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InSPiRE



College of Engineering
and Applied Sciences

WESTERN MICHIGAN UNIVERSITY

November 2017



2017 Alumni Excellence Academy Award Recipients

WMU's College of Engineering and Applied Sciences inducted eight graduates into the Alumni Excellence Academy during the fall 2017 Homecoming festivities.

[Read Full Story](#)



Students take top awards for best paper at transportation conference

Congratulations to two of our students for the 1st and 2nd place awards for Best Student Paper at the Michigan chapter of the Institute of Transportation Engineers meeting earlier this fall.

[Read Full Story](#)



Nathan LaWarre: Change Agent on Campus

Nathan LaWarre is a change agent on campus, seeking opportunities for students to develop an entrepreneurial mindset, helping create a student innovation space, and working with faculty to conduct workshops that expose students to creativity and innovation.

[Read Full Story](#)



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WESTERN MICHIGAN UNIVERSITY

**College of Engineering
and Applied Sciences**

College Snapshot:
Research
Expenditures



WMU's current ad campaign includes one TV spot featuring the College of Engineering and Applied Sciences.



Students and staff did an exceptional job at the "Stuff the Bus" event.
Take a look at our photo gallery on Facebook.

Update Your Info!

Upcoming Events

 Send us YOUR news!



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2017 Alumni Excellence Academy Award Recipients

MR. JAMES CASTELLANO, B.S. AUTOMOTIVE ENGINEERING '87

Jim Castellano graduated with a B.S. in Automotive Engineering in 1987. He joined Ford Motor Company in 1983, working his way through school, and has spent his entire professional career there, holding a variety of engineering and management positions.

Early in his career Jim took an International Engineering Assignment in England to work on World Car, developing a common platform for vehicles across countries as an engineering liaison. In 1999, Jim was selected as one of the first people to develop a hybrid electrical vehicle. After his time working on hybrids, Jim assumed the role of Global Brake and Applications Systems manager, leading the global development of the next generation of vacuum-less and bi-wire braking systems. Jim currently works as a manager for North America Steering Applications and Systems. He has received two patents for his work on high voltage battery systems.



Jim has been married to Christina for 25 years. They have three children, Jimmy, Sarah and Mark. Jim enjoys spending time with his family, cooking Italian cuisine, being a Boy Scout leader, and serving on Western's Engineering Board of Visitors.

MR. MICHAEL DOZEMAN, B.S. ELECTRICAL ENGINEERING '01

Michael D. Dozeman received his B.S. in Electrical Engineering from WMU in 2001 and a M.S. in Electrical Engineering from Stanford University in 2007. A Medallion Scholarship recipient, Michael was a member of Lee Honors College and held a year-round internship at Stryker Corporation while pursuing his studies. He was named a Presidential Scholar in Electrical and Computer Engineering in 2001.

After graduating from WMU, Mike joined Stryker full time as a Research and Development engineer, working on the design of new medical devices used by surgeons in the operating room. During his 19 years at Stryker, Mike has participated in a number of successful product launches, and is a two-time winner of Stryker's Global R&D Best Invention Award. Michael currently is Chief Engineer and leads a complex multi-disciplinary project consisting of engineers working at multiple Stryker facilities across the world.



Michael lives in Portage with his wife Debra and his four young children, Henry, Gabriel, and twins Anna and Andrew. Michael enjoys playing golf and participating in all sorts of activities with his children. Looking back at his time at WMU, Michael's fondest memories are of the

friendships he made and the interaction and mentorship with his professors in Electrical Engineering.

MR. M. ANDREW EICK, B.S. COMPUTER SCIENCE '91, B.A. PHILOSOPHY '91

M. Andrew Eick is a technologist, dedicated to crafting scientific innovation into practical solutions for the Intelligence Community (IC). He graduated from WMU in 1991 with a B.S. in Computer Science and a B.A. in Philosophy. In 1995, Andrew graduated from Oakland University with an M.S. in Computer Science.

While working at Ford Motor Company, Andrew created a system to manage the development and printing of service manuals, which earned him multiple technology awards and one U.S. software patent. In 2003 he became Chief Technology Officer at SSS Research, a Department of Defense contracting startup. His innovations for optimizing the processing and transmission of geospatial data received multiple U.S. software patent awards. In 2008, Andrew started his own company, Mission Focus, focusing on the “Big Data” problems inherent in the IC domain. As CEO, he orchestrates technology and operations, employing cloud technologies to address the storage and processing of information.



Andrew lives in Northern Virginia. When he isn't working on “Big Data” solutions, he enjoys photography. His wife, also a 1991 WMU graduate, and two daughters, ages 13 and 14, are his favorite models. On any weekend during soccer season he can be found on the sidelines of a soccer field.

DR. ALI FADHEL, B.S. CHEMICAL ENGINEERING '04, M.S. PAPER SCIENCE AND ENGINEERING '07

Ali Fadhel made Kalamazoo home for six years after moving from the Middle East in 2001. The warm people of WMU and the cold winters of Michigan will forever be happy memories in his heart.

Ali obtained a B.S. in Chemical Engineering with a focus on Energy Management in 2004 and an M.S. in Paper Science and Engineering under the direction of Dr. John Cameron, Dr. Said Abubakr, Dr. Andrew Kline, and Dr. Peter Parker. With a passion for learning, Ali moved to Atlanta and attended the Georgia Institute of Technology, where he obtained a Ph.D. in Chemical Engineering.

He worked as a research engineer at GE Water & Process Technologies and at Georgia Pacific Gypsum before joining the Patent & Trademark Office as a patent examiner for petrochemical technologies.



Ali currently lives in Seattle and enjoys spending time with his family, reading history books, hiking with his rambunctious 10-lb Yorkie, and being by the water.

MR. CHARLES (CHAS) HAMMOND, B.S. CONSTRUCTION ENGINEERING '05, M.S. ENGINEERING MANAGEMENT '07

Chas Hammond received his B.S. in Construction Engineering in 2005. He also holds an M.S. in Engineering Management from WMU and attained his Professional Engineering (PE) License.

Chas is Director of Project Planning for The Austin Company, an international design-build construction company with an office located in Kalamazoo. He began working for The Austin Company after graduation and has since progressed from managing field work to coaching staff and leading business development regionally for the company.

Chas maintains active involvement in professional organizations, including the ISPE, ASCE student society, Chief Engineers and Southwest Michigan First – Council of 100. Forever a Bronco, Chas has been privileged to serve on the Industrial Advisory Board for the Department of Civil and Construction Engineering and recently became a part-time faculty member at WMU.

Married to Dana, a fellow Bronco engineer, Chas has four beautiful daughters. In addition to chasing kids, Chas enjoys playing all sports from volleyball to shooting sporting clays. A Kalamazoo local, he continues to support the university at campus events, including Miller Auditorium, football and hockey games. Go Broncos!



MR. JEFF MCINERNEY, B.S. MANUFACTURING ENGINEERING '92

Jeff McInerney received a B.S. in Manufacturing Engineering from Western in 1992. The recipient of 11 competitive academic scholarships, he also received the Presidential Scholar Award for the IME department and graduated cum laude. He also holds an M.S. from Kettering University (formerly GMI).

Jeff is Vice President, Supply Management, Americas, for Rolls-Royce North America Inc. He is responsible for leading the company's supply management strategy and operational organization in North America. Prior to joining Rolls-Royce, Jeff was the North America Purchasing Director at Nexteer (formerly Delphi Steering Systems, GM) in Saginaw, MI.

Jeff serves on the Manufacturing Engineering Technology Advisory Board at WMU and the Executive Advisory Board for Michigan State University's Eli Broad Supply Chain program. During his time at WMU, he



held various leadership roles in the student chapters of both the Society of Manufacturing Engineers and the Society of Plastics Engineers.

One of Jeff's favorite memories of WMU is the soap box derby car race that used to be held on Homecoming weekend. Student organizations would build a car and race down hill to the Valley dorms. Jeff lives in Indianapolis, is married and has four children. In his spare time, he enjoys coaching various sports teams for his kids. He also has a love for the water and enjoys boating.

MR. JASON TEDROW, B.S.E. INDUSTRIAL ENGINEERING '97

Jason Tedrow received his B.S.E. in Industrial Engineering in 1997 and is a member of the WMU IEE Curriculum Advisory Board. He also holds an MBA from the University of Chicago Booth School of Business.

Jason currently is the Vice President of Supply Chain at James Hardie Building Products where he is responsible for all transportation, planning, customer service, procurement, new product introduction and inventory management activities. He previously was the Vice President of Supply Chain for US Silica and has held a variety of supply chain, engineering and operations management positions with Lafarge Cement, ConAgra Foods and Amway.



While at WMU, Jason completed an internship at the Kellogg Company where he met his wife (and fellow Industrial Engineering graduate) Jennifer (Pierce) Tedrow. They currently live in Chicago with their three children, Andrew, Addison and Connor. The family was thrilled to travel to Dallas earlier this year to support the Broncos at the Cotton Bowl. Jason reflects fondly on his time at WMU, and feels strongly that his experiences at Western provided an excellent foundation for each phase in his career.

DR. ROGER VELDMAN, M.S.E. MECHANICAL ENGINEERING '95, PH.D. MECHANICAL ENGINEERING '01

Roger Veldman received his M.S.E. in Mechanical Engineering at WMU in 1995 while working full-time for the automotive component supplier Donnelly Corporation (now Magna) in Holland, MI. In 1998 he joined the faculty at Hope College as an assistant professor of engineering. Roger continued his studies at Western and completed a Ph.D. in Mechanical Engineering in 2001.

Roger currently is a professor of engineering at Hope College, serving as the chair of the Engineering Department. He teaches a variety of mechanical engineering courses, including a senior capstone design course.



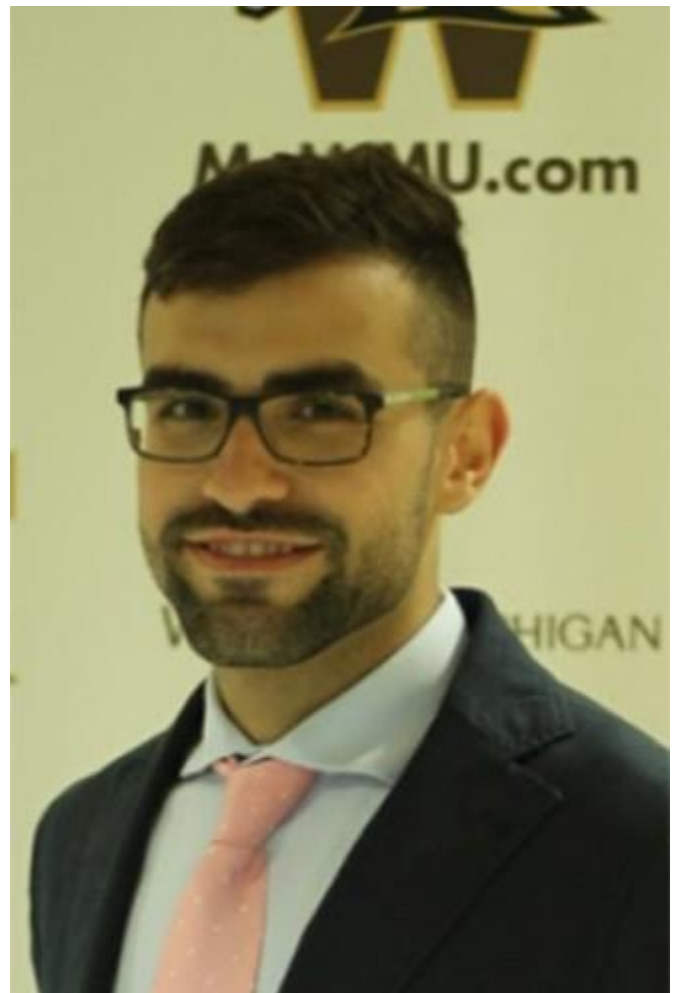
Roger is also active in research involving both numerical predictions and experimental trials to determine the effects of explosive detonations on structures. He has received continuous research funding from various agencies since 2001. Roger is a named inventor on 48 United States patents.

In his free time he enjoys traveling and spending time with his wife and three children.

Students take top awards for best paper at transportation conference

Congratulations to two of our students for that the 1st and 2nd place awards for Best Student Paper at the Michigan chapter of the Institute of Transportation Engineers meeting earlier this fall.

The \$500 1st place award went to Odai Alhouz, a master's student in civil engineering for his paper titled, "Effectiveness of Bicycle Signal and Bike Box for Improving Safety and Multimodal Mobility at Urban Intersections." The \$300 2nd place award went to Fadi Alhomaiddat, a Ph.D. student in civil engineering for his paper titled, "Cycling Risk Perception and Skill Level of Different Age Groups."



Odai Alhouz

Alhouz has been working on a number of transportation projects with Dr. Jun Seok Oh in the Transportation Research Center for Livable Communities. He has been awarded the Civil and Construction Excellence Scholarship and the Undergraduate Research Excellence Award. He also is a member of the Tau Beta Pi engineering honor society and the American Society of Civil Engineering.

Alhomaidat is a research assistant in the Transportation Research Center for Livable Communities. He received his bachelor's degree in 2011 in civil engineering from Mutah University in Jordan and master's degree in 2015 in transportation engineering from the University of Texas at Arlington. His research interests include motorized and non-motorized traffic safety analysis, GIS application in transportation engineering, and driving simulation.



Fadi Alhomaidat

Nathan LaWarre: Change Agent on Campus

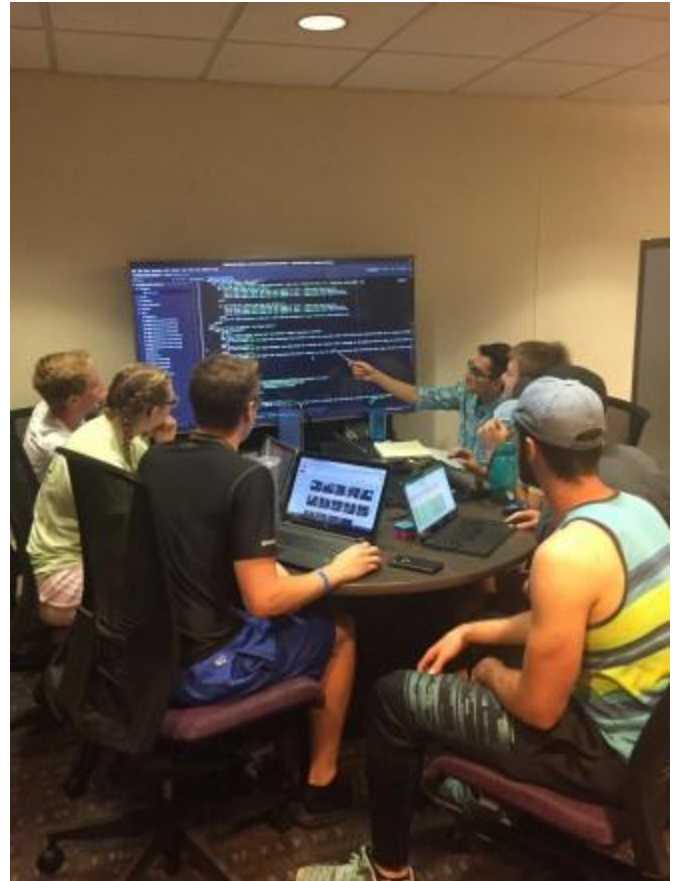
Nathan LaWarre is a change agent on campus, seeking opportunities for students to develop an entrepreneurial mindset, helping create a student innovation space, and working with faculty to conduct workshops that expose students to creativity and innovation. The junior majoring in computer engineering is one of two students at WMU selected as University Innovation Fellows through a program administered by Stanford University. Jill Puckett, a business student at Western, also was selected as a University Innovation Fellow. Both are headed to Stanford later this month for additional training that commemorates the 5th year anniversary of the fellowship program. Since its inception, the University Innovation Fellows program has trained 1,000 fellows at 185 schools around the world.

“When you first enter the University Innovation Fellows program it is an intense six weeks of online training,” LaWarre said. “You interact with students from all over the world during those six weeks and collaborate on many different projects.” When the initial training was complete, the students headed to the design school at Stanford to meet up and participate in additional training on entrepreneurship, innovation and design thinking. They also had the opportunity to participate in workshops at Google and Microsoft.

“The training is all about entrepreneurial skills, collaboration, ideation, design thinking, problem solving, empathy, and how to find and use the resources at your disposal,” LaWarre said. “It’s a very intense training, but well worth it. It changes the way you look at problems and tackle them.”

He said he is looking forward to returning to Stanford to continue his training. “Dr. Steve Butt has been very supportive of the Innovation Fellows program and obtaining the funding from the college to allow me to have this opportunity,” LaWarre said. “I really want to make a difference here at Western in exposing students to creativity, innovation and entrepreneurial thinking.”

LaWarre has been involved in creating the Innovation Club, a registered student organization that provides a place on campus for students to design, build and be creative. “The Innovation Club provides a ‘makerspace’ where students take their ideas or skills they want to learn and



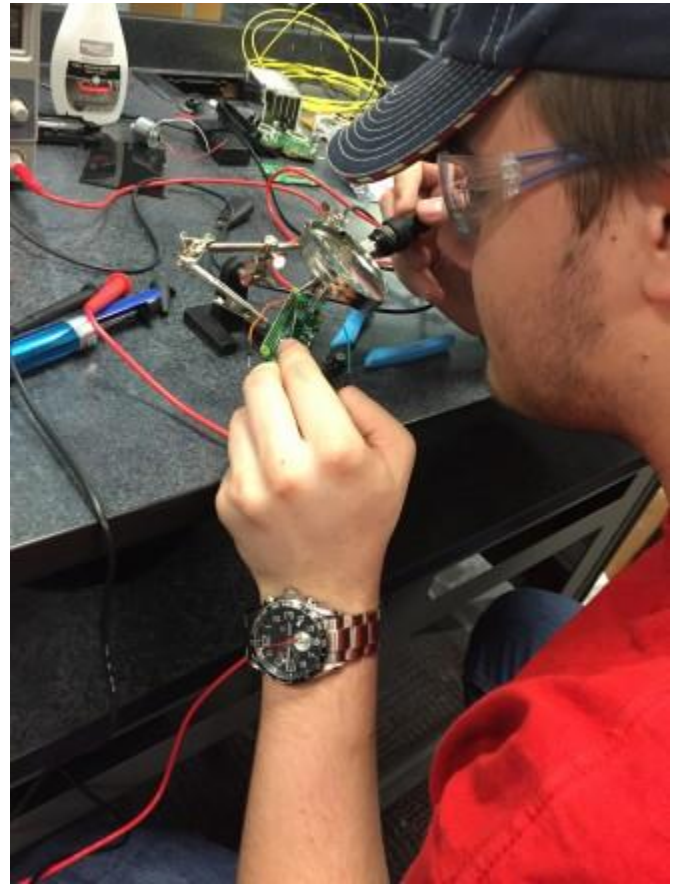
Collaboration between Innovation Club members.

actually build those ideas and learn those skills,” he said. “And even if you don't have an idea or skill you want to learn, you can jump on someone else's idea and help with it.”

The makerspace, which is run by students, is in the University Computing Center on the second floor, and is open from 10 a.m. – 10 p.m. Monday-Thursday. Use of the facility is free for students. It houses an array of equipment including 3D printers, hand tools, prototyping materials, and electrical equipment. Innovation Club members also have established a Student Projects Fund that students can apply to for funding their unique projects. Among the projects currently being funded are a Bluetooth speaker made from scratch, a robotic arm and a 3D printed 2-level train set.

Members of the Innovation Club also have been working with faculty to run design thinking workshops with several First Year Experience classes, touching on topics such as collaboration, teamwork, communication and relationship building.

More information about the Innovation Club can be found on Instagram and Twitter at [iclubwmu](#), and on Facebook and LinkedIn.



Innovation Club member at work.

NFPA awards \$25,000 to Western Michigan University researchers for curriculum development



The National Fluid Power Association (NFPA), under its Curriculum Grants Program, has awarded \$25,000 to Drs. Alamgir Choudhury and Jorge Rodriguez from Western Michigan University (WMU) for a project to develop modular course material for “Design of Fluid Power Systems.”

Choudhury and Rodriguez are faculty members in the Department of Engineering Design, Manufacturing, and Management Systems at WMU’s College of Engineering and Applied Sciences. The work proposed under the one-year grant is to develop senior-level modularized materials that teach fluid power concepts under the umbrella of designing a complete power system. Concepts related to circuits, simulation, prototype, testing and controls will be included. The materials will be offered as an elective course in the college in 2018.

“We also plan to have the finalized modules implemented independently at other institutions according to the objectives of their curriculum,” Rodriguez said.

The NFPA Education and Technology Foundation awards grants of up to \$25,000 to 4-year universities to develop, replicate, or disseminate high-quality, high-impact undergraduate-level fluid power curriculum. These initiatives engage faculty in the teaching of fluid power and create heightened awareness of and engagement with fluid power among the next generation of engineering leaders. The grant to WMU's College of Engineering and Applied Sciences is the only one awarded this year.

"This grant complements our efforts at the college to strengthen fluid power engineering education," said Rodriguez, who along with former Dean Michael Atkins, initiated the undertaking. Rodriguez and Atkins worked to establish the college's Parker Motion and Control Laboratory in 2003 with an initial grant of \$100,000 from the Parker Hannifin Corp. together with ongoing annual support. Additional efforts have resulted in several development grants to the college including a \$100,000 grant from NFPA to Choudhury and Rodriguez in 2012 to further develop the fluid power laboratory and a \$50,000 grant from the Denso Foundation in 2013 for testing hydraulic auto components in a controlled environment.

In related efforts, the College of Engineering and Applied Sciences has been an active participant in the "Chainless Challenge," a nationwide competition in which a human-powered vehicle is designed and fabricated by a team of students. The vehicle competes in sprint, efficiency and endurance races. The Chainless Challenge was sponsored by Parker Hannifin for several years, and now is sponsored by NFPA. WMU is one of two universities that has participated in every competition, and has been the overall champion on two occasions.

Current efforts related to fluid power education are development of pneumatic curriculum (Dr. Rodriguez), further integration in existing curriculum (Dr. Choudhury), and control systems (Dr. Richard Meyer). Companies interested in collaborating or contributing to future endeavors should contact Dr. Jorge Rodriguez, (269) 276-3374 or at jorge.rodriguez@wmich.edu.



Dr. Alamgir Choudhury



Dr. Jorge Rodriguez

"Stuff the Bus" brings in a ton of food for WMU campus food pantry



Many of the College of Engineering and Applied Sciences' student organizations participated in the "Stuff the Bus" event helping contribute to its success.

Western Michigan University's College of Engineering and Applied Sciences recent "Stuff the Bus" event at the D & W Fresh Market grocery store was a tremendous success, bringing in more than a ton – some 2,596 pounds -- of food to benefit WMU's campus food pantry.

"Western's 'Invisible Need' food pantry was established to help our students who are hungry," said Jamie Long, who organized the event for the college. "We are so pleased that the community supported this effort, with shoppers picking up an extra item or two when they were doing their grocery shopping that day," she said. In addition, another \$1,500 in cash donations allowed student volunteers to shop at the store for much-needed items for the food pantry.

Members from the college's Sunseeker solar car, Formula SAE and Baja teams volunteered at the event, displayed their vehicles and provided WMU giveaways to shoppers. Students from Ts'ai Lun, the Society of Women Engineers, the American Institute of Chemical Engineers and the Computer Club also volunteered at the event. "We could not have done this without our amazing student volunteers," Long said. "Their hard work and many hours at the event made it a huge success."

In recent years, campus communities across the nation have discovered that there are large populations of students who go hungry. These include both non-traditional students, such as those with families, as well as independent students. Campus food banks have become a critical resource for students in need.

Long said students in need have access to “shop” the pantry as often as every two weeks. For more information about the Invisible Need food pantry, contact Shari Glaser at (269) 387-4820 or shari.glaser@wmich.edu.

College Snapshot: Research Expenditures



W College of Engineering
and Applied Sciences
WESTERN MICHIGAN UNIVERSITY

IN THE 2016-17 FISCAL
YEAR, THE COLLEGE OF
ENGINEERING AND APPLIED
SCIENCES HAD RESEARCH
EXPENDITURES OF \$4.5 MILLION,
A RECORD HIGH.