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4-2022

## ME-EM eNewsBrief, March 2022

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

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**Dr. Jason Blough** (Associate Chair and Director of Graduate Studies, ME-EM) has agreed to serve as interim chair for the ME-EM department, effective 1 July 2022. Dr. Blough started his career in ME-EM as an Assistant Professor in 2003 and may be best known as the Faculty Advisor of our excellent SAE Clean Snowmobile Challenge Team.

Since joining the department, Dr. Blough has been recognized for his contributions in teaching, research, and service. He is a member of Michigan Tech’s Academy of Teaching Excellence, and he received the honor of Distinguished Professor in 2021. He has received the SAE Ralph R. Teetor Educational Award, the Blue Ribbon Coalition Scientist of the Year Award, the SEM DeMichele Award, and the SAE Arch T. Cowell Merit Award. Dr. Blough is an SAE Fellow, serves as a member of the SAE Snowmobile committee, sits on the Scientific Board of ISMA, has given over 30 short courses to industry, and has had 100-plus funded projects totaling more than \$2.7 million as principal investigator (PI) and \$2.3 million as co-PI. He is the incoming Vice President of the Society of Experimental Mechanics for 2023, President-elect in 2023-'24 and President in AY 2024-'25.

**Dr. Wayne W. Weaver** (Professor and Director of the Agile & Interconnected Microgrids Center, ME-EM) will take over the Associate Chair and Director of Graduate Studies position in July.

Greetings from William (Bill) Predebon, Chair, Dept 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](http://www.mtu.edu/mechanical).

### Upcoming Events - Retirement Party - 5/13 @ 4:00 - Rozsa Lobby

**Dr. William W. Predebon** (J. S. Endowed Dept. Chair & Professor, ME-EM) will be retiring from Michigan Tech on 30 June 2022. Bill began working at Michigan Tech in 1975, and he has been the ME-EM department chair since 1997. That’s 25 years, folks! Even before his appointment as Chair, Bill played an important role in shaping Michigan Tech goals and standards by contributing to the Graduate Council, Faculty Senate, the University’s Long-Range Planning Committee, the Senate Committee on Retrenchment, the Ombudsman Selection Committee, and the Committee for Campus Enrichment. He chaired the Building Design and Occupancy Committees for both the Dow building and the Great Lakes Research Center. He played a pivotal role in establishing the University’s Learning Resource Center for self-paced programmed courses in 1981. Under his leadership, the ME-EM department has grown both in size and prestige for years, with the undergraduate program being ranked 34th nationally in 2020 by U.S. News (top 10% of all ME programs in the United States) and the graduate program being ranked 63rd nationally in 2021 by U.S. News (top 35% of all doctoral-granting Mechanical Engineering departments).



If you’re in the Houghton area on May 13, please stop by the Rozsa for Bill’s retirement reception and raise a glass to a legend!

~ RSVP to Jade Driscoll ([jdriscoll@mtu.edu](mailto:jdriscoll@mtu.edu)) if you plan to attend ~



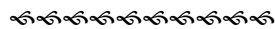
## ME-EM Faculty & Staff

### Awards and Accomplishments

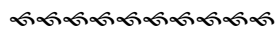
**Dr. Nancy Barr** (Prof. of Practice, ME-EM) was selected as a finalist for the 2022 Distinguished Teaching Award in the Assistant Professor/Lecturer/Professor of Practice category. This is Nancy's third nomination as a finalist for this award, a testament to her dedication and teaching skills.



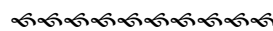
**Karen Bess** (Executive Assistant, ME-EM), and **Cindy Wadaga** (Graduate Program Coordinator, ME-EM) received the Exceptional Staff Member award from the Graduate Student Government (GSG) for the 2022 Merit Awards. They were recognized by the GSG for their "professional excellence in supporting graduate students through advocacy, awareness, encouragement, and readiness to help."



**Dr. Ana Dyreson** (Asst. Prof., ME-EM) is co-author on the 2030 Vision Report published by the MultiSector Dynamics Research Community, a multidisciplinary collection of researchers from universities and labs across the U.S. The report, [Scientific Challenges and a Research Vision for 2030](#), clarifies core definitions, shares research questions, highlights scientific opportunities, and identifies the importance of capacity building to meet these challenges.

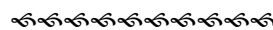


**Dr. Susanta Ghosh** (Asst. Prof., ME-EM) was invited to participate in a virtual panel discussion at the National Artificial Intelligence Research Resource (NAIRR) Task Force's public meeting on 16 February. The Task Force is a federal advisory committee, and participants discussed how the Task Force can benefit the AI research community, how the private sector plays a role in provisioning resources, and how the Task Force could provide further access to resources.



**Dr. L. Brad King's** (Prof., ME-EM) leading space industry startup, Orbion Space Technology, and **Dr. Paul van Susante's** (Asst. Prof., ME-EM) newest lab, the Planetary Surface Technology Development Lab, are featured stories in Michigan Tech's [2022 Research Magazine](#).

**Dr. King, Nolan Pickett** (sr., EME) and **Kyle Bruursema** (sr., EME/EEE) are featured in February's Husky Bites video titled "[Bite-sized Satellites Changing the World!](#)". Read the article by the same name in the COE blog



**Dr. Hassan Masoud** (Assistant Professor, ME-EM) is the lead author of the paper "[Evaporation of Multiple Droplets](#)," which was recently published in the Journal of Fluid Mechanics. The paper was also featured in a Focus on Fluids article entitled

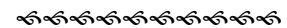
"[Predicting Evaporation Rates of Droplet Arrays](#)." His co-authors are Peter D. Howell of the University of Oxford and Howard A. Stone of Princeton University.



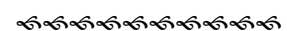
**Dr. Fernando Ponta** (Professor, ME-EM), **Apurva Baruah** (PhD student, ME-EM) and their research team seek to understand the detailed physics of a wind-turbine—from the rotor structure and aerodynamics, to turbine control and drivetrain electromechanics. Watch the Husky Bite video titled "[The Wind Beneath My Wings/Sails/Turbines](#)", and read the article by the same name in the [COE Blog](#).



**Dr. Darrell Robinette** (Asst. Prof., ME-EM) and Dr. Jeremy Bos (Asst. Prof., ECE) were selected by COE Dean Janet Callahan for the [Deans' Teaching Showcase](#) in February. Bos and Robinette were selected due to their success in the SAE AutoDrive Challenge I, a four-year challenge that wrapped up in summer 2021. As Dean Callahan summarized, "Michigan Tech's SAE AutoDrive Challenge team has proven our students innovate to succeed. We are proud of what Jeremy Bos and Darrell Robinette have done, and what the students they mentored were able to accomplish."



**Dr. Paul van Susante** (Asst. Prof., ME-EM) was one of three Michigan Tech faculty/staff members who each received \$2,200 for pre-college outreach and research seed programs from the [Michigan Space Grant Consortium](#) for its 2022-23 funding cycle, sponsored by NASA. His program is "Hands-On NASA-Oriented Experiences for Student Groups (HONES): 'Lunabotics Competition Robot.'"



### New ME-EM Department Staff Member

**Donna Jenó-Amici** joined the ME-EM staff as Coordinator of Research and Marketing Programs on February 21.

Before joining Michigan Tech, Donna worked as a Grants and Contracts Specialist at the University of Illinois, Urbana Champaign.

She has a Bachelor of Business Administration, a BS in Biology/Teacher Education, and an MBA-Marketing.



## Student Accomplishments and Awards

A team featuring undergraduate students **Gracie Brownlow** and **Kelsey Brinks** as well as graduate students **Behnam Ahmadi**, **Behzad Ahmadi**, and **Masoud Ahmadi** was selected as a semi-finalist for the [GE/ASME Additive Manufacturing Heat Sink Challenge](#). In the next phase, GE will 3D print and test their heat sink design. The team is advised by **Dr. Sajjad Bigham** (Asst. Professor, ME-EM).

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**Tyler Fabian** (sr./ME) has been selected for the 2022 Department Scholar Award and is now eligible for the 2022 Provost's Award for Scholarship. Fabian is pursuing a BSME degree with a minor in Aerospace Engineering and a concentration in Aerospace Enterprise. He is an active member of the American Society of Mechanical Engineers (ASME), Lambda Chi Alpha, Ridge Roamers, Roundnet Club, Piston Bike Racers, and the Ski and Snowboard Club. He was nominated for the award by **Dr. Yongchao Yang** (Assistant Professor, ME-EM) and endorsed by **Dr. Gordon Parker** (Professor, ME-EM).

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**Brian Halonen** (sr./EME), a Michigan Tech hockey forward, was named February's [Forward of the Month](#) by the Central Collegiate Hockey Assoc. On 11 February, he became the 67th player in Tech history to reach the 100-point mark in his career, and he was named MVP of the annual Winter Carnival series.

Brian was named a top 10 finalist for the [Hobey Baker Memorial Award](#), which is presented annually to the top player in NCAA Division I men's ice hockey. He is the fifth Michigan Tech player to be named as a finalist.

Brian has signed a two-year, two-way entry-level contract with the New Jersey Devils.

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**Hayden Huttula** (sr./ME) was one of two Michigan Tech student-athletes who were named recipients of the [2021 Fall GLIAC Commissioner's Award](#). The awards are presented after the fall, winter, and spring athletic seasons to twelve student-athletes who excel both in the classroom and in competition.

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**Samuel Lange** (jr./ME) was one of ten Michigan Tech cross country runners to earn individual All-Academic Honors from the United States Track & Field and Cross Country Coaches Association. Individual student-athletes must have a cumulative GPA of at least 3.25 on a 4.0 scale and have finished in the top 30% of their respective regional championship meet to qualify. Read more about the All-Academic Honors [here](#).

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**Blake Pietila** (jr./ME) was named the Central Collegiate Hockey Association's [Goaltender of the Month](#) for January. He has been named the [Goaltender of the Week](#) four times during the 2021 - 2022 season.

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Blake was named a semifinalist for the [Mike Richter Award](#) for the second year in a row. The award is given annually to the top goalie in men's NCAA Division I hockey. He was one of eleven semifinalists announced by the Hockey Commissioners Association. Blake is also a candidate for the Hobey Baker award for the second year in a row.

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Men's Nordic Ski Team's **Henry Snider** (jr./ME) placed 36th in the 10K classic on day one of the NCAA Championships. He became the first male student-athlete to compete in both the NCAA Skiing Championship and the NCAA Cross Country Championship.

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**Owen White** (sr./ME), men's basketball guard/forward, was named [Player of the Week](#) by the GLIAC North Division for the second time this season and the fifth time in his basketball career. He was also named to the 2022 [First Team All-Midwest Region](#) by the Division II Conference Commissioners Association. This followed the announcement that he was the fourth Michigan Tech men's basketball player in GLIAC history to win conference player of the year in back-to-back seasons.

Owen was named [2022 First Team Midwest All-District](#) by the National Association of Basketball Coaches (NABC).

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Nine ME-EM graduate students were recognized for the Fall 2021 Semester Graduate Student Awards. **Noah Agata** (MS student / *Dr. Amitabh Narain*), **Ron Kyllonen** (MS student / *Dr. Sriram Malladi*), **Revant Matthey** (PhD student / *Dr. Susanta Ghosh*), **Ikechukwu Okoh** (PhD / *Dr. Sajjad Bigham*), **Shashank Pathrudkar** (PhD / *Dr. Susanta Ghosh*), and **Noah Squires** (MS / *Dr. Scott Miers*) all received Outstanding Graduate Student Teaching Awards, which is awarded to those who have an Average of 7 Dimensions overall score greater than a 4.0 on their teaching evaluations. A student is only eligible to win the award once. **Mitch Timm** (PhD / *Hassan Masoud*), **Upendra Yadav** (PhD / *Dr. Susanta Ghosh*), and **Shabham Konica** (PhD / *Trisha Sain*) all received Outstanding Scholarship Awards, which are given to graduating PhD students who have shown outstanding scholarship through GPA, publications, and other activities.

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## Student Competitions and Team Awards

**Owen White** (sr./ME) and **Carter Johnston** (sr./ME) were two of three Michigan Tech men's basketball players recognized by the Great Lakes Intercollegiate Athletic Conference All-Conference awards. White was named GLIAC Player of the Year, First Team All-GLIAC, and GLIAC All-Defensive team. Johnston was named to the All-GLIAC Defensive team.



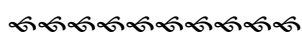
**Owen White** (sr./ME), **Carter Johnston** (sr./ME), **Kyle Clow** (sr./ME), and **Dawson Nordgaard** (fr./ME) were among the five students recognized with [Michigan Tech men's basketball team awards](#) for the 2021-2022 season. White was selected for the Ken Hamar Award for most valuable player; Johnston received the Harold Meese Sportsmanship Award for the second straight season; Clow received Tech's Scholastic Achievement Award; and Nordgaard earned the Bob Olson Award for Outcoming Newcomer.



**Brian Halonen** (sr./ME) and **Blake Pietila** (jr./ME) were two of four Michigan Tech hockey players named [All-CCHA players](#). Halonen was honored on the All-CCHA First Team and Pietila was honored on the All-CCHA Second Team.

## Alumni and Friends News, Accomplishments & Awards

**Anurag Kamal** (MSME '18) and **Folasade Ayoola** were recognized by [Forbes in Cleantech Energy](#) for "30 Under 30" as the cofounders of ElectricFish Energy, which has developed an easily installed, and ultra-fast EV charger.



**Dr. Teik C. Lim** (BSME '85) was named president-elect of the [New Jersey Institute of Technology](#) (NJIT). Along with being president, he will also be appointed as a Distinguished Professor of Mechanical Engineering. He will begin his NJIT tenure on 1 July 2022.



**Dr. Darwin Moon** (BSME '79) passed away on 16 March. Dr. Moon was engaged in numerous ways with Michigan Tech, serving not only on Michigan Tech's Alumni Board but also as a member of the Dept of Mechanical Engineering-



Engineering Mechanics (ME-EM) External Advisory Board. He and his wife, Margarita, also supported the research of Professor L. Brad King (ME-EM), the Richard and Elizabeth Henes Endowed Professor (Space Systems). Take a moment to read more about Dr. Moon in the [Michigan Tech Alumni News retrospective](#).



**Eric Obermeyer** (BSME '94, MSME '97) was promoted to Manager of Manufacturing Engineering at InSink-Erator, a division of Emerson Electric Co. Obermeyer is a licensed Professional Engineer in the state of Wisconsin.



**Dr. K. P. Rajurkar** (MSME '78, ME-EM PhD '82) was awarded the M. Eugene Merchant Manufacturing Medal from ASME/SME for "pioneering contributions to enhance the productivity of nontraditional machining processes used in automobile, aerospace and medical device manufacturing."



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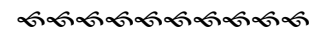
**Pamela Rogers Klyn** (BSME '93) and **Matt Monte** (BSME '93) were two of five Michigan Tech alumni featured on a Zoom panel titled "Working Together for Sustainability" on 2 March. Panelists discussed how Michigan Tech can work with industry and alumni for a more sustainable future.

## Department Accomplishments

The ME-EM dept announced a new Advanced Metal 3D Printing Center facility for both campus and external users. The center, located on the first floor of the Minerals and Materials Building, houses a powder bed fusion 3D Systems DMP Flex 350 Metal Printer and is staffed by Russell Stein (res. eng., MSE) and **Jacob Lundin** (res. eng., ME-EM). Users do not need to operate the printer; they need only to submit a 3D model in one of various standard formats. The metal printer acquisition was made possible by the generosity of ME-EM alumni, including a discount on the system from full service supplier Scarlett Inc., whose owner, Jim Scarlett is a MET alumnus.



Researchers from Michigan Tech, Lunar Outpost, and Bechtel Corporation will be joining the Colorado School of Mines on their [NASA-funded research](#) to develop autonomous technology for rovers to assist in constructing landing pads before they arrive on the moon.



Michigan Tech's online MS in Mechanical Engineering program was featured among the Best Online Master's in Sustainability and Green Technologies programs in the nation at AcademicInfluence.com. They list the top-ranked online masters in green technologies degree programs to equip students to hold managerial and supervisory positions in the consulting, marketing, finance, engineering, government, nonprofit, and technology fields.

[Best Online Master's in Sustainability and Green Technologies \(#8\)](#)

## University News & Awards

Michigan Tech was one of four universities awarded federal funding by the Michigan Department of Health and Human Services to help the state of Michigan expand sequencing for COVID-19 and other infectious diseases. The announcement was picked up by [Michigan Radio](#), [CBS Detroit](#), [WLNS TV6 of Lansing](#), the [Daily Mining Gazette](#), and [ABC 10](#).



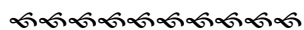
Michigan Tech reaffirmed its accreditation through the Higher Learning Commission (HLC) by completing its 10-year comprehensive evaluation. The reaffirmed accreditation comes with no requirement for interim monitoring or reporting. Michigan Tech has been continuously accredited since 1928.



Former Michigan Tech Nordic skier Deedra Irwin had [Team USA's best finish](#) in Olympic biathlon history during the 2022 Winter Olympics. Irwin placed seventh in the 15K individual start by crossing the line in 44:14.1 with only one shooting penalty.

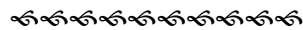


Michigan Tech is one of only 156 universities and colleges worldwide to be honored by [Exercise is Medicine](#) for efforts to create a campus culture of wellness. Michigan Tech's UP and Moving program, housed in the Department of Kinesiology and Integrative Physiology, played a large part in helping Tech earn a silver designation from the Exercise is Medicine On Campus program. All 156 campuses will be recognized on 1 June as part of the 2022 Exercise is Medicine World Congress, which is held in conjunction with the American College of Sports Medicine's Annual Meeting.



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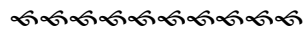
156 Husky student-athletes earned recognition on the Great Lakes Intercollegiate Athletic Conference All-Academic and All-Academic Excellence Teams for the Fall 2021 semester. 105 Huskies earned recognition on the All-Academic Excellence Team and 54 earned recognition on the All-Academic Team. Read more on the [Michigan Tech Athletics website](#).



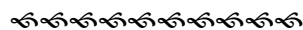
25 Husky student-athletes earned recognition on the Great Lakes Intercollegiate Athletic Conference All-Academic and All-Academic Excellence Teams for the Winter 2022 semester. 22 of the students earned recognition on the All-Academic Excellence Team.

## Current Contracts and Grants

**Dice, Paul** (PI, ME-EM/APSRC): "Technical Support and Maintenance of the Meteorological Instrument at the Michigan Regional Test Center for Solar Technologies"; sponsor: Sandia National Laboratories; total award: \$20,000.



**Dyreson, Ana** (PI, ME-EM/APSRC), and **Gordon G. Parker** (co-PI, ME-EM/APSRC): "Enhancing the Efficiency and Resilience of PV Systems at Northern Latitudes"; sponsor: Sandia National Laboratories; total award: \$228,848.



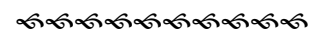
**Endres, William** (PI, ME-EM): "Enhanced Two Phase Heat Exchanger for High Heat Flux Devices"; sponsor: Wayne State University; total award: \$131,697.

**Endres, William** (PI, ME-EM): "Enhanced Two Phase Heat Exchanger for High Heat Flux Devices - Shear-Cool Match"; sponsor: Shear Cool, LLC; total award: \$36,191.

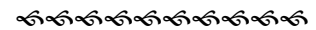
**Endres, William** (PI, ME-EM/AIM), and **Wayne Weaver** (co-PI, ME-EM/AIM): "DTE E - Challenge 5: Manufacturing Cell Smart Switching"; sponsor: DTE Energy; total award: \$259,343.



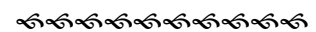
**King, L. Brad** (PI, ME-EM): "Auris Nanosatellite Development Phase B"; sponsor: Utah State University Space Dynamics Laboratory; total award: \$477,975.



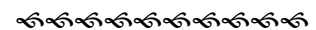
**Miers, Scott** (PI, ME-EM/APSRC), and **Brian Eggart** (co-PI, ME-EM/APSRC): "Testing of a Miniature Portable Emissions Measurement System (mini-PEMS) for Motorcycles"; sponsor: Environment and Climate Change Canada; total award: \$27,155.



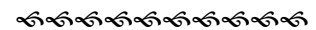
**Naber, Jeffrey** (PI, ME-EM/APSRC), **Paul Dice** (co-PI, ME-EM/APSRC), **Henry Schmidt** (co-PI, ME-EM/APSRC), and **Jeremy Worm** (co-PI, ME-EM/APSRC): total award: \$2,598,884.



**Parker, Gordon G.** (PI, ME-EM/AIM), and **Jason R. Blough** (co-PI, ME-EM/AIM): "Ship Vibration Mitigation for Additive Manufacturing Equipment: Phase 2"; sponsor: Advanced Technology & Research, Inc.; total award: \$185,000.



**Yang, Yongchao** (PI, ME-EM): "SUPER-RESolution Acoustic Imaging (SURE-AI)"; sponsor: Wayne State University; total award: \$144,763.



**Zhou, Kai** (PI, ME-EM/MuSTI): "ERI: Harnessing Probabilistic Deep Learning Method Integrated with Tailored Features for Enhanced Real-Time Machinery Fault Diagnosis and Prognosis"; sponsor: National Science Foundation; total award: \$199,050.