April Educational Night
Thursday, April 20, 2017
Resistance Welding Safety, Process Control and Maintenance

Special Guest: Bruce Kelly
Location: Ukrainian Culture Center
26601 Ryan Rd., Warren, MI 48091
$10 at the door to cover buffet

Click here for Map/Directions or see map on page 2

This will be our second and final Education Series for the year. Bruce Kelly (GM-ret. and RWMA Educator) will cover “War Stories” – technical issues that stumped the Maintenance Department. A short review of basic safety requirements will be addressed, followed by general principles of weld process control and weld quality criteria. Then, highlighting the night’s program will be the always paramount maintenance aspects the equipment package and process. Incoming power considerations, installation, and controls will be reviewed. Water service, cooling, and flow will be looked at. Air and hydraulic force delivery components will be discussed. Lubrication, tooling, electrodes, and spare part considerations will be covered also.

Bruce Kelly Bio: Bruce Kelly attended Michigan Technological University, receiving a BS in Electrical Engineering in 1968 and a MSBA in 1969. He began working at Oldsmobile Division of General Motors in 1969 and was involved with fuel tank assembly and sheet metal fabrication at Oldsmobile and then at the General Motors Technical Center. Along the way he developed a hot air soldering process for fuel tank assembly, assembly equipment for aluminum hoods, and steel hoods on the same tooling. Hood assembly processes built over 1 million aluminum hoods. With the aluminum hood assembly; came up the local circulating pump concept to get high water flow rates through tooling to support the higher cooling requirements for welding aluminum. More than 50 of these systems were installed in several different GM facilities.

Bruce also picked up 3 defensive publication awards from GM in lieu of patent applications for ideas related to resistance welding equipment. Bruce was invited to join RWMA in the early 1990’s to provide a customer viewpoint and has continued with the RWMA Welding School (now part of AWS) thru 2015, and currently chairs the AWS C1 committee on Resistance Welding. In the AWS Detroit Section, he has served two sets of terms on the section executive committee and has been part of the Sheet Metal Welding Conference committee for the last 8 conferences. He received the AWS life member certificate in 2011.
Chairman’s Message

Let me start by thanking everyone who came out and supported our 2017 Annual Ladies Night event. We had a great turn out this year at an exciting new venue. John Bohr and his team put a great deal of effort into making the event successful, we certainly appreciate his efforts and the efforts of all those involved.

Detroit Section members can expect a ballot to be emailed to them this month to vote on our next Detroit Section Executive Committee. The Nominating Committee has worked hard to provide a great slate of candidates for your consideration. This is one of the easier ways for you to be involved in your section. The online ballot system has made it so that you are just a few clicks away from making your choice for the leadership of next year’s Executive Committee. Please take the few minutes required to participate and fill these out.

The coming ballot and election is a good indicator that the current session is nearing its end. Before that occurs, keep in mind that we still have several AWS events that deserve a spot on your calendar in the coming months. In terms of technical content we look forward to an Education Series on Thursday April 20, 2017 at the Ukrainian Cultural Center in Warren and our final Technical Night of the session to be held at United Technical Whitmore Lake on May 11, 2017. For students, Friday May 12, 2017 is our Annual High School Welding Competition held at Washtenaw Community College in Ann Arbor. If you are looking for a way to give back and support our industry’s future welders, the High School Welding Competition is the perfect opportunity. This event is always in need of welding supplies, material, prizes and volunteers. If you are able to donate time or material please contact Glenn Kay (gkayii@wccnet.edu).

Coming up in July is the last event of the session, our Annual Golf Outing. This is one of the more popular social events on our calendar, so if you’re interested in participating or sponsoring please visit our website (www.awsdetroit.org) for more details and updates. Keep in mind that this event fills up fast.

The American Welding Society has designated April as National Welding Month. I cannot think of a better opportunity for you to take the time to consider whether or not you are getting all that you want from your involvement with the Detroit Section. If you feel like there is more that we could do to support your needs and expectations please contact me directly tyler.alexander@cntrline.com or (519) 734-8868 (x4476) to discuss.

April Educational Night meeting location:

Ukrainian Culture Center
26601 Ryan Rd., Warren, MI 48091
March Technical Meeting Re-cap

The AWS-Detroit section hosted its March technical meeting/Old Timer night at Paslin located in Warren, Michigan. As a co-host, Greg Stacey, Sales Account Manager from Paslin, gave a brief introduction of Paslin. Mr. Terry Tupper, senior engineer from Fanuc presented his talk regarding the vision applications in automotive industry. Terry introduced multiple commonly used 2D and 3D laser-based and camera based vision systems in the automotive assembly manufacturing process. The AWS Detroit section also recognized the old timers after the talk, including Mr. Savatore Delisi. There were about 30 attendees in the meeting.

We hope to see YOU at our next meeting! Remember, everyone is welcome.
Annual AWS Detroit Election

The 2017-2018 AWS Detroit Section Executive Committee Election will once again be conducted using the AssociationVoting.com service. As in the past two years, at approximately 12:01 AM on April 1st AssociationVoting.com will send a personalized email with voting instructions to a list of Detroit Section members (compiled on 3/10/2017). The URL provided in the email will take you, at any time day or night, to the voting tool where you enter your last name and member number (provided in the email) to see candidate biographies before making your confidential selections. A follow-up email reminder will be sent on April 10th to members who have not yet voted or opted out. When the vote has ended on April 15, the Detroit Section Teller’s Committee will receive a confidential vote tally summary supported with a listing of member voting times.

Please send an email to secretary@awsdetroit.org before April 15th if you want to:
• provide an email address update
• provide an email address to be used only for the purposes of this ballot
• cancel an unsubscribe notification entered in response to last year’s ballot

While it will be too late for the purposes of this ballot, changes to your contact information can be made directly through the www.aws.org website by clicking the MY ACCOUNT tab in the narrow grey bar at the top of the webpage. You can also contact AWS Member services at: 800-443-9353 or 305-443-9353.

We look forward to your participation and feedback. If you have any comments or questions pertaining to this process, please direct them to: secretary@awsdetroit.org or any member of the Executive Committee.

Editor’s Notes

It’s April! And, I think we are all hoping for sunshine, warm weather, trees, grass and flowers all to start coming back again! April also reminds us that we are winding down another very active season in the AWS Detroit Section.

We ended March with our Annual Ladies Night event! Look for pictures in the May edition of the e-bulletin, as well as on our AWS-Detroit Facebook page! You might get to see yourself!

There is still quite a bit to look forward to in the next few months, and we welcome anyone and everyone to come out to the education and technical nights this month and next!

Not to mention, we have the High School Welding Contest in May, and our annual Golf Outing coming up in July!

So, there are still plenty of opportunities to come out and get involved.

Have a great month, get out there and encourage someone to look into welding as a career, and ‘til next month, remember to …

Keep on Welding!

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Fronius USA LLC in Brighton, MI, hosted a vocation night for the Riveters First Robotics Team from Mercy High School in Farmington Hills, MI. The Riveters competed in last year’s Stronghold world competition and are mentored in part by Dr. Amberlee Haselhuhn, a Researcher with General Motors, and Dr. Rob Reed, a physician and partner with HBWS, PC. Members of the AWS Detroit Section Executive Board volunteered their time to help make the night memorable for the students. The students were given this opportunity in order to benefit academically from exposure to welding.

The meeting started with Wesley Doneth of Fronius USA LLC, giving a 45 minute lecture on aluminum welding technology. During the lecture students and mentors learned the basics of welding aluminum. After the lecture the group went out into the lab at Fronius and watched a robot application used to weld aluminum. There was also a demo set up for manual GMAW-P so they could get a feel for the process. Students and mentors were able to try out the GMAW-P arc welding process on 6061 aluminum.

**New AWS Standards Available for Sustaining Company Library’s for Spring 2017**

- B1.10:16, Guide for Nondestructive Examination of Welds
- B2.2:16, Specification for Brazing Procedure and Performance Qualification
- D1.8:16, Structural Welding Code – Seismic Supplement
- J1.2:16, Guide to Installation and Maintenance of Resistance Welding Machine

**RWMA/AWS Announcement**

Very successful annual RWMA meetings were held in San Diego Feb. 21-24. One of the highlights was a full day mixed committee (RWMA/AWS) review of the current CRWT (Certified Resistance Welding Technician) certification scope documents and subject matter review. These meetings were very successful in realigning the existing AWS-CRWT documents to be more pointed to a technician level exam and will eventually lead to new test criteria being rolled out over the next 18-24 mos.

The AWS in conjunction with the RWMA has also rolled out a 7 module Basic Resistance Welding process course as part of the overall AWS Welding Process training course. This is a great way to get new personnel that have no resistance welding experience some good basic resistance welding process information along with other common welding processes and can be taken on line anytime! This online information can be found via the AWS website: [www.aws.org](http://www.aws.org)

Also, for the first time EVER: The RWMA and AWS will be offering the RWMA RESISTANCE WELDING SCHOOL at the upcoming Fabtech Mexico/Weldmex show in Monterey Mexico in early May 2017. This is the SAME EXCELLENT COURSE that is given each year at the Fabtech US show BUTTIT: To make it successful in Mexico ALL MATERIALS AND AT LEAST 75% OF THE PRESENTATIONS WILL BE DONE IN SPANISH.

For those companies with “brothers and sisters” in MEXICO this is an EXCELLENT opportunity to get them some fantastic Resistance Welding Education including in class demos, etc. More information on specific times, dates and cost, will soon be available via the AWS website.

You can also ask Don Maatz (verify first) or Don Crist (dcrist@romanmfg.com) of the AWS Detroit Section-Executive Committee or Don DeCorte-RWMA Education Section Chairman if you have questions.

**CenterLine Becomes Gold Standard Winner**

CenterLine (Windsor) Limited is pleased to announce that, as a winner of Canada’s Best Managed Companies program in 2013, it has successfully retained its status and become a Gold Standard winner in 2017. This prestigious national award is sponsored by Deloitte, CIBC, Canadian Business, Smith School of Business and MacKay CEO Forums.

“It’s much more than just financial performance,” said Peter Brown, Partner, Deloitte, CIBC, Canadian Business, Smith School of Business and MacKay CEO Forums.

“IT’s much more than just financial performance,” said Peter Brown, Partner, Deloitte and Co-Leader, Canada’s Best Managed Companies program.

“The ingredients to success also include overall business performance and sustained growth. It takes dedication and commitment from the entire organization.”

CenterLine congratulates its outstanding world class staff for its continued dedication to excellence and thanks its many valued customers and suppliers for their contributions to this wonderful achievement.

Contact: CenterLine (Windsor) Limited; 415 Morton Drive, Windsor On N9J 3T8; Marc Levesque – Director, Corporate Marketing; (519) 734-8464 ext. 4459; marc.levesque@cntrline.com; [www.cntrline.com](http://www.cntrline.com)

**April Hotline**

Pictured left to right: Dr. Rob Reed, Dr. Amber Haselhuhn, Mary Marquette, Elise Scarchilli, Anika Jane Beamer, Joshua Fincannon, Wesley Doneth

Wes Doneth and Joshua Fincannon manually welding with GMAW-P

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Q: “Which type of transformer is better for the resistance spot welding of sheet metal, especially the new high-strength materials that are becoming more common, AC or MFDC? I ask as I have an old AC machine that runs great and has handled everything I have thrown at it so far?”

A: “Now that a viable Medium-Frequency Direct Current (MFDC) resistance spot welding system had been developed in the mid 80’s, how did it migrate from just a fringe element of the business then to in 2016 out selling a comparable AC system to the tune is nearly 20:1? As with most new innovations the process took some time. It also had to have believers, and more than a few bugs worked out. It also did not hurt that the entire resistance welding world would be changing (and be challenged) at times literally as fast as one could speak. But, as is often the case, a bit more history is still in order to achieve a more complete picture of what transpired.

When the new MFDC power supplies were released to the plants there was little, if any, discussion concerning the benefits of lower primary power demand, nor was there any mention of the effect MFDC had on material weldability. There are most likely two reasons for this. The first is that the majority of bodyshops back in this time period were electrically overdesigned with regards to primary power. Why? They were most likely equipped to handle portable gun transformers. The primary electrical demand for portable gun transformers is huge (potentially 10x that of comparable MFDC unit) and since these electrical systems were already in place, a capital cost reduction was not possible unless a ‘Greenfield’ facility was being launched. As a result, there was very little cost savings attached to the actual power system equipment side. The second reason had to do with the fact that the MFDC technology was in its infancy and the Facilities Engineers were not going to risk downzising a plant power system on this new technology. The same thinking applied to the Welding Engineer with respect to weld quality and process robustness. Since the initial goal was mass reduction and increased secondary weld current capability, folks were not looking for, nor expecting, an improvement in material weldability.

The selection of AC vs. MFDC with regards to facilities and tooling is based on its own unique acceptance criteria. As with all choices it is not entirely a black and white issue and some knowledge of the potential compromises and pitfalls is essential to achieve an accurate decision. From a facility perspective the use of MFDC represents a major change in thinking as compared to AC. The following points should help illustrate the differences, and highlight both possible advantages and disadvantages for each type of power supply.

- MFDC permits equal three-phase current distribution and thus a more balanced primary loading condition. An AC welding system only taps into 2 of the 3 primary bus legs and requires a fair amount of facility planning to ensure that each leg on the bus is subjected to the same load. Also, because the single-phase loads are not synchronized, balancing the load on a three-phase distribution is nearly impossible.
- The selection of MFDC for a large volume installation, such as new bodyshop, does result in reduced overall primary demand. This lower primary demand can translate into savings due to the lower costs associated with primary power distribution equipment (smaller circuit breakers, wire, etc.). But since switching from AC to MFDC requires changing from single-phase breakers and two-wire systems to three-phase breakers and three-wire systems the true electrical facility cost reduction may not be what one would hope for. Another important consideration is that the AC installation can get by with a primary cable rated at 600V while the same item in an MFDC system requires a higher rating between the weld control and the power supply. This is due to the nature of power associated with the MFDC system that results in a peak value of 650V.
- Within the world of general automotive applications the cost of AC transgun transformers vary in price from $900 - $1,600 while the equivalent MFDC units run from $1,900 - $3,200, depending on features. The same disparity can be seen in the weld controls required for each power supply with the MFDC also suffering a cost penalty. However, a cautionary note on costs: This is one area where the application and volume can have a huge impact. Prices for the MFDC equipment used to be in excess of 2:1 over the comparable AC device but that gap has narrowed considerably due to the economies of scale. That being said the inherent complexity of an MFDC resistance welding power supply or weld control will most likely keep it more expensive than its AC equivalent for the immediate future.
- MFDC power supply water cooling requirements are significantly higher when compared to an equivalent AC unit, with the typical flow rate requirements two or three times those required of AC. The sophisticated internal water paths also dictate a higher differential pressure, and the physical conditioning (i.e. mechanical filtration, etc.) of the water must be better to prevent sediment build up due to the tortuous water flow path. Conversely the AC transformer is much more durable and less prone to failure with respect to water issues.
- The MFDC power supply may have a shorter life expectancy than its AC counterpart. This is due to the characteristics of a diode when it is thermally cycled and the resultant movement between the wafers in the rectifier packs. In essence the ‘moving parts’ of the MFDC power supply wear out. The typical life span averages 20-22 million thermal cycles, but can be higher. Additionally the MFDC power supply is more susceptible to failure due to low water flow rates. While this same affliction is harmful to an AC transformer, the magnitude of the degradation is much less. Also, an AC power supply will often give you a bit of warning that it is going to fail, this event often foreshadowed by a very unique smell, while the MFDC power supply will work on one weld and then not on the next.

But as was eluded to, there might be more to the story as to why the MFDC power supplies became more prevalent within the industry. We will discuss these aspects in our next column.”

The author gratefully acknowledges the assistance of past AWS-Detroit section Chairman Don DeCorte, VP Sales for RoMan Manufacturing Inc.

If you have more questions about this topic, contact Don Maatz at: If you have more questions about this topic, contact Don Maatz at:

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References:
AWS Detroit Section Ladies Night

As with all volunteer organizations we rely on support from our members and valued corporate sponsors. The Detroit Section’s Ladies Night held March 25th is no different. On the behalf of the Detroit Section Executive Committee and as the 2017 Ladies Night Chairman I would like to recognize and thank our Section Patrons and Ladies Night Sponsors whom without there support Ladies Night would not be a success.

John Bohr
2017 Ladies Night Chair

AWS Detroit Section Patrons and Ladies Night Sponsors

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Thank you again for your support!

Please see the Detroit Section website for photos from this years Ladies Night as well as information regarding other upcoming events; www.awsdetroit.org/
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Hello! Welcome to our April Meet our Members column. Our featured member this month is also a member of the AWS Detroit Executive Committee.

Welcome, Dan! Please tell us a little bit about yourself.
Hello, I’m Dan Wellman. I am the Vice President of Sales and Marketing for the Obara Corp. USA.

Dan, what do you like about your position with Obara?
I love to travel and meet people, but I hate to be away from home... It’s a catch 22.

Why did you join the AWS?
The two main reasons I joined the AWS was to continue to learn and secondly, to have the ability to network with some of the most knowledgeable people in the industry.

Do you have a favorite AWS event?
I would have to say Ladies night and Scholarship Night.

What do you like to do outside of work?
I like to golf, work around the house, travel and read.

Do you have any funny moments or stories that you’d want to share?
One of the Ford plants was having trouble with water cooling a spotwelding cap. An old friend, Marvin Hayes used a five-gallon bucket of water to dip the cap in for cooling. After every couple of welds the robot would dip the cap into the bucket, it actually worked out well.

My most memorable moment with AWS was receiving my AWS Scholarship in 1978. It paid for my second year of school.

Do you have anything that you’d consider near/dear to your heart?
The City of Detroit

Do you have any mentors that you’d want to recognize?
I have had several, the two most important would be my step father, Torb Guenther, and my welding instructor Stu Galbraith at Schoolcraft College.

Dan, how did you get started in welding?
My step father needed someone to do TIG welding and he showed me how.

What do you see as the biggest challenge for welders in the future?
Besides the skills of welding they need extended education in math, English and science. Good communication skills are essential.

Have you ever used your welding skills outside the workplace?
I've worked on car bodies.

What would you tell someone who may be “on the fence” about getting into welding as a career?
You never know where it will lead you if you keep learning and trying new things. You can end up anywhere.

If you weren’t involved in the welding industry, what would be your dream job?
I’d like to be a Park Ranger.

Would you encourage more schools (high schools and junior high) to encourage more young people to look into technical schools and jobs and not just degreed positions?
Yes, I would encourage it, but I also feel strongly on the maximum of learning the basics in math and English. With these skills, they are prepared for diversity and are more flexible in the work place.

Dan, thank you for taking the time to be our April Meet our Members featured member!
If you would like to be featured in this column, please contact Daniel Galiher at danielgaliher@gmail.com
2017 AWS Golf Outing

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Thursday, July 20, 2017

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Registration: 8:00AM—9:00AM
Driving Range: 8:00AM—9:00AM
Shotgun Start: 9:00AM
Format: 4- man Scramble
Lunch: Hotdog
Dinner: Chicken & Beef

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1. Payment

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# 2017 AWS Golf Outing

**Sponsorship/ Support Opportunities**

Proceeds to benefit grant and educational initiatives

**Thursday**

**July 20, 2017**

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- Sign with Company Logo

**Tee (24 available)**

---

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One of our committee members experienced this and we thought we’d give it a try. You decorate a table to your liking! Supply gifts for the eight people (2 foursomes) that will be seated at the table (no assigned seating). You can use company logo material or other gifts of your choosing.

- **Table (18 available)**

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