



American Welding Society®
DETROIT SECTION



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Check out the latest videos published by the American Welding Society on its YouTube page.

AWS Technical Nights are open to everyone! We encourage that members bring students and non-members to learn more about our organization and industry.



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Greetings AWS - Detroit Members and Friends,



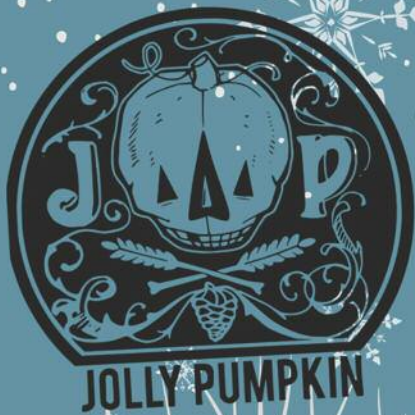
Chairman's Message Mark D. Gugel

The Detroit section of the American Welding Society has a lot to look back at over the last year. Under last year's leadership of Eric Lichtfusz, we resumed even more in-person meetings. In February, Warren Peterson of United Technical presented "Dynamic Characteristics of Resistance Projection Welding." March witnessed our first Ladies' Night Gala since the COVID-19 pandemic. The April meeting was hosted at LIFT where we learned about their learning programs and listened to a presentation from Jason Ball of Miller. In the final meeting before the summer break, Dr. V. (Anthony) Ananthanarayanan of Innovative Weld Solutions presented, "Arc Welding Aluminum vs Steel." The fall meetings resumed with our September Student Night. Mark Jager and Dr. Ece Yaprak discussed the welding program at Wayne State University. In October we visited LIFT again for a manufacturing day event. Finally, this last month we had two events. Many of us traveled to Atlanta to take part in FABTEC 2022. Others of us who remained visited the Iron Workers Local 25 to learn about their apprenticeship program from Joseph Fontaine, Brad Pierce, and Matt Rajda.

We are all thankful that the disruption of the pandemic appears to be behind us. This month, look forward to relaxing with our families and celebrating the month's holidays: Christmas, Hanukah, Kwanzaa, and the new year's celebration. We look forward to our Holiday party in January and resuming more technical meeting.

**God's blessings through the holidays,
Mark D. Gugel, PE, PhD
AWS-Detroit Chair 2022-2023**

post Holiday Party



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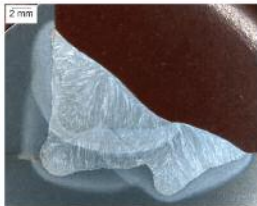
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Ask the Welding Engineer

By Donald F. Maatz, Jr.

Q: "Is it possible to re-weld a weld nut (in our case a M10 Hex) after it has been welded once?"

A: "I was taught early in this business if a weld nut was ever 'dry-cycled' through a machine at full force (meaning it did not pass current), the projections were altered and the weld nut should be scrapped. To be fair, I have never seen a study or paper on this topic, one way or the other. However, from a certain point of view, it makes sense. Most weld nuts are made from 1008 or 1010 'Play-Doh', I mean steel, so their projections deforming to some extent under the load of full weld force should not come as a surprise. The issue is really how much deformation occurs, and what does this do to the weldability of the weld nut.

That being said, it sounds like the weld nut in question has already been through a full welding cycle (think squeeze allowing a build up to full weld force, the passage of current, and hold), but was somehow deemed to not have been joined successfully. This leads us down two possible paths:

- 1) The weld nut has come off
- 2) The weld nut is still adhering to the part, albeit in a manner determined to be less than acceptable

In either of the above cases, we have no doubt the projection geometry has been altered. The question is what can we do from a potential repair perspective?

Case #1) The weld nut in question should be scrapped. We then must decide if we can reprocess a new weld nut utilizing the original projection welding (PW) equipment or if we have to manually locate a new weld nut and attach it by some other means (see Case #2 below). The reprocessing approach may potentially require a minor refinish of the part at the weld location in order to obtain a clean and smooth surface. Also, unless you are dealing with a full-ring design, it may be beneficial to hand locate the weld nut so the projections are on as undisturbed portion of the substrate as possible. Finally, it should go without saying, the process must be revalidated after repair and/or adjustment so we are making acceptable welds.

Case #2) We must supplement the attachment of the weld nut to the part by some means other than PW. In this situation, the only real acceptable methodology is to add some sort of fillet arc weld to the exterior of the weld nut, joining it to the base material. The process of choice in most standards is Gas-Metal Arc Welding (GMAW). Dependent upon the approved repair procedure, one may have the option of utilizing a braze filler if the base material is thinner, or a steel filler if the material is thicker. Most repair standards require at least two (2) welds of some specified length, placed on opposite sides of the weld nut.

Please note that nowhere in the discussion of Case #2 did we mention the idea of attempting to re-weld the existing nut in the original tooling. The reason is there are just too many unknowns to account for. In fact, it is most likely not possible to achieve an acceptable projection weld in this manner.

That being said, there is a school of thought some folks will be quick to bring up on how a possible re-weld might work. We will address this question in our next column."

References:

- 1) Resistance Welding Manual, revised 4th Edition
- 2) AWS C1.1M/C1.1:2019, Recommended Practices for Resistance Welding

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

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Donald F. Maatz, Jr. is with R&E Engineering Services and serves in the capacity of Laboratory Manager. He is past-chairman of the AWS-Detroit Section, serves on the D8, D8D and D8.9 Automotive Welding Committees, is an advisor to the C1 Resistance Welding Committee, is an AWS endorsed CWI and vice-chairman of the Certified Resistance Welding Technician working group, and an instructor for the RWMA School. He is a graduate of Ohio State with a BS in Welding Engineering.

Our Mission is to advance the science, technology and application of welding and allied joining and cutting processes worldwide, including brazing, soldering and thermal spraying. AWS Detroit provides support for the industry in many ways, including:

- Institutional Grants (endowment based);
- Scholarships through Application (endowment based);
- Scholarships through aptitude (HSWC);
- Vocational Support (case by case but budgeted each year),
- Institution (e.g. supply gas and materials),
- Local Contest (e.g. travel expense),
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- Student Memberships (evaluated each year);
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December Hotline

AWS Detroit has discontinued awsdetroit.org

AWS Detroit can no longer be accessed via awsdetroit.org. The long used landing page for members and guests has been deemed obsolete, and has now been discontinued. A simple search for AWS Detroit will now land you on our established home page provided by AWS National at <https://awssection.com/detroit/>

AWS Announces FABTECH 2023

AWS Welding Digest

FABTECH will be in Chicago at the McCormick Place, September 11-14, 2023, and the American Welding Society is pleased to announce its plans for the event. Welders and fabricators looking to reconnect with suppliers, find new ones, fill workplace gaps, or increase productivity will find that FABTECH is a one-stop shop to enhance their business operations.

AWS Welding Digest

This year, make FABTECH yours. With so many AWS events, plan your show schedule to make the most out of our booths, including our educational and special events.

Essential Welding Equipment

Fine Magazine

Welding requires many tools and equipment that may be overwhelming to wade through, especially as a beginner. As a welder, you would be working with so much heat and open flame. Worry not. Whether you are a beginner in the world of welding or you're curious, here's a list of essential welding equipment to operate safely and with precision.

Preheat & Interpass Temperatures Defined in Welding

The Welder

Preheat temperature is the base material's minimum required temperature immediately before any arc can be struck or applied to the weld joint. This includes welding, tack welding, or carbon arc gouging. Interpass temperature is the minimum or maximum allowed temperature measured immediately before the next arc is struck in the weld joint.

ESD - Ray Roberts

The ESD Affiliate Council meeting was held on October 19, 2022 by Zoom. The presenter Dr. Peggy Rock, PE, who has bachelor and master degrees in Nuclear Engineering from UM and Master and PhD in Mechanical Engineering from Wayne State University. Her presentation was the status of Nuclear Power Plant Technology. Nuclear power plants have been in existence in the country since the early 1950s. As the knowledge was gained through the operation of nuclear plant enhancements in design have been develop

and incorporated. The evolution of nuclear power plant design is described in four generations. The nuclear plants that still operate in the country are Generation II reactors, while the test prototype are Generation I. The Generation III reactor were built overseas in the 1990s and incorporated Three Mile Island lessons learned in Japan, Korea, India, China, and Russia. Currently under rapid development, to be constructed and tested prior to 2030, are federally funded Generation IV fast reactors. The generation IV have walls five feet thick made of concrete and steel. The sodium fast reactor the most developed and received the most funding. Reactors are being developed in Wyoming, Idaho, and Richmond Washington.

Annual Operations Manual Changes

All change requests must be submitted to me no later than March 31, 2023. The changes will be reviewed by the Leadership Committee prior to May 15, 2023. Eric Lichtfusz is organizing the implementation of all approved changes, and distribution of the latest edition of the Operations Manual no later than July 1, 2023.

Sheet Metal Welding Conference XIX

The next Sheet Metal Welding Conference will be held in 2024. Andrea Orr will be reaching out to individuals to serve as committee members over the next two months. If you would like an active role in the 20th Sheet Metal Welding Conference, please reach out!

CWI Seminar Free Seat Recipient

On October 15 - 21, 2022, the AWS Detroit Section hosted a CWI seminar at the Detroit Marriot Airport Hotel. On October 22, 2022, the AWS Detroit Section hosted the CWI Part B exam. AWS Detroit Section Executive Committee member Robert Watson participated in the seminar and part B exam as the free seat recipient.

Scholarship & National Foundation

Preparations have begun for the 2023-24 Scholarship season. Forms are being updated for the webmaster, and informative documents are being created for the eBulletin and social media publications. Work is also being done to incorporate the new scholarships from Robert and Mardell Wilcox into the Ops Manual and to ensure the Foundation has the correct descriptions before solidifying any publications.

AWS Detroit Executive Committee

Christian Megna has been appointed to the Executive Committee as a Non-Voting Member. He will take over social media responsibilities from Erin Lalinsky, who will aid in the transition. A separate motion to approve Christian Megna as a voting member to fill the slot of James Torres was approved unanimously by the executive committee.

Ladies Night, April 1st

Same location as last year, the familiar venue has been booked at Motor City Casino with band announcement coming soon.

A welder & a lawyer walk into a bar National Review

...and his name is Bob. Leah Sargeant has an incisive piece about vocational training in the magazine that's a must-read. So often, the discussion around higher education is either elitist - aspiring students must attend college to get ahead - or reactionary - college is worthless, and technical degrees and the trades are the way. Each suggests the false dichotomy that a student must be one thing or another — a MIG welder or a lawyer. There's no reason Americans can't know the innards of Black's Law Dictionary just as well as proper drive-roll tension for the wire feed on a Miller welding rig.

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Keagan Sherry
Galloway, OH
Ferris State University
Welding Engineering Technology
Detroit Section Scholarships
District 11 - 011-Detroit

Dear Detroit AWS Section,
I am extremely grateful to be receiving the Detroit AWS Section Scholarship once again

this year. I am also excited to have completed my Welding Engineering associates degree and prepare to continue to the Welding Engineering Technology bachelors. Being able to share my experiences with the amazing facility at Ferris State and having friends here that truly are my second family has kept me going strong through the last two years of school and this "interesting" time we currently face in the world. What made this previous school year special was my freshman roommate Brian who I helped and guided in the way that is college life. I still plan on working for Miller Electric once I am finished at Ferris and unfortunately, I was unable to participate in my planned summer internship last year, but I have applied for a plethora for this summer, and I am waiting to hear back. In these first two years of welding, I truly went from knowing nothing to having a pool of knowledge and resources at my disposal. Through the AWS, I have been able to give back to the community at school and greatly expand my welding network and friends as well. Along with my passion for cooking, I am still involved in Boy Scouts in my hometown of Hilliard, OH and will visit the high adventure camp of Philmont this summer! It brings me extreme joy and honor to receive a district scholarship and greatly appreciate the generosity. I look forward to using this to continue my educational dreams.

Thank You, Keagan P. Sherry



Ryan Smith
Brownstown Michigan, MI
MIAT or Schoolcraft
Welding
Detroit Section Scholarships
District 11 - 011-Detroit

Thank you to AWS for awarding me the Detroit Section Scholarship. This Scholarship will help me to peruse my welding career at Schoolcraft College. I am looking forward to this next chapter in my life.

Thank you again, Ryan C. Smith

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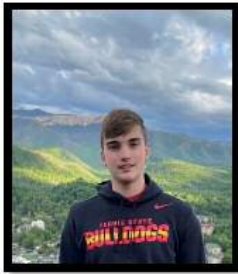
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Isaac Sultzer
Amherst, OH
Ferris State University
Welding Engineering Technology
Detroit Section Scholarships
District 11 - 011-Detroit

Dear AWS Detroit Section,
I am writing to thank you for selecting me as a recipient of the AWS Detroit Section scholarship.

I was extremely grateful and appreciative to learn that I was one of the chosen recipients. This spring I received my associates degree and was accepted into the bachelors program for welding engineering at Ferris State University. I have been working during the summers at a fab shop welding and fitting. I also do automotive work and fabrication at home with my father. I am looking forward to my future in this field and expanding my skills and knowledge. By awarding me the Detroit District scholarship you have lightened my financial burden and allowed me to put all of my focus towards learning during the 2021-2022 school year. I hope that one day I will be in the position to help others achieve their goals the same way you have helped me.

Sincerely, Isaac E. Sultzer

Thank You

AMERICAN WELDING SOCIETY



Eric Smith
Bay City, MI
Ferris State University
Welding Engineering Technology
Detroit Section Scholarships
District 11 - 011-Detroit

Dear AWS Scholarship Committee,
I am sincerely honored to have been selected as a recipient for an AWS Detroit Section Scholarship.

Thank you for your generosity, which has allowed me to focus more on my schooling for this year rather than the struggle for funds towards my tuition. College is suppose to be a good experience for young adults and because of you I get to enjoy it more. As I complete my education at Ferris State University, I am very thankful for receiving your thoughtful gift to help me push through these last two years of my college career. Because of your scholarship I will be able to complete my degree without being further in debt when I graduate. This makes me more excited for my future as a Welding Engineer. Thank you again for this scholarship award.

Sincerely, Eric Smith

Social Media Update

If anyone has anything they would like posted to Facebook and/or LinkedIn please send it to
Erin Lalinsky: elalinsky@ipgphotonics.com and
Christian Megna: christian.a.megna@gmail.com

LinkedIn As of 11/16, during the past 30 days LinkedIn page has had:

- 7 new posts
- 188 post views
- 2,626 total members
 - 68 active members
 - 7 new members

Facebook As of 11/16, during the past 28 days Facebook page has had:

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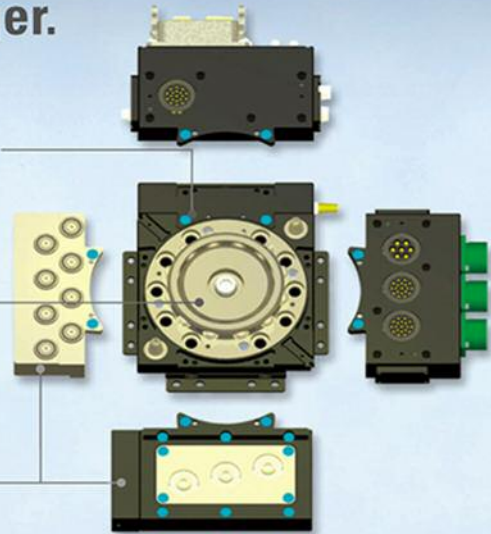
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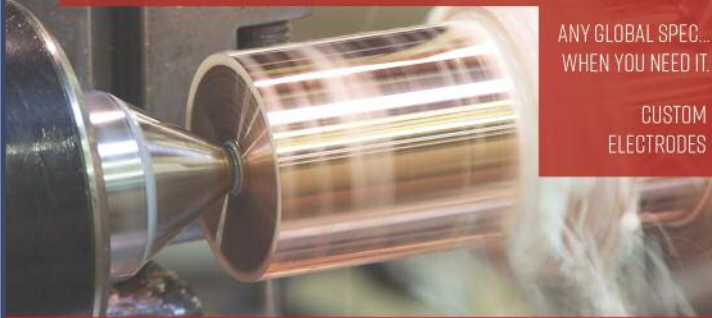
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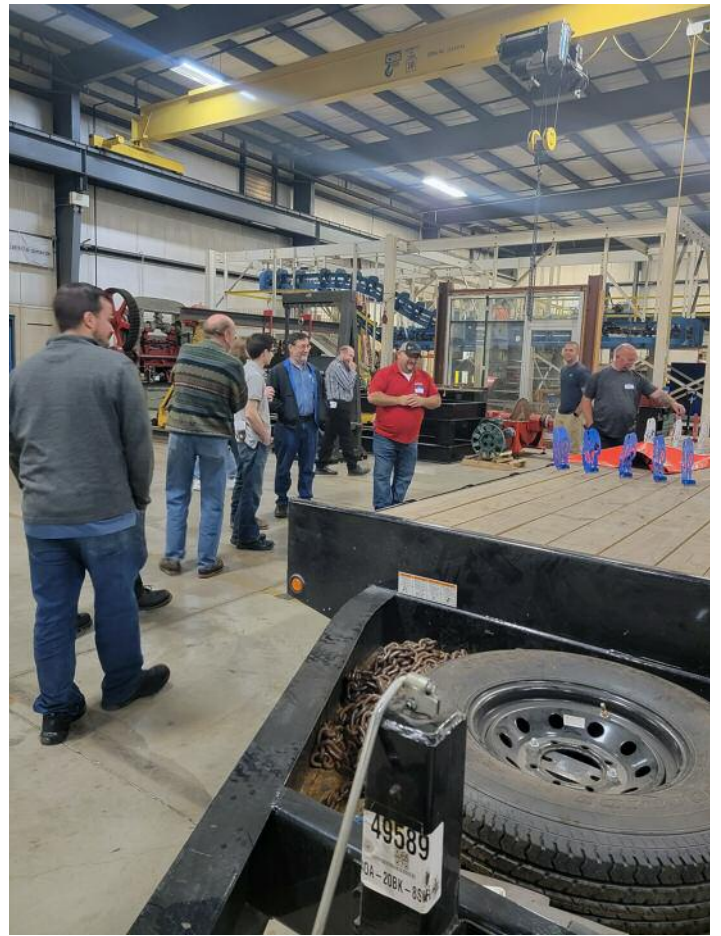
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November Tech Night

The AWS Tech Night at Ironworkers Local 25 was a great success. Their training center features 20 welding booths and they also have a mobile testing trailer with 10 welders and generator. The Ironworkers Local 25 is a great career path and they are currently accepting apprenticeship applications. [Click Here](#) for more information on the apprenticeship program and to print your application.



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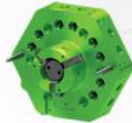
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**AWS Detroit Section is Now
Accepting Applications!**

**WELDING SCHOLARSHIPS
for
POST SECONDARY TRAINING,
ASSOCIATE OR BACHELOR DEGREE
in WELDING ENGINEERING, WELDING
ENGINEERING TECHNOLOGY or
RELATED FIELDS with WELDING
CONTENT**

For students pursuing Post-secondary training or an Associate/Bachelor Degree in Welding Engineering, Welding Engineering Technology or Related Fields with welding content. These scholarships provide money to be used for the student's tuition, books, or lab fees for one year. To be eligible for these scholarships, you **MUST BE ENROLLED** in a certification-based program or two (2) or four (4) year engineering degree program in Welding, Welding Technology, or a related field. The program supports students who either live in, or are attending schools in the state of Michigan and the following counties in the province of Ontario; Essex, Chatham-Kent, and Sarnia-Lambton.

An on-line application form (with supplemental instructions) is now available on the AWS Detroit Section website, under the 'Scholarships' tab. **Click Here.**

Application deadline for the 2023-24 academic year is April 1, 2023.*

For 2022/23 the section was able to award 40 scholarships totaling \$61,000 to students from 5 different schools.

**Please reach out directly if you have a paper application to send in (dmatz@reautomated.com)*

**American Welding Society®
DETROIT SECTION**

**2 New Welding Scholarships
Available!**

**The AWS-Detroit Section
is proud to announce the addition
of two new scholarships**

**The Mardell D. Wilcox
Vocational Scholarship
and
The Robert P. and Mardell D. Wilcox
Engineering Scholarship**

The Mardell D Wilcox Vocational Scholarship was established by Mardell D Wilcox and Robert P Wilcox as a one-year award of \$1000 to any Michigan 2-year college, Vocational Program or Technical School promoting careers in Welding and Manufacturing Engineering.

The Robert P and Mardell D Wilcox Engineering Scholarship was established by Mardell D Wilcox and Robert P Wilcox as a one-year award of \$1500 to any 2 or 4-year Michigan college promoting careers in Welding and Manufacturing Engineering.

These scholarships will be available starting in 2023. See the on-line application form (with supplemental instructions) at AWS Detroit Section website, under the 'Scholarships' tab. **Click Here.**

Application deadline for the 2023-24 academic year is April 1, 2023.*



2023-2024 SCHOOL YEAR • RULES and APPLICATION INSTRUCTIONS

Completion of this application automatically considers the student for the "Amos and Marilyn Winsand Scholarship" and the "Robert P and Mardell D Wilcox Vocational and Engineering Scholarships." These are AWS Foundation endowed scholarships.

- 1) Applicant must be enrolled in a Welding Engineering Program, a Welding Engineering Technology Program, a Post-Secondary Technical Program (Welding Certification targeted program), or a related field of study with a strong welding content.
- 2) Students are eligible to apply for Detroit Section scholarships if they are permanent residents of the state of Michigan or the following Ontario counties: Essex, Chatham-Kent, and Sarnia-Lambton. Students who are temporary residents attending school in the state of Michigan or the following Ontario counties: Essex, Chatham-Kent, and Sarnia-Lambton are eligible for non-named scholarships. Preference will be given to students who are permanent residents of the Detroit Section territory, including Ontario counties: Essex, Chatham-Kent, and Sarnia-Lambton.
- 3) The Detroit Section Scholarship Committee administers the AWS Detroit Section Scholarship program, with the assistance of the AWS Foundation. The Committee also selects the recipient of the Amos and Marilyn Winsand Foundation Endowed scholarship as part of this scholarship application.
- 4) AWS Detroit Section Scholarships are paid in varying amounts based on individual awards. If an applicant is awarded a scholarship, the payments are made directly to their qualifying educational institution. Payments are made through the AWS Foundation.

Application Instructions

The information requested on the application form is self-explanatory. Please fill out the form completely.

The AWS Foundation inter-active application is available either at awssection.com/detroit under the Scholarships tab. Or by going directly to the AWS Foundation scholarship page: scholarship.aws.org/

For more additional information about the scholarship program, please see aws.org/foundation/page/scholarships

AWS membership is encouraged of all welding aspirants.

In addition to the application form, you must enclose or attach the following:

- **Transcript(s)**
Official scholastic records or grade transcripts from the high school, college or university you attended during the recent school year.
- **Personal Statement and Work Experience**
Ambitions, goals, background, and other factors that will help the selection committee understand your commitment to pursuing a welding career.

**Application
Postmark
Deadline
April 1, 2023**

Thank You

AMERICAN WELDING SOCIETY



Kanyon Sherrick
 Middleton, MI
 Ferris State University
 Welding Engineering Technology
 Detroit Section Scholarships
 District 11 - 011-Detroit

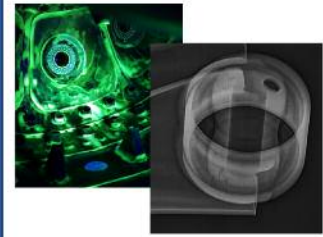
Dear AWS Detroit Section,
 Thank you so much for selecting me as a recipient of your scholarship. I'm truly honored, and it helps greatly with funding my education and my pursuit of excellence in all I do. I have always strived to

completely finance my schooling through work and scholarship. Your scholarships in the past have certainly helped with this, and I know this will as well. This past year has been my most challenging at Ferris State University since starting my education. Without the help of scholarships like this, I would not have been able to focus as well on learning and getting the most out of my education. Next year I will be entering my final year of the Welding Engineering Technology program. It is then that I will be starting my capstone project. I am also currently in my internship with the company Genie in Redmond, WA, and this has been providing me with excellent industry experience. The capstone project and my internship will be some of my most academically rigorous and beneficial experiences to date. I want to put my all into both to best prepare myself for the workforce, and I can confidently say that this scholarship will help me do just that. I also wish to continue my commitment to leadership and service, especially through the campus ministry Real Life. This scholarship will enable me to accomplish this as well. Thank you again for your generosity. Looking back on my time at Ferris State University, I can honestly say that scholarships like this have made a significant positive impact on me, my education, and others. Please know that this scholarship is much appreciated. Thank you again, and I hope to see you in person at Scholarship Night later this year.

Sincerely,
 Kanyon Sherrick

Nondestructive Testing Regional Education Program

Saturday Feb 25, 2023 - 10AM-4PM



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