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12-2011

ME-EM eNewsBrief, December 2011

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

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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/>.

85 Years and Counting

The Department of Mechanical Engineering - Engineering Mechanics is celebrating its 85th year of delivering a world class mechanical engineering education to its students. We will be enhancing our normal alumni events and adding some new ones to help celebrate this milestone. We have established the ME-EM Department 85th Anniversary Fund to support continued growth of our academic programs for our students and for faculty development. Please contact the Department at (906) 487-2551 if you would like to contribute to this effort. Watch our website for the enhanced and new events: <http://www.me.mtu.edu/>.



Come "friend" us on Facebook. ME - EM is now on Facebook. Join with others to follow us on Facebook: <https://www.facebook.com/#!/MTUMEEM>.

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MEEM Department Chair Travel

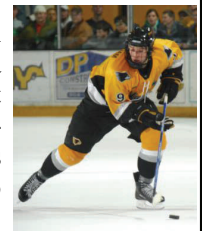
When on travel for the Department, Dr. Predebon visits with alumni to get their feedback on our programs and their career and to give an update on the Department and University. Please let the Department know if you would be available for a visit when he is in your area. (906) 487-2911.

- Week of March 4, 2012, Clearwater Florida for the ASME Conference
- April 1—3, 2012 Chicago, IL
- Week of April 22, 2012, Detroit Michigan for the SAE Congress

Upcoming Events

ME-EM Annual Winter Carnival Hockey Social

The 12th Annual ME-EM Alumni Winter Carnival Hockey Social will be held on Saturday, February 11, 2012 during the Michigan Tech versus Nebraska Omaha hockey 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 munchies and drinks will be provided, Complimentary tickets are required this year so please RSVP to Kathy at kagoulet@mtu.edu or 906-487-2911 to reserve yours.



SAE Clean Snowmobile Challenge

For the 10th straight year, the ME-EM Department, along with the Keweenaw Research Center, will again be hosting the SAE Clean Snowmobile Challenge on March 5-10, 2012. For more information on this event, please contact the department at 906-487-2551 or email me at wwpredeb@mtu.edu. Sponsorship is welcomed.



The ME-EM Department will again co-host a reception along with Michigan Tech's Corporate Development during the SAE International Congress to be held at Cobo Hall in Detroit, MI April 24-26. More details will be in the March eNews-Brief and will be posted on the Michigan Tech Alumni website shortly.

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 or Kathy at kagoulet@mtu.edu.

Hajj Flemings (BSME '96) was one of eight Web entrepreneurs invited to live in a house in Mountain View, Calif., for nine weeks. While there, they fine-tuned their business plans and made pitches to potential financial backers as a part of an accelerator and mentoring program. CNN followed their journeys in the new documentary "Black in America: The New Promised Land — Silicon Valley," which aired on Nov 13, 2011. Hajj is the co-founder of Gokit.me, an identity platform that enables people to manage and curate their online personas. Read the article at: <http://www.mtu.edu/news/stories/2011/november/story50037.html>

On August 28, 2011 **Chris Gibbs** (BSME '05) completed his first Ironman triathlon (a 2.4 mile swim, 112 mile bike ride and 26.2 mile run) with a time of 14 hours and 49 minutes. Eight months before the triathlon, Chris had to teach himself to swim as he could not even swim the length of a pool.

David Koster (BSME '92) has been se-

lected as General Manager for the City of Holland Board of Public Works.

Gregory Orzech (BSME '80) was hired as VP of Worldwide Sales at Calypto Design Systems Inc, based in Santa Clara CA. Calypto Design Systems, a leading ESL (electronic system level) hardware design and RTL (register transfer level) power optimization corporation had \$1.3 million in revenue sales last year according to D&B. Greg was employed previously with Intrinsicity as Vice President, Worldwide Field Operations. Intrinsicity, based in Austin TX was purchased by Apple Computers in 2010.

Chris Schmidt (BSME '80) has been selected by Governor Rick Snyder to the Michigan Wheat Promotion Committee, approved by a referendum vote of the state's wheat producers this summer. Appointees are subject to the advice and consent of the Senate, according to a news release from the Governor's office. Chris Schmidt will represent District 8 growers for a two-year term expiring May 31, 2013. Chris is the owner and fourth generation farmer of Schmidt Farms of Au-

burn, which consists of more than 600 acres. Read the article at: http://www.mlive.com/news/bay-city/index.ssf/2011/11/gov_rick_snyder_appoints_aubur.html

Terry Woychowski (BSME '78), member of the Michigan Tech Board of Control and VP-Global Quality & Vehicle Launches at GM presented a check for \$160,000 from GM to Michigan Tech to fund student activities in the Advanced Hybrid Electric Vehicle and Advanced Motorsports Enterprises, several Senior Design teams and student groups, and diversity programs.

Dr. Hussein Zbib (BSME '81, MSME '83 & PhD MEEM '82) was one of five scientists elected fellow of the American Association for the Advancement of Science for his efforts to advance science or its applications. Dr. Zbib's research focuses on the behavior of materials — particularly the thermo-mechanical behavior — at the nano and micro scales in an effort to create more durable materials that will stand stress.

Current Contracts and Grants

Seung Hyun Kim (PI, ME-EM), "Degradation Analysis and Optimization of Catalyst Layer in PEFC Based on Multiphysics Approach", sponsor: confidential, total award amount: \$218,326.

Desheng (Dennis) Meng (PI, ME-EM), "Scalable Fabrication of Fractal Nanoparticles for Electrochemical Energy Storage", sponsor: National Science Foundation, total award amount: \$352,650.

Jeffrey Naber (PI, ME-EM), "Diesel En-

gine Studies - Investigation on 1.9L I4 for Combustion and Efficiency Baseline and Characterization", sponsor: Nostrum Energy, LLC, total award amount: \$8,845.

Jeffrey Naber (PI, ME-EM), **Bo Chen** (coPI, ME-EM); "IC Engine Test Stage V"; sponsor: Nostrum Energy, LLC; total award amount: \$42,088.

Reza Shahbazian Yassar (PI, ME-EM), **Gregory Odegard** (coPI, ME-EM); "Collaborative Research: Stronger Than Glass Fibers, Stiffer Than Steel Wires: A New Perspective into the Mechanics of Cellulose Nanocrystals"; sponsor: National Science Foundation; total award amount: \$277,650.

Reza Shahbazian Yassar (PI, ME-EM), "New Insights on High Performance Anodes for Lithium-Ion Batteries", sponsor: American Chemical Society - Petroleum Research Fund, total award amount: \$154,000.

Tammy Haut Donahue (PI, ME-EM), "A New Experimental Model of Knee Joint Trauma", sponsor: National Institutes of Health, total award amount: \$207,686.

Charles Van Karsen (PI, ME-EM), "Buzz-Squeak-Rattle Material Study", sponsor: Bayer Material Science, total award amount: \$3,912.

**Faculty/Staff Awards
Accomplishments**

Ossama Abdelkhalik (assistant professor, ME-EM) has been appointed to the editorial board of the Journal of International Aerospace Sciences.

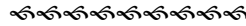


Ezra Bar Ziv (professor, ME - EM) was interviewed for the Matt Rousch CBS Detroit article, 'Tech Tour Day Three: More Tech Terrific'. The interview centered around the Ezra's research in the field of advanced energy technologies, specifically working on new ways to turn biomass into coal. Read the whole article at: <http://detroit.cbslocal.com/2011/10/02/tech-tour-day-three-more-tech-terrific/>

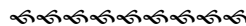


Gordon Parker (professor, ME-EM) was highlighted in the Winter 2011-12 edition of the Michigan Tech Magazine. The article, "Simple Gifts, a Gift of Freedom", contains information about the John (BSME '64) and Cathi Drake Endowed Professorship, of which Dr. Parker is the

recipient. Most grants are tied to deliverables but the endowment allows Dr. Parker to do exploratory work. Read the whole article at: <http://www.mtu.edu/umc/services/pr-news/magazine/winter1112/stories/simple-gifts/>



On the recommendation of the faculty of the Department of Mechanical Engineering – Engineering Mechanics, the Michigan Tech Board of Control granted emeritus rank to retired ME professor **Sheryl Sorby**.



Jeremy Worm (research scientist, ME - EM) was interviewed by Matt Rausch for CBS Detroit in the article "Tech Tour Day Two: Michigan Tech's Magnificent" in October. The interview highlighted the Michigan Tech Advanced Power Systems Research Center and the 'eye-popping' Michigan Tech Mobile Sustainable Transportation Lab, both of which Jeremy has been instrumental in helping develop. Read the whole story at: <http://detroit.cbslocal.com/2011/10/02/tech-tour-day-two-michigan-techs-magnificent/>

Sudhakar Pandit (professor, ME-EM) retired on December 23, 2011. He joined



Michigan Tech as an Associate Professor in the Department of Mechanical and Industrial Engineering on August 31, 1976. Dr. Pandit's areas of research are systems analysis, forecasting, and control, with applications to manufacturing and design. His principal contribution has been the methodology of data dependent systems (DDS) He has published more than 130 papers on the methodology and two books. He was the 1994 recipient of the Michigan Tech Faculty Research Award. The American Society of Mechanical Engineers recognized his "significant engineering achievements" in 1999 by electing him to the grade of Fellow. The Society of Manufacturing Engineers recognized him in 2009 for his "outstanding research, innovations, and leadership" by electing him to the grade of Fellow.

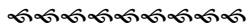
University News/Awards



Michigan Tech's overall job placement has risen to 94.6%, well above the national average of 63.7%.



Michigan Tech will receive \$260,000 over two years from the Michigan Strategic Fund and the Michigan Economic Development Corporation. Michigan Tech is among several schools to receive an award. Areas being invested in are university-industry partnerships, technology commercialization and innovation and entrepreneurship.



Michigan Tech University was highlighted in Modern Mopar magazine on October 19, 2011. Michigan Tech is one of 29 universities with whom Chrysler currently has recruiting programs. The article follows a team of engineers on their visit to the Michigan Tech campus. Read the whole article at: <http://www.modernmoparmagazine.com/wp/2011/10/19/copper-country-cruising-and-recruiting-srt-style/>

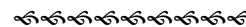


At its regular meeting on Dec. 9, the Board of Control voted unanimously to extend the contract of President Glenn Mroz for two years. The contract will run to June 30, 2016.



Dr. Todd Stewart (BSCE '67), Director of National Security and Strategic Initiative

at Michigan Tech and Major General, USAF (Ret.), has been appointed by the Secretary of Defense to a four-year term on the Air Force Scientific Advisory Board (AF SAB). The Secretary of the Air Force nominated Todd to this 46 member board of leaders from government, industry and academia. AF SAB links the Air Force and the nation's scientific community and promotes the exchange of the latest scientific and technical information



Michigan Tech was mentioned in a



Weather Channel article that named Hancock/Houghton the 3rd snowiest city in America. Read

the article at: http://www.weather.com/outlook/weather-news/news/articles/snowiest-six-cities_2011-11-29?page=5.

CAPSTONE ORZUR

Fourteen new project teams are just now beginning their "*first job, not their last class*" as this goes to press. Eleven projects, one of which is encompassing four teams, are getting underway. Thanks to all of you for supporting this program, as we build effective engineers for the future (and present!). This diverse set of projects ranges from ordinance fuse testing system design, to finding more cost-effective automotive geartrain wear-resistant treatments, to designing high performance hand-crank cycles for wounded veterans. Exciting stuff indeed!

Michigan Tech's Capstone Design Program will begin very soon to *actively look for industry customers* for projects that will be starting in September 2012. If you would like to be a part of this Capstone Experience, benefit from the value of interacting with some of the nation's most promising engineers, and support the continuation of this top nationally ranked program, please contact us!

Bob De Jonge
906.487.2142
rdejonge@mtu.edu



Student Accomplishments and Awards

The following ME-EM seniors were honored for their extraordinary contributions to either their Enterprise or Senior Capstone Design projects at the at the ME-EM fall Senior Recognition Banquet held on December 6, 2011:

Enterprise:

Kyle North is the team leader for the spacecraft On-board Data and Command team, which developed satellite control computer system hardware and software. This complicated subsystem is composed of two separate computers, multiple ADCs, two video frame grabbers and a suite of student-written software.

Drew Aiken has been an integral part of the Formula SAE team. He served as president and, while on a co-op as-

signment, continued with his capstone team to complete the design of smaller, lighter tire/wheel assemblies for the car that is currently under construction. This semester, Drew has invested countless hours welding, machining and passing on his skills by working with new members.

Senior Capstone Design:

Evandro Ficanha was committed to the success of the Hybrid Vehicle Educational Demo project. In the early stages of the project, he prototyped concepts by cannibalizing parts from things like an ink-jet printer and remote-control cars. Throughout the project, he found creative ways to get things done. He and his teammates worked many hours to learn the software and electronics necessary to cre-

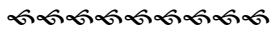
ate a fun and educational demo that emulates the functioning of a hybrid vehicle.

Steven Slater has been the leader of an extremely efficient and hardworking multidisciplinary team (4 ME's and 2 EE's). Steve has shown a great deal of maturity in leading this team and has consistently been a driver in moving the project forward. It should also be noted that the team as a whole has done an outstanding job.

Darrin Traczyk has been one of the leading members of a very good design team, helping a good team become even better. His team's project was very difficult for a number of reasons, but he has made steady progress towards a finished product that he can take pride in and will provide vital data to the sponsor, American Axle and Manufacturing.

Student Accomplishments and Awards continued

Seyyed Hessam Mir Shah Ghassemi (PhD student, ME-EM) received a \$500 Biotechnology Research Center travel grant toward a podium presentation at the Electrochemistry 2011 meeting held Boston, in October. His advisor is **Dr. Reza Shahbazian Yassar** (assistant professor, ME-EM).

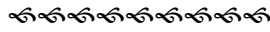


Michael Hojnacki (sr., ME-EM) scored his 1,000 career point for the men's basketball team in a 74-63 win over Minnesota State Saturday, Nov. 19. The 6-7 forward from Milwaukee, Wis., is the 22nd player in school history to eclipse the 1,000 point mark. Hojnacki is averaging 12.1 points per game over his 84 game career.



Brett Jenkins (sr., ME-EM) and Anne Dancy (sr., BioMed) placed third in

the Bob Mark Memorial Elevator Pitch Competition on Nov. 14, 2011. Their SafePlug invention will turn off heat producing appliances if the user moves more than 50 yards away.



Dallas Smolarek (sr., ME-EM) was highlighted in the Tech Today article "DENSO Student Design Center Expands Horizons of Engineering Students". The article highlights Dallas' participation in the DENSO North America Foundation's \$50,000, three-year grant that outfitted and supports a bright, spacious student design center with a computer work station for each student and state-of-the-art 3-D modeling software. Read the article at: <http://www.admin.mtu.edu/urel/ttoday/previous.php?is->

[sue=20111216&utm_source=email&utm_content=20111216.](http://www.admin.mtu.edu/urel/ttoday/previous.php?sue=20111216&utm_source=email&utm_content=20111216)



Jesse Vandenberg (sr., ME-EM), a defensive back on the 2011 Husky football team has earned All-GLIAC First Team honors.



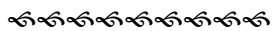
Jesse Vandenberg (sr., ME - EM) was the corecipient of the Michigan Tech Outstanding Defensive Back Award for 2011. A strong safety, he had 84 tackles this year, the most for the team for the third straight year and a career total of 304.



Chet White (sr., ME-EM) a football defensive back earned the Michigan Tech Harold Meese Sportsmanship Award.

Student Competitions and Team Awards

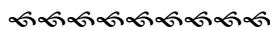
On November 23rd, the Milwaukee SAE Section hosted a Student Grant Challenge where student chapters presented information to earn grant money to support their competition vehicles. The Michigan Tech Student Chapter placed second in the competition to earn \$1,300.



The Michigan Tech soccer team recently earned the National Soccer Coaches Association of America Team Academic Award. The Huskies posted a 3.12 cumulative team grade point average and was one of six GLIAC teams to receive the award.



On December 6, 2011 the Department of Mechanical Engineering - Engineering Mechanics hosted its fall Senior Design Day. Nine teams gave 25 minute presentations detailing the results of their efforts over the past two semesters. The projects encompassed a wide variety of projects from a wide variety of sponsors. To read more about the teams and their projects, visit http://www.me.mtu.edu/senior_design_show/index.html. The Spring 2012 Senior Design Day will be held on April 17, 2012.



A banquet was held the evening of December 6, 2011 honoring the graduating seniors and inducting those that attended into the Order of the Engineer.



The Order of the Engineer is an association that fosters a spirit of pride and responsibility in the engineering profession, to bridge the gap between training and experience, and to present to the public a visible symbol identifying the engineer. Those inducted must take an oath to abide by a code of ethics. Dr. Paul D. Rogers (BSME '88, PhD '04 and MEEM External Advisory Board member), Deputy Program Executive Officer Program Executive Office Ground Combat Systems, US Army was the keynote speaker for the evening.



From All Over the State What Makes Michigan **GREAT**

Come join the fun.

Michigan Tech Winter Carnival

February 5th - 11th, 2012

12th Annual ME-EM Alumni Winter Carnival Hockey Social

Saturday, February 11, 2012 at 5:07 p.m.

Michigan Tech versus Nebraska Omaha

MacInnes Presidential Skybox of the Student Development Complex (SDC)

Admittance is free for ME alumni and their guests

Refreshments will be provided

RSVP to Kathy at kagoulet@mtu.edu or 906-487-2911 to reserve your tickets

