



# Milwaukee Section Newsletter

February 2008

[www.saemilwaukee.org](http://www.saemilwaukee.org)

**MotoTron**



## **MotoTron Engine and Powertrain Control** & **Industry and Academics Partnership**

***Wednesday February 27th, 2008***  
***5:00-5:30 p.m. Engineering Centers Building Tour***  
***6:00 - 8:30 p.m. Dinner and Presentation***  
***At University of Wisconsin - Madison***



The technical staff of MotoTron will be presenting several diverse topics in engine and powertrain management:

- Latest Coding Techniques of Model Based Design Software
- Rugged Programmable Control Modules Using MotoHawk
- Green Technology R&D in the World of Powertrains
- Embedded Control Modules
- Biofuels and Challenges

Glenn Bower, PhD and SAE student advisor at UW-Madison will lead tours of the Engineering Centers Building, and present success stories of industry and academic partnerships.



## Speaker Biographies:



**Eric Bradley**, MotoTron's Director of Products, is pleased to present the MotoTron product showcase. Mr. Bradley has both a BS & MS in Electrical Engineering and a MBA from Purdue University. He has worked across multiple industries including aviation with General Electric and transportation at Cummins Engine Company. Mr. Bradley was the initial architect of MotoHawk, MotoTron's model-based design tool, and has led its development as a critical tool within MotoTron and also its product launch to outside customers.

**Eric** will be presenting the MotoTron software product line. MotoTron's flagship software, MotoHawk<sup>®</sup>, is an add-on to MatLab/Simulink that makes it easier to use Simulink models directly on rugged, production embedded control modules. MotoHawk makes it easy to create algorithms, calibration, CAN, OS, and IO features for your system. You would use MotoHawk and Simulink to create your engine management system using graphical diagrams rather than traditional source code.



**Jeff Konopacki**, MotoTron's Director of Engineering, is excited to present the hardware portion of MotoTron's product showcase. Mr. Konopacki has a BSMET from the Milwaukee School of Engineering and holds 8 patents. His career background consists of 18 years of engine design and development. The last 7 years have been focused on developing advanced control systems at MotoTron. Mr. Konopacki now leads the team at MotoTron responsible for developing and testing future mechatronic hardware solutions.

**Jeff** will be presenting the MotoTron hardware product line. MotoTron has a family of rugged embedded control modules designed for the automotive, marine, off-highway, and heavy duty operations. MotoTron has the unique ability to sell these modules into many markets, even at very small volumes at attractive pricing. These modules range from simple CAN gateways to very complex 12-cylinder gas racing engine control modules including our newly designed 100kw electric vehicle inverter. All these modules are programmable using the MotoHawk<sup>®</sup> tool suite making end users able to design and implement their own IP on this rugged hardware.



**Blake Suhre**, Senior Technical Fellow at MotoTron is honored to present the MotoTron roadmap for future technologies. Mr. Suhre is an expert in the areas of engine combustion systems, and engine and vehicle control systems. He holds 14 patents, and has co-authored 4 publications. Mr. Suhre holds an MSME from the University of Wisconsin, a BSME from GMI, Engineering and Management Institute, and a BSBA from Southern Illinois University at Edwardsville.

**Blake** will be presenting the future technologies for MotoTron. Global warming, fuel efficiency, and improved emissions are all important and complex topics impacting our market. Mr. Suhre has performed extensive research around alternatives to fossil based fuels, alternative powertrain architecture and internal combustion engine technologies. He will be presenting a summary of many of these findings and how they might affect the selections of future powertrain architectures including series hybrid, parallel hybrid, pure electric vehicle, and traditional engine powertrains.

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## Coffee Speaker – Industry and Academic Partnerships



**Glenn Bower**, Automotive Faculty Advisor at the University of Wisconsin-Madison, advises 5 different SAE projects and the Hybrid Vehicle team in addition to teaching a Manufacturing and Senior Design course. Four different teams have won 11 international competitions in the last 10 years. Dr. Bower holds a MS and PhD in Mechanical Engineering from the University of Wisconsin-Madison. He holds 1 patent and has co-authored 28 publications.

**Glenn** will provide an overview of the student projects and synergy ignited by “Industry Allies”. Research, product development, and SAE collegiate competitions have demonstrated several success stories that will be shown during the tour and summarized to open the meeting.

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### --- EVENT AGENDA ---

<b>Tour (1/2 hour)</b>	<b>5:00-5:30 p.m.</b>
<b>Registration:</b>	<b>5:00pm</b>
<b>Dinner:</b>	<b>6:00pm</b>
<b>Program:</b>	<b>6:45 - 8:30pm</b>

### --- DINNER ---

#### **MENU:**

#### **DINNER PRICES:**

<b>SAE Members / spouses:</b>	<b>\$20.00</b>
<b>Retirees:</b>	<b>\$15.00</b>
<b>Guests / Non-members:</b>	<b>\$25.00</b>
<b>Students w/ID</b>	<b>\$10.00</b>

### --- MENU ---

#### **MENU:**

- **Buffet menu selection of chicken piccata, red potatoes, veggie, assorted desserts, and complementary beverages (coffee, water, milk, etc.)**

#### **Registration:**

Only pre-payments made with a **charge card** can be completed online via <http://milwaukee.sae.org>

Retirees, students and members without web access may register by phone on the SAE Registration Coordinator – Jim Ryan (262) 636-1634. Note new registration number!

**[Registration deadline: Monday, February 25, 8:00 a.m.](#)**

## **Directions to University of Wisconsin – Engineering Centers Building** **– last tour starts at 5:30 p.m.**

Directions to the parking ramp from Milwaukee:  
From I-94, take I-90 south to Hwy 12/18 (The Beltline) west  
Exit Hwy 12/18 at Park Street (Exit 261 B).  
Proceed north on Park Street about 2 miles  
Turn left at Regent St and go about a half mile  
Turn right at N Randall Ave and go about a 1/3 of a mile  
Turn left at Engineering Dr and go past Engineering Hall on your left to the parking ramp  
(an interactive map can be linked through the SAE event information: <http://milwaukee.sae.org>)

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## **MotoHawk User Group, June 24-26 Novi Michigan**

*Make plans to join us June 24-26 for our annual MotoHawk User Group (MUG) at the Sheraton in Novi, Michigan. This conference provides you with the opportunity to hear from fellow MotoHawk Users, our product design team and MotoTron management. We'll also have some fun! Evening dinners and entertainment provided. Register for the conference at [salesinfo@MotoTron.com](mailto:salesinfo@MotoTron.com).*

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## ***Future SAE-Milwaukee Programs:***

<b><i>March (first week – TBD)</i></b>	<b><i>Student Night at Milwaukee School of Engineering</i></b>
<b><i>March 10-15</i></b>	<b><i>Clean Snowmobile Challenge at Michigan Tech</i></b>
<b><i>March 14</i></b>	<b><i>Milwaukee Section meeting at Houghton, MI</i></b>
	<b><i>“Altair Engineering”</i></b>
<b><i>April 14-17</i></b>	<b><i>International Congress, Detroit, MI</i></b>
<b><i>April</i></b>	<b><i>Cummins Filtration, tour and presentation(TBD)</i></b>
<b><i>May</i></b>	<b><i>Cirrus Aircraft (TBD)</i></b>
<b><i>June 20-22</i></b>	<b><i>SAE – Milwaukee at the June Sprints, Road America</i></b>
<b><i>July 28 – Aug 1</i></b>	<b><i>SAE International Gathering at EAA, Oshkosh, WI</i></b>
<b><i>September 9-11</i></b>	<b><i>Small Engine Technology Conference - Milwaukee</i></b>

## Milwaukee Section 2007-2008 Governing Board

### CHAIRMAN:

Bernard Krauska  
DRS Technologies  
email: [saemilwaukee@gmail.com](mailto:saemilwaukee@gmail.com)  
Phone: (262) 442-7754

### SECRETARY:

Wayne Richter  
Heraeus GmbH – Exhaust Catalysts  
email: [richterway@sbcglobal.net](mailto:richterway@sbcglobal.net)  
Phone: (262).377.8145

### TREASURER:

Pat Schoepel  
Modine Manufacturing Company  
email: [P.J.Schoepel@na.modine.com](mailto:P.J.Schoepel@na.modine.com)

### PAST CHAIRMAN:

Joe Sagat  
Modine Manufacturing Company  
email: [j.g.saga@n.a.modine.com](mailto:j.g.saga@n.a.modine.com)  
Work: (262) 636-1362

### WEBMASTER:

Cara Piggott  
Cummins Filtration  
email: [cara.r.piggott@cummins.com](mailto:cara.r.piggott@cummins.com)  
Work: (608) 877-3918

### MEMBERSHIP/

### COMPANY REPRESENTATIVE:

Chris Nelson  
National Instruments  
email: [chris.nelson@ni.com](mailto:chris.nelson@ni.com)  
Work: (608) 852-7328

### A WORLD IN MOTION (AWIM): Education

Patrick Murray  
Muskego High School  
email: [pmurray@mnsd.k12.wi.us](mailto:pmurray@mnsd.k12.wi.us)  
Work: (414)765-9966 x246

### PROGRAM DEVELOPMENT:

Josh Rayeske  
Strattec Security Corporation  
email: [jrayeske@strattec.com](mailto:jrayeske@strattec.com)

### REGISTRATION COORDINATOR

Jim Ryan  
Modine Manufacturing Company  
email: [J.W.Ryan@na.modine.com](mailto:J.W.Ryan@na.modine.com)

### CAREER DEVELOPMENT

Dale Wiza  
Professional Engineering Placements, Inc.  
email: [dale@engineeringplacements.com](mailto:dale@engineeringplacements.com)  
Work: 414-807-9663

### COLLEGIATE ADVISORS:

#### Glenn Bower, PhD.

UW-Madison  
email: [grbower@facstaff.wisc.edu](mailto:grbower@facstaff.wisc.edu)  
Work: (608) 263-7252

#### Chris Damm, PhD.

Milwaukee School of Engineering  
email: [damm@msoe.edu](mailto:damm@msoe.edu)  
Work: (414) 277-7543

#### Jim Rice, PhD.

Marquette University  
email: [james.rice@marquette.edu](mailto:james.rice@marquette.edu)  
work: (414) 288-5405

Dear Members and Section Friends,

Thanks to the Society of Women Engineers (SWE) for inviting us to participate in the John Gibbons Biofuels presentation and benefit for the Wisconsin School for the Deaf. We raised more than \$400 for the STAR program – encouraging deaf students to pursue careers in engineering and the sciences. A special thanks to Gina Janke and Barb Grlika from SWE. We look forward to planning another benefit event this coming year.

Please join us at the Clean Snowmobile Challenge. A technical program summary is attached for the event. The secret about this competition is its informality, opportunity to engage with the students and learn more about leading edge challenges related to E85, Biofuels and hybrid technologies. The event is more than a collegiate competition. It is a gathering of other technical and industry professionals here in our section. For more details regarding the Clean Snowmobile Challenge, you can contact Jay Meldrum at [jmeldrum@mtu.edu](mailto:jmeldrum@mtu.edu) or the Keweenaw Research Center website:

<http://www.mtukrc.org/snowmobile.htm>

More details regarding the Altair Engineering, Milwaukee Section program at CSC will be distributed shortly. Come and join us for the snow – we hear they have some up there too.

On behalf of the governing board, I would like to thank you for your continued support of the Milwaukee Section, attendance at monthly meetings and leadership you provide to our industries, schools, universities and communities.

You are welcome to bring your gifts and talents to our section by participating in many of the activities we have planned. We offer multiple opportunities for professional growth, networking and leadership in a non-traditional environment. Feel free to contact any of our board members to find out what you can do for the section, or how we can serve you and your company better. One of the best ways to influence your section is to engage with other board members – Make a Difference!

Regards,

Bernard Krauska  
Chairman – Milwaukee Section.  
[saemilwaukee@gmail.com](mailto:saemilwaukee@gmail.com)



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## Meeting Sponsorship



[www.eschevrolet.com](http://www.eschevrolet.com)



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For more information on becoming a sponsor, please contact any Section Board member.

Keep current with us on these SAE web sites:

[www.saemilwaukee.org](http://www.saemilwaukee.org) for the Milwaukee Section or

the national site at [www.sae.org](http://www.sae.org)

For more information on **A World In Motion** call: 724-772-8514, and ask for Darlene Geweth

email: [awim@sae.org](mailto:awim@sae.org) internet: [www.sae.org/foundation/awim](http://www.sae.org/foundation/awim)

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## Interns Needed –

**Super Steel Corporation is looking for engineering interns to support product development, manufacturing, testing and engineering changes. Contact Freddy Franklin at (414)-355-4800.**



*Contact Jay Meldrum for details on how you or your company can volunteer, participate in student career development sessions or participate in any technical programs. [jmeldrum@mtu.edu](mailto:jmeldrum@mtu.edu)*

<b>Date/Time</b>	<b>Schedule</b>	<b>Meeting Place</b>
<b>Monday, March 10</b>		
12:00 pm	Teams Arrive and Set Up	KRC/T3
12:00 pm to 5:00 pm	Registration of Teams & Volunteers	
12:00 pm to 5:00 pm	Turn in Snowmobile Description Form	
2:00 pm to 6:00 pm	Pre- Technical Inspection	
6:00 pm to 7:00 pm	Technical Demonstration	KRC/T3
	Fire Extinguisher Safety	
	Hawk Technologies, Jay Ruohonen	
	<i>Refreshments and food will be provided</i>	
<b>Tuesday, March 11</b>		
7:30 am	Judges Meeting	KRC/T3
8:00 am to 11:00 am	Final Technical Inspections and Fueling, ISR	KRC/T3
	Technical Demonstrations	KRC/T3
	Thermal Imaging	
	ThermoAnalytics, Inc.	
11:00	<b>*Grand Opening Event*</b>	<b>KRC/T3</b>
Noon	Electric Sled Range Test	KRC/T3
Noon	Endurance Run to Copper Harbor	KRC/T3
2:00 pm	<i>Late Lunch</i>	<i>Mariner North, Copper Harbor</i>
6:00 pm	Return to KRC	
7:00 pm	<i>Volunteer's Reception</i>	<i>Joey's Seafood, Houghton</i>
	<i>Refreshments and food will be served</i>	
<b>Wednesday, March 12</b>		
7:30 am	Judges Meeting	ATDC
8:00 am to 5:00 pm	Student Design Presentations	ATDC
10:00 am to 11:00am	Technical Presentation	
	Engine Tuning Procedure	KRC/T3
	Land & Sea Corporation, Dick Locke	
8:00 am to 5:00 pm	Teams fix sleds	KRC/T3
8:00 am to 5:00 pm	Make-Up Endurance Miles	KRC/T3
Noon	<i>Lunch on your own</i>	
2:00pm to 3:00pm	Technical Presentation	KRC/T3
	Catalyst Chemistry	
	Emitec, Inc., Marcus Downey	
4:00 pm to 6:00pm	Student Resume Exchange	Copper Country Mall
6:00 pm to 8pm	<b>*Snowmobile Public Display*</b>	Copper Country Mall
	<i>Light refreshments will be served</i>	



<b>Thursday, March 13</b>		
8:00 am	NGK/NTK Cold Start Event	Outside KRC/T3
9:00 am to Noon	Noise Event	KRC T3
9:30 am to 5:00 pm	Polaris Subjective Handling Event	KRC/T3
1:00 to 4:00pm	Technical Demonstration In Service Emissions Sensors, Inc., Dave Kalen	Outside KRC/T3
9:30 am to 5:00 pm	Emissions Event	KRC/T5
Noon	<i>Pasty Lunch</i>	KRC/T3
2:00 pm to 3:00 pm	Electric Sled Draw Bar Pull	KRC/T3
6:00 pm	<i>KRC Beef Bar-B-Que served</i>	KRC/T3
<b>Friday, March 14</b>		
7:30 am	Judges Meeting	KRC/T3
9:00 am to 5:00 pm	Continue Emissions Event	KRC/T5
10:00 am to 11:00am	Technical Presentation Sound Quality Head Acoustics, Inc., Mike Stephan	
Noon to 6:00 pm	Open time to enjoy the Keweenaw Keweenaw Sled Tours/Ski Hill at Discounted rates/ Everts, Dans Polaris, MTU Ski Hill	KRC/T3
6:00 pm to 7:00pm	SAE Milwaukee Section Meeting Invited Speaker Mike Kidder, VP Altair Engineering <i>Refreshments and food will be served</i>	<b>ME-EM 112</b>
7:00 pm to 9:00 pm	ME-EM lab tours	
<b>Saturday, March 15</b>		
8:00 am	Judges Meeting	KRC/T3
8:00 am to 10:00 am	Emission Testing (if necessary)	KRC/T5
10:00 am	*Polaris Acceleration event*	KRC Test Course
11:00 am	*Polaris Objective Handling event*	KRC Test Course
Noon	Judges Meeting to Review Scoring and Penalties	KRC T1
6:00 pm	<i>Awards Banquet</i>	<b>MUB Ballroom</b>

**\* Public Viewing Opportunities\***