

Message from Department Head

Summer has officially arrived with the Spring graduates gone and the summer school students starting classes. We had 14 undergraduate students graduate this semester, along with 7 master's and one doctoral student. In addition to teaching the faculty were heavily involved in research, publication, and proposal writing. It is always interesting to see the variety and depth of work that ISE is involved in. This past year the ISE department reported over \$4 million dollars in research expenditures. You can find a sampling of the research activities by examining the list of recent journal publications from faculty and students on page 4 of this newsletter. This list doesn't include the many other publications such as book chapters and conference proceedings. In addition to the ISE faculty, we had 11 graduate students attend and take part in the national conference of the Institute of Industrial and Systems Engineers in Anaheim, California this past May. Five of those students were from our distance graduate program. This exemplifies the level of activity of the students and faculty at the national level.

Don't hesitate to drop me a line if you have any questions or ideas. I would love to hear from you.

Go Dawgs!
John



Spring 2016 Graduates

Doctoral:

- **Fadi Batarseh** – “Collaboration for Innovation in Virtual Teams.” Advisor: John M. Usher

Master's Thesis:

- **Marc Banghart** – “Investigation of human subjectivity during Failure Mode Effects Analysis (FMEA).” Advisor: Kari Babski-Reeves
- **Benjamin Campbell** - “Study of In-Vehicle Technology for Increasing Motorcycle Conspicuity.” Advisor: Lesley Strawderman
- **Michael Ross** - “Comparison of touchscreen and physical keyboard with nomadic text entry.” Advisor: Lesley Strawderman

Master's Non-Thesis: William Bradley, Molly Edwards, Clifton Geter, and Robert Perry.

Undergraduates: Thomas Bishop, Christopher Crosby, Fantasi Curry, Kellie Ellis, Richard Evans, Dallas Finley, Tyler Freeman, Kayla Ivory, Jeremy Liddell, Amarin Montroy, Megan Rowland, Jamontrey Sawyers, Robert Schaper, and Mitchell Wilczynski.

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Linked in Aside from the ISE website, the best way to stay on top of the latest news about ISE students, faculty, and the department is to join the [Mississippi State University Industrial & Systems Engineering](#) LinkedIn group. There are nearly **700** MSU ISE alumni members in that group, so it is a great way to reach out to other ISE Bulldogs. (Use the link: <http://bit.ly/msu-ise>)

Department & Faculty News

- **Linkan Bian's** journal paper was selected as the **Best Paper** in the **IIE Transactions** Focus Issue on Quality and Reliability Engineering for 2016. The award is selected by a committee from all papers published between July 1, 2014 and June 30, 2015. His accomplishments were recognized at the Honors and Awards Dinner during the Industrial and Systems Engineering Research Conference held in Anaheim, CA. His winning paper is entitled: "Degradation Modeling for Real-Time Estimation of Residual Lifetimes in Dynamic Environments."
- **Lesley J. Strawderman**, associate professor of industrial and systems engineering, the Jefcoat Excellence in Advising Faculty Award. This honor is given to only one professor in the university each year and recognizes outstanding academic advising and the faculty member's commitment to quality advising.
- Congratulations to **Linkan Bian** for receiving a 3-year grant from the **National Science Foundation** for support of the project entitled "US-South Korea Collaborative Research: Additive Manufacturing of Fatigue Resistant Materials." This project is a collaborative effort with other MSU faculty Nima Shamsaei, Hongjoo Rhee, and Scott M. Thompson.



Alumni News

- **Theresa Graves Maxwell** was recognized as the ISE Distinguished Fellow for 2016. Theresa is a 1980 summa cum laude IE graduate who retired in January 2015 after almost 35 years as a public servant with the National Aeronautics and Space Administration (NASA). After graduating from MSU, Maxwell began her career at the Marshall Space Flight Center in Huntsville, Alabama, scheduling astronaut activities and science operations for Space Shuttle missions. She earned her master's degree in ISE from the University of Alabama in Huntsville in 1987. In 2004, she joined the International Space Station Office at NASA Headquarters in Washington, D.C., performing program oversight and policy functions for the \$3 billion per year program, and retired as the Deputy Director of the office. Maxwell and her husband, Kim Toufectis, live on Capitol Hill and enjoy traveling and improving their 108 year old row house. She has served on the ISE advisory board since 1998, and is a member of IIE, Mensa, and the MSU Alumni Association.
- **Leander "Skip" Taylor (BS '77)**, a manager of quality trends and records at Ingalls Shipbuilding, was recognized for his achievements in the science, technology, engineering and math (STEM) fields during the 30th annual Black Engineer of the Year Award STEM Global Competitiveness Conference. Skip began his career as a manufacturing engineering with Ingalls at its Avondale site and he currently leads a process improvement team for the company.



Student Highlights

- The President's Commission on the Status of Women granted the PCSW Student Leadership Award for 2016 to **Kennedy Brown** (ISE Senior). As a result, she will be one of two students from MSU that will be attending the National Conference for College Women Student Leaders this year in College Park, Maryland.
- An ISE student team composed of graduate students **Shuchisnigdha Deb** and **Md Mahmudur Rahman**, and undergraduate students **Rachel Creely** and **Jack Francis** placed 3rd in the National Society of Health Systems/Flexsim Model Building Competition. As finalist, they traveled to Houston, TX to make their final presentation. This is the 2nd year in a row that we have placed 3rd in the competition.
- Senior ISE student, Fantasi Curry, was selected for a national GEM Fellowship for 2016. She was selected by Ford Motor Company and will fulfill two summer internships with them.
- A conference paper entitled "Identification of External Design Preferences in Autonomous Vehicles" by ISE graduate students **Shuchisnigdha Deb**, **Sushil Poudel**, and **Suyogya Bhandari** was selected to receive the **IIE SEMS Best Student Paper Award** at the 2016 IIE Annual Conference & Expo in Anaheim, California, May 21 – May 24.
- Winners of the J. Ron Walsh Outstanding Industrial Engineering Awards are:
 - Outstanding Senior Award – **Christopher Crosby**
 - Outstanding M.S. Student Award – **Rebecca Vander Linde**
 - Outstanding Ph.D. Student Award – **Md Mahmudur Rahman**
 - Outstanding Research Paper Award – **Nandi, Apurba K.**, and Hugh R. Medal, "Methods for Removing Links in a Network to Minimize the Spread of Infections," Computers and Operations Research, vol. 69, 2016, 10-24.
- Pictured below are the 14 MSU-ISE students that attended the IIE Southeastern Regional Student Chapter Conference at the University of South Florida. Dr. Strawderman, Faculty Advisor (pictured at right) accompanied them to the conference.



Recent ISE Faculty and Student Publications

- **Bian, L.**, Gebraeel, N., & Kharoufeh, J. (Feb 2015). Degradation modeling for real-time estimation of residual lifetimes in dynamic environments. *IIE Transactions*, 47(5), 471-486.
- **Bian, L.**, Thompson, S.M., & Shamsaei, N. (Jan 2015). Mechanical Properties and Microstructural Features of Direct Laser Deposited Ti-6Al-4V. *JOM TMS*, 67(3), 629-638.
- **Dai, R., Hu, M.**, Yang, D., & Chen, Y. (Dec 2015). A Collaborative Operation Decision Model for Distributed Building Clusters. *Energy*, 84, 759-773.
- **Grabenstetter, D.**, & **Usher, J.** (Apr 2015). Sequencing Jobs in an Engineer to Order Engineering Environment. *Production & Manufacturing Research*, 3(1), 201-217.
- **Hu, M.** (Dec 2015). A Data-driven Feed-forward Decision Framework for Building Clusters Operation under Uncertainty. *Applied Energy*, 141, 229-237.
- **Jaradat, R. M.**, & Keating, C. (Nov 2015). Systems Thinking Capacity: Implications and Challenges for Complex System Governance Development. *International Journal of System of Systems Engineering Inderscience Publishers*, 4(1/2), 100-115.
- **Jaradat, R. M.**, & Pinto, C. (Aug 2015). Development of a Framework to Evaluate Human Risk in a Complex Problem Domain. *International Journal of Critical Infrastructures Inderscience Publishers*, 11(1/2), 1-19.
- **Jaradat, R. M.** (Jul 2015). Complex System Governance Requires Systems Thinking - How to Find Systems Thinkers. *International Journal of System of Systems Engineering Inderscience Publishers*, 6(1/2), 53-70.
- **Marufuzzaman, M.**, & Henni, A. (Mar 2015). Solubility of CO₂ and C₂H₆ in Heavy Oil and Its SARA Fractions. *The Canadian Journal of Chemical Engineering*, 93(3), 553-564.
- **Marufuzzaman, M.**, Eksioğlu, S., & Hernandez, R. (Feb 2015). Truck versus Pipeline Transportation Cost Analysis of Wastewater Sludge. *Transportation Research Part A*, 74, 14-30.
- **Poudel, S., Marufuzzaman, M., & Bian, L.** (Dec 2015). Designing a Reliable Biofuel Supply Chain Network Considering Link Failure Probabilities. *Computers & Industrial Engineering*, 91, 85-99.
- Shamsaei, N., Yadollahi, A., **Bian, L.**, & Thompson, S.M. (Oct 2015). An Overview of Direct Laser Deposition for Additive Manufacturing; Part II: Mechanical Behavior, Process Parameter Optimization and Control. *Additive Manufacturing Elsevier*, 8, 12-35.
- **Smith, B. K.**, Du, J., & Bedwinek, A. (Aug 2015). Caseload/Workload Study of Speech-Language Pathologists in Missouri Public Schools: Implications of Key Factors That Contribute to SLP Job Satisfaction. In Jayanti Ray, PhD, CCC-SLP (Eds.), *Journal of Missouri Speech-Language-Hearing Association*, 1(1), 51-72.
- **Cannon, A., Strawderman, L., & Burch, R.** (Aug 2015). Evaluating Change in User Error When Using Ruggedized Handheld Devices. *Applied Ergonomics*, 51, 273-280.
- **Nandi, A., Strawderman, L., Rahman, M., & Huang, Y.** (Aug 2015). Driver Speed Limit Compliance in School Zones: Assessing the Impact of Sign Saturation. *Accident Analysis and Prevention*, 82, 118-125.
- **Hamilton, M., Strawderman, L., Hale, B., & Babski-Reeves, K.** (Jun 2015). Effects of BMI and Task Parameters on Postural Sway During Simulated Small Parts Assembly. *Ergonomics*, 58(3), 504-512.
- Thomas, M.D., & **Carruth, D.** (Mar 2015). Active Shooter Training: Data Based Recommendations for Retraining Depreciable Skills. *Journal of Law Enforcement*, 4(3), 1-21.
- Thompson, S.M., **Bian, L.**, Shamsaei, N., & Yadollahi, A. (Oct 2015). An Overview of Direct Laser Deposition for Additive Manufacturing; Part I: Transport Phenomena, Modeling and Diagnostics. *Additive Manufacturing Elsevier*, 8, 36-62.
- Thompson, S.M., Aspin, Z.S., Shamsaei, N., Elwany, A., & **Bian, L.** (Sep 2015). Additive Manufacturing of Heat Exchangers: A Case Study on a Multi-Layered Ti-6Al-4V Oscillating Heat Pipe. *Additive Manufacturing Elsevier*, 8, 163-174.

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