

SAE MILWAUKEE

An SAE International Section

Upcoming Events

- April 12 – UW-Madison Engine Lab (with ASME)

Future Events

- May 10 – Synerject
- June – SCCA June Sprints at Road America
- July 12 – Cruise night

March 2017 SAE Newsletter

April 2017 Event



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

UW-Madison Engine Research Center

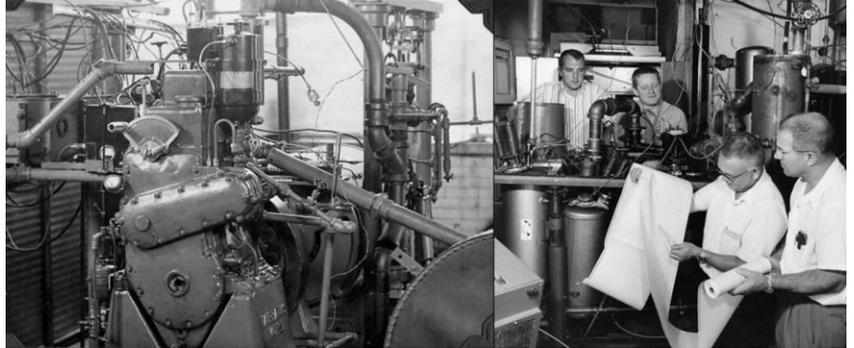
Wednesday, April 12th, 4:30pm

1500 Engineering Drive
Madison, WI 53706

About the UW Engine Research Center

This month, the ASME Milwaukee Section and SAE will tour the UW Engine Research Center on the UW Campus in Madison, WI. Afterwards, we will have dinner at the Essen Haus. This is a joint tour event that is open to members of both organizations and their guests.

The Engine Research Center is devoted to fundamental research on spark ignition and diesel engines and has been a leader in Low Temperature Combustion research. The ERC includes seven active faculty members and typically ~60 graduate students in addition to several full-time staff members. The Engine Research Center (ERC) is a world-leading research and educational institution dedicated to investigating the fundamental thermo-physical processes that control combustion performance and the pollutant emissions formed during combustion in internal combustion engines. The annual research expenditures of the ERC have averaged approximately \$3 million for the past 5 years.



About the Event

Event Agenda

Registration	4:30-5:00pm
Tour	5:00-6:30pm
Travel to Restaurant	7:00-7:15pm
Dinner	7:30pm

Registration Fees

SAE/ASME Members	\$25
Member's Spouses	\$10
Students	\$10
Non-members	\$30

Registration

Registration Deadline: April 7

Maximum Attendance: 90

Ways to Register:

- Online with a charge card via the [ASME website](#)
- By phone: 414-259-5794 (Ken Derra)

Thank you to ASME Milwaukee for organizing this event and inviting SAE Milwaukee to join!

Map and Parking Instructions



There is a parking ramp located near the ERB, between the stadium and the Mechanical Engineering Building (lot 17). The visitors entrance is towards the stadium where an attendant is available. Parking fees apply.

Clean Snowmobile Challenge Recap

Ice, Wind and Cold Can't Beat Clean Snowmobile Challenge Winners

By Allison Mills | awmills@mtu.edu | Published March 14, 2017

Students work to make quieter and cleaner sleds as part of an SAE International university competition. This year's winners are École De Technologie Supérieure, University of Wisconsin – Madison, and Michigan Tech.

Students had to battle ice, wind gusts greater than 50 miles per hour and single digit temperatures at this year's Clean Snowmobile Challenge. Michigan Tech won first place in the zero emissions category, and École De Technologie Supérieure won the diesel utility class and tied with the UW - Madison in the internal combustion class.

The events and tests are held north of Houghton at the Keweenaw Research Center, (KRC) where student teams run a gamut of tests ranging from an endurance run to oral presentations to exhaust emissions measurements. On Saturday morning, only four sleds started in the bitter cold; one electric, diesel, and two internal combustion sleds using batteries, B15 biodiesel and E59 gasoline (59 percent ethanol), respectively.

Winners

This year, 13 teams competed with internal combustion engines, 6 with diesel engines and 5 with electric sleds—a record number of competitors. The overall winners are: internal combustion - École De Technologie Supérieure (tied for first) with UW - Madison and the University of Minnesota – Duluth (third); diesel - École De Technologie Supérieure (first), North Dakota State University (second) and University at Buffalo (third); zero emissions - Michigan Tech (first), Clarkson University (second).

By winning first place in the internal combustion class, École De Technologie Supérieure earned the traveling MacLean-Fogg Cup and the International Snowmobile Manufacturers Association award for first place. They succeeded in developing a quiet but feasible design, winning awards for PCB's quietest snowmobile CAMSO trac, BRC's most practical design, Polaris' best handling and Mahle's best engine design.

UW-Madison once again set the bar for low emissions in internal combustion engines, tying for first place; they have earned first place three years running now. They also took home awards for lowest in service emissions sponsored by Sensors, Inc., along with AVL's best emissions winner and Gage's best fuel economy winner.

Michigan Tech's electric sled took first place in the zero emissions class.

The zero emissions category, which covers electric snowmobiles, posed a major challenge and only two teams passed the technical inspections. Michigan Tech. won the John Deere Electronic Solutions award for first place; Clarkson University took second place. The category is of interest to many research organizations seeking ways to travel in polar regions without contaminating experiment

samples; electric sleds could also be useful for remote travel where fuel is difficult to come by, but charging stations would be available.

Growing in competition - up from only two teams competing last year - the diesel utility class represents a unique group, one that students say focuses on hard work over performance, which is important for agricultural and small - engine based industries. École De Technologie Supérieure placed first, receiving the John Deere Power Systems award; North Dakota State University and University at Buffalo were close behind. Kettering University's team took home an EControls Can-Do E-Controls award.

The U of M - Duluth took third place in the internal combustion category and also won SAE International's best design award and Faurecia's most innovative emissions design. They also took home DENSO's innovation award, EControls CAN-DO E-Controls and a portable five - gas analyzer from Horiba worth \$5,000 to help them in future years.

The Rochester Institute of Technology's internal combustion team also took home an EControls Can-Do E-Controls award. The University of Idaho won both EMITECH's best value award and Woody's best acceleration award. Clarkson University won CAMSO's best performance winner, taking home a CAMSO trac.

History / Next Year

For 15 years, the KRC has hosted the Clean Snowmobile Challenge. The first three years were held in and around Yellowstone National Park, sparked by discussions of excluding recreational snowmobile access. The industry responded by working with the Environmental Protection Agency to develop emissions and noise standards that require snowmobiles to be clean and quiet. To win in this event, the students competing in the internal combustion category must beat those standards to score, while using ethanol-based fuel ranging from E10 to E85, like flex-fuel cars. Next year's event is scheduled for March 5-10, 2018.

Thanks to Sponsors

The cost to put on the week-long challenge is approximately \$200,000. Of that, approximately 80 percent comes from industry partners, 10 percent comes from local partners, and 10 percent comes from the snowmobile manufacturers, clubs and associations.

A special thank you to our sponsors: AVL, Faurecia, MacLean-Fogg, Denso, John Deere Power Systems, CAMSO, Horiba, PCB, Fiat Chrysler Automotive, Boss Snow Plow, Gage Products, Sensors, Dassault Systems

See photos of the Challenge here: <http://www.mtukrc.org/csc2017pix/index.html>

Chairman's Message

We are halfway to summer and the SAE board members are working hard to make sure our tour schedule stays busy. Speaking of that, we've just finished a fantastic tour that Wayne Richter worked long and hard with the great team at Generac to make happen. I expect everyone that attended had a great time because I know I did and the Generac Team pulled out all the stops for us (the tour bus ride sure made things easy!). For those that couldn't or didn't make it I would encourage you to sign up early for the future tours.

For those that have been around awhile it is a common request asking for volunteers to join the board. We understand that this can be intimidating, but don't fear – we are a pretty friendly bunch and welcome helping hands or at least the moral support. Some areas where we are constantly looking for help are the SAE Baja program and the STEM/AWIM programs. Most are probably familiar with the Baja program and those of you that who been around awhile probably remember this chapter regularly hosting a Baja event. We would like to do that again and need a group of people to take on the planning of this event. STEM/AWIM are educational programs for primary schools to help teach the subjects that support a future engineering career path. Feel free to email or talk to one of the board members about how you can contribute to the engineering community.

I hope to see many of our members as we share a joint meeting April 12th with ASME at the UW Engine Research Center in Madison.

Regards,
Van Phifer
SAE Milwaukee Section Chairman

SCCA June Sprints at Road America

As in past years, SAE Milwaukee has received discount tickets to the SCCA June Sprints, held from June 15-18 at Elkhart Lake's Road America. For more information about the event, please visit Road America's [website](#).



Tickets are regularly priced at \$35 each – we will be offering them at a price of \$5 each for students, \$10 each for adults, or 4 tickets for \$35. Get a group together and join us Saturday morning for a behind-the-scenes tour of race car tech inspection and race control (advanced registration is necessary). To purchase tickets for yourself, family, friends, or co-workers, please contact Wayne Richter at 262-770-0252 (text/call) or richterway@sbcglobal.net, or find Wayne at our April and May events.

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vanphifer@gmail.com

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campbellg@uwplatt.edu

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richterway@sbcglobal.net

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negin.salami@jci.com

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cara.kazda@cummins.com

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rhoffman2@wctc.edu

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dale@engineeringplacements.com

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kurt.person@hbpsi.com

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a.m.boyer@na.modine.com

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michael.fricke@huscoauto.com

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 Section!

Do you like the service and support that your SAE Milwaukee Section 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, find the position that suits your talents and/or interests, or to serve in a committee with others.

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

Inspiring Today's Students to Become Tomorrow's Engineers and Scientists

OUR K-8 STEM EDUCATION SOLUTION, A World in Motion (AWIM), is a teacher-administered, industry volunteer-assisted program that brings science, technology, engineering and math (STEM) education to life in the classroom for students in Kindergarten through Grade 8. Benchmarked to the national standards, the AWIM program incorporates integrated STEM learning experiences through hands-on activities that reinforce classroom STEM learning.

Program Highlights & Benefits

- It's interdisciplinary in nature, which helps students learn to make meaningful connections among disciplines
- All activities correlate with the Next Generation Science standards and the Common Core standards
- It builds bridges between corporations and classrooms by giving teachers, volunteers, and students the opportunity to work together and learn from each other
- More than 72,000 curriculum/challenge kits have been provided; over 4.5 million students participate; more than 30,000 volunteers.



Industry Support & Volunteers

- Industry support is essential to this program. Corporations and their employees can influence the ways in which youth are prepared to meet the future by sponsoring schools in their communities. By doing so, schools can qualify to receive free or low cost AWIM program Challenge kits.
- Industry volunteers provide students with first-hand impressions and information about careers in their chosen profession and serve as an in-classroom resource for teachers.

Accordingly, Johnson Controls has been supporting certain Milwaukee county schools by providing the kits and volunteering hours over the past 8 years. This year, the “Jet Toy” challenge will be held for three Elementary schools – Atwater, Lake Bluff, and Kluge – proudly in collaboration with SAE - Milwaukee Section and broader SAE members as of the volunteers to enrich the students’ hands-on experience.

The program will be started in early February.

For more information on volunteering, please contact Negin Salami:

negin.salami@jci.com

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