recent report by Kinexus found that area manufacturers are concerned about the lack of available applicants with technical skills.

Dan Mitchell, President of Hanson Mold, said, "This new center will be a major signal that Lake Michigan College stands side-by-side with businesses to create a strong and vibrant manufactur-

ing economy in our region and will play a vital role in attracting and retaining people."

Construction of the Hanson Technology Center was partially supported by donations, including donations from NTMA members Alro Steel, Niles Precision Company, Vickers Engineering, and the center's namesake Hanson Mold and the 1979 NTMA



National Chairman and First Lady Mr. Merlin & Carolyn Hanson.



## SAVE THE DATE

11.16.2016  
Denver, CO

REGISTRATION  
Early Bird \$300  
(Deadline 10/26/16)

Member \$375

Non-Member  
\$500



PLANT MANAGERS  
ROUNDTABLE

Denver, CO

### NTMA PLANT MANAGERS ROUNDTABLE

Wednesday, November 16th, 2016

Network with Plant Managers from NTMA member companies and discuss new techniques and the many ways to improve production at your facility. Each roundtable will start with a Plant Tour at a member company the day before the educational sessions. The educational sessions will allow you to learn about new technologies, manufacturing metrics, lean manufacturing, and the importance of additive manufacturing.

Tuesday, November 15 - Networking Reception

For registration information or questions contact:  
Brittany Belko • bbelko@ntma.org • 216-264-2848



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**Specifications:**

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As a maintenance planning and scheduling professional, I am often asked how to schedule maintenance activities when production is 24/7 or 24/6. An important question is whether the 24/7 operation is driven in part by a lack of reliability or if the organization is proactive and actually capacity constrained. In either case, the challenge is finding windows for work with the equipment stopped or shutdown.

What I often find are the following opportunities:

**1. FAILURE TO IDENTIFY SMALLER WINDOWS FOR WORK** such as product flavor or size changes. In these cases, the sections of process are shut down for allergen cleaning, clean-in-place processes, or physical product size change as examples. These are often difficult to schedule since operations is running a lot size or specific amount of production. Depending on how they run, they may shorten or extend beyond the anticipated time of the downtime window. To do the work requires a level of resource scheduling flexibility.

**2. GIVE WORK TO OPERATORS:** Following on the item above, when flavor changes or cleaning occur, we find maintenance technicians performing operations tasks that should be performed by trained operators. This in turn frees up the maintenance personnel to do maintenance during those windows.

This item and the one above are reflections of the item below.

**3. LACK OF PARTNERSHIP BETWEEN THE OPERATIONS AND MAINTENANCE GROUP.** I like to say that operations should own the equipment and maintenance owns the capacity of the equipment. If operations expects to meet their requirements with any level of reliability, then maintenance must be allowed time to ensure that capacity. In a true partnership, operations should do everything possible to meet their production schedule downtime windows so that maintenance can do the work. Operations personnel also have to operate the equipment properly based on standardized work practices. Without the partnership, operations and maintenance are often working with different goals and measures.

**4. GET THE WORK DONE RIGHT:** The maintenance function has the responsibility to ensure the work they do is to a specification or with precision. Shame on us if we work on an asset and once returned to operations, it fails shortly after being placed back into service because of a behavior. We also have the responsibility to do the work in the most efficient and effective manner possible which means properly planned and scheduled, with realistic durations, parts kitted, and the resources standing there at the machine to do the work when it goes down.

**5. MAKE RESOURCES AVAILABLE:** In the case of a 24/6 window, I often find that ample maintenance resources are not available for scheduling on the down day simply due to shift schedules. It's not unusual to see maintenance working 10-hour shifts Monday thru Thursday and then have overtime required to get them in for work on Saturday and Sunday. While I realize that everyone wants to be home on Saturday and Sunday with the family when they are not in school and so on, unfortunately the maintenance job really requires a different schedule. The challenge for the organization is to provide for the business needs and maintain a work/life balance for the employees.

**6. THE RIGHT FOCUS ON PREVENTIVE MAINTENANCE (PM).** In addition, maintenance has the obligation to ensure that we don't take down the equipment unnecessarily for PM work. More than 40% of the PM tasks performed add no value and fail to address any likely failure modes of the assets. The majority of PM tasks should be inspections, looking to find the equipment in the act of failing, not failed.

**7. IDENTIFY FAILURE:** Everyone—engineering, maintenance, operations, and quality—has the responsibility to identify what indicates failure. In many cases, we are shutting down equipment to look for potential fail-

CONTINUE ON NEXT PAGE

## STANLEY E. FOSTER SCHOOL OF ENGINEERING, INNOVATION AND DESIGN RECEIVED GENE HAAS FOUNDATION AWARD



In support of manufacturing education, the Gene Haas Foundation recently awarded \$15,000 to the Stanley E. Foster School of Engineering, Innovation and Design at the Kearny Educational Complex in San Diego, California. These funds will be used as scholarships and awarded to students looking to pursue careers in manufacturing. The check was presented to Kearny's program instructor John Riego de Dios by Bill Belina, the new Haas Factory Outlet District Manager for San Diego and Imperial Counties.



ures (the P on the P-F Curve) or failures (the F), when other techniques could determine the potential for failure without shutting the asset down. In addition to predictive technologies such as vibration and infrared analysis, include SCADA system parameters like flow, pressure, temperature, and statistical process charts from the Quality group. Don't forget about the human senses either. There are many more people qualified to use those senses than people qualified to do vibration analysis. The senses include feeling temperature differences, hearing noise, and detecting vibrations as examples.

**8. ACT, DON'T REACT:** In a number of cases where the operation is 24/7, we find high levels of reactivity driven by the need to make production targets which in turn drives lack of access for maintenance. In those situations, we find the maintenance personnel literally waiting on the next reactive failure. If that is the case, shame on us. There are so many opportunities for improvement (defect elimination, PM optimization, parts kitting, CMMS Bill of Material improvement, and lower priority maintenance work such as rebuilds). The challenge we have is to use all of the labor effectively and that means everyone

gets scheduled work. This is why I prefer to break out planned work into different levels within the Priority system (high, medium, and low).

**9. DON'T DEFER PM TASKS:** When a downtime window appears, there is often temptation to schedule corrective and project work, while deferring proactive PM tasks. While you may get away with this for a short period, it will come back to bite you in the rear end. It's the PM tasks that prevent the reactive cycle of chaos. This is assuming that we are doing the right work from a PM perspective, referring back to Items 6 and 7 above.

**10. FAILURE TO TAKE ADVANTAGE OF UNPLANNED DOWNTIME FOR PROACTIVE WORK:** When a line or process suddenly stops, there should be schedule ready work (planned, parts kitted, only waiting for downtime and the resources to do the work). It should be the responsibility of the maintenance Supervisor to have a schedule ready job listing literally in their back pocket. When downtime appears, send a couple of responders if required, and then, focus the rest of the group on those schedule ready jobs of less or equal duration.

**11. MANAGE THE BACKLOG:** With a very limited opportunity to perform maintenance


work, there has to be a laser focus on the actual work to be planned and scheduled. Therefore, trim the backlog of non-essential "nice to haves" that may end up diverting the resources into less important activities given the critical nature of the downtime windows.

**12. LACK OF EFFECTIVE COORDINATION BETWEEN THE CRAFTS:** Rather than maintenance planning and scheduling, people should view it was maintenance planning, scheduling, and coordination. With short windows to work, it's critical that the work be well coordinated to ensure effective execution. Think about scaffolding, insulation, mechanical, electrical, painting, and so on.

These 12 items are some of the most common opportunities that I see in planning, scheduling, and coordinating organizations that operate on a 24/7 or 24/6 schedule. Mahatma Gandhi said "The future depends on what you do today." In the end, the challenge is look beyond the normal approaches for the opportunity to optimize and perform maintenance work. What can you anticipate?

For more information, visit [www.grainger.com](http://www.grainger.com).





**Cutting Time Comparison**

Material: 4140 Steel  
Starting Hole: 3"  
Final Hole: 4"

Bore Depth	Milling (Minutes per Hole)	Boring (Minutes per Hole)
3"	~5	~2
6"	~10	~5
9"	~15	~8
12"	~40	~10
15"	~130	~12

*Milling: 2" Face Mill, 5 Flute  
Feed/Tooth: .005"*


*Rough Boring: 4" SW 319, Stepped Cutting  
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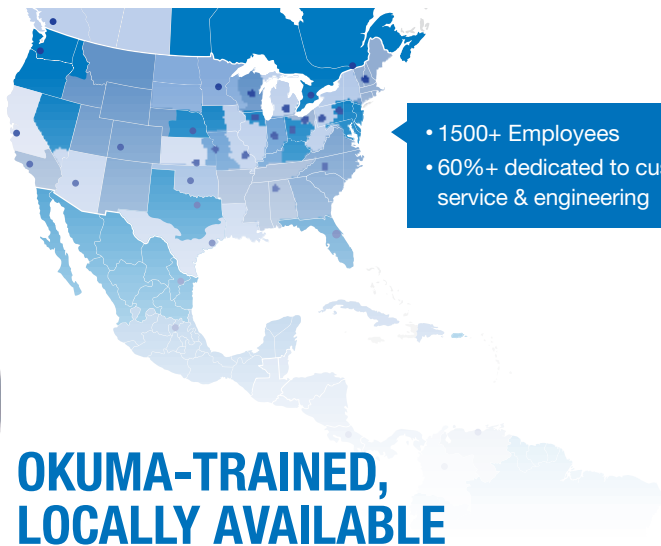
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But we're being paid to work, and we've got plenty to do. If you've read CultureShoc articles or seen/heard us before, you're probably familiar with our tools for setting and accomplishing goals, holding ourselves and others accountable, and communicating effectively with co-workers.



Allied Mineral Products builds new bikes and helmets for kids in Columbus, Ohio

Today, however, I want to talk about one specific method to raise and maintain engagement consistently in your business through uniting people around a common cause. More plainly, pick one of more individuals, nonprofits or organizations that mean something to you and/or your people, and figure out how to help.

One of best ways I've ever seen to engage teams is to help others, to participate in something bigger than oneself. We have helped companies, departments and individuals build brand new bikes for high-achieving kids in underprivileged areas. We have seen teams compete to earn the most donation items for military veterans that have fallen on hard times. We have gone out into a local neighborhood and cleaned up places that needed it.

This can be a big project once in a while or nominating one cause per week/month to support. And it doesn't have to include big money. Canned goods, clean-up efforts and holiday gifts don't have to hit hard in the



Allied Mineral Products builds new bikes and helmets for kids in Columbus, Ohio

wallets, but they make a huge impact. It's awfully hard to be cynical or a stick-in-the-mud when the task is to collaborate to build furniture for Habitat for Humanity Families or put together items that you hand directly to people that will appreciate them more than we know.

If you're someone constantly asking yourself how you can make your team more motivated, engaged and positive, ask them what they care about outside of work and align those interests with causes you can support. Create optional service opportunities, consider a ½ day of a team building to assemble or build something to donate, or ask your people how the company can help.

Find a cause or multiple causes that matter to you and your people, and when times get tough, remember how good we have it, as well as the potential we have every day to enhance the lives of others.



## BOSTON CENTERLESS EXPANDS SERVICES WITH NEW TECHNOLOGY

Boston Centerless, a precision bar materials supplier, has expanded its services by adding a Material Validation Testing Center to its operation. This new center gives the company the ability to verify the identity and integrity of the precision bar products manufactured by Boston Centerless, mitigating material risk. These services can also be performed on customer supplied material.

Specifically, the equipment can test for internal and surface defects as well as alloy verification. This is especially important for industries where metal identification is criti-

cal to the application such as aerospace and medical.

"This testing capability brings a higher level of service to our customers allowing us to reduce lead time and logistics requirements, and supply a superior level of quality for the customer," said Dave Mersereau, Sr. Vice President and General Manager at Boston Centerless. "By having the ability to test real time with manufacturing, we eliminate the need for the customer to manage additional suppliers while shaving valuable time off their process."

Testing services include Ultrasonic

Testing, Eddy Current Testing and XRF Alloy Verification. Laser marking with customer-specific identifiers is also available.

Boston Centerless supplies customers worldwide with precision bar materials for close tolerance CNC Swiss machining applications. The company also provides grinding services for customer supplied materials and components, CNC Swiss consulting services, and manufactures a line of ultra-precise gages. For more information, visit [www.bostoncenterless.com](http://www.bostoncenterless.com).



# COLORADO INITIATIVE TO HELP EMPLOYERS HIRE 30,000 VETERANS

STATEWIDE EMPLOYER SURVEY TO REVEAL REAL-WORLD CHALLENGES HOLDING EMPLOYERS BACK



There are more than 30,000 veterans, Guard Members and Reservists in Colorado who still are looking for full-time jobs even though the economy is improving. The majority of small employers who want to hire veterans typically don't know how to connect with them or assess their qualifications. Employers with fewer than 1,000 employees are key to reducing veteran unemployment because numerically, they make a majority of all new hires every month.

Because the role of small employers is key to getting veterans into full-time jobs and good careers, a diverse informal coalition of Colorado business associations, government agencies, non-profits and veterans' groups is focusing on innovative ways to help employers hire more veterans easier and faster.

"A first step," said Rick Crandall, President of the Colorado Freedom Memorial, 2012 Colorado Broadcaster of the Year and Air Force veteran, "is that I've just sent an email invitation to 12,000 small employers asking them to participate in a short online survey. We need employers to participate in the survey so we can zero in on specific real-world problems that are holding employers back from hiring veterans. Survey results will help to develop more effective free small business education and networking resources necessary to solve the problems."

"It is important that businesses from all parts of Colorado and all industries participate in the survey", said Stephanie Veck, Colorado Workforce Development Council Director, "so the results appropriately reflect Colorado's diversity and diverse needs, thereby informing the development of valuable information and resources that will provide benefit to employers in all locations and industries throughout Colorado. I would urge every business in the state to take 5 minutes to complete the survey, and be sure to use the Colorado specific code, C888, on the first question so their results are attributed to Colorado".

**[https://www.SurveyMonkey.com/r/36PW85F\\_CFA](https://www.SurveyMonkey.com/r/36PW85F_CFA)**  
Input Colorado code for the first question: C888

"In many cases, the services are available in Colorado to help small businesses succeed in military hiring, however time and availability of staff may limit the reach and effectiveness of the services," said Elaine Edon, Coordinator, Veterans Programs, Colorado Department of Labor and Employment. "In other cases, industry-specific requirements or geographical location can make the connection between an employer and prospective veteran a random and frustrating experience. In order to further our impact on Colorado's veteran unemployment, going forward we must ensure that services and resource networks are easy to access and relevant to meeting their hiring needs. The Every Vet Counts! survey gives them the opportunity to tell us what they need in their location and in their industry," Edon added.

Izzy Abbass, 1st Vice President of the United Veterans Committee of Colorado, whose members include 50 veterans' support groups in the state, said, "UVC has endorsed this effort because it is obvious that if we can help all the small employers in the state to hire veterans, thousands of veterans who have served their country can capitalize on their skills and experience in good, meaningful careers. A better life starts with a full-time job offer."

The "Every Vet Counts!" Colorado Employer Survey, coordinated by non-profit Center for America, is the first internet-based survey about veteran hiring in Colorado. The survey results will be shared with all organizations participating in the project and help identify ways the organizations can work together to improve outreach services for employers and veterans.

"This project is mission-critical and has been joined by such a diverse group of organizations in Colorado to do one thing – improve hiring opportunities and results," said Brig. Gen. (ret.) Marianne Watson, former Director of Manpower and Personnel (J-1) at the National Guard Bureau in Washington, DC, and Center For America Colorado Project Coordinator. "Together, we're going to provide employers with free directories, video programs, live webinars, employer guides on veteran hiring, and

other resources so recruiters get better help to connect with veterans, National Guard members and Reservists to help build their organizations. Bringing employers and military candidates together more efficiently is our number one priority."

"We're grateful to have sponsors such as DaVita Corporation and The Anschutz Foundation to underwrite this project," said Steve Nowlan, President of Center for America. "DaVita and Phillips 66 have also sponsored four Employer Guides on key aspects of hiring veterans which employer can download now at no cost from our website at [www.CenterForAmerica.org](http://www.CenterForAmerica.org)."

Among the Colorado organizations that have agreed to participate in various ways such as encouraging members or business contacts to participate in the survey, or encouraging members to download the CFA employer guides, or nominating webinar and webcast panelists, are:

- Action 22
- Associated Builders & Contractors Rocky Mountain Chapter (Colorado)
- Association for Corporate Growth (Denver Chapter)
- Association of Equipment Management Professionals
- Colorado Department of Labor and Employment
- Colorado National Guard
- Colorado Restaurant Association
- Colorado Society for Human Resource Management
- Colorado Wastewater Utility Association
- Colorado Workforce Development Council
- Emergency Medical Services Association of Colorado
- Mountain States Employers Council
- Mt. Carmel Center of Excellence
- Outdoor Industry Association
- Pikes Peak Military Care Network
- Progressive 15
- Small Business Development Center Network (Colorado)
- United Veterans Committee of Colorado
- Welcome Home Alliance for Veterans





# GIFT AND ESTATE TAX DISCOUNTS LIKELY TO SHRINK FOR CLOSELY HELD BUSINESSES

BY JAMEY RAPPIS & TIM MUEHLER, CLIFTONLARSONALLEN



For many years it has been common for estate planners to advise an owner of a closely held business to gift or sell minority and noncontrolling interests to children and other related parties at discounts to their pro rata value. These discounts, consisting of a discount for lack of control (DLOC) and for a lack of marketability (DLOM), often combined for a discount of 35 – 45 percent or more in some cases. This has been a great way to leverage the gift tax exemption by transferring \$1 of stock while reporting that value at significantly lower values for gift tax reporting purposes (e.g., 60 cents or 65 cents in many cases).

But that changed in early August 2016, when the IRS issued proposed regulations to Internal Revenue Code Section 2704. The changes will reduce the ability to take these discounts when valuing the transfer of minority interests between family members. If these regulations are finalized as written, the thought among many professionals in estate planning and valuation is that the DLOC for these types of transfers will be essentially eliminated.

There are some safe-harbor exceptions involving the presence of a nonfamily owner in the business that would allow the discounts to be applied. But stipulations apply:

- The nonfamily member must own at least a 10 percent interest
- The nonfamily ownership block needs to be at least 20 percent
- The ownership needs to be held for at least three years
- Ownership must be given

a “put” right to allow the non-family member to request payment for the shares at any time

- Ownership must be paid within six months at “minimum value,” which is essentially pro rata value of the business as a whole

Obviously, qualifying for this safe harbor would be very difficult in most closely-held business entities.

Some valuation professionals, ourselves included, believe there are still opportunities to apply both the DLOC and the DLOM for intrafamily transfers of closely held stock and partnership interests; the discounts would be less than those taken prior to the proposed 2704 regulations, if finalized as written.

Consider a gift or sale before January 1, 2017

Given the likelihood of these proposed regulations going through, it would be wise to review your estate plan. We can help you determine whether the gifting of closely-held stock or partnership interest to family members makes sense from an overall estate planning perspective, and whether these transfers should be made prior to January 1, 2017, which is the earliest the regulations can become final. By transferring the shares prior to the finaliza-

tion of the regulations, the discounts should be allowed under the current regulations and relevant case law.

*The information contained herein is general in nature and is not intended, and should not be construed, as legal, accounting, investment, or tax advice or opinion provided by CliftonLarsonAllen LLP (CliftonLarsonAllen) to the*

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MANUFACTURING AMERICA'S FUTURE

## 2016-17 NATIONAL EVENTS AND TECHNICAL SEMINARS

**October 11th -14th, 2016**

Fall Conference, Charlotte, NC

**October 26th, 2016**

Plant Managers Roundtable, Boston, MA

**November 2nd, 2016**

Sales & Marketing Workshop, Philadelphia, PA

**November 16th, 2016**

Plant Managers Roundtable, Denver, CO

**February 8th, 2017**

Plant Managers Roundtable, Boston, MA

**February 19th - 21st, 2017**

Chapter Leadership Summit, Austin, TX

**March 22nd - 25th, 2017**

The MFG Meeting, Amelia Island, FL



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