

## Message from Department Head

Greetings from MSU-ISE. This semester we had 18 bachelors, 5 masters, and one doctoral student graduate. We also saw a strong increase in the number of our undergraduates participating in research. This provides a wonderful opportunity for them to gain exposure to contemporary issues in ISE, as well as insight into the research of our faculty. You will find a few of their efforts highlighted in this newsletter.

The faculty are keenly aware of the importance of problem-based learning in the classroom utilizing real-world projects. This semester ISE teamed up with North Mississippi Health Systems to provide projects for both the undergraduate System Simulation and graduate Macroergonomics courses. We are always looking for these types of opportunities with other companies, so don't hesitate to contact us if you may be able to provide a real-world project applicable to any of our courses.

This semester several of our students were recognized with awards at the department, college, and university level. In addition, both Bonnie Ladner and Mary Ann Richardson were recognized by the Bagley College of Engineering with awards. It is great to see them recognized for their wonderful service to the Department and College.

We had 23 ISE students travel to the Southeast Regional IIE Student Conference in Orlando, Florida in February. They represented us well at the conference and had the opportunity to participate in various workshops and activities. Our IIE student chapter will be hosting the spring 2015 regional conference at MSU and they are looking for companies interested in participating in the career fair and/or providing sponsorship, as well as ISE professionals who would be willing to share their experience in a talk or session at the conference.

As always, don't hesitate to drop by when you are in the area.

Go Dawgs!

John



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

Contact: [usher@ise.msstate.edu](mailto:usher@ise.msstate.edu) or 662-325-3865

**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. This is the principal place where we post news on a regular basis. There are over 500 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>)

### ISE Entrepreneurial Spirit

SportSnax, an MSU alumni-founded start-up of Eric Hill (BS ISE) and Daniel Payne (BA Acct.), believes that fans at sporting events should be able to order game day snacks without having to leave their seats. The company utilizes a mobile-based web app allowing fans to browse, order, and pay for concessions using their smartphone, followed by direct delivery to their seat. They began service at MSU's Dudy-Nobel Field in spring 2013 and have since expanded to Humphrey Coliseum at MSU, as well as baseball, basketball, and softball at the University of Alabama in Tuscaloosa. In the near future they hope to extend SportSnax service to the football stadiums at both schools. Next time you find yourself hungry and at any of these venues, be sure to access the service at <http://dawgsnax.com>. To learn more about the company go to <http://www.sportsnax.com>

### Study Abroad Experience

Alex Barillas had the opportunity to study abroad at the University of New South Wales in Sydney, Australia, during the Fall of 2013. In his words: "This study abroad experience was full of challenges and adventures that changed my life forever. While studying abroad, I had the opportunity to take engineering courses that were taught in a totally different way than what I was used to. The courses' structure, their grading systems, and teaching methodologies were very different than what I have experience in the US. I was stimulated to find solutions to problems in ways that I wouldn't think before." Alex highly recommends that other MSU-ISE students pursue extended study abroad opportunities.



### J. Ron Walsh Awards

Each year a series of J. Ron Walsh Awards are presented to recognize the outstanding students that excel in academics, leadership and service. As well, J. Ron Walsh Awards are presented for best research and instructional papers for students and faculty. The 2013-2014 winners are:

- Outstanding Senior: **Daniel Snyder**
- Outstanding M.S. Student: **Robert Holt**
- Outstanding Ph.D. Student: **Reuben Burch** and **Seratun Jannat**
- Outstanding Student Research Paper - **Mohammad Marufuzzaman**, "Environmentally Friendly Supply Chain Planning and Design for Biodiesel Production via Wastewater Sludge," *Transportation Science*, <http://dx.doi.org/10.1287/trsc.2013.0505>.
- Outstanding Faculty Research Paper – **Sandra Eksioglu** and **Allen Greenwood**, "Supply Chain Designs and Management for Biocrude Production via Wastewater Treatment," *Environmental Progress & Sustainable Energy*, 32(1), 139-147.
- Outstanding Faculty Instructional Paper - **Lesley Strawderman**, "Engaging Engineering Students with Transportation Safety," *Proc. of the Human Factors and Ergonomics Society*.

### Service Learning Project – Systems Simulation

Since simulation is an applied technology, a significant component of Systems Simulation I course (IE 4773/6773) is a group project. The project for Spring 2014 involved working with North Mississippi Health Services (NMHS) in Tupelo to analyze the surgical operations at North Mississippi Medical Center. The class project provided NMHS with a means, through the use of simulation, to assess performance improvement alternatives and understand the effect of reducing variability in process times. The instructor, Dr. Allen Greenwood, and graduate assistant, Adam Collins, provided the technical support and were the primary liaisons between MSU and NMHS. Six groups of four students each focused on one of the three types of surgeries – cardiovascular, general, and urology. Within groups, students assigned themselves primary and secondary responsibility for four areas: modeling (simulation model design, development, and testing), analysis (statistical analysis and inference), reporting (written reports and presentation), and administration (liaison, project management, and data management). At the end of the semester, groups were evaluated by the client (hospital staff) on the quality of their solution and recommendations, as well as their presentation of results. As shown in the photos below, one student representative from each group received an in-depth tour of surgical operations at NMMC. Both MSU and NMHS view this project as a starting point for a long-term collaborative partnership.



### Service Learning Project – Macroergonomics

Also with a focus on healthcare, as part of the graduate Macroergonomics course, two teams of students recently completed research projects with North Mississippi Medical Center. The projects were completed in an effort to improve the design of the hospital's work systems, with an added benefit of improving patient care and patient safety. In the first project, students assessed the handoff and transitions process used by nurses during shift changeover. In the second project, students evaluated the use of nurse bedside technology.

### Undergraduate Student Highlights

- The 'Spirit of State' award is given by the university each year to recognize and honor students that have demonstrated excellence in involvement and service to the university, impacting both their peers and community. This year two ISE students, **Apurba Nandi** (PhD student) and **Sunny Patel** (senior), received this award.
- **Sunny Patel** (senior) was named one of the 2014 Fellows of the G.V. "Sonny" Montgomery leadership Program. Fellows are chosen based on academics, leadership skills and strength of character. They participate in a 3-semester program involving leadership training and practice, along with community service.
- **Jonathan McKenzie** (senior) worked this past spring in the office of Senator Roger Wicker as a part of the BCoE Congressional Fellowship Program.
- Each year the Bagley College of Engineering selects a total of six undergraduate students from across the eight departments in the college to receive the Student Hall of Fame Award. They are selected based on achievements in academics, leadership, and service. This year **Nibeer Dewan** (senior) from ISE was selected to receive the award.
- **Lucy Ly** (senior) received 2<sup>nd</sup> place for her research poster on Community Engagement in the MSU Undergraduate Research Symposium.
- At the BCoE graduation ceremony, **Nibeer Dewan** (senior) received the Six-Sigma Certificate.
- Our student chapter of IIE was received the 2014 IIE Student Chapter Gold Award for chapter excellence. This is the highest award that a student chapter can receive and recognizes chapter improvements, progress, and overall achievements.
- This past February, the MSU-ISE IIE student chapter traveled to Orland to attend the Regional IIE Student Conference. A record number of our students attended the conference. Of the 23 in attendance 17 are shown in the picture below.



## Spring 2014 Graduates

### Doctoral:

- Reuben F. Burch – “Understanding the Advantages Gamers Bring to the Workforce and What Their Skillset Means for the Future of Handheld Scanning Technology in Large Industrial Organizations,” Advisor – Lesley Strawderman

**Master’s Non-Thesis:** Jonathan Curtis, Robert Holt, Jerry Ellis McNair, Derek A. Mitchell, and Lucas Simmons

**Undergraduates:** Elizabeth Baker, Elizabeth Barnett, Matthew Berry, Jessica Booth, Benjamin Campbell, Zachary Carroll, Austin Davis, Nibeer Dewan, Casie Flynn, Corey Fry, Anne Guenther, Xavier Harris, Robert Henshaw, Jeremy McAlister, Todd Phillips, Clayton Seymour, Daniel Snyder, and William Thornton

## Undergraduates In Research

- **Matthew Winters** (junior) worked on a transportation related research project with Dr. Hugh Medal. His efforts in helping with data collection dealing with sidewalk placement and pedestrian safety helped Dr. Medal in proposal development.
- **Lucy Ly** (senior) worked with Dr. Sandra Eksioglu this year on an educational project, as a part of Mission Intermodal Excellence which is funded by NCITEC. She conducted statistical analyzes of the data collected from student surveys. It was the results of this work that she presented at MSU’s Undergraduate Research Symposium (mentioned earlier).
- **Ryan Weitzel** (senior) also worked with Dr. Sandra Eksioglu on developing an excel-based decision support system that enables companies to evaluate whether a particular site is suitable for locating a bioenergy plant. He received funding from the Department of Energy Undergraduate Laboratory Internships (SULI) program to continue his research this summer at the Argonne National Laboratory.
- **Mary Katherine Beall** (junior) received an Undergraduate Research Award from the Office of the Graduate School to study physiological effects of various sit/stand workstation setups. Mary Katherine will be working with Dr. Babski-Reeves on this project in the summer and will present her results in the Undergraduate Research Symposium in July.

## Graduate Student Highlights

- Six ISE graduate students participated in the BCoE Graduate Research Poster Competition in March. These students were **Zahra Azadi, Hadi Karimi, Mohammad Marufuzzaman, Apurba Nandi, Md Mahmudur Rahman, and Eghbal Rashidi**. Congratulations go to **Md Mahmudur Rahman** for receiving a “Meritorious Award” in the PhD Category for his poster entitled “Transportation Alternative Preferences of the Aging Population” with co-authors **Lesley Strawderman** and Carolyn Adams-Price.

### New Faculty Research Grants

- **Lesley Strawderman** received two grants from the US Army Corps of Engineers Engineer Research and Development Center (ERDC) to develop occupant-centric parameters for engineering design. The projects are a collaborative effort with CAVS.
- **Lesley Strawderman** and **John Usher** have received a grant from the US Army Corps of Engineers Engineer Research and Development Center (ERDC) to enhance the validity of simulated environments. Building upon prior work completed for the US DOT, they will develop and incorporate empirically-based models of dynamic entities in an effort to improve the realism of models currently used. The project is a collaborative effort that includes faculty from ISE, CAVS, Sociology, HPC, and CSE.
- **Lesley Strawderman** has received a grant from the US Army Corps of Engineers Engineer Research and Development Center (ERDC), along with Cindy Bethel of CSE and Daniel Carruth of CAVS, to design and develop a collaborative workspace to support distributed engineering design.
- **Kari Babski-Reeves** received a grant from the Office Ergonomics Research Council to quantify ergonomic exposures associated with using sit-stand workstations (e.g., muscle activity, body positioning, discomfort reporting). Three computer set ups will be evaluated (laptop undocked, laptop docked, desktop). This research can be used to help establish appropriate guidelines for sit-stand intervals during work.
- **Kari Babski-Reeves** and **Burak Eksioğlu**, along with Teena Garrison of CAVS, have received a grant from the US Army Corps of Engineers Engineer Research and Development Center (ERDC) to develop a prototype decision support system for development of prototype ground vehicles for military operations. The system will provide users with an interface to select various vehicle parameters and provide a listing of trade-offs associated with various selections.

### Faculty, Staff, and Alumni Highlights

- **Stan Bullington** received the BCoE Award for Excellence in Online Teaching. Stan has been involved in online teaching since 1990
- **Lesley Strawderman** was awarded Diplomate status in the IIE Society for Health Systems.
- **Bonnie Ladner** was awarded the MSU Zacharias Distinguished Staff Award.
- Both **Bonnie Ladner** and **Mary Ann Richardson** were recognized by the Bagley College of Engineering with awards. Mary Ann received the Professional Staff Award and Bonnie received the Support Staff Award.
- **Carl Brown** retired in May after 25 years of service. We are going to really miss him.
- **Will Botts** (1968 alumnus) was recognized as one of the 2014 Distinguished Fellows of the James Worth Bagley College of Engineering. He is currently Chief Commercialization Officer at Lynntech, Inc. in College Station, TX, and CEO and majority owner of KIN-TEK Analytical Inc. in Houston, TX.



## Your support makes a difference...

We wanted to be sure you know that when giving to the University, it is possible for you to make gifts directly to the ISE Department through the MSU Development Foundation. However, this requires that you explicitly specify that your gift is for the Department of Industrial & Systems Engineering.

The gifts that we receive from alumni, corporate sponsors, and other partners directly impact the student, staff, and faculty of the department. The ISE department needs your help with:

- scholarships and fellowships for recruiting and retaining students,
- funding access to state-of-the-art technology through equipment purchases for enhancing classroom and laboratory experiences,
- support for student leadership groups, and
- professorships to attract and retain top-caliber faculty.

These programs are not supported through state appropriations and therefore, are not possible without your help. Such gifts are an investment in the future, helping us to achieve excellence in the classroom and laboratory. You can use the form on the next page to contribute to these programs. You can also contact John Usher (662-325-7624; [usher@ise.msstate.edu](mailto:usher@ise.msstate.edu)) or Bennett Evans, Director of Development (662-325-0386; [bevans@bagley.msstate.edu](mailto:bevans@bagley.msstate.edu)) to learn about other ways to support the department.

If you want to make a donation online you can go to [msufoundation.com](http://msufoundation.com) and click on the “Give Now” link at the top right of the screen. When specifying the “**Designation**” select “**College/School/Preferred Area.**” When a new screen comes up, type “**Systems Engineering**” and select “**Industrial & Systems Engineering (310506)**”. The account **310506** should appear as the “Selected Designation.”

We encourage you to join those listed at right who made a difference with their support to the department in the last three years.



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