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Young inventors enjoy innovation and entrepreneurship camp

Have you started a business or thought of starting a business? Do you wonder what it takes to be an entrepreneur, engineer or business owner? We asked those questions of area students to gauge their interest in an entrepreneurship and innovation camp hosted here at the College of Engineering and Applied Sciences.

Read Full Story
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Butt named fellow of Institute of Industrial and Systems Engineers

Dr. Steve Butt, of the College of Engineering and Applied Sciences, recently was named a fellow of the Institute of Industrial and Systems Engineers. He received the honor during the institute's 2017 annual conference May 20-23 in Pittsburgh. Being named a fellow is the highest classification of membership in the organization.

Read Full Story

WMU hosts 4th Annual Summer Conference on Livable Communities

The Transportation Research Center for Livable Communities (TRCLC) held the 4th Annual Summer Conference on Livable Communities June 1-2, 2017, at Western Michigan University's Parkview campus. The conference brought together nearly 100 transportation researchers, practitioners, and representatives of public agencies.

Read Full Story
WMU to launch master’s in engineering management in Tampa

Tau Beta Pi hosts rocket competition at local elementary school

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Students get up-close look at plastics industry at technical conference

Sky Broncos place 4th in national competition event

Upcoming Events

Send us YOUR news!
Young inventors enjoy innovation and entrepreneurship camp

Have you started a business or thought of starting a business? Do you wonder what it takes to be an entrepreneur, engineer or business owner? We asked those questions of area students to gauge their interest in an entrepreneurship and innovation camp hosted here at the College of Engineering and Applied Sciences. Some 21 high school students participated in a four-day camp in June called, “Beyond the Lemonade Stand: An Entrepreneurship and Innovation Experience.”

The camp was a collaboration with the Haworth College of Business, which last year hosted a 2-day entrepreneurship camp through Starting Gate, WMU’s business incubator. That camp was so well received it was expanded to four days this year and relocated to the Parkview Campus so participants could take advantage of the labs and facilities of Floyd Hall and enjoy site visits at area companies in the BTR Park.

Students worked in teams throughout the week to brainstorm, put their learning to use, and develop a product or service that they pitched to judges on the last day.

Speakers included faculty from both the College of Engineering and Applied Sciences and the Haworth College of Business, leaders in the community and area businesses, and local entrepreneurs. Topics included business plan and financial fundamentals, successful business pitching, inventing a product and leadership. The students toured WMU’s Human Performance Institute, the solar gardens at Floyd Hall (with a close-up look at the Sunseeker solar car), Thermo Fisher Scientific, the WMed Innovation Center, and printed their own camp T-shirt in the college’s printing lab.
Georgeau Institute awards five research grants to address global construction challenges

Five research grants have been awarded to faculty through the newly established Georgeau Construction Research Institute at WMU’s College of Engineering and Applied Sciences.

“These initial research projects are exactly the kind of innovative, rigorous work we envisioned for the Georgeau Construction Research Institute,” said Dr. Osama Abudayyeh, chair of the Department of Civil and Construction Engineering and founding director of the institute. “We see tremendous opportunity to investigate some of the challenges of the U.S. construction industry and help propel it forward in the global marketplace.”

Establishment of the institute at WMU was made possible by a generous $5 million gift from Phil and Betty Georgeau. Phil Georgeau is a graduate of WMU and founder of Chem Link, a company based in Schoolcraft, Mich., that manufactures products for the construction industry.

The vision of the institute is to advance the construction industry through innovative research focused on addressing global construction challenges and creating better, stronger, sustainable, safer and more resilient construction systems and materials.

Fire Safety in Smart Buildings – 4D Fire and Smoke Simulation

Dr. William Liou, PI

The nearly half million structure fires in the U.S. each year cause 17,000 injuries and deaths, and $10 billion in property losses. Dr. William Liou will build a predictive tool to simulate incidents of fire and smoke events and predict the location and likely growth of fire and smoke in smart buildings. The project will use computational fluid dynamics software and WMU’s Floyd Hall in the model.
An Innovative Application of Construction Sealants and Adhesives to Enhance Resilience of Wood Residential Buildings to Natural Hazards

Dr. Xiaoyun Shao, PI

Hurricanes and earthquakes cause tremendous devastation around the world. Dr. Xiaoyun Shao’s research will study construction sealants and adhesives, their properties and application, and how to mitigate damage to low-rise wood buildings, which comprise 90 percent of residential structures. Dr. Shao plans to use analytical and statistical modeling to assess the effectiveness of construction sealants and adhesives in improving the resilience of structures in windstorms and earthquakes.

Means and Methods for Improving the Structural Integrity of Roof Systems

Dr. Upul Attanayake, PI

Roof covering failure is a common occurrence in hurricane and tornado disasters. Roof covering failure allows water penetration, leading to significant damage to a building’s interior, and in most cases, structural failure. Dr. Upul Attanayake’s research will evaluate various roof systems and materials for improving structural resilience in damaging winds.
Automated compliance checking is used in the construction industry to improve the efficiency and effectiveness of a construction process. However, with increasing demands from clients and tightening regulatory requirements, current automated compliance checking techniques cannot tackle the complexity of a project’s lifecycle. Dr. Wuwei Shen and Dr. Jiansong Zhang are proposing a novel framework that uses a UML profile and then applies conformance checking to perform compliance checking through the lifecycle of the project.
Towards Unmanned Self-Navigable Real Time Location Sensing System for Construction Safety

Dr. Abiola Akanmu, PI

Despite increasing efforts to address safety concerns in the construction industry, construction sites still have high accident rates. Integrating information technologies with construction activities and environments can provide opportunities for real-time monitoring of resources, access to data on workers’ behavior, and prediction of construction accidents. Dr. Abiola Akanmu’s research will evaluate the performance of a commercially available real-time location sensing system that provides access to the location of workers, materials and equipment, enabling the design and development of an unmanned location tracking system that can self-navigate indoor construction environments.

Butt named fellow of Institute of Industrial and Systems Engineers

Dr. Steve Butt, of the College of Engineering and Applied Sciences, recently was named a fellow of the Institute of Industrial and Systems Engineers. He received the honor during the institute's 2017 annual conference May 20-23 in Pittsburgh. Being named a fellow is the highest classification of membership in the organization.

The accolade recognizes outstanding industrial and systems engineering leaders who have made significant, nationally recognized contributions to the profession. WMU now has four fellows, which as a percentage of industrial engineering faculty, is one of the highest percentages of fellows at any institution.

Butt serves as professor and chair of both the Department of Industrial and Entrepreneurial Engineering and Engineering Management and the Department of Engineering Design, Manufacturing and Management Systems.

Butt joins three other faculty members who have been named IISE Fellows: Drs. Tycho K. Fredericks, 2015; Timothy J. Greene, 1999; and Kailash M. Bafna, 1996. All three are professors of industrial and entrepreneurial engineering and engineering management. In addition, Greene serves as WMU's provost and Bafna also is a professor of engineering design, manufacturing and management systems.

IISE is an international nonprofit association that provides leadership for the application, education, training, research and development of industrial and systems engineering. Since 1950, only about 500 members of the organization have been have been named a fellow.
The Transportation Research Center for Livable Communities (TRCLC) held the 4th Annual Summer Conference on Livable Communities June 1-2, 2017, at Western Michigan University’s Parkview campus. The conference brought together nearly 100 transportation researchers, practitioners, and representatives of public agencies from Michigan, Texas, Utah, Tennessee and Montana to share current practices, on-going research projects, and interesting ideas regarding transportation and livable communities. A number of graduate students also participated and presented their research posters.

During the event, participants made 22 podium presentations and 20 poster presentations. Topics included innovation in active transportation, non-motorized transportation safety, safe mobility for the elderly and people with disabilities, and enhancing public transit services.

“It was a pleasure to host this conference again this year,” said Dr. Jun-Seok Oh, director of the center and professor in WMU’s Department of Civil and Construction Engineering. “We appreciate the many contributions of the TRCLC consortium members for their productive and thought-provoking research, and efforts to make this conference a success.”

Since it was established in 2013, the center has received $4.2 million from the U.S. Department of Transportation. The Transportation Research Center for Livable Communities includes five consortium member universities--Western Michigan University, University of Texas - Arlington, Utah State University, Wayne State University and Tennessee State University.

The TRCLC aims to address the nation's critical transportation challenges through the prism of livable communities. The center’s primary goal is to improve affordable and environmentally sustainable transportation options for conventionally underserved communities with special attention paid to non-motorized travel, pedestrian and bicycle safety, job accessibility and 'smart' transport technologies.
Beginning fall 2017, Western Michigan University will offer a Master of Science in engineering management through WMU’s Tampa Bay regional location. The 30-credit graduate program is a hybrid of regularly scheduled online instruction and face-to-face meetings and experiences. The program is designed to meet three weekends per semester and students can complete the degree in two years.

The Master of Science program in engineering management was developed to meet the demand for professional leaders and decision-makers in manufacturing, process engineering and service operations. The program is designed to help current engineers enhance their skills in technical engineering and systems management, preparing them to lead individuals, projects and teams. As global business changes, professionals need advanced education to succeed. This program provides them with the skills needed to be successful.

Engineering management is the degree that “bridges the gap” between engineering and business. It focuses on the leadership and skills necessary to manage people, money, and projects. This degree provides both excellent technical and managerial skills.

“Career opportunities for engineers with both technical competence and managerial skills are rapidly growing. Market research has shown an increasing need for qualified people to lead engineering initiatives in Florida,” said Dr. Houssam Toutanji, dean of WMU’s College of Engineering and Applied Sciences. “Our engineering management program addresses this need by developing highly skilled leaders who are able to effectively manage people, projects and resources. We are pleased to be able to expand this offering in Florida. We see a significant growth opportunity in the state.”

The engineering management courses will be taught by WMU’s College of Engineering and Applied Sciences faculty, each with over 20 years of experience. Course offerings include concepts and principles of engineering management, capital budgeting, project management, and production and quality management. Upon completion of the program, students will earn certification from the American Society for Engineering Management and earn professional development units from the Project Management Institute, which can be used for the institute’s certifications such as Project Management Professional and Certified Associate in Project Management. WMU’s Department of Industrial and Entrepreneurial Engineering and Engineering Management is a registered education provider for the Project Management Institute.

WMU’s Tampa regional location is located at 9445 Camden Field Pkwy, Riverview, Fla. More information about WMU’s Master of Science in engineering management can be found online at wmich.edu/extended/academics.
**Tau Beta Pi hosts rocket competition at local elementary school**

The WMU chapter of the engineering honor society Tau Beta Pi coordinated a bottle rocket competition at Saint Mary School in Paw Paw at the end of the spring 2017 semester. The Rockets Module is part of Tau Beta Pi’s [MindSet Program](#) designed to inspire students to consider careers in science and engineering. A few weeks prior to the competition, WMU students provided to school faculty and students a tutorial on how to design air-powered rockets as well as how to build their own rocket. The rocket constructed by Saint Mary School faculty traveled the farthest distance. Conner Knepley, Travis Shivley, and Clarissa Stanton led a team of about 10 Tau Beta Pi student members on this project.

![Rocket Competition](image)

Photos courtesy of Principal Michelle Radomsky, Saint Mary School

**Sunseeker, Baja and Formula SAE vehicles hit the road this summer**

Western Michigan University’s vehicles have been showcased in competitions and events around the country this summer. Here’s a look at some of their travels near and far.

**Baja and Formula SAE**

The Baja and Formula SAE teams made a trip to the east side of the state to participate in Metro Detroit Youth Day, the largest youth event in Michigan, with more than 35,000 participants enjoying constructive, positive activities on Belle Isle. The Baja team also traveled to Peoria, Ill., in June to compete against other universities at the Caterpillar Edwards Demonstration and Learning Center and was invited to take a lap during the BTR Park bike race in early July.

![Vehicles at Metro Detroit Youth Day](image)
Sunseeker

The Sunseeker solar car team traveled to Austin, Texas, to compete in the American Solar Car Challenge’s Formula Sun Grand Prix. Despite having to work out some bugs and order some parts at the last minute, the determined team was able to hit the track and do a lap at the event. The Sunseeker team typically takes WMU’s solar car to some 40 or more public and private events each year and has a rigorous schedule of community events in Kalamazoo and throughout Michigan planned for the months ahead.

WMU to offer Information Security graduate certificate

WMU’s College of Engineering and Applied Sciences and the Haworth College of Business have collaborated to develop an information security graduate certificate for information technology (IT) professionals launching fully online in fall 2017.

The information security field's growth potential has a predicted 35 percent growth rate from 2012 to the 10-year period ending in 2022. As business demands are increasing to train more individuals in the security of information systems, the College of Engineering and Applied Sciences and WMU’s Haworth College of Business are offering management and engineering graduate certifications for individuals working in the information security fields. The certifications are available for graduate students or industry professionals with a bachelor’s degree.

WMU’s information security graduate certificate will be offered as an online-only, accelerated, 15-credit program and includes two 10-month track options. Individuals will have the opportunity to specialize in either information security management, or secure software and engineering. Following completion of the graduate certificate, students will be exposed to various opportunities to gain the necessary knowledge to prepare for industry standards testing such as SANS GIAC, CISSP, CISA, and ITIL, which are recommended when pursuing expanded IT career opportunities.

Courses will be taught by WMU faculty from the College of Engineering and Applied Sciences and the Haworth College of Business. More information regarding the information security graduate certificate is available at wmix.edu/infosecurity.
Students get up-close look at plastics industry at technical conference

Twelve WMU engineering students attended the Society of Plastics Engineers Annual Technical conference in Anaheim, Calif., this spring where they learned about all things plastic. It’s the world’s largest conference related to plastics and the plastics industry. The students – all members of WMU’s student chapter of the Society of Plastics Engineers -- met industry leaders, professionals and students from other schools and listened to presentations in some 25 subject areas. WMU’s James Meirndorf presented a poster on his senior project work.

“Students saw presentations by industry leaders on the same subjects that they have been researching for classes, such as the impact of gate locations on weld line location and strength,” said Jay Shoemaker, faculty advisor to the student chapter. “They had a chance to see how what they are learning in the classroom is important and relevant to the industry.

Some 400 different presentations included topics ranging from injection molding, to plastics in the auto industry, to plastics part design, plastics recycling and additive manufacturing, among others.

The conference also included an exhibition where companies from the industry displayed their products and services.
Sky Broncos place 4th in national championship event

Western Michigan University's famed precision flight team, the Sky Broncos, captured fourth place in the 2017 National Intercollegiate Flying Association championship held this spring at Ohio State University. The team included two students from the College of Engineering and Applied Sciences: Brian Erhart of Belmont, Mich., and Dana Wyckoff of Shelby Township, Mich., both studying aerospace engineering.

The 16-member team competed against 26 teams from colleges and universities across the nation. The Sky Broncos placed fourth in ground events and fourth in flight events, placing fourth overall.

Schools earn the right to compete at nationals by winning or placing second in regional competitions. The Sky Broncos qualified for this year's competition by winning last October's NIFA Region III event at Ohio State University for the fourth consecutive year.