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

**13th Annual ME-EM Alumni Winter Carnival**

**Hockey Social** will be held on Saturday, February 9, 2013 during the Michigan Tech versus Alaska Anchorage (Winter Carnival) game in the Husky Suite South Skybox of the Student Development Complex (SDC). The game has a 5:07 PM start time. Join us for this fun filled event. Admittance is free for ME alumni and their guest and refreshments will be provided. Admission is limited so please RSVP to Kathy at kagoulet@mtu.edu or 906-487-2911 to reserve your space. There will be a check-in list at the table at the top of the stairs across from the ticket window. Please note the earlier start time.

For the 11th straight year, the ME-EM Department, along with the Keweenaw Research Center, will again be hosting the **SAE Clean Snowmobile Challenge** on March 4-9, 2013. For more information on this event, please contact the department at 906-487-2551 or email me at wwpredeb@mtu.edu. Sponsorship is always welcomed, contact Jay Meldrum at (906) 487-3178 or jmeldrum@mtu.edu.

The ME-EM Department will again co-host a reception along with Michigan Tech's Corporate Development at the **SAE International Conference** in Detroit, MI the week of April 15th. Information on the reception will be in the next eNewsBrief. Refreshments will be served. Students from the SAE Student Chapter at Michigan Tech will be there with competition vehicles. Door prizes will be given out. Plan to come spend an evening with our students, hear about their competitions, see their vehicles, and hear what is happening on campus.
ME-EM eNewsBrief

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 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 winter and spring:
- San Diego, CA the week of March 10th for the ASME International ME Education Leadership Summit
- Detroit, MI the week of April 15th for the SAE World Congress

Current Contracts and Grants


Michele Miller (coPI, ME-EM) and Brennan Tymrak (PI, ME-EM), Joshua Pearce (PI, Materials Sci & Engr), “NSF Graduate Research Fellowship - Technologies for Developing Countries”, sponsor: National Science Foundation, total project amount: $126,000.


Charles Van Karsen (PI, ME-EM), Gregory Odegard, and James DeClerck (coPIs, ME-EM), “Acoustic Boom Modeling”. sponsor: General Motors, total project amount: $184,481.


The Department of Mechanical Engineering - Engineering Mechanics invites you to join in the celebration of its 85th year of delivering a world class mechanical engineering education to its students. Go to 85th anniversary to see how you can participate.
Alumni and Friends
News, Accomplishments & Awards

Steven Bethel's (BSME '83 & MSME '85) company, Leadfoot Engineering, has received a grant of $10,000 by the Michigan Corporate Relations Network. The company has received one of four Small Company Innovation Program (SCIP) grants to support research partnerships between small businesses and state universities. SCIP enables small businesses to work with universities to commercialize research. The grant will help support research at Michigan Tech to develop new piston materials with improved mechanical properties at elevated temperatures. Leadfoot, based in Chassell, Bethel serves on the School of Technology's Mechanical Engineering Technology Industrial Advisory Board.

Greg Ives (BSME '03) has been named Crew Chief for JR Motorsports and driver, Regan Smith for next year's NASCAR Nationwide Series season. Articles can be found at NASCAR or Crew Chief.

Long-time Michigan Tech equipment supervisor and coach Sheldon Moose Larson passed away on December 7, 2012. He was 88 years old. Read the obituary at Larson.

Susan Mentink (BSME '86) was highlighted in a Nov 19, 2012 article in the Marietta Times. Sue is an instructor in Washington State Community College's engineering department and is coordinator of their Engineering Technology program. Read the article at Mentink.

Greg Ives (BSME '03) has been named Crew Chief for JR Motorsports and driver, Regan Smith for next year's NASCAR Nationwide Series season. Articles can be found at NASCAR or Crew Chief.

Dr. Paul Rogers (right) (BSME '88 & PhD MEEM '04) was named director of the U.S. Army Tank Automotive, Research Development and Engineering Center on August 13, 2012. Paul is also a member of the ME-EM External Advisory Board. Read the article at TARDEC.

Department Accomplishments
US News ranks Mechanical Engineering #6 among best technology jobs and #17 in the ranking of top 100 jobs. Mechanical Engineering (#6) and Civil Engineering (#9) and are the only jobs in the top 9 that are not computer services jobs (which are highly outsourced and less so for ME). Also Mechanical Engineering (#17) is the only engineering profession in the top 17 plus best jobs. See the article at Mechanical.
Capstone Receives National Coverage...

Four Capstone teams were recognized for their work this past fall, as the fruit of their labor was rolled out for a national audience. Check this out:

http://tinyurl.com/TechAchilles

At the time of this update being released, eleven new projects are getting underway. As always, our students had a nice range of both product and process development projects to become a part of. We appreciate all of you who are involved with this program and are happy you are deriving value from the experience.

April is always a great time to visit Tech. On Tuesday, 23 April, sixteen Capstone teams will be presenting their final designs and prototypes. These projects began last September, and represent a great body of engineering work. We would suggest coming to see first-hand just what can be accomplished through Capstone!

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

Student Accomplishments and Awards

Michael Kivisalu (PhD candidate, ME-EM) was awarded the Michigan Tech Finishing Fellowship. Competition for these fellowships is strong. The selection panel was impressed with Michael's research, publication record, and contribution to the mission of Michigan Tech. Michael's advisor is Dr. Ami tabh Narain (professor, ME-EM).

Erik Wachlin (jr., ME-EM) is part of a team of Michigan Tech students working to create a mobile medical clinic for the rural poor of Ghana. The students are converting a van that was donated by Husky Motors in order to build the clinic. Read the article at Ghana.

Nathan Koetsier (sr., ME-EM) is the recipient of a $5,000 scholarship from ASCO Numatics, the world's leading manufacturer of comprehensive fluid automation, flow control, and pneumatics solutions. ASCO Numatics stated that this year they had "the largest and most qualified field of applicants in our scholarship program's history". Michigan Tech will also receive a $1,000 grant. Read the article at ASCO.

Ryan Leisenring (fr., ME-EM) named to manage the CONTROLTEC office in the Lakeshore Building in Houghton, MI. Read the article at CONTROLTEC.
Alicia Walby (sr., ME-EM) was elected as a regional collegiate representative (RCRs) for Region H, which encompasses Illinois, Indiana, Iowa, Michigan, Minnesota, North Dakota, South Dakota and Wisconsin. Read the article at Walby.

Andrea Walvatne (sr. ME-EM) was the national grand prize winner in the annual Stilettos to Steel Toes essay contest, sponsored by Schlumberger and endorsed by the Society of Women Engineers (SWE). Schlumberger is a leading international oilfield services provider. The contest invites women engineering students to write short essays examining "Where will your shoes take you?" explaining why a non-traditional job is the way to go. The grand prize was a $2,000 scholarship and an expense-paid trip to the SWE 2012 national conference in Houston in November, 2012, where she read her essay. Read her essay at Essay.

A team of 20 Michigan Tech engineering students were in Detroit the weekend of October 20th helping the Achilles Freedom Team of wounded veterans who participated in the Detroit Free Press/Talmer Bank marathon on Sunday, Oct. 21, 2012. The Tech students are a Mechanical Engineering Senior Design team that is working on a capstone project sponsored by General Motors to create a better hand-cranked racing cycle. The cycle was unveiled on national television during half time at the Army-Navy game on December 8, 2012. The team received national attention, having been featured in the Daily Mining Gazette, Michigan Tech News, a Chevy commercial, The Detroit News, Autoweek, and the Detroit Free Press. Read the articles at Gazette, Tech Today, News, You Tube, Detroit News, Autoweek, and Detroit Free Press.

In addition the following two of our alumni were featured:
- **Doug Parks** (BSME '84), page 25
- **Dr. Paul Rogers**, PhD 2004, page 24
Read the articles at Engineering.

Dr. Ezra Bar-Ziv was featured in the article "Michigan Tech professor at forefront of emerging 'biocoal' industry" in the September 26, 2012 edition of Upper Peninsula's Second Wave. Read the article at Wave.

Nancy Barr (Communications and Senior Capstone Design Programs Advisor, ME-EM) has joined the Conference on College Composition and Communication (CCCC) of the National Council of Teachers of English (NCTE).

The Mechanical Engineering - Engineering Mechanics Department was recognized by the Michigan Tech Youth Programs on October 17, 2012. The Department received the following awards:
Faculty/ Staff Awards/ Accomplishments Cont.

- Mind Trekkers Champion - **William Endres** (associate professor, ME-EM) for Senior Design
- Mind Trekkers Champion - **Jeremy Worm** (research engineer/instructor, ME-EM) for HEV
- Innovation Award (Women in Engineering (WE) and Engineering Scholars Program (ESP) - Mechanical Engineering Department - Department Tours
- Innovation Award (WE/ESP group projects) - Mechanical Engineering Department - Remotely Operated Underwater Vehicles
- Program Exceeding Capacity (Summer Youth Program) - Engineering the Human Body.

**Dr. Jeffrey Naber** (professor, ME-EM) was one of 3 Michigan Tech faculty members to present at the Engineering Society of Detroit’s Hybrid Vehicle Systems Course held on November 12, 2012 in Southfield, MI.

**Dr. Reza Shahbazian Yassar** (associate professor, ME-EM) research on sodium batteries was highlighted in Michigan Tech’s Tech today. Read the article at Battery. The research was also highlighted in Science Daily. See that article at Science.

**Dr. Paul van Susante** (lecturer, ME-EM) was selected as a 2012 Outstanding Reviewer for the ASCE's Journal of Aerospace Engineering. ASCE’s reviewer recognition program gives the editors of the Society’s journals an opportunity to express their gratitude to these reviewers and to commend them for their efforts.

University News

Michigan Tech has won a national award for its diversity initiatives. INSIGHT into Diversity, the oldest and largest magazine about diversity on college and university campuses, announced its first annual Higher Education Excellence in Diversity (HEED) award today. The award cites Michigan Tech for “its outstanding commitment to diversity and inclusion for the year 2012.” The December 2012 issue of INSIGHTS into Diversity highlights Michigan Tech. For the full story, see Diversity.

Intellectual Property Citation Index (IPCI), a product of the National Applied Research Laboratories in Taiwan, has listed Michigan Tech as 39th in the world in instrument and instrumentation research leading directly to patent and industry application. The release stated that Michigan Tech particularly excels in research related to instruments and instrumentation, materials science, electrical engineering and physics. Read the article at Research.

Michigan Tech is one of 29 colleges and universities showcased in a new National Academy of Engineering (NAE) report called Infusing Real World Experiences into Engineering Education that effectively incorporate real world experiences into their curriculum and highlights best practices for schools seeking to create new programs. The best practices outlined in the report include incorporating multidisciplinary team-based projects into curricula to help students develop skills in decision-making, leadership, written and oral communication, organization/time management, cultural awareness, and problem-solving. The report identifies frequent impediments to infusing real-world experiences into engineering programs and suggests ideas for overcoming these barriers to program implementation. Read the report at NAE and Engineering.

Come Join the Fun

Heroes and Villains Find Their Powers
In These Frozen Winter Hours
February 6-9, 2013