



12-2018

Inspire e-News 12 2018

College of Engineering and Applied Sciences

Follow this and additional works at: https://scholarworks.wmich.edu/engineer_news



Part of the [Engineering Commons](#)

WMU ScholarWorks Citation

College of Engineering and Applied Sciences, "Inspire e-News 12 2018" (2018). *College of Engineering and Applied Sciences Newsletter*. 171.

https://scholarworks.wmich.edu/engineer_news/171

This Newsletter is brought to you for free and open access by the College of Engineering and Applied Sciences at ScholarWorks at WMU. It has been accepted for inclusion in College of Engineering and Applied Sciences Newsletter by an authorized administrator of ScholarWorks at WMU. For more information, please contact maira.bundza@wmich.edu.



InSPiRE

W College of Engineering
and Applied Sciences
WESTERN MICHIGAN UNIVERSITY

December 2018

W College of Engineering
and Applied Sciences
WESTERN MICHIGAN UNIVERSITY

Wishes You

Holiday greetings from the dean



Simulating flight

The Department of Mechanical and Aerospace Engineering recently completed initial development of a new engineering flight simulator that will take the student experience to new heights.

[Read More](#)



Join us for Innovation EXPO

Entrepreneurs of the future will be pitching their products and ideas at the 11th annual Innovation EXPO Friday, Dec. 7 at the College of Engineering and Applied Sciences. All are invited to Floyd Hall on the Parkview campus from 9 a.m. – 1 p.m. to see the next generation of entrepreneurs.

[Read More](#)



Students attend Society of Women Engineers annual conference

Seven members from the student chapter of Society of Women Engineers (SWE) headed to Minneapolis for the organization's annual conference to learn about current research and trends on the state of women in engineering.

[Read More](#)





Last roll

[Read More](#)

Ph.D. student joins board of industrial engineering institute

[Read More](#)



College Snapshot: Industrial and Entrepreneurial Engineering

[Read More](#)

Holiday Message from the Dean



Dear Friends:

2018 has been a year of many successes for our students and our college. As we enter the holiday season and approach the new year, it's a good time to reflect on the some of the milestones and highlights of the past year.

- Enrollment is high. In 2017-18, we awarded a record number of bachelor's degrees (377) and a record number of doctoral degrees (22).
- Our research expenditures are at an all-time high at \$4.7 million.
- All 13 of our undergraduate program under review were re-accredited – demonstrating our ability to provide strong learning experiences and an excellent engineering education.
- We recently opened AMP [Lab@WMU](#), a new advanced manufacturing partnership with a state-of-the-art facility in downtown Grand Rapids to help meet the region's need for more engineers and those in the skilled trades.

- We're establishing an Industry Outreach Office to help develop relationships for student co-op and intern positions, more industry involvement to engage our students in research opportunities, and enhanced industry interaction with student organizations and senior design projects.
- We are well on the way to establishing a biomedical engineering program in collaboration with WMed (WMU's Homer Stryker M.D. School of Medicine) and the College of Arts and Sciences. .
- Our 32 registered student organizations continue to be very active, provide great hands-on learning opportunities, and consistently are recognized for their contributions to their fields and the community.

There is a lot of energy and excitement in our college, and we are looking forward to new opportunities and challenges in the coming year.

I wish you and your families a wonderful and restful holiday season and a very Happy New Year.

Best wishes,



Houssam Toutanji

Simulating flight



MAE Engineering Flight Simulator - As it nears completion

The Department of Mechanical and Aerospace Engineering recently completed initial development of a new engineering flight simulator that will take the student experience to new

heights. Dr. Kapseong Ro, professor of mechanical and aerospace engineering, and graduate student Cameron Segard -- along with a senior design capstone project group -- unveiled the new simulator this fall.

Flight simulators are used extensively for pilot training and as a research and development tool by aerospace manufacturers and government institutions. A rather basic, inflexible flight simulator previously had been used to familiarize students with aircraft. The new engineering flight simulator, however, is more flexible and can be tailored to meet various objectives and applications such as applied research and engineering education.

“This new flight simulator will be used not only as an integrative tool for aeronautical engineering education but also as an effective tool to conduct advanced research such as next generation aircraft design, innovative control configured aircraft, safety and environmental benefits of advanced flight control laws, and evaluating flying and handling qualities,” Ro said. “Integrating the simulator into the current aerospace curriculum will provide students with the chance to physically experience changes in flight dynamics and control systems in a way there weren’t able to before.”



Engineering Flight Simulator being used and tested during Passport Day 2018

The simulator consists of an out-the-window display system made up of three 55” UHD-TVs, providing a large field of view (160° horizontal and 30° vertical), primary flight instruments display and two touch screen monitors, a throttle and flap control unit, and a FAA Level D flight simulator certifiable three-axes primary control loading system (CLS).

The new simulator was assembled in the UAV (Unmanned Aerial Vehicles) Lab by the senior design team, undergraduate and graduate students and even family members. The team selected, sourced and purchased raw materials and necessary equipment ahead of each phase of the assembly process, enabling an ambitious assembly schedule last summer.

“Now students can fly their choice of available aircraft and experience an immersive simulation,” Ro said. “It’s exciting for students to have an opportunity to be at the controls and test their piloting skills in various flight conditions.”

Join us for Innovation EXPO



Entrepreneurs of the future will be pitching their products and ideas at the 11th annual Innovation EXPO Friday, Dec. 7 at the College of Engineering and Applied Sciences. All are invited to Floyd Hall on the Parkview campus from 9 a.m. – 1 p.m. to see the next generation of entrepreneurs. Participants include more than 350 K-12 students from area schools as well as undergraduate students at the college.

The event – which was conceived by four professors from the Department of Industrial and Entrepreneurial Engineering and Engineering Management -- Drs. Tycho Fredericks, Bob White, Azim Houshyar and Steve Butt. The event continues to grow each year.

Visitors use ‘innovation dollars’ to ‘invest’ in the products they see as most innovative. The winning student teams in various categories receive medals and prizes.

Dr. Steve Butt, professor and department chair, said Innovation EXPO gives students a chance to gain experience in presenting their products and prototypes to engineering professionals, faculty and members of our community.

“Innovation EXPO encourages entrepreneurs of the future and at the same time acknowledges and celebrates our local entrepreneurial community,” Butt said.

The event is supported by the local design community through MIX (<http://mixswmi.com/>) and helps expand the college’s reach throughout Southwest Michigan and beyond.

Sponsors of Innovation EXPO included the Custer Lecture Series, Steelcase, Humphrey Products, Newell Brands, DENSO, Schupan & Sons Inc. and Michigan Office Solutions.

For more information, go to <https://wmich.edu/ieem/innovationexpo>

Students attend Society of Women Engineers annual conference



Seven members from the student chapter of Society of Women Engineers (SWE) headed to Minneapolis for the organization’s annual conference to learn about current research and trends on the state of women in engineering. The event also included a career fair – the largest of its kind for women engineers, featuring some of the biggest companies in engineering and technology.

“All of us had a chance to interview for a position with some amazing, top-notch companies,” said Tessa Williams, president of the SWE chapter.

She said the conference was very inspirational for all who attended. “We participated in a lot of breakout sessions aimed at career development, the transition out of college into the work force, being a minority in the field and leadership training.”

As president of the SWE chapter, Williams also attended the collegiate leadership academy, which focused on leadership skills and networking with other SWE collegiate leaders. “I learned about methods for growing and developing our chapter as well,” she said.

Students who attended the conference were Daisy Barreto Tufino, Magreth Haji, Marie Bridges, Marissa Doyen, Rupal Patel and Emily Principe.

The last roll



Representatives from the Department of Chemical and Paper Engineering, the Paper Technology Foundation and WMU’s Paper Pilot Plants at the groundbreaking for the installation of the updated paper machine.

11.01.2018: It was a bittersweet day when the last roll of paper rolled off the paper machine in McCracken Hall on WMU’s main campus and the machine was shut down for the final time after being in service since 1958. The machine is being disassembled and some parts will be incorporated into updated equipment at the Parkview campus at the WMU Coater Pilot Plant location. When complete, the machine will be the only double Fourdrinier in North America with the top Fourdrinier from the McCracken machine. A Fourdrinier machine produces paper, paperboard and other fiberboards through a moving endless belt that receives a mixture of pulp and water and allows excess water to drain off, forming a continuous sheet for further drying. The double Fourdrinier will allow the plant to produce two-ply paper and paper board, a

process used by many modern packaging and paperboard machines. The fiber recycling plant also is being moved to the Parkview campus and updated.

“This project will greatly enhance our research and production capabilities,” said Lon Pschigoda, general manager of WMU Pilot Plants. “We will have some very unique manufacturing capabilities and enhanced equipment to perform papermaking and recycling R & D for industry.”

WMU is the only place in the world where four pilot plants are available for research and development in recycling, papermaking, coating and printing. These plants conduct proprietary industry research and provide invaluable experience to student employees. “The combination of the paper engineering program, the Paper Technology Foundation and the Paper Pilot Plants give our students a huge head start on a great career,” Pschigoda said.

Ph.D. student joins board of industrial engineering institute

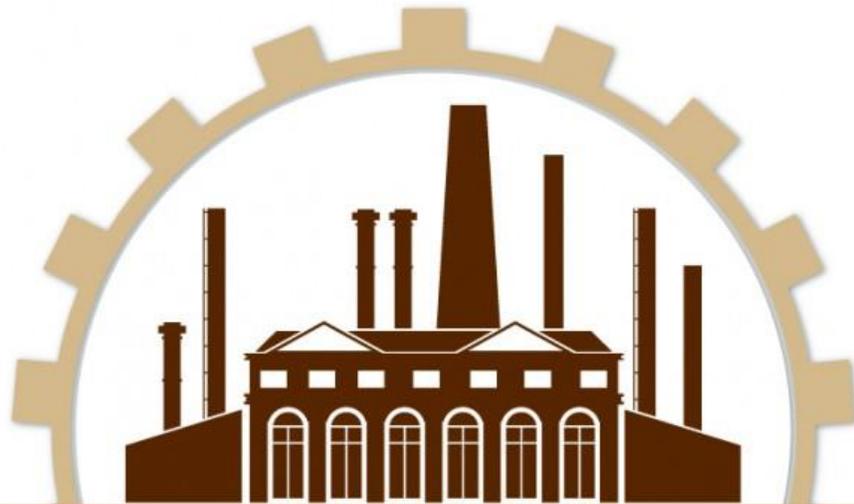


Ph.D. student Shoruk Awad Mansour

Industrial engineering Ph.D. student Shoruk Awad Mansour was named the student representative to the board of the Engineering Economy Division of the Institute of Industrial and Systems Engineers. She will be planning webinars for division members, promoting member value and helping further knowledge in the field.

Mansour's research in general focuses on economic risks by structuring a global facility site selection decision model. "I want my research to be important for this field of knowledge," she said. She plans to reach out to the top researchers in the organization's Engineering Economy division, build her network and work on member education.

College Snapshot - Industrial and Entrepreneurial Engineering



INDUSTRIAL AND ENTREPRENEURIAL ENGINEERING

WMU's program is one of the first accredited programs in the nation that combines a traditional industrial engineering program with an entrepreneurial engineering focus, where engineering design, creativity and innovation are emphasized throughout the curriculum.