

Manufacturing Careers Partnership Meeting  
 Busch Precision  
 February 16, 2015  
 Noon – 1:30PM

In Attendance:

Busch Precision	Michael	Mallwitz
Busch Precision INC	Matt	Pettigrew
Caterpillar	Kris	Smith
Caterpillar	Janeen	Peters
Gateway Technical College	Benjamin	McFarland
GKN Sinter Metals	Connie	Coon
GKN Sinter Metals	Aimee	Foreman
Goodwill SEW	Dan	Depies
Goodwill Talent Bridge	Mark	Honadel
Hispanic Chamber of Commerce of WI	Ed	Panelli
HCCW	Jorge	Franco
KHS USA, Inc.	Bill	Mermolia
KLH Industries Inc.	Kenneth	Heins
Lakeside Manufacturing	Kari	Koenig
Lakeside Manufacturing	Scott	Hetzel
MATC	Duane	Schultz
MATC	Dorothy	Walker
Matzel Manufacturing Inc	Wayne	Matthiesen
Matzel Manufacturing Inc	Brian	Nuetzel
MAWIB	Toni	White
MMAC	Jane	Trenchard-Backes
MMAC	Barb	Smith
Monarch Corporation	David	Mitchell
Moraine Park Technical College	Marcia	Arndt
Precision Plus	Michael	Reader
Supersteel, LLC	Heather	Krugler
Supersteel, LLC	Mike	White
Telsmith	Cheryl	Milbauer
Telsmith	Dan	Lorenz
Waukesha County Business Alliance	Mary	Baer
WCTC	Michael	Shiels
WOW Workforce Development	Elsa	Travieso
Milwaukee7	Anne	Nordholm
Milwaukee7	Susan	Koehn

## Notes

### Welding Panel 101

**Mike Shiels** – Dean of Applied Sciences and Manufacturing, WCTC

Critical components of the initiative are the alignment of competencies across welding criteria. AWS standards were used so employers and educators were using the same language to set the standards for the welding curriculum. NIMS standards need to be used for the machining curriculum for the same reasons – We needed to get to a common language and create a shared understanding for welding at the Entry, intermediate, and advanced levels. What we accomplished:

- Hired a curriculum consultant
- Regional curriculum and state curriculum was goal
- We created a Survey by bringing together all stakeholders
- 8 credit credential
- 1 – math-
- 1 safety
- instructors from tech colleges and industry representatives were asked to check committee work for validity and reliability
- advisory committees and state wide meetings in state were tapped for feedback
- Result: adopted the 8-credit entry level welding credential. Align with existing curriculum. The roll out was left up to the individual tech districts for customizing the program. WCTC partners with WRTP to customize program.
- WCTC plans to engage bootcamp soon for 16 welders from Waukesha
- 128 hours of instruction for gas metal arc welding (get courses)
- Both 1 year technical diploma and 2 year associate diploma students go through entry level Welding 101 (AWS) Curriculum Development

**Duane Shultz** – Associate Dean at MATC

Pathway – Welding 101 (our standard gasmetal arc was a 5-credit course rather than the 3 courses recommended) There was a lot of debate about how to get the credential done in the shortest amount of time. Could it be a 2-3 credit course? Instructors were concerned with “rushing” the process with students with no experience. It has to work for tech colleges and employers and students.

We work with pre-college students (3-500 students who are trying to bolster skills to get into career pathways). We minimize high stakes tests and focus on “Readiness is Everything”. We need to help learners understand that they can learn skills while making progress. MATC is focusing on encouraging Youth Options, and have completed discussions to create articulation agreements with Grafton School District. To attract students, we use individual flyers, brought to churches, faith based organizations CBO’s, Recruitment Fairs, etc. In December we had 75 folks come out to learn about the program.

\* (MATC Welding 101 curriculum is attached.)

**Ben McFarland** – Welding Instructor/ Chairperson Welding, CNC, IMT at Gateway Technical College, former business owner

Instructors struggled with bringing down the credit count to meet the need for urgency and shorter hour time. Faculty and Administrators at Gateway's SC Johnson iMET Center met to review curriculum and address concerns about hours/credits. Short-term, (15 hours) customized, modular and boot camp training in CNC machining, industrial maintenance, robotics, welding and fabrication, in addition to industrial trades apprenticeship training, is being offered at the SC Johnson iMET Center. We actually did the exact same thing as WCTC where we created an internal certificate including 442-321 GMAW, 442-332 Advanced GMAW, and 442-324 Print reading, and once any student completes those courses they complete the cert. This was our way to ensure that we would be able to transfer from any college in the state.

We have increased our offerings as a whole as we are currently offering from 7 in the morning until 10pm at night with no down time and the addition of iMET having evening classes as well all part of the blueprint for prosperity grant.

There is no boot camp included now because of the MIG welding and TIG welding demands. Gas metal arc **welding** (GMAW), sometimes referred to by its subtypes metal inert gas (**MIG**) **welding** or metal active gas (MAG) **welding**, is a **welding** process in which an electric arc forms between a consumable wire electrode and the work piece metal(s), which heats the work piece metal(s), causing them to melt, and join. Gas tungsten arc **welding** (GTAW), also known as tungsten inert gas (**TIG**) **welding**, is an arc **welding** process that uses a non-consumable tungsten electrode to produce the weld.

**Dorothy Walker**, interim dean, Technology and Applied Sciences. MATC

- Tweaked program to include curriculum from AWS (American Welding Society) and safety focus from **Manufacturing Skill Standards Council (MSSC)**
- Grants allowed piloting with HCCW and their Fast Forward grant
- 81 students through first cohorts of program
- 28 students completed and are placed
- 35% going on to additional courses
- 11%?
- MATC and HCCW are in the process of surveying companies regarding quality of candidates. Do we need to tweak the program?
- 2 sections with HCCW to focus on Soft Skills component which students took prior to taking Welding 101. Soft Skills first seems to help students stick with the program to completion.
- MATC Pathways for all of the welding curriculum will eventually be offered at the high school level - Fall 2015 will pilot program at Oak Creek High School
- Expanded curriculum to include stick-welding for high school and pre-college levels
- New welding fabrication facility at Mequon campus
- Moving to 2-year metal fabrication program
  - We are still seeking to have a deeper and broader conversation: Does the content in current Welding 101 provide enough skill prep for candidates?

- Advisory Council approved and gave feedback on diploma and metal fabrication industries. How well are students adapting?
- Incarcerated people are willing and available to move into another direction. We are actively Looking at parole and probation population to fill jobs for - Offender-friendly employers. WE are expanding our conversations with employers about other options for employment pools.
- Internships/Apprenticeships are important - there is a lack of clarity about these distinctions. Apprenticeships give newbies the experience often required by companies.
- As we move into the Machining piece we can apply lessons learned from Welding. MAWIB has been a good partner—providing feedback.

### **Marcia Arndt**

Moraine Park Technical College has been running 12 week Welding Boot Camps on an annual cycle between our Jackson, Beaver Dam and Fond du Lac campuses. In addition to Welding, Print Reading and Math we have added a 3 credit soft skill/team building skills course and a 3-credit internship. As a condition of being in the boot camp the employers work with the college to interview and select candidates to be a part of the one day a week paid internship program while students are attending school. The majority of the interns are hired by the employer at the completion of the boot camp.

### **Ed Pannelli** General Manager-Market Driven Systems at Miller Electric Mfg. Co.

Skills need to be adapted to the supply need of welders. Advanced Manufacturing Partnership got together and decided to modify the usual tech training because there is 15-50% failure rate because of issues like drug testing, coming to work on time, working well with others etc. We need to develop the Human Capital. The “secret sauce” piece is having Godfrey and Kahn create an LLC through which we can screen participants and conduct drug tests and background checks. We have found the difference is having students go through soft skills program before they go through welding program.

Currently, this program is running in 4 different areas of state. Milwaukee Green Bay, Appleton, and Wausau. We are beginning conversations with Madison and Kenosha.

Our focus is Fundamental quality control! How do we do a better job with the inputs? The HCCW offers support by providing mentors. This program is sustainable if we look at the – SuperSteel Model: They understand the need to commit both current personnel and funding to get people with the essential skills who can become part of the company.

Word of mouth is getting this HCCW/MATC program some traction.

How do we attract students? Attraction Process – Target toward under and unemployed. Open to all ethnic groups. We go everywhere: churches, schools bulletin boards. This attraction is about relationships not the usual digital postings.

What works:

- Cheaper to source and train at industry site.
- Legal screening through LLC makes a difference is reducing delay to productivity.
- Seeking private investment capital.

- WE all need to acknowledge that manufacturing is coming back and everyone is having shortages.
- **Jay Manufacturing** serves as a contract metal fabricator and provides metal fabricating, manual welding, custom laser cutting and tube bending.– They are our newest “Believers”.

Jorge Franco – CEO HCCW

Skills gap is really a training issue. BUT the real issue is essential skills issue. Things like financial access, housing, transportation, these issues will continue to emerge at an accelerated rate. It exacerbates the problem of underutilized human capital.

- Of the 85,000 Latinos in SE WI, 55,000 are undocumented.
- Other Issues: Lack of GED, transportation, Resettlement issues, Financial issues for direct-deposit payroll companies
- Wrap-around/Case management is necessary for some employees
- There is still a lack of collaborative attitude with some employers
- Shift with attitudes is needed to be flexible about preparing job workers.
- ITW and Johnson Controls are good examples
- Attraction – Reached out to 3000 individuals and 300 were selected– Only 10% of possible. Scholarships are available to take essential skills Churches, feet on the street, job centers, tech colleges, active recruitment WE need to collectively work on reconfiguration of attracting potential workers.
- What happens to our dropouts? Job support! Starts with drug screening. Some self-select out of the program. Fast Forward helps us provide support. No one is ever kicked out permanently.

Dan Depies (Goodwill)– FaB is a great example of to shape a talent pipeline from high schools. We need to spend some time dismantling the image of welding/machining now. Provide young people with goals and the pathways to get there.

### **Machining 101 – What’s Next?**

Ken Heins – CEO of KLH Industries, a precision machining company in Germantown. State Machine Tool Apprenticeship Advisory Committee (SMTAAC), apprenticeship chair for the [Tool, Die, & Machining Association of Wisconsin](#).

How this whole process came together? National Institute for Metalworking Skills (NIMS) were used to develop core competencies for CNC processing and programmer technician, and maintenance credentials. CNC Apprenticeships are structured to allow receipt of all credentials. In order to earn NIMS credentials there must be 100% satisfaction on tests. The reason for this high standard is that it reduces any quality issues. Many tech colleges teach to those NIMS outcomes but don’t assess for the outcomes. Chippewa Tech is a great example of matching instruction and assessment. They provide a semi-annual review with an eye toward international standards since machining is growing outside of the United States.

Four companies are piloting a new apprenticeship standard for metalworking in

Wisconsin. Toolcraft, Integrity Wire EDM, KLH Industries, and Versevo have all volunteered to trial a competency-based apprenticeship program developed by the [National Institute for Metalworking Skills](#) (NIMS).

Wisconsin's current apprenticeship model, established in 1911, combines theory learning with a minimum hourly requirement of on-the-job training. For example, the "Machinist" apprenticeship requires 8,320 hours of on-the-job training spread across nine categories. Aside from basic category descriptions, there are no defined requirements or field tests. The assumption is made that time breeds competency. The effectiveness of those hours, in truth, can vary greatly due to the employer's scope and interpretation.

In the NIMS model, time is irrelevant. Each NIMS apprenticeship consists of specific skill requirements, called credentials, which are categorized as beginner (Level 1), intermediate (Level 2), or advanced (Level 3). There are 52 different credentials spread across 13 professions. The current pilot only includes Machining, Die Making, and Mold Making because they share the same Level 1 credentials.

Each credential can be taken as part of the apprenticeship program, or as a stand-alone certificate. The credentials are designed to be modular, meaning employers can select the skills that are relevant to their line of work. To graduate as a NIMS-certified apprentice, students must complete the credentials for all three levels. Supporters of NIMS are calling it "fast-track" education because students can learn and advance based on their own pace and background.

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A Machining 101 Survey crafted by MRA with lots of input from MCP is ready for dissemination on March 4. We will be promoting the survey at the Manufacturing Matters seminar on February 26 and 27.

M7/MCP need your networks to help push the survey out to your contacts. The more people we can get to respond the better these programs will be. Survey results will be shared at an event being planned for April. At that time we will establish works groups for the curriculum formation. Fast Forward dollars will be available at the end of March/April. That is a possible source to fund promising practices.

Some questions/comments to consider:

- Are we focusing on Entry-level Machining only?
- What about middle skills?
- How do we take consider Time-to-market is a critical part of the training system?  
Can all Training programs be year-round in order to provide that Just-in-time learning and establish many more cohorts?
- How long will curriculum be for the Machining 101 course?
- Are we expecting the cohorts to go for 16 weeks from essential skills to Welding camp?

- Gateway has a trimester system year round. A normal 2-year program can be done in 18 months
- How many employees are retained after one year?
- Can the HCCW organization manage the pool of labor and be flexible and responsive as markets shifts.
- How can we organize ourselves to accommodate layoffs as a region?
- Business cycle is getting shorter and shorter. How do we manage the layoffs as contracts end?
- How do we navigate the shifts and crunches? How do we get the work done when businesses seek employees out side of the state?
- How are “cyclical market shifts” included in the essential skills programs?

Mark Honadel– Governor’s taskforce

- Every group has to make a concerted effort that K12 students have to be able to measure do fractions and decimals.
- WorkKeys – “Train and Survive”

Duane – quoting Theresa Russel – “There are biases in the community that STEM is a “University thing”. Science, technology, engineering and math are the very subjects of technical colleges.”

Mary Baer – WBA has a K12 – survey “top 10 employability skills” we are willing to share. Manufacturing Executive Council is addressing this issue of sharing talent. We are looking to create this for the region. Let’s start a committee for that.

Jorge – solving this dilemma is a leadership issue. David Mitchell has been a hero. Dorothy, Tim White and many others should be recognized as they champion these efforts.

Toni – MAWIB – contact our planning department to help facilitate grant proposal writing.

Dorothy – Vicki Martin wants to reach out to manufacturers. CEO’s luncheon on March 11 at Oak Creek Campus. Get in touch with Dorothy if you want to be contacted. Dave Mitchell is helping to coordinate

Respectfully submitted,

Anne Nordholm and Susan Koehn