Greetings from William (Bill) Predebon, Chair, Department of Mechanical Engineering-Engineering Mechanics at Michigan Tech. For the latest news and info about our faculty, students and staff, please visit our website at www.mtu.edu/mechanical. Visit us on Facebook, MEEM.

**Upcoming Events**

**Michigan Tech/ME-EM SAE Reception**

The ME-EM Department and Michigan Tech's Corporate Development will co-host the annual Michigan Tech Alumni Reception at the SAE International Conference in Detroit, MI on Wednesday, April 22, 2015 in room 430A at Cobo Hall. A Department and University update will be given by Dr. William Predebon. Food and drinks will be served. Students will be there with their vehicles. Please stop by to network with other alumni and students.

**Early Bird Notification - ME-EM Reunion Scholarship Cruise.**

Come join us for an afternoon cruise down the Portage Canal on the Ranger III on Thursday, August 6, 2015. We depart at 1:00 p.m. and will return at 3:30 p.m. (plenty of time to attend the Pasty Picnic). Cost of the cruise is $35 per person which covers the ticket for the Ranger and a $15 donation to a department scholarship. Food (by the Library Bar) and beer, wine, water and soda are compliments of the ME-EM Department. If you think you may be interested, please contact Alumni Relations at 906-487-2400 to put your name on the early bird list. Alumni Relations will then contact you when registration is open to confirm your interest and arrange payment.

**ME-EM 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 the University. Please let the Department know if you would be available for a visit when he is in your area. (906) 487-2551.

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

- April 15—19, Phoenix AZ to attend a workshop
- April 19—23, Detroit MI to host reception at the SAE World Congress and to meet with alumni
## Current Contracts and Grants

**Ossama Abdelkhalik (PI, ME-EM); “Advanced Control of Wave Energy Converters”; sponsor: Sandia National Laboratories; Total award amount: $50,000.**

**Ossama Abdelkhalik (PI, ME-EM); “CPS: Breakthrough: Toward Revolutionary Algorithms for Cyber-Physical Systems Architecture Optimization”; sponsor: National Science Foundation; Total award amount: $261,135.**

**Chang Kyoung Choi (PI, ME-EM) and Jeffrey Allen (Co-PI, ME-EM); “Technical Survey on High Efficient Intensive Cooling Control Technology”; sponsor: Chung-Ang University; Total award amount: $176,724.**

**William Endres (PI, ME-EM) and Kazuya Tajiri (Co-PI, ME-EM); “Technology Review and Design Concept for an Oil Sampling System for Application”; sponsor: Cummins Inc; Total award amount: $12,250.**

**Scott Miers (PI, ME-EM); “Emissions Evaluation of a Yamaha Viper with a MPI Turbocharger”; sponsor: Mountain Performance Inc; Total award amount: $9,576.**

**Jeffrey Naber (PI, ME-EM), Seong-Young Lee and Mahdi Shahbakhti (Co-PIs, ME-EM); “Continuation of Ignition Studies Ford Motor Co”; sponsor: Ford Motor Company; Total award amount: $115,000.**

**Jeffrey Naber (PI, ME-EM), Seong-Young Lee and Jaclyn Johnson (Co-PIs, ME-EM); “Chrysler Spray Test”; sponsor: Chrysler Group LLC; Total award amount: $176,046.**

**Jeffrey Naber (PI, ME-EM) and Bo Chen (Co-PI, ME-EM); “Closed Loop Combustion Control (CLCC) for SI Engines”; sponsor: Ford Motor Company; Total award amount: $89,861.**

**Jeffrey Naber (PI, ME-EM) and Jeffrey Naber (PI, ME-EM) and Paul Dice (Co-PI, ME-EM); “Nostrum Injector Evaluation and Validation of a Single Cylinder DI SI Engine with Exhaust Emissions”; sponsor: Nostrum Energy, LLC; Total award amount: $59,089.**

**Jeffrey Naber (PI, ME-EM), Jeremy Worm and Paul Dice (Co-PIs, ME-EM); “Hitachi NG Gasoline Engine Studies”; sponsor: Hitachi America, Ltd; Total award amount: $109,825.**

**Gregory Odegard (PI, ME-EM); “Center for Novel High Voltage/Temperature Materials and Structures”; sponsor: University of Illinois at Urbana-Champaign; Total award amount: $14,091.**

**William Predebon (PI, ME-EM); “Torrefied Wood Biofuel”; sponsor: Michigan State University; Total award amount: $2,435.**

**Kazuya Tajiri (PI, ME-EM); “Proton Exchange Membrane Characterization at Subzero Temperature”; sponsor: Toyota Motor Corporation; Total award amount: $40,000.**

**Kazuya Tajiri (PI, ME-EM); “Study of Two-Phase Flow Behavior in PEMFC Flow Channels”; sponsor: Toyota Motor Corporation; Total award amount: $26,000.**

## Promotion

**Dr. Paul van Susante’s recommendation for promotion from lecturer to senior lecturer has been approved and is effective in August 2015. He received a Master of Science from Delft University of Technology in 2001 in Civil Engineering with an emphasis on Building Engineering. He then went to the Colorado School of Mines (CSM) to participate in NASA research and received a Master of Science in Engineering Systems from CSM in 2004 followed by a Ph.D in Engineering Systems from CSM in 2011. He joined the ME-EM Department in 2012 as a lecturer. Visit his web page at Paul.**

## Michigan Tech Alumni Reception

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Please contact Alumni Relations at 906-487-2400 to put your name on the early bird list. See page 1.
Alumni and Friends News,  
Accomplishments & Awards

Cynthia Hodges (BSME ’87 and MSME ’90), representing Ford Motor Company, returned to campus February 16th to award $10,000 to the Women in Engineering Program. About 150 pre-college women come to Michigan Tech to experience the Women in Engineering (WIE) scholarship program—a fun and intensive weekend look into engineering careers.

Margot J. Hutchins (BSME ’02, MSME ’07, PhD ’10) is the recipient of a 2015 SME Outstanding Young Manufacturing Engineer Award. The award recognizes exceptional contributions and accomplishments in the manufacturing industry. She is a senior member of the technical staff at Sandia National Laboratories. She currently conducts systems analysis in support of U.S. national security objectives, including cyber resilience of critical infrastructure and international engagement on the implementation of nuclear detection architectures.

Britta Jost (MSME ’04) has been selected to receive the 2015 Michigan Tech Outstanding Young Alumni Award. The award will be presented at the Alumni Reunion Dinner on August 7, 2015. The award is presented to alumni under the age of 35 who have distinguished themselves in their careers. It recognizes the achievement of a position or some distinction noteworthy for one so recently graduated. Her MS faculty advisor was Gordon Parker (professor, ME-EM).

Greg Ives (BSME ’03) was highlighted in the USA Today article “For Dale Earnhardt Jr., Greg Ives, devil in the details”. Read it at details.

Robert Loukus' (BSME '71) company REL Machine was mentioned on Natural Gas Index.com, a website for news about the natural gas industry. Michigan Tech and Calumet-based REL Inc. received a $2.1 million grant from Southwestern Energy to develop a natural gas fuel tank for light pick-up trucks. The Daily Mining Gazette also published a front-page story about the grant. Read about the grant at grant and natural gas. PI on the project is Dr. Gregory Odegard (professor, ME-EM).

University News/Awards

The Upper Peninsula Education Partnership, of which Michigan Tech is a member, received the 2015 Collaborate Award at the Michigan Governor’s Economic and Education Summit in Detroit in March. The partnership was recognized for uniting a network of community colleges, intermediate school districts and business leaders to meet the unique talent needs of the region. Read the story at Award.

The College of Engineering's distance learning graduate engineering programs have been ranked 40th in the nation in online graduate engineering program rankings announced in January by U.S. News and World Report. The rankings are based on five categories: student engagement, faculty credentials and training, student services and technology, peer reputation and admissions selectivity. This year, 79 online graduate engineering programs were ranked.

Dr. Les Cook (vice president, student affairs and advancement) has been appointed to a three-year term on the Board of Directors of the NASPA Foundation. He began his appointment at NASPA’s annual conference in New Orleans in March.

The Detroit News quoted Dr. Glenn Mroz (president, Michigan Tech) on February 25th regarding tuition cap and on the retirement of Mike Boulus, CEO of the Presidents Council, State Universities of Michigan. See retirement.

According to PayScale.com, a Michigan Tech graduate earns an average of $661,700 more over 20 years than a person with a high school diploma does after 24 years of work. That places Michigan Tech among the top 30 colleges and universities in the nation with the best return on investment (ROI). See the report at Payscale.

College of Engineering Dean Dr. Wayne Pennington joined representatives of more than 120 other engineering schools and colleges at the White House on March 24th to celebrate a commitment to educate a new generation of engineers expressly equipped to tackle some of the most pressing issues facing society in the 21st century.

Michigan Tech's Mel Pearson has been named the 2014-15 College Hockey News Coach of the Year.

Michigan Technological University has earned high marks from the Business Insider financial news website for the salaries its graduates earn at mid-career. In its latest list of “most underrated colleges in America,” Business Insider ranked Michigan Tech 15th in the nation for mid-career salaries and 10th in starting salaries among public universities. To determine the most underrated colleges, the website compared US News’ rankings of the best universities and national liberal arts colleges with PayScale's 2013-2014 College Salary Report, which ranks colleges and universities based on their graduates' mid-career salaries. See the rankings at Business Insider.
Faculty/Staff Awards/ Accomplishments

Dr. Andrew Barnard (assistant professor, ME-EM) has been named to the board of directors for the Institute for Noise Control Engineering (INCE-USA) for a 1 year term beginning on April 1 2015.

Dr. James De Clerck (professor of practice, ME-EM) has been selected as a 2014 SAE Outstanding Faculty Advisors Program for Student Branch and Collegiate Design Series Team Advisors. "This award recognizes your dedication and contributions to SAE and your Collegiate Chapter." He is the faculty advisor for the SAE Formula Car Enterprise Team. He will receive the award on Tuesday, April 21st at the SAE 2015 World Congress & Exhibition in Detroit, MI.

Dr. Gregory Odegard (professor, ME-EM) received the Merit Award for Exceptional Graduate Student Mentor. The award recognizes advocacy for graduate students, being available and encouraging to students, and creativity/interdisciplinary collaboration in new opportunities for graduate students.

Dr. Gordon Parker (the John and Cathi Drake Professor in the Mechanical Engineering-Engineering Mechanics Department) was the January 23rd Dean’s Teacher, have received excellent evaluations from students, as well as gaining the respect of faculty in their departments.

Student Accomplishments/ Awards

The following ME-EM students have received the Michigan Tech Graduate Student Government Outstanding Scholarship Award in February:

- Ranjeeth Naik (PhD student)
- Gaurav Pandit (MS student)
- Anqi Zhang (PhD student)
- Mehran Bidarvatan (PhD student)
- Jordan Klinger (PhD student)
- Udit Shrivastava (PhD student).

The award recognizes academic performance in areas such as excellent GPA, originality in research, leadership and teamwork.

The following ME-EM students received the Michigan Tech Graduate Student Government Outstanding Teaching Award in February:

- Mehran Bidarvatan (PhD student)
- Troy Bouman (MS student)
- Madhu Kolati (PhD student)
- Luting Wang (PhD student).

The award recognizes graduate students who have exhibited exceptional ability as a teacher, have received excellent evaluations from students, as well as gaining the respect of faculty in their departments.

Muraleekrishnan Menon Menon Muraldeharan Nair (PhD student, ME-EM) received the Michigan Tech Graduate Student Government Outstanding Service Award in February. The award recognizes excellent service to Graduate Student Government and the University community.
Student Competitions and Team Awards

Michigan Tech’s Clean Snowmobile Challenge (CSC) Team

in the Internal Combustion Class placed 6th overall. The CSC faculty advisor is Dr. Jason Blough (associate professor, ME-EM) with advising assistance for the engine by Dr. Scott Miers (associate professor, ME-EM). A record-setting 11 of the 19 teams entered completed the 95.5 mile endurance run to Copper Harbor, Michigan including Michigan Tech. The event has historically winnowed out half the competition’s sleds. One of the highlights of this year’s competition was entrance of the Lapland University of Applied Sciences team from Finland. They not only won for distance traveled, but for their electric snowmobile in the zero emissions category. Read more about the challenge. Visit the CSC webpage.

Mind Trekkers were in Green Bay on January 10th to participate in the Einstein Project Science Expo. With more than 5,200 STEM enthusiasts in attendance, the Science Expo is the biggest annual STEM event in Green Bay. Providing a full day of hands-on science fun for the local community, it promotes innovation and creative thinking for young, inquiring minds. See pictures at Einstein. On February 12th they presented to middle schoolers at the Northeast Wisconsin Technical College. See pictures at roadshow. They then took their hands-on science and engineering demos to Houston on March 12 and 13, where 7,000 children and adults attended the Dow Chemical’s Adventures in STEM, a science and engineering festival held at the San Jacinto College central campus in Pasadena, Texas. Read the article in Deer Park Broadcaster. Visit their webpage at Mind Trekkers.

CAPSTONE CORNER

Fall project planning is underway! These projects will start 1 September, and we should be starting 18-20 projects. Anyone interested in getting involved is encouraged to contact us as soon as possible.

We are also coming up on our ‘Senior Design Day’ on 21 April, where 19 project teams that began their work last fall will be presenting their final work and go-forward development recommendations. Please consider taking in these presentations if you are curious as to just how much a team of 5-6 Tech students can accomplish in 28 weeks!

If you are interested in getting involved in a fall-2015 project and engage our nationally recognized program, please contact us today!

Bob De Jonge
rdejonge@mtu.edu
906-487-2142