

# SAE MILWAUKEE

An SAE International Section

## Upcoming Events

Clean Snow Challenge

- March 2-7

Case New Holland

- March 11

## February 2015 Newsletter

Next Event:



**Case New Holland  
(Hosted by ASME)**

Wednesday, March 11  
5:00pm  
Stutevant, WI

## About the Event

You are invited to join ASME (American Society of Mechanical Engineers) on a tour of the Case New Holland (CNH) Racine Tractor Plant in Sturtevant, WI.

CNH Industrial is a global leader in the capital goods sector that, through its various businesses, designs, produces and sells agricultural and construction equipment, trucks, commercial vehicles, buses and specialty vehicles, in addition to a broad portfolio of powertrain applications. Present in all major markets worldwide, CNH Industrial is focused on expanding its presence in high-growth markets, including through joint ventures.

From tractors and combines, excavators, wheel loaders, trucks, buses, firefighting and civil protection vehicles to powertrain solutions for on and off road and marine, the Group designs, produces and sells 'machines for work'. Across its 12 brands, 62 manufacturing plants, 48 research and development centers and a workforce of more than 71,000 people, CNH Industrial is present in 190 countries giving it a unique competitive position.

CNH Industrial has several facilities in Racine with a variety of functions including: Sales and Marketing, Financial Services, Purchasing, Information Services, Human Resources and Legal. Racine, Wis. is also home to the Racine Manufacturing Operations which manufactures the Case IH Magnum™ and Maxxum® tractors and the New Holland TG tractor series.

NOTE: When registering for this event, every registered guest must include the name of their employer(s). CNH Industrial reserves the right to refuse access to anyone that does not meet their corporate safety and security criteria.

### General Safety Requirements

Wear closed toe shoes.

Bring a valid ID.

Bring Safety Glasses if you have them.

# Event Agenda

## Event Agenda

Registration .....	5:00–5:45pm
Tour Starts .....	5:45pm
Travel for Dinner .....	7:00pm
Dinner & Announcements .....	7:15pm

## Registration Fees

ASME/SAE Members .....	\$25.00
Member Spouse .....	\$15.00
Guests/Non-members .....	\$30.00
Students .....	\$15.00

## Registration

**Registration Deadline:** March 2<sup>nd</sup>

**Maximum Attendance:** 70 attendees

### **Ways to Register:**

- Online with a charge card via [www.milwaukeesae.com](http://www.milwaukeesae.com) – you will be asked to register on the SAE website as well as the ASME website. If you do not register on the ASME website, your spot will not be reserved!
- By phone at 414-259-5794 (Ken Derra – ASME) – Please mention that you are an SAE Member when registering.

**Registration required – no walk-ins allowed**

# Location

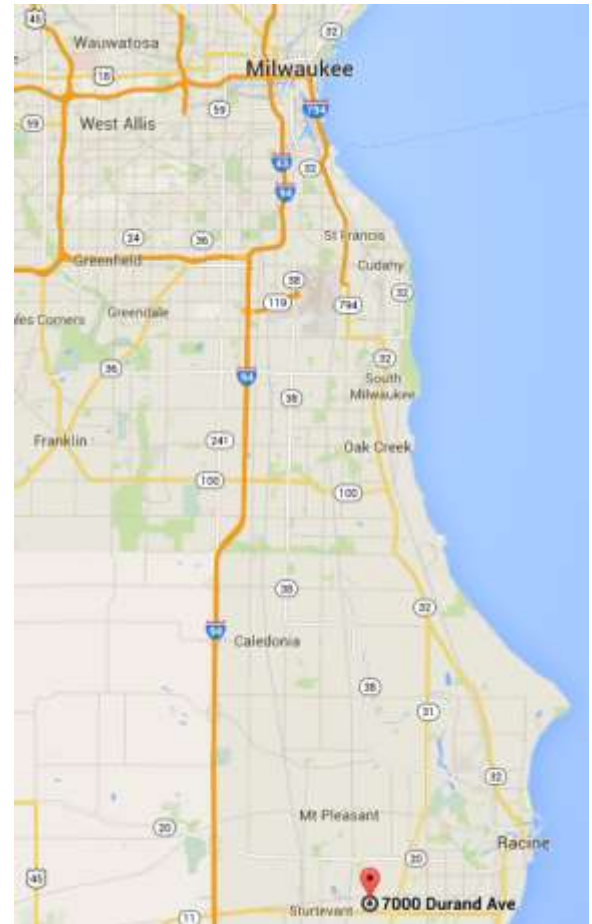
We will meet at CNH's Racine Tractor Plant (7000 Durand Avenue, Sturtevant, WI) for the tour of the facility. Please note the follow procedure when entering the facility:

- Use the Visitor (Right) Lane to enter the facility.
- Check-in with the guard.
- A valid ID must be shown to enter the facility.
- Drive to the Training Center.
- Park in Training Center parking Lot.

Dinner will be held at the Fountain Banquet Hall (8505 Durand Avenue, Sturtevant, WI). Direction from the CNH parking lot are fairly simple:

- Turn LEFT onto Oakes Rd.
- Turn RIGHT/West On Hwy 11 (Durand Ave)
- Drive approx. 1 mile to the Fountain Banquet Hall.

The dinner menu will be served as a buffet and includes baked chicken, BBQ pork, mashed potatoes, baked mac & cheese, green beans, salad, and bread.



# Clean Snowmobile Challenge 2015

March 2-7, 2015

Join Dale and others from the SAE Milwaukee Section in Keweenaw, where they have over 150" of snow!

The SAE International Clean Snowmobile Challenge (CSC) is an engineering design competition for college and university student members that challenge engineering students to reengineer an existing snowmobile to reduce emissions and noise. Their modified snowmobiles will compete in a variety of events including emissions, noise, fuel economy/endurance, acceleration, handling, static display, cold start and design.

The CSC Rules Committee makes changes to the competition each year to keep the competition fresh and to present new engineering challenges. CSC is primarily an "engine" competition however the underlying theme has remained consistent to engineer a clean and quiet trail sled. Current trail sleds are engineered to these standards, but it is possible to achieve more. Noise levels can be reduced and cleaner fuels can lead to lower emissions.

## Competition Objective for IC Engines

The intent of the competition is to develop a snowmobile that is acceptable for use in environmentally sensitive areas such as our National Parks or other pristine areas. The modified snowmobiles are expected to be quiet, and emit significantly less unburned hydrocarbons and carbon monoxide than current production snowmobiles, without significantly increasing oxides of nitrogen emissions. The modified snowmobiles are also expected to be cost-effective and comfortable for the operator to drive. The intent of the competition is to design a touring snowmobile that will primarily be ridden on groomed snowmobile trails. The use of unreliable, expensive solutions is strongly discouraged! Modern snowmobiles are engineered to meet the current standards for noise and emissions. Teams are expected to add innovative solutions for improving on the performance of the base sled that they start with. Design judges (written and oral) will be looking for innovations and incorporating that into their scores.

The minimum performance expectations for a trail IC snowmobile are set by these rules as a sled that by design will go 100 miles without refueling and can attain a trail speed of 45 miles per hour on a smooth trail. Additionally they should be able to traverse 500 feet in 12 seconds or less. Designs that do not have a reasonable expectation of achieving these requirements will be allowed to compete only on an "Exhibition" basis.

## Competition Objective for Zero Emissions Category

The Greenland Ice Cap acts like a sponge, absorbing atmospheric chemicals produced naturally, or via anthropogenic activities. Many of these chemicals are also photoactive in the lower troposphere and even in the upper layers of the snow. Research underway at Summit Station seeks to understand the processes involved, and how it might play into the global cycling of these agents. Some of the chemical constituents under study are measured in parts per billion. Emissions resulting from the burning of fossil fuels on site can hopelessly skew the research results. Due to the sensitive nature of much of the research being conducted at Summit Station, NSF seeks to find a "zero-emissions" vehicle for transporting researchers and support staff to and from research sites.

Electric snowmobiles or other forms of zero-emissions transportation have long been sought. Range and performance have always been extremely limiting factors that have precluded the successful development of commercially available models. Recent advancements in battery and motor technology have finally made it possible to realize vehicles with ranges adequate for some purposes. Zero-emissions personal transportation would allow the operation of more distant satellite camp facilities, and allow access to areas previously accessible only by foot. In short, this is a tool that the research community needs now.

Snowmobiles in this category must be zero-emissions by default. Therefore, no test or points will be given for emissions. Instead, range and draw bar performance will be measured. Innovation will also be judged in this category.

## How to Get Involved

The Milwaukee Section of SAE is responsible for helping run the event, including judging reports written by the collegiate teams entering the competition. Your SAE Milwaukee Section needs you to help judge reports. To volunteer to judge papers, please contact Jay Meldrum ([jmeldrum@mtu.edu](mailto:jmeldrum@mtu.edu)). Judges typically read a minimum of four reports in the category they are most comfortable with (IC engines or electric). There are also volunteer opportunities during the competition. More information on volunteer opportunities at competition will be provided in upcoming newsletters. A schedule of events is included in this newsletter for those who are interested in helping at competition.

To learn more about the event or how you can get involved, please contact Dale Wiza ([dale@engineeringplacements.com](mailto:dale@engineeringplacements.com), 414-807-9663).

Corporate sponsorship opportunities are also available in various levels. If you or your company are interested in more information, please contact Brian Hannon ([bghannon@mtu.edu](mailto:bghannon@mtu.edu), 906-487-3572).

# Schedule of Events



Date/Time	Schedule	Meeting Place
<b>Monday, March 2</b>		
8:00 am to 7:00 pm	Teams Arrive, Registration opens Turn in Snowmobile Description Form IC and ZE Final Technical Inspections	KRC/T3 KRC/T3
5:30pm to 6:00 pm	Fire Safety Presentation	KRC/T3
6:00 pm to 8:00 pm	“Early Volunteers” Reception	<i>Joey’s Seafood, Houghton</i>
Shop open until Midnight	<i>Pizza for students in the shop</i>	
<b>Tuesday, March 3</b>		
7:30 am	Judges Meeting	KRC/T3
10:00 am	Gage Products IC Fueling <b>*Grand Opening Event*</b> NSF Electric Sled Range Test Endurance Run to Copper Harbor	<b>KRC/T3</b> KRC/T3 KRC/T3
3:00 pm – 5:00 pm	<i>Late Lunch and discussion about Future CSC competitions</i>	<i>Shelden Grill</i>
Return to KRC – Shop open 5pm until Midnight		
<b>Wednesday, March 4</b>		
7:30 am	Presentation Judges Meeting	KRC Bldg 69
8:00 am to 5:00 pm	IC Design Presentations	KRC Bldg 69
8:00 am to 5:00 pm	AVL Lab Emissions Event Sensors Inc. In-Service Emissions	T5 T5
10:00 am to 11:00 am	Technical Presentation/Chalk Talk TBD	KRC/T3
8:00 am to 5:00 pm	Make-Up Endurance Miles	KRC/T3
Noon	<i>Lunch for the Presentation Judges Courtesy of Michigan Tech Career Services</i>	KRC Bldg 69
Noon	<i>Lunch in the shop Cininnati Chili Courtesy of The PCB Group</i>	KRC/T3
<b>Student Registration ends at Noon</b>		
1:00 pm to 3:00 pm	Electric Sled Draw Bar Pull	KRC/T3
4:00 pm to 6:00pm	Networking with Industry	Copper Country Mall
6:00 pm to 8pm	<b>*Snowmobile Public Display*</b> <i>Light refreshments will be served Courtesy of the Michigan Tech Graduate School</i>	Copper Country Mall
Shop open until Midnight		KRC/T3



### Thursday, March 5

8:00 am to Noon	PCB and HEAD acoustics Noise Event	KRC T3
8:30 am to 5:00 pm	Polaris Subjective Handling Event	KRC/T3
8:30 am to 5:00 pm	Emissions Events (continued)	KRC/T5
10:00 am to 11:00am	Technical Presentation/Chalk Talk	
	EMITEC- "Catalyst Technology"	KRC/T3
Noon	<i>Pasty Lunch</i>	KRC/T3
1:00 to 4:00pm	ZE Design Presentations	KRC Bldg 69
5:00 pm to 7:30 pm	SAE Milwaukee Section Meeting	
	Presentation by Jack Phillion, Director of Corporate Quality of MacLean-Fogg	
Announcements for Special Awards Finalists Mandatory Attendance		DOW 641
	<i>Dinner provided for Registered Students and Volunteers</i>	
	<i>Provided by Michigan Tech MEEM Department</i>	

Shop open until Midnight

### Friday, March 6

7:30 am	Judges Meeting	KRC/T3
9:00 am to 5:00 pm	Emissions Events (continued)	KRC/T5
10:00 am to 11:00am	Technical Presentation	
	Sound Quality	
	HEAD acoustics, Inc.	KRC/T3
Noon	<i>Beef Bar-B-Que</i>	KRC/T3
	<i>courtesy of the Iowa Snowmobile Association</i>	
1:00 pm to 6:00 pm	Open time to enjoy the Keweenaw Mt. Ripley Ski Hill, Dollar Bay Motorsports Dan's Polaris, Houghton Powersports, M&M Powersports	
5:00pm to 6:00pm	VIP Tours of MEEM Building MEEM	
6:00pm to 8:00pm	VIP/Volunteer Reception	<i>Habeneros, Hancock</i>
Shop open until Midnight	Sleds Outside by Midnight	<i>Students dinner on your own</i>

### Saturday, March 7

8:00 am to 8:30 am	NGK/NTK Cold Start Event	Outside KRC/T3
8:30 am to 10:00 am	Emission Testing (if necessary)	KRC/T5
10:00 am	<b>*Polaris Acceleration event*</b>	KRC Test Course
11:00 am	<b>*Polaris Objective Handling event*</b>	KRC Test Course
	<b>*ZE Acceleration + Load Test*</b>	KRC Test Course
Noon	Judges Meeting to Review Scoring and Penalties	KRC T1
6:30 pm	<b>*Awards Banquet*</b>	<i>MUB Ballroom</i>
	<i>Banquet Meals for the students courtesy of the PCB Group</i>	

**\*Public Viewing Opportunities\***



# SAE Milwaukee Section Board Member Spotlight

## Nerissa Hanson – Student to Professional Transition Manager

Nerissa's interest in automotive engineering started with a passion for motorsports at a young age. When she was 12 years old, her mom took her to a CART (later known as Champ Car) race at Road America and became fascinated with the race cars. She spent much of her free time over the next few years researching them and following as many open-wheel and sports car series as possible. While growing up Nerissa also enjoyed building things and learning how gadgets worked. Her parents often kept her busy by giving her a box of nails, a hammer, and a few pieces of wood. Rather than playing with her Barbie dolls, she preferred to build them houses.



To pursue her automotive engineering interests, Nerissa attended MSOE and graduated with a Bachelor's Degree in Mechanical Engineering. During her time there she became very active in the SAE section. Sophomore and junior year she was a member of the Supermileage Vehicle team where she helped design and implement engine modifications to achieve extremely low fuel consumption. Senior year as Team Captain for the Formula Hybrid team, she led 15 students to design and build an entirely new frame and electric-hybrid powertrain. She also increased funding and sponsorship support for the project, helped design and implement the hybrid powertrain system, and continued to lay the groundwork to ensure success for future MSOE teams. Currently, she works at Mercury Marine as an Engine Test and Development Engineer focusing on diesel cooling system development and under-cowl thermal management.

Nerissa joined the Milwaukee SAE Board shortly after graduation in 2012. She serves as the Student to Professional Transition Manager. It is her responsibility to help engage the section's student members, promote interaction with professional members, and then help them through the process of transitioning from student membership to professional membership after graduation. During Nerissa's time in college, the Milwaukee SAE Section's support played a big role in the success of her teams. Now as a member of the board, she enjoys the opportunity to "give back" by supporting the section's current students.

Apart from SAE, Nerissa enjoys riding her motorcycle, playing in the local community symphonic band, being a STEM advocate for young girls, and volunteering with a professional race team based in Sheboygan Falls.

## Milwaukee Section 2014-2015 Governing Board

**CHAIRMAN:**

Garrett Herning—Power Test Dynamometers  
[garretth@pwrst.com](mailto:garretth@pwrst.com)

**VICE CHAIRMAN: OPEN****SECRETARY:**

Drew Caron—Rexnord  
[andrew.caron@rexnord.com](mailto:andrew.caron@rexnord.com)

**TREASURER:**

Mitch Crawford—Modine Manufacturing Co.  
[m.s.crawford@na.modine.com](mailto:m.s.crawford@na.modine.com)

**PAST CHAIRMAN:**

James Ryan—Caterpillar  
[jim.ryan@cat.com](mailto:jim.ryan@cat.com)

**HISTORIAN:**

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**AWIM/EDUCATION:**

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**WEBMASTER:**

Cara Kazda—Cummins Filtration  
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**MEMBERSHIP VICE CHAIR:**

Dale Wiza—Professional Engineering Placements  
[dale@engineeringplacements.com](mailto:dale@engineeringplacements.com)

**COMPANY AMBASSADORS:**

Tony Grant - New Berlin Plastics  
[tony.grant@earthlink.net](mailto:tony.grant@earthlink.net)

**COLLEGIATE RELATIONS:**

Mike Krauski—UW-Milwaukee  
[krauski@uwm.edu](mailto:krauski@uwm.edu)

**STUDENT ACTIVITIES:**

Randy Hoffman—WCTC  
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**CAREER DEVELOPMENT:**

Dale Wiza—Professional Engineering Placements  
[dale@engineeringplacements.com](mailto:dale@engineeringplacements.com)

**SENIOR ADVISOR:**

Kurt Person—HB Performance Systems

**SOCIAL MEDIA MANAGER:**

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**NEWSLETTER EDITOR:**

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**STUDENT PROFESSIONAL TRANSITION MANAGER:**

Nerissa Hanson—Mercury Marine  
[nerissa.hanson@mercmarine.com](mailto:nerissa.hanson@mercmarine.com)

**MINI BAJA CHAIRMAN:**

Matt Anderson—Briggs & Stratton  
[anderson.matthew@basco.com](mailto:anderson.matthew@basco.com)

**STUDENT REPRESENTATIVES:**

Marquette: Jace Birschbach—[jace.birschbach@marquette.edu](mailto:jace.birschbach@marquette.edu)  
MSOE: Karl Hundt—[hundtk@msoe.edu](mailto:hundtk@msoe.edu)  
UW-Milwaukee: Nate Sievers—[nsievers@uwm.edu](mailto:nsievers@uwm.edu)  
Michigan Tech: TBD  
UW-Madison: TBD  
Northern Michigan University: TBD

## A Letter from the Chairman

Greetings Milwaukee SAE Section members and friends,

The days are starting to get longer which mean spring is right around the corner. While many of us are dreaming of spring already, if you'd like to give winter a proper send off, consider taking the ride up to the Keweenaw Research Center and join SAE at the Clean Snowmobile Challenge on March 2-7. Taking a few days to see what the competition is all about, talking with students, and networking with industry is a great way to celebrate the last few weeks of winter.

This month is our annual joint meeting with the Milwaukee Section of ASME at Case New Holland. This is another great event where to network with other professionals in our field. Please join us on March 11th.

The SAE Milwaukee Section is looking for your help! We have two great opportunities for you to help grow your leadership skills and help keep our section active and continuing to be the premier engineering society in the area.

The first is our Shadow Program. Are you interested in what being a board member entails? Volunteer to be a shadow and we will pair you up with a board member. You can see what this board member does and help them with some of their tasks. This is a great way to get involved and see what helping out with the Milwaukee SAE Section is all about. Please contact Randy Hoffman for more information.

The second opportunity is our AWIM/STEM initiative. Please consider volunteering to help bring engineering into the classroom for middle and high school students. Did someone spark your interest as a child that led you to a path in engineering? Maybe you can do the same for a young person. This is a great way to have an impact and promote the engineering discipline. Please contact Sid Jain for more information.

I look forward to seeing you at our upcoming events!

Garrett Herning  
SAE Milwaukee Section – Chairman

**NEW!!**



## **SAE Board Member Shadow Program**

Members, your board of directors has created a new way for you to get involved in the activities of the SAE Milwaukee Chapter!

Do you like the service and support that your SAE Milwaukee Chapter provides to you? Do you have some fresh ideas to make your section better? **Or.....would you like to just get involved?**

If you would like to participate but do not know how to get started, we have the program for you. This new program allows you to shadow a board member to learn the details of what they do for this section. With this opportunity you can investigate/help a position that interests you without jumping in with both feet. This will allow you to participate to the level you are comfortable with or find the position that suits your talents and/or interests.

***We would like to invite you to Shadow a Board Member.***

If you are interested in this opportunity please contact Randy Hoffman at (920) 397-6644.



## SAE Milwaukee STEM/AWIM program

Your Milwaukee Chapter needs your help with expanding the AWIM program within the local schools. AWIM (A World In Motion) is a teacher-administered, volunteer-assisted program that brings Science, Technology, Engineering and Math (STEM) education to life for K-12 grade students. Program focuses on various age-appropriate challenges that are taught through the use of “kits” – students build different models using these kits while learning about basic principles of physics, motion and flight.

We have paired up with Messmer Prep and St. Rose/St. Leo schools in Milwaukee and will be introducing the AWIM program there



- Both schools are part of the Messmer Catholic Schools and serve the inner city students through a Voucher/Choice program
- This is **first time** a program of this kind is being introduced at Messmer – the program was **specifically requested by teachers** there to inspire girl students and encourage them to pursue STEM subjects later in their educational career
- AWIM program to be introduced for 4<sup>th</sup> and 5<sup>th</sup> grade students at both schools, with a focus on all 3 elementary and one middle school challenge
- **We want YOUR help** in assisting students in Fall and Spring sessions in after-school program setting (~ 3:30 – 5:00 pm)
- **For more information on volunteering, please contact Sid Jain, [S.Jain@na.modine.com](mailto:S.Jain@na.modine.com)**

## Section Sponsors



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