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12-2010

## ME-EM eNewsBrief, December 2010

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

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## Department of Mechanical Engineering—Engineering Mechanics

Greetings from William (Bill) W. Predebon, Chair, Department of Mechanical Engineering-Engineering Mechanics. For the latest news and information about our faculty, students, and staff please visit our web site at <http://www.me.mtu.edu/>.

### Upcoming Events

The **11th Annual ME-EM Alumni Winter Carnival Hockey Social** will be held on Saturday, February 12, 2011 during the Michigan Tech versus Bemidji State (Winter Carnival) game in the MacInnes Presidential Skybox of the Student Development Complex (SDC). The game has a 5:07 PM start time. Join us in the newly renovated SDC suites. Admittance is free for ME alumni and their guest and food and drinks will be provided. Complimentary tickets are required so please RSVP to Kathy at [kagoulet@mtu.edu](mailto:kagoulet@mtu.edu) or call 906-487-2911 to reserve yours. Please RSVP early.



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The ME-EM Department, along with the Keeweenaw Research Center, will again host the **SAE Clean Snowmobile Challenge** on March 6-12, 2011. For more information on this event, please contact the department at 906-487-2551 or email me at [wwpredeb@mtu.edu](mailto:wwpredeb@mtu.edu). Sponsorship is always welcome.

### Department Chair Travel

When on travel for the Department, Dr. Predebon visits with alumni to get their feedback on our programs and their career and to give an update on the Department and University. Please let the Department know if you would be available for a visit when he is in your area. (906) 487-2911.

Dr. Predebon will be traveling to the following cities this coming spring:

- Clearwater Beach, FL, March 23-29th for the ASME International Education Conference
- Detroit, MI, April 12-18th for the SAE World Congress



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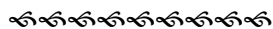
**Alumni and Friends News, Accomplishments, & Awards**

It is my intent to highlight alumni accomplishments on a regular basis. I would like to hear from you about your accomplishments and those of other Michigan Tech ME-EM alumni who have achieved recognition. Please email me this information at [wwpredeb@mtu.edu](mailto:wwpredeb@mtu.edu) or Kathy at [kagoulet@mtu.edu](mailto:kagoulet@mtu.edu).

**John (BSME '67) and Joan Calder** are funding the John F. and Joan M. Calder Endowed Associate Professor in Mechanical Engineering.



**Mark Griep** (PhD, 2008), **Shashi Karna** (MEEM External Advisory Board member), and **Dr. Craig Friedrich** (professor and Associate Chair and Director of Graduate Studies, ME-EM) have been recognized with the prestigious Paul A. Siple Award for the best paper presented at the biennial Army Science Conference. The Siple Award is the highest honor the Army can bestow for research. It is given to recognize the accomplishments of Army scientists and engineers. The Army Science Conference is a world-class science and engineering competition involving researchers from 25 countries. The award is given for the overall outstanding technical paper presented at the conference and described as the Super Bowl of awards.



**Tory Jaloszynski** (BSME '94, MSME '96), of Cummins Emissions Solutions, gave a presentation "Introduction to Cummins Inc. Catalyst Technologies" in ME-EM on October 7, 2010. The presentation centered on Cummins' catalyst technology from the stand point of basic performance, testing and optimization--as well as challenges in bringing SCR catalyst technology and urea injection to the marketplace.



**Christopher Sibilia** (BSME '88), with his wife, Dawn, walked 2,663 miles from Mexico to Canada on the Pacific Crest Trail to raise money for a scholarship fund for a former teacher and coach at Carsonville-Port Sanilac Schools (MI). They began their trek on May 7, 2010 and ended on Sept. 25, 2010.



**Ronald (BSME '67) and Elaine Starr** are funding 2 professorships in the Department of Mechanical Engineering - Engineering Mechanics, the Ronald E and Elaine Starr Endowed Associate Professor in

Energy Systems and the Ronald E and Elaine Starr Endowed Associate Professor in Space Systems.



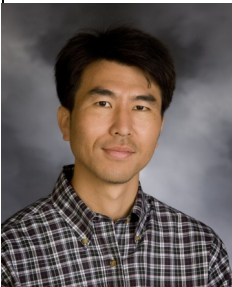
**Timothy Thomas** (BSME '81), CEO of PartSolution, was quoted in David Mantey's (Editor, Product Design & Development) column. Tim coined the word "purchaneering, in which purchasing and engineering work harmoniously try to and figure out which suppliers the company has traditionally used; how the company can mitigate or reduce its current number of suppliers; and which suppliers have negotiated purchasing agreements with the company. Read the article at: <http://www.mbtmag.com/Content.aspx?id=1731>.



**Terry Woychowski** (BSME '78), Vice President, Global Vehicle Program Management, General Motors, represented the General Motors Foundation and presented Dr. Glenn Mroz, president of Michigan Tech, with a \$160,000 donation. Read the whole story at <http://www.mtu.edu/news/stories/2010/september/story31735.html>.

**New Faculty**

**Dr. Seung Hyun Kim** joined the Department as an assistant professor in the fall of 2010. He earned his PhD in Mechanical Engineering from Pohang University of Science and Technology. After completing his PhD, he held a post-doctoral appointment at Stanford University. His research is in combustion modeling, electrochemical energy conversion, multiphase fluid transport in porous media, and nanoscale transport phenomena in energy applications.



**Dr. Kazuya Tajiri** joined the Department as an assistant professor in the fall of 2010. He earned his PhD in Mechanical Engineering from Pennsylvania State University. After completing his PhD, he held a post-doctoral appointment at the Argonne National Laboratory's Nuclear Engineering Division. His research is in system-level modeling and experiments of fuel cell stacks, thermo-fluid system diagnostics, modeling, and experiments of fuel cell stacks, thermo-fluid system diagnostics, modeling, and optimization.



## Department News—Endowed Associate Professorships



**Dr. Jeffrey S. Allen**



**Dr. L Brad King**



**Dr. Jeffrey D. Naber**

Drs. **Jeffrey Allen**, **L. Brad King**, and **Jeffrey Naber** were recipients of three new endowed associate professorships in the Department of Mechanical Engineering—Engineering Mechanics at Michigan Tech. Dr. Allen received the John F. and Joan M. Calder Endowed Associate Professor in Mechanical Engineering made possible through the generosity of John and Joan Calder. Dr. King received the Ronald E. and Elaine Starr Endowed Associate Professor in Space Systems and Dr. Naber received the Ronald E. and Elaine Starr Endowed Associate Professor in Energy Systems both were made possible through the generosity of Ronald and Elaine Starr. Read the whole article at <http://www.mtu.edu/news/stories/2010/september/story31743.html>.

## Current Contracts and Grants

**John D. Hill** (PI, ME-EM); "Optimized Placement of Mounted Equipment within Patrol Vehicles during Side Impact Crashes"; sponsor: US Department of Justice - National Institute of Justice; total award amount: \$207,396.

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**Scott A. Miers** (PI, ME-EM); "Performance and Emissions Testing of a Yamaha Nytro MTX with Turbocharger and Supercharger Kits"; sponsor: Yamaha Motor Corp.; total award amount: \$12,500.

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**Michele M. Miller** (PI, ME-EM), **James DeClerck** (Co-PI, ME-EM), **William J. Endres** (Co-PI, ME-EM) and **Sheryl A. Sorby** (Co-PI, ME-EM); "Meeting the NAE Grand Challenge: Personalized Learning for Engineering Students Through Instruction on Metacognition and Motivation Strategies"; sponsor: National Science Foundation; total award amount: \$390,050.



[Click here for the 2011 Michigan Tech Winter Carnival schedule](#)

**YOU ARE INVITED**  
**11th Annual ME-EM Alumni**  
**Winter Carnival Hockey Social**  
**5:07 PM—Saturday, February 12, 2011**  
**Michigan Tech versus Bemidji State**  
**MacInnes Presidential Skybox**  
**Student Development Complex (SDC).**  
**Food drinks will be provided.**  
**RSVP Required**  
**to RSVP contact**  
**Kathy at [kagoulet@mtu.edu](mailto:kagoulet@mtu.edu)**  
**Call 906-487-2911**

# CAPSTONE

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Eighteen Capstone projects continue into their final semester this spring, and another nine are just beginning their work. As always, the energy emitted by these teams is incredible!

Ten Capstone teams presented their final work last month. We had an incredible group of projects (thanks to you sponsors!) and a fantastic group of teams. A couple of those presentations truly pushed the envelope as far as quality and dynamic range!

Check out the maiden voyage of what three Capstone teams worked on this past year:

<http://www.youtube.com/watch?v=iT8nL0o67ek>

<http://www.youtube.com/watch?v=HoxFbYyxjHw>

Another team was the recipient of some invaluable wind tunnel time to validate their air dam design (thanks *Brian Johnson* and *Chrysler!*)

Michigan Tech's Capstone Design Program will be *looking for more industry sponsored projects* for the Fall 2011 semester. If you can support this world-class engineering design program, and would like TO BE a part of this Capstone Experience, please contact us at (906) 487-2142 or email [rdejonge@mtu.edu](mailto:rdejonge@mtu.edu)

**CAPSTONE**  
DESIGN PROGRAM



Eddie Westrick from the Chrysler-sponsored team observing airflow.

## Student Accomplishments and Awards

The **Capstone Design team** project that was sponsored by Whirlpool was highlighted in an article on Siemens' NX, website. Read the article at:

[http://www.plm.automation.siemens.com/en\\_us/about\\_us/success/case\\_study.cfm?ComponentTemplate=1481&Component=119969](http://www.plm.automation.siemens.com/en_us/about_us/success/case_study.cfm?ComponentTemplate=1481&Component=119969)

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On December 7, 2010 the following seniors received an **Outstanding Student Award** from the ME-EM Department in recognition to their outstanding contributions to either their Capstone Design team or their Enterprise team:

- Seth Taylor, Enterprise, ME-EM
- Bradley Ramsden, Capstone Design, ME-EM
- Stephen Kulju, Enterprise, Bio-Medical
- Colleen Sharpe, Capstone Design, ME-EM
- Holly Goodhal, Capstone Design, ME-EM

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**Andrew Willemssen** (graduate student, ME-EM) has been chosen to represent Michigan Tech for the 2011 Midwestern Association of Graduate Schools Distinguished Thesis Award. His thesis, "Objective Metric for Assessing the Perceived Annoyance of Impulsive Sounds" developed a new method to objectively quantify the overall sound quality of electro-mechanical devices. He is continuing his education as a doctoral student at Michigan Tech and is funded by a NASA Graduate Student Research Program fellowship. His advisor is Dr. Mohan Rao (professor, MEEM).

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**Seyyed Hessam Mir Shah Ghassemi** (ME-EM) received \$500 Biotechnology Research Center 2010 Fall Travel Grant toward a podium presentation at the Materials Research Society Fall Meeting held in Boston, MA., Nov 29 - Dec, 3, 2010. His advisor is Dr. Ossama Abdelkhalik (assistant professor, ME-EM).

## Student Accomplishments and Awards continued

**Michael Rittenour** (sr., ME-EM) was named All-GLIAC First Team in football for 2010.

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**Komal Tayal** (master's student, ME-EM) placed second overall in the cookbook competition sponsored by the Daily Mining Gazette for her tandoori chicken recipe.

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**Jesse Vandenberg** (jr., ME-EM), was named the Defensive Back of the Year on the 2010 Husky football team. He was also named All-GLIAC Second Team with 83 tackles.

## Faculty and Student Invention Disclosures

**Nicole Barna, Quincy Schultz, David Thomasini, and Matthew Zblewski**, members of the 2009 Capstone Design Team, MQuIC Inserted End Mill, along with **William J. Endres**, associate professor, ME-EM and team sponsor), **Doug Woodruff** (BSME '07), and Gary Pennala (BS Civil Eng. '05) have filed an invention disclosure, "Micro-jet cooling of cutting tools".

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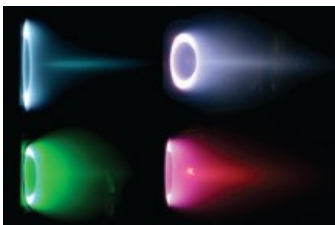
**Dr. Gopal Jayaraman** (professor, ME-EM) has filed an invention disclosure "Kinispar".

## Faculty/Staff News, Awards and Accomplishments

**Dr. Craig Friedrich** (professor, associate chair and director of graduate studies, and Robbins Chair in Sustainable Design and Manufacturing ME-EM) received the US Army's highest award for research at the Army Science Conference in Orlando, FL in December. Dr. Friedrich's co-authored the paper, "Nanoscale Bioelectronics for Real-Time Target Sensing", which was selected as best paper in the nanotechnology division and received the prestigious Paul A. Siple Award for the overall outstanding technical paper presented at the conference. Dr. Mark Griep (PhD, ME-EM) who now works at the US Army Research Laboratory at the Aberdeen Proving Grounds in Maryland, was the lead author of the paper. Dr. Shashi Karna (ME-EM External Advisory Board member) was also a co-author as was Dr. Eric Winder (PhD, biological Sciences). Dr. Friedrich was the advisor for Dr. Griep and a co-advisor for Dr. Winder during their PhD studies.

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**Dr. L. Brad King** (associate professor, ME-EM) had his research mentioned in an article in the December 2010 issue of the AIAA publication Aerospace America. The article, Electric Propulsion, highlighted use of the Hall thruster system in space missions. While Dr. King was not



mentioned by name this picture from his Hall thruster research was included in the article and the article indicated that the research (Dr. King's) on the testing of advanced metal propellants for electric propulsion took place at Michigan Technological University.

**Dr. Jeffrey Naber** (associate professor ME-EM) has been named a fellow by the Society of Automotive Engineers (SAE). Fellow is the SAE's highest grade of membership and recognizes important engineering, scientific and leadership achievements. Members must be nominated by another SAE member to be considered for the honor

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**Dr. John W. Sutherland** (adjunct professor - ME-EM) has been selected to receive the 2010 SAE John Conner Environmental Award in recognition of his outstanding contributions in the area of environmentally responsible manufacturing.

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**Dr. Klaus Weinmann** passed away on November 3, 2010 while on a vacation cruise with his wife in the Galapagos Islands. Dr. Wienmann came to Michigan Tech in 1970 and was Chair of the Department of Mechanical Engineering - Engineering Mechanics from 1993-1997. His family has established a scholarship fund in Dr. Weinmann's name for students studying Mechanical Engineering at Michigan Tech. At their request the funds can



be used for graduate students and undergraduate students. Please contact either Kathy in the Department (906-487-2911) or the Michigan Tech Fund (906-487-3626) for information about the scholarship fund.

**University News/ Awards**

**Michigan Tech** was represented at the first annual USA Science and Engineering Festival held Oct. 23-24 on the National Mall in Washington, DC. The Science and Engineering Expo is the grand finale of a two-week event promoting public interest in science, technology, engineering and mathematics. More than 1,500 interactive activities for all ages, hosted by more than 350 of the nation's leading science and engineering organizations, will expose attendees to a broad spectrum of science.



**Michigan Tech's Army ROTC** was singled out for excellence at a recent army national leadership conference, where it ranked first among ten small programs and third among all forty programs in the UP and nine other states of the Midwest.



Representatives from 185 companies participated in the **Michigan Tech Fall Career Fair** held Wednesday, October 6, 2010 in the multipurpose gym in the Student Development Center.



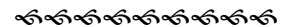
President Glenn Mroz announced the official start of the public phase of Michigan Technical University's \$200 million multi-year fund-raising campaign **"Generations of Discovery: the Campaign for Michigan Tech."** President Mroz announced that appropriately \$125 million has been raised on Michigan Tech's 125th anniversary.



**Michigan Tech Football Team** earned a national ranking of 22 this year, according to the American Football Coaches Association Division II. The ranking is the first for the Huskies since 2008 and the highest for Tech since Oct. 11, 2005.



**The University's Michigan College/University Partnership (MICUP)** program has received Accreditation Board for Engineering's (ABET) Claire L. Felbinger Award for Diversity, one of only two awards for facilitating diversity, given nationally to universities by ABET.



**Dr. Glenn Mroz** (President, Michigan Tech) was awarded the NASPA, a professional organization of student affairs administrators in higher education, with its 2010 NASPA Region IV-East President's Award. The award was presented at a reception and gala at the NASPA Region IV-East annual meeting in Minneapolis on Sunday, Nov. 7. Dr. Mroz was recognized for his "demonstrated leadership in higher education and valuable contributions to Michigan Tech."



**Michigan Governor Rick Snyder** in his inaugural address on January 1, 2011 said "Michigan Tech's Institute for Leadership and Innovation s one of the great successes in the state." Read the whole quote at: [www.doe.mtu.edu/news/2011/governor.html](http://www.doe.mtu.edu/news/2011/governor.html)



**The University Marketing and Communications'** web team received a silver design award for navigation and structure by W3, a web design, video and marketing competition open to all agencies, companies and organizations, regardless of their size for the design of Michigan Tech's 125th anniversary site.



**COME JOIN THE FUN—FEBRUARY 9—12, 2011**