

Message from Department Head

Fall semester is officially over and the halls of McCain are quiet. This is quite a contrast to the flurry of activity I observed in these same halls in the past few months. The ISE Department this semester was home to 184 undergraduate, 29 masters, and 50 doctoral students. At graduation we bid farewell to 18 undergraduates, 5 masters, and 4 doctoral students. These graduation numbers are high for a Fall semester, and represent the efforts of a dedicated faculty interested in ensuring that students are continually making progress towards their educational and career goals. In fact, for calendar year 2013, the department graduated 9 doctoral students, representing a record number for the department.

Speaking of faculty, we welcomed one new faculty member to the department, Dr. Linkan Bian. He has dedicated his time this semester to getting his research program started, and will begin teaching next semester. Larry Dalton retired this past summer after many years as the Director of the Six Sigma program. The department will miss his leadership of that program, as well as the wealth of industrial experience he brought to the classes he taught.

The ISE Reps (pictured below) did a great job this semester with reaching out to potential students and sharing with them all that MSU-ISE has to offer. We visited a few college fairs to get the word out about ISE, but there are many fairs we were just not able to visit. If you would be interested in helping with a college fair visit in your area, please let me know.

I wish you a Merry Christmas. Don't forget to cheer on the Bulldogs in the Liberty Bowl on Dec. 31.

Go Dawgs!

John



Front (L-R): Miandra Maiers, Drew Kelley and Betsy Baker
Back (L-R): Nibeer Dewan, Brianna Cates, Fantasi Curry and Stephen Hayes

NCITEC Conference

The National Center for Intermodal Transportation for Economic Competitiveness (NCITEC) held its first Annual Conference on October 31 - November 1, 2013 at Mississippi State University. The conference brought together a diverse group of approximately 100 experts from industry, academia, and government. These included researchers from MSU, Hampton University, Louisiana State University, Louisiana Department of Transportation, John C. Stennis Institute of Government, Louisiana Transportation Research Center, Mississippi Department of Transportation, United States Department of Agriculture, University of Denver, University of Mississippi, University of New Orleans, and University of Tennessee.



Pritchard Seminar Series

As a part of the Pritchard Speaker Series, Dr. Pawel Pawlewski, was invited to present a lecture on “Transforming a Student Project into a Business Project – Case Study Using Simulation.” Dr. Pawlewski is a member of the Faculty of Engineering Management and Managing Director of the Simulation and Optimization Center in Logistics and Production Processes, at Poznan Institute of Technology in Poznan, Poland. Drs. Greenwood and Pawlewski are collaborating on simulation and optimization research and are developing an international simulation competition. This Fall, Dr. Greenwood implemented competitive student projects in his simulation course and Dr. Pawlewski served as one of the judges.



New Faculty Member – Linkan Bian

Dr. Bian received his Ph.D. in Industrial and Systems Engineering from Georgia Institute of Technology in 2013. He received his dual M.S. degree in Statistics and Mathematics from Michigan State University in 2008. He also received his B.S. degree in Applied Mathematics from Beijing University in 2005. He joined the Industrial and Systems Engineering Department as an Assistant Professor in August 2013. His main areas of research interest are in system reliability and sustainability, diagnosis and prognostics, logistics, stochastic models, statistical learning, and decision theory, with applications in automotive systems, wind power systems, multi-stage manufacturing systems, sensor networks, and other



complex engineering systems. Dr. Bian's publications have appeared in journals such as IIE Transactions, Statistical Analysis and Data Mining, and several conference proceedings. He is a member of the Institute for Operations Research and the Management Sciences (INFORMS) and the Institute of Industrial Engineers (IIE).

Linkan met his wife, Yun (Emma) Xue, when they attended Michigan State University. She received her doctorate degree in statistics in 2011, and currently serves as a manager of modeling analytics at Nielsen Inc. After four years of marriage, their first boy, Max H. Bian, was born at Highland Park Hospital during the past Easter weekend. Linkan likes to read during his free time. His two favorite authors are Dame Agatha Christie and George R. R. Martin. Linkan has also been an amateur swimmer since he was four and a professional photographer since he was twenty-five.

Faculty News

Sandra D. Eksioglu was recently elected as the Vice-Chair of Railway Application Section (RAS) of the Institute for Operations Research and the Management Sciences (INFORMS). RAS was founded in 1994 to facilitate productivity improvements and growth in the rail industry through appropriate application of management science techniques. INFORMS is the largest professional society in the world for professionals in the field of operations research, management science, and analytics.

Allen Greenwood was the invited keynote speaker and project judge at the 4th Annual “Logistics Gala,” at Poznan Institute of Technology, Poznan, Poland. Over 300 students, faculty, and representatives from industry attended the event. In addition to Dr. Greenwood's presentation, the event featured brief video presentations of each student team's simulation project, as well as a ceremony honoring awardees in various categories. The event also featured the newly released Polish version of *Applied Simulation: Modeling and Analysis Using FlexSim*, co-authored by Dr. Greenwood.



New Research Grants

- **Hugh Medal**, as a part of a team with persons from forestry and geosciences, was awarded a grant from the US Dept. of the Interior – Bureau of Land Management to study the “Benefits and costs of implementing fuel treatments on nonindustrial private forest lands in Mississippi.” The goal of the project is to learn more about the behaviors and attitudes of private landowners towards wildfire mitigation activities such as controlled burns. Dr. Medal will develop an optimization model that recommends how much subsidy dollars the government should give each landowner to implement mitigation activities, given a limited budget. The optimization model will include a fire spread simulation, a landowner response function (how government subsidies affect their decision), and a game theoretic relationship between landowners.
- **Lesley Strawderman** has received a grant from the National Institute for Occupational Safety and Health (NIOSH). Working with Teena Garrison (CAVS) and Carrick Williams (Psychology), Dr. Strawderman will investigate the effectiveness of dynamic message signs on highways in order to improve both construction worker and driver safety.
- Several ISE faculty were each awarded a Cross-College Grant aimed at working with faculty across the university to develop research projects within a particular focus area. The focus areas of their grant are:
 - “Energy Institute Working Group” – **Sandra Eksioglu**
 - “Mitigating the Effects of Wildfires by Efficiently Allocating Fuels Treatment Resources” – **Hugh Medal**
 - “Transportation Safety” – **Lesley Strawderman**



ISE Football Tailgate



Student International Exchange

During 2012-13, the ISE department participated in a graduate student exchange between MSU and the Grenoble Institute of Technology (GIT) in France. **Halston Hales**, an ISE undergraduate alumni and current graduate student, studied for two semesters in Grenoble (Fall 2012 and Spring 2013) and received a masters degree from GIT in June 2013. He worked in the GSCOP Laboratory, a GIT research center for the design and management of production systems with a focus on optimization. During the Spring 2013 semester and a portion of Fall 2013, **Anne-Laure Ladier**, a Ph.D. student from the GSCOP Laboratory at GIT, was a visiting scholar at MSU in ISE. Her focus at MSU was on simulation modeling and analysis to compliment her research on optimization in logistics systems. Halston and Anne-Laure both received French Region Rhone-Alps Fellowships to support their studies. Halston also received a Burke Study Abroad Scholarship from MSU's BCoE. Both students were supervised by **Dr. Allen Greenwood** from MSU and Dr. Gulgun Alpan from GIT/GSCOP; they continue to collaborate on the simulation and optimization of logistics systems with a focus on cross-docking operations.



Student Highlights

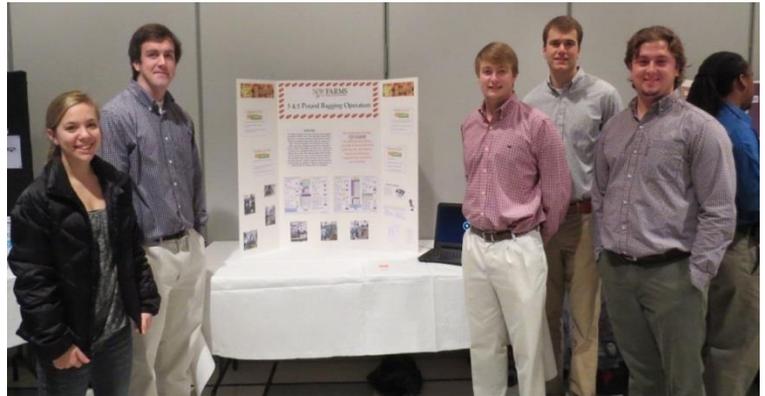
- **Mohammad Marufuzzaman** (Ph.D. student) won first place at the Student Poster Competition at the national Annual INFORMS meeting. The title of his poster was “Impact of Different Carbon Regulatory Policies in Biofuel Supply Chain Network under Uncertainty.” Of all the posters submitted world wide, only 50 were selected to be presented at INFORMS, of which Mohammad’s won first place. Mr. Marufuzzaman’s advisor is **Sandra Eksioglu**.
- At the National Center for Intermodal Transportation for Economic Competitiveness (NCITEC) Conference, two ISE PhD students, **Mohammad Marufuzzaman** and **Seratun Jannat**, placed 1st and 3rd, respectively, in the poster contest. Their posters were:
 - Mohammad Marufuzzaman – “Analyzing the Impact of Intermodal Hub Disruption in Biofuel Supply Chain Network,” faculty advisor: **Sandra D. Eksioglu**
 - Seratun Jannat – “Simulation Modeling and Analysis of Flexible Supply Chains,” faculty advisor: **Allen G. Greenwood**
- **Kelley Kohler** (ISE undergraduate) was awarded one of only two scholarships from the Mississippi Automotive Manufacturers Association.
- Under the leadership of **Daniel Snyder** (President) and **Lesley Strawderman** (Chapter Advisor), the **IIE Student Chapter** received the Gold Award for the academic year 2013.



Six Sigma Projects

As a part of two Six Sigma projects over two consecutive semesters, ISE undergraduate students **Preston Cauley** and **Justin Huff** helped formulate a Disaster Recovery Plan for the Human Resources Management (HRM) department at MSU. The outcome of their efforts was to put HRM in a position to publish their Disaster Recovery Plan in 2013. To paraphrase Judy Spencer (HRM Director), "we could not have accomplished this plan in the necessary time frame without the assistance of the ISE student Six Sigma projects." **Mr. Dalton** provided guidance and advice to each student during their work on the project.

Nibeer Dewan, ISE undergraduate student, completed a Six Sigma Green Belt project at Kohler-Engines (Hattiesburg, MS) using the DMADV (Define, Measure, Analyze, Design and Verify) methodology of Six Sigma. The goal of the project was to reduce downtime in one of the assembly stations on the line and to reduce the repair time. Nibeer was able to achieve a significant reduction in station downtime and approximately a 50% reduction in repair time. **Dr. Clay Walden** served as the mentor for Nibeer during this project.



Service Learning Projects

During the Fall 2013 semester, students in **Dr. Lesley Strawderman's** Industrial Ergonomics course completed a service-learning project. Partnering with N&W Farms in Vardaman, Mississippi, student teams worked to collect and analyze data in the sweet potato packaging sheds. Each student team presented operations and ergonomics improvements to N&W Farms. Recommendations included redesigned layouts to reduce operator travel time, implementing scissor lifts to improve manual material handling safety, and adding proper seating and foot support for improved ergonomics. N&W Farms is currently working to implement the recommendations of the students. Student teams presented their results at a project showcase on December 9, and the following awards were given:

- Best Operations Improvement: Team 3 (Bagging Operation) – **Lacy Duplantis, Tanner Mood, Brock Lovelace, Zach Trace, and J.D. Wilson** (shown above L-R)
- Best Ergonomics Improvement: Team 5 (Box Assembly) – **Marc Brown, Tyler Costley, Johnny Hardges, and Zack Schaper**
- Best Overall Showcase: Team 9 (Box Labeling and Moving) – **Marcellius Moore, Jake Moree, Ben Riser, Noah Sondag, and Tyler Warren**

Fall 2013 Graduates

Doctoral:

- **Steven Hunt McElhaney** – “Defining Display Complexity in Electric Utility System Operator Displays,” Advisor – **Kari Babski-Reeves**
- **Gokce Palak** – “Optimization Models for Cost Efficient and Environmentally Friendly Supply Chain Management,” Advisor – **Sandra Eksioglu**
- **Md Sadekuzzaman Roni** – “Analyzing the Impact of a Hub and Spoke Supply Chain Design for Long-Haul, High Volume Transportation of Densified Biomass,” Advisor – **Sandra Eksioglu**
- **Seungjae Shin** – “Effect of RFID Technology on Profitability, Productivity, and Efficiency on US Retail Supply Chains: Financial Ratio Analysis,” Advisor – **Burak Eksioglu**

Master’s :

- **William David Bowen** – Thesis – “A Decision Support System to Design the In-Bound Supply Chain for Biomass Co-Fire in Power Plants,” Advisor – **Sandra Eksioglu**
- **Dakota Brooke Chamblee** – Thesis – “Evaluating User Satisfaction and Perceived Quality of Electronic Health Records in Mississippi,” Advisor – **Lesley Strawderman**
- **Thomas Joseph Havir** – Non-Thesis, Advisor – **Stanley Bullington**
- **Deidre Michelle Johnson** – Non-Thesis, Advisor – **John Usher**
- **Md Sadekuzzaman Roni** – Non-Thesis, Advisor – **Sandra Eksioglu**

Undergraduates: Arin Akbay, Alex Barillas, Sandip Bhandari, Christophe Branson, John Hamon, Carla Hedglin, Morgan Hewes, Richard Jayroe, Andrew Jenne, Michael King, Ivo Kolev, Elizabeth McCall, Molly McLellan, Laura Newberry, Walter Stark, Nicholas Stuart, Madison Swedenburg, and Nicholas Willis



ISE Back to School Bash



Visit us at: <http://www.ise.msstate.edu>

Contact: usher@ise.msstate.edu or 662-325-3865

LinkedIn 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. This is the principal place where we post news on a regular basis. There are over 400 MSU ISE alumni members in that group, so it is a great way to reach out to other ISE Bulldogs. (Link is: <http://bit.ly/msu-ise>)