www.metalworkingadvocate.org

Follow us on Twitter!

Advocacy Clips is a weekly compilation of relevant news articles from around the country on subjects that impact the metalworking industry. These articles are compiled by Bracewell & Giuliani, NTMA and PMAs public relations firm. ***Please forward this e-mail to a colleague who may have interest in these topics.***

In This Issue:

Tooling, Machining Companies Shine Spotlight on Workers [NTMA Mention]

Tooling, Machining Companies Shine Spotlight on Workers [NTMA Mention]
Meadville Tribune
By: Keith Gushard
1/29/2017

The Blue Collar Bash was a night of celebration for the area's tooling and machining companies and their number one asset — the people working in the industry.

Saturday's 11th annual event was sponsored by the northwestern Pennsylvania chapter of the National Tooling and Machining Association, an industry trade group. The event is billed as a way to thank all the hardworking individuals in the trade, according to Tami Adams, executive director of the chapter.

Manufacturing is important to Crawford County since there is a heavier reliance on it here than in other parts of Pennsylvania and the country. About 22 percent of the jobs in the county are related to manufacturing, compared to 10 percent for the state and 11 percent nationally. Many of the area's tooling and machining shops are suppliers of tools, equipment and parts to major manufacturers.

About 450 people were on hand at the Italian Civic Club for a night of music by the Fabulous Booze Brothers Show Band and Revue of Pittsburgh and the opportunity to win prizes by both individuals and NTMA member firms of the local chapter.

Prizes were awarded to individuals based on years of service.

The local NTMA member firms in attendance were eligible for education dollars for their employees.

Acutec Precision Aerospace Inc. and Shorts Tool & Manufacturing Inc. each was awarded $500 in NWPA NTMA Education Foundation funds for employee training.

A total of six Precision Manufacturing Institute vouchers each for 24 hours of training were awarded to Area Tool & Manufacturing Inc., Greenleaf Corp., Talbar Inc., C&J Industries, Laser Tool Inc. and Arvite Technologies LLC.

Crawford County Career and Technical Center paid tuition for adult evening classes for introduction to precision machining went to Kuhn Tool & Die Co. and introduction to welding went to Doutt Tool Inc.

In addition, the member firms and partner firms of the northwestern Pennsylvania chapter of the NTMA made a $2,950 donation to Fraternal Order of Police Lodge 97 to support area law enforcement.

Did you know?

The National Tooling and Machining Association is the national representative of the custom precision manufacturing industry in the U.S.

NTMA member firms design and manufacture special tools, dies, jigs, fixtures, gages, special machines and precision machined parts, and some firms specialize in experimental research and development work, according to Tami Adams, executive director of the northwestern Pennsylvania chapter of the association. The chapter has 56 member firms and a total of 121 member and partner firms.

Beaumont School Girls, Members of Strong Robotics Team, Heading for Los Angeles [NTMA, NRL Mention]

Beaumont School Girls, Members of Strong Robotics Team, Heading for Los Angeles [NTMA, NRL Mention]
Cleveland.com
By: Jeff Piorkowski
1/26/2017

CLEVELAND HEIGHTS, Ohio – "It's fun, all the sparks, trophies and fighting," Beaumont School senior Margaret Schiffer said while considering, not the latest hit action adventure movie or a night at a mixed martial arts competition, but about something much closer to her heart.

No, it wasn't MMA, but another kind of bout to which Schiffer was referring – those involving robots made by high school and college students and who do battle at local, regional and national competitions.

Schiffer, along with fellow Beaumont students Rosie Sirk, Kimberly Browske, Nora Duncan and Hayley Muhvic, make up Beaumont's proud robotics team.

The team has an illustrious history, winning awards in each of the competitions it has entered over the past six years. For example, in last year's national competition, the team finished fifth in the country, placing ahead of some college teams.

No shrinking violets, the Beaumont team was the highest placing all-girl team in the competition. And, "competition" is the key word when it comes to motivating the Beaumont team.

"We want to destroy all the other bots," said Browski, a senior from Highland Heights who is in her first year with the team.

Competition can take many forms. For example, Sirk, a sophomore who took part in her first competitions last school year, was as diligent as any NFL scout when she made up a book documenting the strengths and weaknesses of most all possible opponents in one of those competitions.

"I've never seen anything like this book," said Gretchen Santo, a biology teacher who coaches the robotics team, of

Sirk's scouting report. "It blew me away it was so detailed and unique."

While preparing for this year's regionals, to be held April 30 at Lakeland Community College in Kirtland, and the nationals, in May, Schiffer and Sirk will have the honor of traveling to Los Angeles to represent their school, team and the National Robotics League at the SolidWorks World Conference, to be held Feb. 5-8.

In L.A., the girls will participate in a mini-competition with their robot, Stobor ("robots" spelled backwards), and showcase their robot and computer-aided designs (CAD) for the 5,000 people expected to attend.

The Beaumont team members were invited to take part in the conference by National Tooling and Machining Association Director of Youth Engagement Bill Padnos.

"This is an international conference which gives our girls the unique opportunity to demonstrate their skills, show their leadership capabilities and showcase their superior communications skills, all while celebrating their successes with robotics," Santo said.

The team members built their robot in keeping with competition guidelines that say it must weigh no more than 15 pounds. Within those 15 pounds, the girls must engineer a mobile fighting machine capable of destroying other teams' robots.

Stobor features as its weapon a "spinner," a revolving, pure-steel mechanism that is capable of flipping enemy robots skyward and yes, causing sparks. Stobor's spinner turns at 8,000 revolutions per minute.

Should Stobor be flipped, Sirk, of Lyndhurst, explained, "It can still move while upside down, you just have to activate the remote controls the reverse of how you normally would."

Sirk and Schiffer control the robot during competitions, which is why they were selected for the L.A. trip.

Each team member, however, is among the school's most academically gifted. Each works generally, and has specific team chores to perform.

"I'm a CAD specialist," said Duncan, a sophomore from Shaker Heights. "I also like art. I make a 3-D representation of what we're going to build before we build it."

Duncan, by the way, added that the competition aspect was one of the keys to luring her into the world of robotics.

Muhvic, a freshman, is the newcomer to the team.

"I like to work with the machine," she said of the Bridgeport Milling Machine, used to make the base and sidebars of Stobor.

Muhvic, of Parma, and the others are not merely gifted academically, they also put a lot of work into their robotics. Every Saturday, from 7-11:30 a.m., they go to Solon's Christopher Tool and Manufacturing to work with their mentors on strengthening and improving their robot, and engineering and building skills.

The team members thank Christopher Tools' Joe Gerdes, Jim Colantuono and Adam Lommlar for their mentoring.

Schiffer, of Aurora, whose mother, Yvonne, is a retired engineer and who works with the team as a Beaumont faculty member, said that during each competition, as their robot gets damaged while advancing through the brackets, the girls must figure out ways to make Stobor ready for its next battle, then physically make those adjustments.

Competitions are judged in the areas of documentation, presentation, the "coolest bot," and best engineered.

The Beaumont team finished third overall in the 2016 regionals, held at Lakeland Community College, winning overall for best documentation, which details Stobor's plans.

In finishing fifth in the 2016 nationals at California University of Pennsylvania, the Beaumont team, which also consisted of girls since graduated, won top honors for best documentation and best presentation.

Said Yvonne Schiffer of the team's documentation skills, "Professional engineers have told me they'd hire them

right now."

Some of the girls, like Margaret Schiffer, want to pursue engineering careers, while others haven't yet decided their future paths.

But, for now, that future will include lots of work and a simple desire to see from opponents' robots lots of flying sparks.

TOP

Wanted: Factory Workers, Degree Required

Wanted: Factory Workers, Degree Required
The New York Times
By: Jeffrey Selingo
1/30/2017

When the German engineering company Siemens Energy opened a gas turbine production plant in Charlotte, N.C., some 10,000 people showed up at a job fair for 800 positions. But fewer than 15 percent of the applicants were able to pass a reading, writing and math screening test geared toward a ninth-grade education.

"In our factories, there's a computer about every 20 or 30 feet," said Eric Spiegel, who recently retired as president and chief executive of Siemens U.S.A. "People on the plant floor need to be much more skilled than they were in the past. There are no jobs for high school graduates at Siemens today."

Ditto at John Deere dealerships, which repair million-dollar farming machinery filled with several dozen computers. Fixing tractors and grain harvesters now requires advanced math and comprehension skills and the ability to solve problems on the fly. "The toolbox is now a computer," said Andy Winnett, who directs the company's agricultural program at Walla Walla Community College in Washington.

These are the types of good-paying jobs that President Trump, blaming trade deals for the decline in manufacturing, has promised to bring back to working-class communities. But according to a study by Ball State University, nearly nine in 10 jobs that disappeared since 2000 were lost to automation in the decades-long march to an information-driven economy, not to workers in other countries.

Even if those jobs returned, a high school diploma is simply no longer good enough to fill them. Yet rarely discussed in the political debate over lost jobs are the academic skills needed for today's factory-floor positions, and the pathways through education that lead to them.

Many believe that the solution is for more Americans to go to college. But the college-for-all movement, which got its start in the 1970s as American manufacturing began its decline, is often conflated with earning a bachelor's degree.

Many high school students rush off to four-year campuses not ready for the academic work or not sure why they are there. Government data show that 44 percent of new graduates enroll directly in a four-year college, but based on recent trends, less than half of them will earn a degree within four years. And though two-year colleges have long been identified as the institutions that fill the job-training role, some 80 percent of community college students say they intend to go on for a bachelor's degree, or they leave with generic associate degrees that are of little value in the job market.

Students in the United States are offered few feasible routes to middle-skill careers — jobs that require more education than a high school diploma but typically not a bachelor's degree. The National Skills Coalition, a nonprofit organization, calculates that middle-skill jobs — in computer technology, health care, construction, high-skill manufacturing and other fields — account for 54 percent of the labor market, but only 44 percent of workers are sufficiently trained.

"The bachelor's degree is the gold standard, but the higher education system has to create ways for students to

choose training and education in their own time and sequence," said Anthony P. Carnevale, the director of the Center on Education and the Workforce at Georgetown University. "Higher ed," he said, "needs to respect the dignity of labor."

Faced with a skills gap, employers are increasingly working with community colleges to provide students with both the academic education needed to succeed in today's work force and the specific hands-on skills to get a job in their companies. John Deere, for example, has designed a curriculum and donated farm equipment to several community colleges to train technicians for its dealer network. About 15 to 20 students come through the program at Walla Walla each semester. Because they are sponsored by a John Deere dealership, where the students work for half the program, most graduate in two years with a job in hand. Technicians start at salaries just shy of $40,000, on average.

Dr. Carnevale's research has found that 40 percent of middle-skills jobs pay more than $55,000 a year; some 14 percent pay more than $80,000 (by comparison, the median salary for young adults with a bachelor's degree is $50,000).

Jobs like the ones John Deere offers are still associated in people's minds with students who performed poorly in high school, those considered "not college material." But to succeed in programs like those at Walla Walla, students need to take advanced math and writing in high school, academics typically encouraged only for those going on to four-year colleges.

Persuading students and their parents to consider the apprenticeship track is a tough sell, especially because companies want students who have a strong academic background.

Struggling to fill jobs in the Charlotte plant, Siemens in 2011 created an apprenticeship program for seniors at local high schools that combines four years of on-the-job training with an associate degree in mechatronics from nearby Central Piedmont Community College. When they finish, graduates have no student loans and earn more than $50,000 a year.

"These are not positions for underachievers," said Roger Collins, who recruits apprentices for Siemens at 15 Charlotte-area high schools.

Chad Robinson was one of those students. Ranked in the top 10 of his high school's senior class, with a 3.75 grade-point average, he had already been accepted to the engineering school at the University of North Carolina at Charlotte when he told his parents he wanted to shift course and apply for the Siemens apprenticeship.

"They were very against it," he said, until they went to the open house. "A lot of my friends who majored in engineering in college told me they wish they had done the apprenticeship because my work experience will put me ahead of everyone else."

IT is not uncommon to find executives in Europe who got their start in apprenticeships, which are seen as a respected path to a profession in a variety of fields, from hospitality to health care, retail to banking.

In the United States, on the other hand, apprenticeships have long been associated with the construction trades and labor unions. That can be traced to a Depression-era labor shortage that led Congress to pass the National Apprenticeship Act. The act formalized standards and empowered the Labor Department to certify training, which was mostly in manual labor occupations. Unions took on the task, tightly controlling apprenticeship opportunities and passing them down through the generations.

In the decades after World War II, registered programs expanded in number and type, with the addition of fields like firefighting and medical technician. But apprenticeships never caught on, relegated to a second-class career track as college enrollment ballooned in the 1960s and '70s, and more recently mirroring the falloff in the influence and membership of labor unions.

The Department of Labor's registry now lists 21,000 programs with about 500,000 apprentices, which sounds impressive but represents only 1.5 percent of 18- to 24-year-olds in this country and is far short of demand. Still, participation is up 35 percent and the number of programs by 11 percent since 2013.

Apprenticeships are making a comeback thanks in part to bipartisan support among lawmakers. In the last two years, Washington has allocated $265 million to spur programs. President Obama's secretary of labor, Thomas E. Perez, a strong proponent, attempted to rebrand apprenticeships to appeal to educators and parents. During his

tenure, the department established a partnership between registered community colleges and sponsors that allowed on-the-job-training to count as academic credit toward a degree.

“Apprenticeship is the other college, except without the debt,” said Mr. Perez, who had a goal of doubling the number by 2018. Advocates are hopeful that the trend will continue with new leadership in Washington, given President Trump’s familiarity with construction.

While the building trades still dominate, the types of occupations offering internships have expanded to include jobs like pharmacy technician, I.T. project manager and insurance adjuster. Aon, the insurance and financial services company, last month announced a program in Chicago in which high school graduates get training in account management, human resources, financial analysis and information technology while earning an associate degree from Harold Washington College or Harper College.

Gov. John Hickenlooper of Colorado wants to make apprenticeships ubiquitous in high schools around his state. Later this year, backed by $9.5 million from Bloomberg Philanthropies and JPMorgan Chase, Colorado will begin offering hands-on training, starting in high school, in financial services, information technology and health care as well as manufacturing. The goal is to make the program available to some 20,000 students at all academic and income levels within the next decade.

“Apprenticeships can start with a job and end with a Ph.D.,” said Noel Ginsburg, who heads up the program and is president and founder of Intertech Plastics in Denver. The initiative was inspired by a visit that Mr. Ginsburg and dozens of politicians and business and education leaders made to Switzerland in 2015. Although German apprenticeships are often held up as the model, Mr. Ginsburg preferred the Swiss approach, which involves a wider range of fields.

In Switzerland, compulsory education ends after ninth grade, when students can choose either an academic or a vocational path. Between 20 percent and 30 percent of students choose the academic track, which focuses on the few professions, such as medicine and law, that require a university education; nearly 70 percent choose the vocational track, with programs for about 230 occupations.

Beginning in 10th grade, students rotate among employers, industry organizations and school for three to four years of training and mentoring. Learning is hands-on, and they are paid. Switzerland’s unemployment rate for the young is the lowest in Europe and about a quarter that of the United States’.

Here in the United States, most students are offered a choice between college or a dead end. The college-for-all movement, it seems, has closed off rather than opened up career options. For working-class voters who feel left out in this economy to be able to secure meaningful jobs, educational pathways must be expanded and legitimized — in the process redefining and broadening what is meant by higher education.

“The silver bullet comes by adding more training opportunities during and after high school,” said Dr. Carnevale. “And whatever you do with training, you need to call it college. You want to make people feel good about the path they choose.”

Manufacturers Seeking to Change Perceptions

Manufacturers Seeking to Change Perceptions
Smart Business Network
By: Adam Burroughs
2/1/2017

Northeast Ohio manufacturers continue to face challenges when it comes to finding both the general and skilled labor needed to meet production demands.

Companies in this industry are facing a skills gap, which refers to the difference between the number of employees who are aging out of their jobs and the number of new job candidates ready and willing to take those positions. And that gap is significant.

According to a 2015 TeamNEO report that focused on Summit County manufacturing jobs, 72.5 percent of tool and die makers are older than 45, and the numbers are similar for industrial machinery mechanics, chemical plant and system operators, and more.

There are several conclusions drawn to explain why generations behind the baby boomers are shying away from careers in manufacturing. Among them is the idea that a misperception exists regarding what a manufacturing job looks like.

“I think manufacturing has an image issue,” says Jenny Stupica, a member of the executive committee of the board of directors for ConxusNEO and human resources manager for SSP. “It’s seen as low skill, an unsafe environment, low tech, none of which are true.”

To that end, William H. Gary Sr., executive vice president for Workforce, Community and Economic Development at Cuyahoga Community College, says more needs to be done to show the next generation of job candidates that manufacturing is a viable career path.

“… No longer is manufacturing the smokestack environment that I knew when I moved into the steel industry right after my undergraduate work,” Gary says. “Manufacturing is now very high-tech. And so, collectively, not only the community college but also the industry as a whole needs to collaborate more to market the benefits, the job opportunities and the wage opportunities that are associated with the manufacturing industry.”

Reaching people at a young age, showing them the available career options and even showing them what a modern factory floor looks like are commonly cited as incredibly important steps toward bridging the skills gap. Additionally, providing training and education options that help people learn the skills needed to both find work in the short-term and grow in a career over the long term are said to be key.

“For me, it’s the absence of the related instruction for apprenticeships,” says Randy Bennett, vice president of Automation Tool and Die Inc. “If you look at the curriculums that have existed in public schools, we’ve taken away from that over the past decades. We’ve not added to them. And all the life skills curriculum is gone — shop class, drafting, home economics, all of that. At the same time we’re in this boom of technology. And all the jobs are changing.”

Jason Scales, Ph.D., manager of educational services at Lincoln Electric, also says manufacturing jobs are changing, and so are the skills needed to fill those roles.

“If you look at welding technology, it’s changing,” Scales says. “We’re going into more automation. We’re developing new tools to be able to weld faster, safer and to have a better work environment for the welder. When all these technologies start to shift, what happens to the skill set and the amount of knowledge that that new worker has to have within that?"

Each of these individuals and their organizations — companies, colleges and associations — are taking steps to address what they see as the disconnect between job candidates and manufacturing careers. Here are some of the ways they’re doing that.

Taking action

To overcome the misperceptions that are keeping some job candidates away from manufacturing jobs, ConxusNEO is testing a way to match candidates to jobs based on skills instead of experience.

Stupica says while the perception is that there is a skill shortage, she’d position it more as an experience shortage. That prompted the implementation of TalentNEO and ACT WorkKeys, which is a test candidates take to grade their aptitude in basic skills that can be matched with jobs.

Candidates in Summit and Cuyahoga counties can take the free, proctored tests that assign scores to these aptitudes — reading for information, locating for information and math, for example. They can then search for jobs based on how well their scores in certain aptitudes match the scores assigned to jobs posted by employers.

“So you might have a person who has never set foot in a manufacturing environment who says, ‘I’m not going to bother to look for a job in manufacturing because I’m sure that’s not for me, I don’t have any experience.’ But yet their skill shows they have the capability of being successful in a manufacturing environment,” Stupica says. “It’s opened a whole new array of options for them that they previously wouldn’t have explored as far as finding jobs.”

At Automation Tool and Die, Bennett has used multiple methods to help the younger generations better understand the career opportunities that exist in manufacturing.

The company participates in manufacturing initiatives and hosted a private screening of the film “American Made Movie,” which the company says shows the positive impact of domestic manufacturing jobs on national and local economies. But most notably, this year the company is bringing back its apprenticeship program.

Working in partnership with Cuyahoga Community and Lorain Community colleges, the company coordinates related technical instruction in the hopes of training an untapped pool of talent for jobs in tool and die, industrial maintenance, CNC, machining and welding — the top five most in-demand jobs in Ohio, according to Ohio Means Jobs data.

The company will work with high school students in their junior or senior years, offering them summer, weekend and after-school jobs that provide exposure to the industry.

Once they graduate, they will work full time during the day and two evenings each week, as they take classes until they fulfill their 800 hours of related instruction that starts with basic math and ends with more advanced manufacturing concepts.

In his model, the employer pays for tuition and books.

“The student pays nothing,” Bennett says. “What we do, we’ll bring someone in. We’ll employ them for one year. Different companies do it different ways but we want one year of service so that we can see work ethic, commitment, capability, everything some might call soft skills. We would be taking that year to put them through a Manufacturing Foundations course to provide exposure to the company and manufacturing as a sector. And we would risk that cost 100 percent.

“But after year one if they’re deemed to be ready to go, we have a contract, and all it is is a repayment contract. So we’ll pay it 100 percent, all four years.”

He says the direct costs are not that high relative to the indirect costs that manifest as lost opportunity.

The company recently built a 102,000-square-foot facility. But in some cases it doesn’t have the people it needs to meet the capacity the new facility allows them to have.

“Right now we have more opportunity than we have capability,” he says, so the company is being very selective about what work it takes on in large part because it needs more people to do the work. The hope is that the apprenticeship program can solve that problem.

Partners in education

Educators are working to understand the needs of the manufacturing community to develop courses that prepare students for specific jobs with Northeast Ohio manufacturers.

One example is the Steelworker for the Future program, which is a result of a partnership between Cuyahoga Community College and ArcelorMittal. Gary says through this program, the curriculum developed and equipment used are aligned to build the specific skills needed to work at ArcelorMittal.

The four-semester program offers both general education as well as electrical and mechanical training, and includes an apprenticeship and on-site training.

“It’s an opportunity to not only align the community college’s programs with the industry sector, but through the collaboration we can actually design the programs that companies like ArcelorMittal require in order to have a productive workforce,” he says.

Cuyahoga Community College has similar programs with Automation Tool and Die, Vitamix Corp., Oatey and Nestlé, to help prepare candidates to fill their jobs. It has also purchased two mobile units that house state-of-the-art equipment and classrooms to perform on-site training at employers’ locations.

While many employers and educators have become partners in workforce development, one company is filling the

role of both.

Lincoln Electric will open its $30 million Welding Technology Center, designed to help train the industry and workforce in new welding technologies in the fourth quarter.

Scales says the main focus will be on training the trainer programs, creating more certified welding inspectors and educators, and working with more welding educators to make sure they have the skills to pass on to incoming and current workforces as new technology comes into the industry.

“And that’s really the main component of that new welding school is that we want to be training the trainers and really be a knowledge transfer center for industry here at Lincoln Electric,” he says.

It will facilitate localized training within regions, working with teachers and others who teach welding, offering welding educator workshops, some of which deal specifically with training younger generations.

The war for talent today doesn’t reside within the borders of a single industry. Multiple job sectors are essentially looking for the same core talent and are competing for a share of the same labor pool.

Through collaboration and partnerships, manufacturers are finding ways to bridge the skills gap and dispel the negative preconceptions to showcase the opportunities that exist to the next generation of job candidates, and position the industry as an exciting place to spend a career.

TOP