

## Michigan Technological University Digital Commons @ Michigan Tech

Department of Mechanical Engineering-Engineering Mechanics eNewsBrief

Department of Mechanical Engineering-Engineering Mechanics

10-2023

## ME-EM eNewsBrief, September 2023

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University

Follow this and additional works at: https://digitalcommons.mtu.edu/mechanical-news



Part of the Engineering Mechanics Commons, and the Mechanical Engineering Commons

## **Recommended Citation**

Department of Mechanical Engineering-Engineering Mechanics, Michigan Technological University (2023). ME-EM eNewsBrief, September 2023. 19(3)

Retrieved from: https://digitalcommons.mtu.edu/mechanical-news/53

Follow this and additional works at: https://digitalcommons.mtu.edu/mechanical-news



Part of the Engineering Mechanics Commons, and the Mechanical Engineering Commons

For the latest news and info about our faculty, students, and staff, please visit our website at <a href="www.mtu.edu/mechanical">www.mtu.edu/mechanical</a>.

Visit us on Facebook, Instagram and Twitter.

## **A Note from the Chair:**



As I write this welcome to our eNewsBrief, the weather is quickly changing from an overly warm and pleasant October to a cold, wet and snowy Fall. Even as construction season is coming to a close, we broke ground on a new residence hall on the East end of campus and are working to finish up the new campus entrance on the West end of campus with an arch and paver walkway. The H-Stem building's completion is on the horizon, soon allowing the ME-EM department full occupancy, a significant change after sharing it for over 50 years.

We recently celebrated the induction of three exceptional alumnae into our <u>Presidential Council of Alumnae</u>. All three came to campus and met with students and had a lunch with the department. Their genuine engagement and humility during their visit underscored their roles as stellar models for our students. We look forward to interacting more with them in the future.

**Marty Lagina** (BSME '77) gave a great lecture to our first year engineering students. The students enjoyed his talk and having their pictures taken with him and asking about his TV show, "The Curse of Oak Island." It was great to hear that he reaches multiple generations in many families with the show -- students talked of watching it with their parents and grandparents.

I hope you can join us for our Winter Carnival Hockey Skybox Social on Saturday of Winter Carnival. A part of the cost of the box goes to support scholarships for our students. Thank you all for your continued support as it really does make a difference to our students! Go Huskies!!

~ Jason R. Blough, Ph.D. | Interim ME-EM Department Chair and Distinguished Professor

<u>Upcoming Events</u>: The ME Scholarship Winter Carnival Alumni Hockey Social will be held on Saturday, February 11, 2024 during the Michigan Tech Huskies vs. Bowling Green Falcons hockey game in the Husky Suite South Skybox of the John MacInnes Student Ice Arena. The game has a 5:07 start time. Tickets are \$45/person, which includes a \$15 donation to the ME-EM Alumni Scholarship Fund. Stadium food and refreshments are provided by the department. A registration link will be posted on the Michigan Tech website later this year for more info and to purchase tickets for the event, or contact Alumni Services at (906) 487-2400.

## Past Events: 2023 Presidential Council of Alumnae (PCA) Induction Ceremony

A slate of eight honorees were inducted into the Presidential Council of Alumnae (PCA) in September. PCA members are recognized for exceptional personal and professional achievements in all facets of life—including education and career excellence, community involvement, volunteerism, their past involvement as a student, as well as their current

relationship with Michigan Tech. Three of this year's inductees are Mechanical Engineering alumnae, including:

<u>Kristin Kolodge</u> - J.D. Power, VP for Auto Benchmarking and Mobility Development

Marissa Gecse - Ford, Manufacturing Advanced Feasibility Engineer for Electrified Powertrains, Helena Seiver - Air Liquide Electronics, VP of Group Strategic Account Management

Congratulations to these exceptional graduates! For detailed information on all of the members, please visit the <u>PCA member roster</u>.







The Mechanical Engineering inductees include (from L-R): **Kristin Kolodge** (Schwalbach), BSME 1995, **Marissa Gecse** (Graziano), BSME 2016, and **Helena Seiver** (Kaplan), BSME 1994.



## Faculty/Staff Awards/ Accomplishments

**Dr. Jeffrey Allen** (John & Joan Calder Professor in Mechanical Engineering, ME-EM) was mentioned in a NASA Science News press release announcing proposals selected for funding by NASA's Physical Sciences Research Program. Allen is the PI of a project which will build on prior reduced-gravity research to advance fundamental research in the physical sciences.

ૹૹૹૹૹૹૹૹૹૹ

**Dr. Ana Dyreson** (Assistant Professor, ME-EM) wrote a guest blog highlighting the efforts of her research in tracking ways to boost solar power in snowy climates. Taking place at the nation's northernmost DOE solar energy Regional Test Center in Calumet, the research is aimed at improving photovoltaic performance in cold climates. Read more on Michigan Tech's Unscripted Research Blog.

%%%%%%%%%%%%

Kartik Iyer (Assistant Professor, ME-EM/Physics) is the author of a paper titled "Dependence of the asymptotic energy dissipation on third-order velocity scaling" that was published in <a href="Physical Review Fluids">Physical Review Fluids</a>. This work highlights this pivotal dependence of the energy dissipation rate on the small-scale motions in fluid turbulence.

ૹૹૹૹૹૹૹૹૹૹૹ

**Dr. Brad King** (Professor, ME-EM) was quoted by the Michigan Economic Development Corporation in a story about what's driving Michigan's growth as a destination for venture capital investment.

**Dr. King's** company Orbion Space Technology, with its groundbreaking Aurora Plasma Thruster, is a top three finalist in the "Coolest Thing Made in Michigan" contest, an annual people's choice award presented by the Michigan Manufacturers Association. The winner will be announced live during the 2023 Manufacturing Excellence Awards on Nov. 9. Read the article in the COE Blog for more information.

**Dr. Jeff Naber** (Professor, ME-EM) was honored to receive the prestigious 2023 ASME Internal Combustion Engine (ICE) Award at the at ASME's 2023 ICE Forward Conference, held in Pittsburgh, PA. The ASME ICE Award recognizes eminent achievement or distinguished contribution over a substantial period of time, which may result from research, innovation or education in advancing the art of engineering in the field of internal combustion engines; or in directing the efforts and accomplishments of those engaged in engineering practice in the design, development, application and operation of internal combustion engines.

\$\$\$\$\$\$\$\$\$\$\$\$\$\$

Dr. Vinh Nguyen (Assistant Professor, ME-EM) was one of three faculty selected by Michigan Tech's Institute of Computing and Cybersystems (ICC) and Great Lakes Research Center (GLRC) to receive a Rapid Seedling Award as part of an internal initiative to sponsor scalable research efforts within the institute. The joint institute will sponsor up to \$10,000 during the fall semester. Read about the funded research projects on the Institute of Computing and Cybersystems Blog.

**Dr. Nguyen** (Assistant Professor, ME-EM) was quoted by the <u>Detroit News</u> in a story about \$335 million in earmarks to fund Michigan-based projects that are included in proposed Congressional legislation heading into September. Among them is a \$2 million to launch a research center at MTU to develop winter weather standards for vehicles with self-driving capabilities.

ૹૹૹૹૹૹૹૹૹૹૹ

**Dr. Madhukar Vable** (Professor Emeritus, ME-EM) wrote an opinion article titled "Academia: Change it, or lose it" that was published in <u>The Hill</u> discussing anger-provoking challenges facing higher education.

ૹૹૹૹૹૹૹૹૹ

**Dr. Paul van Susante** (Assistant Professor, ME-EM) and his lab were mentioned in a story in <u>Space Ref</u> about various lunar technologies being developed, including their project "to develop and mature lunar regolith excavation technologies" for which they received a Lunar Surface Technology Research (LuSTR) award from NASA.

# **Student Accomplishments & Awards**

**Kirsten Meyers** (fr., EME) was one of the Michigan Tech students quoted by <u>WLUC TV6</u> in a story about Michigan Tech's Study Away Fair in Sept.

Michigan Tech hockey being predicted to top the CCHA 2023-24 regular season standings was covered by WJMN Local 3, WLUC TV6, the Keweenaw Report, BVM Sports, USCHO.com and the Rink Live. They also mentioned that Michi-

Live. They also mentioned that Michigan Tech Forward **Kyle Kukkonen** (so., EME) was named to the coaches' preseason team.

\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$\$

ME-EM PhD candidates Ponkrshnan Thiagarajan (advisor: Susanta Ghosh, Assistant Professor/ME-EM) and Hrishikesh Suhas Gosavi (advisor: Sriram Malladi, Assistant Professor/ME-EM) were awarded Finishing Fellowships provided by the Graduate School to support students who are close to completing their degrees and contributing to the attainment of goals outlined in The Michigan Tech Plan.

The awards recognize outstanding PhD candidates in need of financial support to finish their degrees. Funds are made available through the generosity of alumni and friends of the University.





Ponkrshnan Thiagarajan and Hrishikesh Gosavi

Page 2 July - September 2023

## Alumni & Friends, News Accomplishments & Awards

Dr. Carl Anderson (BSME '72, ME-EM Professor Emeritus), Glen Barna (BSME '88, MSME '90), and Paul LaVigne (BSME '83 MSME '89) were quoted in a story about IR Telemetrics of Hancock which specializes in real-time data transfer from moving components. The company, founded over 30 years ago, supports the development of machinery across industries, notably adapting to the rise in alternative fuels. Find the complete story in Diesel Progress' June 2023 issue.

\$\$\$\$\$\$\$\$\$\$\$\$

Joe Berger (BSME '05), retired NFL lineman, has been inducted into the Muskegon Area Sports Hall of Fame, acknowledging his significant 13-season NFL tenure, mostly with the Minnesota Vikings. Berger is also lauded for his engineering background, dedication to family, and his recent role in the manufacturing sector at Modern Produce Equipment in Fremont. Find the full article Near North Now.

ૹૹૹૹૹૹૹૹૹ

**Debra Charlesworth** (BSME '93) was appointed as <u>Associate Dean</u> of the Graduate School. Dr. Charlesworth has been with the Grad School since 2007 and began her new role as associate dean in July 2023. Her immediate focus will be on improving the graduate student experience and streamlining degree completion processes.

୰୰୰୰୰୰୰୰

Greg Ives ('03 BSME), NASCAR crew chief for Hendrick Motorsports' Alex Bowman, was featured in the Iron Mountain Daily News. The coverage highlighted his visit to Norway Speedway for an autograph session at the Auto Value Super Stock race.

\$\$\$\$\$\$\$\$\$\$\$

Marty Lagina (BSME '77) delivered the First-Year Engineering Series Lecture to Michigan Tech's incoming engineering majors on Oct. 2 in the Rozsa Center Auditorium. The title of Lagina's lecture is "I'm Not Here to Give You Advice." Lagina is the CEO of Heritage Sustainable Energy, a winemaker, and an executive producer of the long-running reality TV show "The Curse of Oak Island," now in its 10th season on the History Channel.

ૹૹૹૹૹૹૹૹૹૹ

**Dr. Teik Lim** (BSME '85) was honored as the recipient of the Chinese-American Academic & Professional Society's 2023 Distinguished Leadership Achievement Award. Dr. Lim is the president of the New Jersey Institute of Technology. Read more about Dr. Lim at ROI-NJ.com.

\$\$\$\$\$\$\$\$\$\$

Scott Overton (BSME '68) vividly recounts his adventures as a third-year mechanical engineering student working summer jobs in 1965 in Spokane, Washington in his article "My Summer with Two Fords". From his 1957 Chrysler to the inherited 1962 Ford

Fairlane, Scott's journey is filled with vehicular challenges, picturesque drives, and engineering tasks during his summer job. Find the full automotive tale on Hemming's Motor News.

ૹૹૹૹૹૹૹૹૹ

Kevin Pageau (BSME '81), owner and president of International Marketing Alliance, in Novi Michigan, was named the recipient of the Society of Plastics Engineers Automotive Division's 2023 Lifetime Achievement Award in September. Kevin has been a pioneering figure, with over 40 years of unmatched dedication. From spearheading significant advancements in CAE technologies to his esteemed leadership roles, Kevin's influence has been profound. To dive deeper, check out the detailed press release in "Plastics Decorating".

ૹૹૹૹૹૹૹૹૹ

Polaris published an employee spotlight interview with alumna "Korinne C.," rider safety manager for off-road vehicles and snow, in "People Behind Polaris". Korinne earned her bachelor's in mechanical engineering at Tech. She worked as a powertrain project engineer and ATV instructor, as well as helping to establish and develop the SxS training program for employees.

Missed the reunion? Someone was there with a camera - check out the Alumni Reunion 2023 Photo Gallery

## ME-EM Graduate Seminar Speaker Series - Fall semester: August and September, 2023

\* Caryn L. Heldt, PhD - Professor of Chemical Engineering, MTU and Director, Health Research Institute. "Mixing and Moving to Continuously Purify Viral Vaccines".

Dr. Heldt's seminar talks about developing a continuous liquid-liquid extraction method to enhance viral vaccine production and address challenges in scaling up the system for improved vaccine processing.

\* **John Ringwood**, PhD - Professor, Electrical Engineering Maynooth University, Ireland. "<u>Control Co-Design</u> for Wave Energy Systems".

Dr. Ringwood's presentation explores the relationship between optimal wave energy converter (WEC) designs and the control methods employed, emphasizing device geometry, array layout, and power take-off characteristics within a control co-design framework. \* Danan Dou, PhD - John Deere Fellow and SAE Fellow Chief Technologist (Power Systems), John Deere Power Systems. "Fields of Opportunities in a Growing World".

Dr. Dou's discussion examines renewable energy solutions in terms of environmental impact, energy efficiency, and value to customers, especially in agricultural applications.

Page 3 July - September 2023

# **Student Competitions & Team Awards**

Michigan Tech's Planetary Surface Technology Development Lab (PSTDL), a student lab led by Dr. Paul van Susante (Assistant Professor, ME-EM), was mentioned by ExecutiveGov, Parabolic Arc, and autoevolution in stories about NASA's Watts on the Moon Challenge — a competition to design new technologies for bringing electrical power to the moon. MTU's team was announced by NASA in mid-July as one of four finalists advancing to the final stage of the competition. The PSTDL team won \$400,000 in prize money and will compete in Level 3, the final stage of the challenge. Read more about the PSTDL team's most recent accomplishment at Michigan Tech News.

@NASAPrize, the Twitter account for NASA Prizes, Challenges, and Crowdsourcing featured photos of the Planetary Surface Technology Development Lab's Break the Ice Challenge prototype.

## **University News/Awards**



Dr. Audra N. Morse, chair of the Dept. of Civil, Environmental, and Geospatial Engineering, was named dean of the College of Engineering effective June 25.

Dr. Morse is an expert in water and wastewater treatment, specif-

ically water reclamation systems and the fate of microplastics in treatment systems. She is a Fellow in the American Society of Civil Engineers (ASCE), and has served on numerous committees that support education and accreditation. She earned BS and MS degrees in Environmental Engineering, and a PhD in Civil Engineering from Texas Tech.

ૹૹૹૹૹૹૹૹૹ

MLive mentioned Michigan Tech in a story about Smart Asset's most recent list of "Best Value Colleges." MTU was ranked as the second-highest best value in Michigan, behind only the University of Michigan-Ann Arbor. Tech's starting salary was described as "near the top of all schools on the list."

ૹૹૹૹૹૹૹૹૹૹ

Wisconsin Public Radio and Urban Milwaukee highlighted Michigan Tech's role in developing a new technique for recycling flexible plastics using the solvent-targeted recovery and precipitation (STRAP) recycling system. Scrap Monster also mentioned Michigan Tech's contribution to this innovative recycling approach.

ૹૹૹૹૹૹૹૹૹ

Space Ref highlighted Michigan Tech in an article discussing emerging lunar technologies. Among them is a project by MTU's Planetary Surface Technology Development Lab, which has been recognized with a Lunar Surface Technology Research (LuSTR) award from NASA for their advancements in lunar regolith excavation technologies.

\$\$\$\$\$\$\$\$\$\$\$

Michigan Tech News reported that enrollment is up 3.5% from last year, marking the third consecutive year of overall growth for the university. welcomed 7,320 students to campus this fall, including 1,463 incoming first-year students, with women making up over 30% of the student body. The last time Tech enrolled this many students was 1983.

%%%%%%%%%%%%

U.S. Sen. Gary Peters mentioned Michigan Tech in a press release about funding legislation passed by the Senate Appropriations Committee that could bring \$250,000 to MTU. The funds would help the University create a small business accelerator "to support research and jobs related to advanced materials and critical minerals used in the automotive and defense industries."

<u>UPWord</u> mentioned Michigan Tech in a story about enrollment increases seen by both MTU and Northern Michigan University for fall 2023.

ૹઌ૾ઌ૽ઌ૽ઌ૽ઌ૽ઌ૽ઌ૽ઌ૽ઌ

Michigan Tech was mentioned by WLUC TV6, the Daily Mining Gazette, and the Alpena News in stories about MTU's Aviation and Aerospace summer youth program, hosted by Michigan Tech's Center for Educational Outreach.

જ્રિજ્જજ્જજ્જજ્જજ્જ

Michigan Tech ranked 12th for Salary Impact by the Wall Street Journal. The Wall Street Journal/College Pulse Salary Impact ranking lists schools in order of their impact on graduates' salaries and how this relates to the cost of attending the college. Michigan Tech was ranked 12th overall, and 2nd among public universities.

ૹૹૹૹૹૹૹૹૹૹ

Becker's Hospital Review listed Michigan Tech as No. 12 among the nation's top 20 schools for salary impact, or how much a college boosts salaries earned by students after graduation. The ranking was based on the Wall Street Journal's recently released Best U.S. Colleges 2024 ranking list.

ૹઌ૾ઌ૽ઌ૽ઌ૽ઌ૽ઌ૽ઌ૽ઌ૾ઌ

The U.S. National Science Foundation mentioned Michigan Tech in a news release announcing its Experiential Learning for Emerging and Novel Technologies (ExLENT) investment of \$18.8 million, awarded to 27 teams at U.S. colleges and universities. MTU will receive \$999,930 to fund a project led by principal investigator Aleksandr Sergeyev (Professor, Applied Computing) and co-PIs Vinh Nguyen (Assistant Professor, ME-EM), Scott Kuhl (Computer Science), David Labvak (MSME '03, PhD ME-EM '17 /Assistant Professor, MMET) and Paniz Hazaveh (Associate Teaching Professor, Applied Computing).

ૹૹૹૹૹૹૹૹૹૹૹ

Page 4 July - September 2023

## University News/Awards (cont'd)

Money Magazine listed Michigan Tech as one of the best colleges in the nation for 2023, awarding the University a ranking of 4.5 out of five stars. Money's analysis was picked up by MLive.

ଟ୍ୟ ବ୍ୟ ବ୍ୟ ବ୍ୟ ବ୍ୟ ବ୍ୟ ବ୍ୟ ବ୍ୟ

WLUC TV6 mentioned Michigan Tech in a story about Michigan's state budget for fiscal year 2024. \$870,000 was allocated to the University to support the relocation of the former Finlandia University nursing program.

ૹૹૹૹૹૹૹૹૹૹ

Michigan Tech was mentioned by PV Magazine in a story about a study on the use of existing fences in animal farms as a low-cost racking solution for solar panels. The research team included scientists from MTU and Canada's Western University.

\$\$\$\$\$\$\$\$\$\$\$\$

Talent Management mentioned Michigan Tech in a story about Michigan's industry, government and institutes of higher education collaborating to build a high-quality workforce in the state. MTU's partnership with Calumet Electronics to bring hands-on manufacturing experience to engineering students was highlighted.

ૹૹૹૹૹૹૹૹૹ

The <u>Daily Mining Gazette</u> ran a story about Michigan Tech's fall 2023 enrollment statistics and noted that more first-year students coming from outside Michigan and women representing 30% of Tech students for the first time ever. MTU's fall 2023 enrollment was also covered by the <u>Keweenaw Report</u>. The numbers were announced last week by <u>Michigan Tech News</u>.

<del>୰</del>୰୰୰୰୰୰୰

DBusiness mentioned Michigan
Tech's inclusion among the top 100
schools on the Wall Street Journal's recently released Best U.S. Colleges 2024 ranking list. Among public
schools, Michigan Tech ranked first in
Michigan — and second in the nation
— for salary impact, or how much a
college boosts salaries earned by students after graduation.

ૹૹૹૹૹૹૹૹૹ

Wisconsin Public Radio and Urban Milwaukee mentioned Michigan Tech in stories about a new technique for recycling flexible plastics. Michigan Tech is named as a partner in the development of the solvent-targeted recovery and precipitation (STRAP) recycling system.

\$\$\$\$\$\$\$\$\$\$\$\$

Scrap Monster mentioned Michigan Tech in a story about the solvent-targeted recovery and precipitation (STRAP) technique for recycling flexible plastics. Michigan Tech is named as a partner in the development of the recycling system.

୰୰୷୰ଡ଼ଡ଼ଡ଼ଡ଼ଡ଼୰

Plastics Recycling Update mentioned Michigan Tech in a story about 14 research and development projects funded by the REMADE Institute, which is supported by the U.S. Department of Energy. MTU received two awards to fund research on solvent-based plastic recycling (\$600,000) and recycling of all-polyolefin multilayer flexible packaging (\$200,000).

\$\$\$\$\$\$\$\$\$\$\$\$

CBS Detroit, MLive and Lansing's WLNS 6 News mentioned Michigan Tech in stories about 2024 college rankings released by U.S. News & World Report. MTU ranked at No. 151 nationally and No. 3 in the state.

the Michigan Business Network mentioned Michigan Tech in connection to a \$7.5 million grant and a 15-year, 100% state essential services assessment exemption awarded to Calumet Electronics to support construction of a first-of-its-kind package substrate factory. MTU was credited as

Gov. Gretchen Whitmer and

ૹૹૹૹૹૹૹૹૹૹ

graduating the "brilliant engineers"

behind the company's innovations.

The <u>Keweenaw Report</u> published a photo gallery covering the 2023 Parade of Nations and Multicultural Festival, held Saturday (Sept. 16).

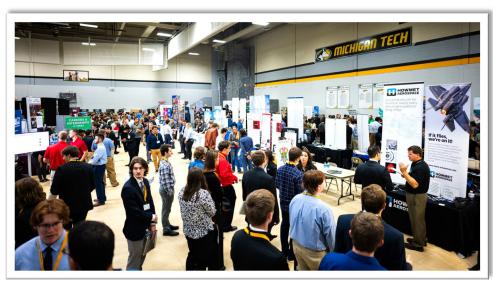
\$\$\$\$\$\$\$\$\$\$

DBusiness also mentioned Michigan Tech as one of the universities participating in a research and development section at the AutoMobili-D technology showcase (AMD) during the Detroit Auto Show's Technology Days in September.

ૹૹૹૹૹૹૹૹૹ

DieselNet mentioned Michigan Tech in coverage of the U.S. Department of Energy Vehicle Technologies Office 2023 Annual Merit Review, presented virtually by the DOE from June 12-15. The review mentioned an MTU project tasked with hybridizing an off-road vehicle.

ૹઌ૽ઌ૽ઌ૽ઌ૽ઌઌઌઌ



Michigan Tech's 2023 Fall Career Fair brought nearly 400 companies to campus, offering our students numerous opportunities to interview for co-ops, internships and full-time positions throughout the event.

Page 5 July - September 2023



## **Contracts & Grants**

**Blough, Jason** (PI, Professor, MEEM/MARC) and **James De Clerck** (Co-PI, Professor of Practice); "Simulation Methods for Optimal Fixture Design and Prediction"; sponsor: Honeywell Federal Manufacturing and Technologies, LLC / US DOE; total award: \$25,000.

Blough, Jason (PI, Professor, MEEM/MARC) and Brad King (Co-PI, Professor, MEEM); "Performance and lifetime characterization of low-power Hall-effect thruster"; sponsor: Orbion Space Technology Inc; total award: \$288,237.

෯෯෯෯෯෯෯෯෯

こうこうこうこうこうこうこうこうこう

**Dyreson, Ana** (Co-PI, Assistant Professor, MEEM/GLRC); "Center for Climatedriven Hazard Adaptation Resilience and Mitigation (C-CHARM) in Great Lakes Rural Communities"; sponsor: US Dept of Energy/Office of Science – Chicago; total award: \$347,874.

Malladi, Sriram (PI, Assistant Professor, MEEM/MARC); "Designing reconfigurable meta-structures with metal 3D printed Dynamically Linked Elemental Grade Oscillators (D-LEGOs)"; sponsor: Michigan Technological University/ AVPRD; total award: \$39,850.

ᢀᢀᢀᢀᢀᢀᢀᢀᢀᢀᢀᢀᢀ

Masoud, Hassan (PI, Associate Professor, MEEM/GLRC); "Harnessing perforated heave plates to improve the efficiency of two-body WECs"; sponsor: Alliance for Sustainable Energy LLC; total award: \$42,520.

Miers, Scott (PI, Assoc. Professor, MEEM/APSRC); "Alternative Fuels Research with Argonne National Laboratory"; sponsor: Argonne National Laboratory and US DOE; total award: \$49,999.

&&&&&&&&&&

&&&&&&&&&&&

Narain, Amitabh (PI, Professor, MEEM) and Jeff Naber (Co-PI, Professor, MEEM); "Collaborative Research: Very High Heat-flux Cooling through Stable Energy-Efficient Macro-scale Partial Flow-boiling Using Microstructured Surfaces and Ultrasonics"; sponsor: NSF; total award: \$344,064.

**Nguyen, Vinh** (PI, Assistant Professor, MEEM/GLRC); "Automated Data-Driven Prediction of Porosity in Wire-Arc Additive Manufacturing"; sponsor: Michigan Technological University/GLRC; total award: \$6,321.

&&&&&&&&&&

**Nguyen, Vinh** (Co-PI, Assistant Professor, MEEM); "Beginnings Track: Experiental Learning for the Mechatronics Workforce in the Upper Peninsula and Northern Michigan"; sponsor: NSF; total award: \$999.930.

බංබංබංබංබංබංබංබංබංබංබ

**Sharma, Bhisham** (PI, Associate Professor, MEEM/MARC); "STTR Special Topic AFX20D-TCS01 - Phase II Open Topic supporting Agility Prime"; sponsor: ERG Aerospace Corporation / US DOD/Air Force/AFRL); total award: \$174,152.

෯෯෯෯෯෯෯෯෯

Weaver, Wayne (PI, Professor, MEEM/MARC) and Gordon Parker (Co-PI, Professor, MEEM); "Power Electronics and Advanced Modeling and Control for Energy Systems"; sponsor: Sandia National Laboratories / US DOE; total award: \$77,000.

Weaver, Wayne and Fernando Ponta (Co-PIs, Professors, MEEM/ICC); "A Leap Towards Resilient Offshore Wind Energy: Innovative Experimental Setup for Developing Next-Generation Protection Systems for HVDC Grids"; sponsor: Michigan Tech University/GLRC; total award: \$10,000.

\$@@@@@@@

# CAPSTONE

## Senior Capstone Design Update

We extend our gratitude to everyone who has collaborated with us in shaping the next generation of engineers. Below is a partial list of companies that have undertaken projects with our students.

- Loukus Technologies, Inc. Dr. Adam Loukus, Project Engineer | Project Name: "Ceramic Insert Installer"
- WorldAutoSteel Mr. George Coates, Technical Director | Project Name: "Passenger-to-Cargo Adaptation for Steel E-Motive Vehicle"
- Milwaukee Tool Mr. Joseph Greaney, Senior Design Engineer, Masonry and Concrete Accessory | Project Name: "Manual Test Data Collection"
- John Deere Mr. Dan Watson, Engineering Mgr. Articulated Dump Trucks & Large Scrapers | "Undisclosed Project Title"
- Stryker Mr. James Novorita, Staff Engineer, Software, R&D | "Undisclosed Project Title"
- AAM American Axle & Manufacturing Ben Lively, Systems Engineer | "Undisclosed Project Title"
- Kohler Brian Witt, Manager, New Product Development | Project Name: "Undisclosed Project Title"

Contact Dr. Bill Endres (wjendres@mtu.edu) with questions about the program.

Envision long-term; focus on mid-term; deal with near-term... in that order if you can.

From: A Game Against Reality: Engineering Practice and Professionalism in a Physical World Inhabited by Humans by William J. Endres, Program Director (publication forthcoming)



Page 6 July - September 2023