IOE Welcomes Three New Faculty Members

This fall, three new faculty members joined the IOE Department. They represent a wide variety of experience and research interests that add to an already rich department.

Eunshin Byon
Assistant Professor, PhD, Industrial and Systems Engineering, Texas A&M University, 2010

Dr. Byon’s research interests include reliability analysis and optimal control for wind power systems, modeling and analysis of sustainable energy systems, predictive modeling, and data mining. Her recent research focuses on structural load (extreme and fatigue loads) modeling, development of cost-effective condition-based maintenance decision strategy, prognostics and reliability analysis for assessing and predicting the health status of system components, and development of a discrete-event simulation model for a large-scale wind farm.

As part of her ongoing research, Dr. Byon is planning to develop a test bed of a laboratory-size wind turbine. Putting sensors into the test bed will allow condition monitoring and detection of different kinds of faults inside the turbine. Dr. Byon will also study how to optimize different control schemes in the wind turbine such as blade pitch controls and yaw controls in order to harvest maximum wind power.

Dr. Byon was awarded the Best Paper Award of the IERC Modeling and Simulation division in May 2011. She was coauthor of an article featured by the Editor-in-Chief in the April Issue 2010 of IIE Magazine, “A classification procedure for highly imbalanced class sizes,” IIE Transactions, Vol. 42, No. 4, pp. 288-303. She is also a member of IIE, INFORMS, and IEEE.

Jon Lee
Professor, PhD, Operations Research and Industrial Engineering, Cornell University, 1986

Dr. Lee’s research focus is on nonlinear discrete optimization (NDO). Many practical engineering problems have physical aspects which are naturally modeled through smooth
nonlinear functions, as well as design aspects which are often modeled with discrete variables. Research in NDO seeks to marry diverse techniques from classical areas of optimization, for example: methods for smooth nonlinear optimization and methods for integer linear programming, with the idea of successfully attacking natural NDO models for practical engineering problems.

Dr. Lee spent 1985-1993 on the faculty of Yale University and 1993-2000 on the Mathematics Department faculty of the University of Kentucky in the Discrete Mathematics Group. He was a Research Staff Member at the T.J. Watson Research Center of the IBM Corporation from 2000-2011, where he managed the Mathematical Programming group in the Mathematical Sciences Department. Dr. Lee was the founding Managing Editor of the journal *Discrete Optimization*, (2004-2006). He has authored *A First Course in Combinatorial Optimization*, Cambridge University Press, 2004 and is a co-editor of the upcoming text titled *Mixed Integer Nonlinear Programming*, Springer, November 2011.

Dr. Lee was awarded the INFORMS Computing Society Prize in 2010 and was a plenary speaker at the SIAM Optimization Conference, May 2011, in Darmstadt, Germany. Currently, he is Chair of the INFORMS Optimization Society, on the editorial board of the journal *Discrete Applied Mathematics*, a Permanent Member of DIMACS, and a Full Member of the COIN-OR Foundation.

**Siqian Shen**  
Assistant Professor, PhD, Industrial and Systems Engineering, University of Florida, 2011

Dr. Shen’s research interests include integer programming, stochastic programming, robust optimization, network optimization, as well as their applications in network interdiction, finance, ecological operations management, energy and smart grids, and public policy. The models she considers usually feature stochastic
parameters and discrete decision variables. In general, optimal solutions are desired for trading off between the immediate benefits and the long-run gains, or between cost effectiveness and operational risk. Decomposition strategies are employed to tackle these problems, in which decision variables are categorized into two sets: the first-stage decisions made a priori and the second-stage responding ones. For optimally solving the decomposed models, Dr. Shen develops cutting-plane algorithms via duality analysis and polyhedron studies. She also applies similar algorithms for solving multi-stage optimization, robust optimization, and network interdiction models.


Dr. Shen currently teaches IOE 510: Linear Programming I as a graduate-level course and will teach IOE 612: Network Flows in Winter Term. She is also the faculty advisor of the UM Women in Science and Engineering Program where she is involved in the Marian Sarah Parker Scholars Program. Dr. Shen offers research internship opportunities to female students selected by the program to encourage high-achieving women in Engineering, in their junior year of study, to consider pursuing graduate degrees.

Faculty & Staff Announcements

James Bagian, clinical professor of engineering, research professor of anesthesiology, and the director of the Center for Health Engineering and Patient Safety, has been named one of the 13 most influential patient safety advocates in the US by Beckers Hospital Review. Individuals were chosen using several criteria, including leadership positions in patient safety-related organizations, research and other writing that have shaped the field, success in raising awareness of key issues, awards for patient safety, and implementation of initiatives that have improved the quality and safety of care.

Dr. Bagian was also interviewed recently by NPR’s Talk of the Nation about balancing the need to be prepared for natural or man-made disasters with the cost of such preparations in a segment called “Risk Assessment: Balancing Safety With Cost.”

Professor Yavuz Bozer’s paper, “Optimizing Inbound and Outbound Door Assignments in Less-Than-Truckload Crossdocks,” co-authored with IOE PhD graduate, Hector Carlo, has been included in the top ten most often cited papers for IIE Transactions over the last three years.

Richard G. Snyder Distinguished University Professor Emeritus, Don Chaffin, was invited to give a lecture at Tsinghua University as part of their “Global Vision Lectures.” His talk was titled “From Anthropometric Models of People to Mental Workload Models.” About 250 IE students and faculty members from many different universities attended.

Professor Xiuli Chao has received funding from the National Science Foundation for his research project “Cost-Effective Energy Efficiency Management of Sustainable Manufacturing Systems.”

Professor Amy Cohn has received research funding from Altair Engineering, Inc., for a project titled "From Anthropometric Models of People to Mental Workload Models."
Welcome to IOE News, our newsletter for alumni and friends of the Department of Industrial and Operations Engineering. In this issue, we’re proud to introduce you to our three newest faculty members: Eunshin Byon, Jon Lee, and Siqian Shen. All three have hit the ground running and bring new and exciting ideas and talent to the IOE Department.

We’ll also update you on outstanding achievements by some of our faculty, students, and alumni. Professor of Practice James Bagian, the director of the new Center for Health Care Engineering and Patient Safety, has recently been named one of the 13 most influential patient safety advocates in the US. Additionally, IOE student Allen Kim, who we profiled in our last issue, was named a University of Michigan Student of the Year.

Looking through the listing of awards and honors in these pages reminds me that IOE really is home to some of the best and brightest. I’m proud of each and every one of the achievements of our community.

Another high achieving group at the University is the UM Solar Car Team. In this issue, you’ll meet two IOE students who have been a part of the National Championship winning team and hear about how that experience has complimented their IOE education.

As always, this is your newsletter and we enjoy hearing from you. Please send your comments, suggestions, news items, etc. to IOENewsletter@umich.edu.

I have enjoyed meeting many in the past years. Whenever you are on campus, our doors are always open to you. Please drop by to introduce yourself or catch up!

Go Blue!
Mark S. Daskin

The IOE Department depends on your generosity to fund undergraduate student groups, seminars, outside speakers, student travel, and other related activities. We hope you will contribute generously to the IOE Special Gift Fund to support the endeavors. See page 15 for more information on contributing to the Department.

Many thanks!

IOE Fall Term Visiting Scholars

Adel Alaeddini, Wayne State University, Collaborating with: Professor Romesh Saigal and Professor Katta Murty
PhD: Wayne State University, 2011, Industrial Engineering
Current research interests: healthcare and medical operations, global optimization, statistical learning

Min Huang, Northeastern University, Collaborating with: Professor Xiuli Chao
PhD: Northeastern University, 1998, Control Theory and Control Engineering
Current research interests: supply chain and logistics management, production inventory control, risk management, soft computing

Shenghao Zhang, Xi’an Jiaotong University, Collaborating with: Professor Xiuli Chao
PhD: Hong Kong University of Science and Technology, 2005, Operations Management
Current research interests: inventory control, production and operations management, supply chain management
“Assessment of Applicability of Altair Database Management and Optimization Tools for Logistics and Scheduling Problems.”

Paul Green, research professor at the UM Transportation Research Institute, associate professor of information, and adjunct associate professor of industrial and operations engineering, discussed distracted driving in a Technology Review article titled “Hold that Call, and Focus on the Road.”

Wallace Hopp, Alessi Professor of Business Administration, has been elected a Fellow of SME (Society of Manufacturing Engineers). Election as an SME Fellow is limited to a select group of individuals each year, making it one of the most prestigious honors bestowed by the Society.

Richard E. Hughes, IOE associate professor, has been elected to the American Academy of Orthopaedic Surgeons (AAOS) as an Associate Member in Basic Science. AAOS is the preeminent professional society for orthopaedic surgeons in the United States. The basis for his membership is his contribution to spine, shoulder, and knee biomechanics research. Dr. Hughes is jointly appointed in Orthopaedic Surgery, Industrial & Operations Engineering, and Biomedical Engineering.

Professor Jeffrey Liker spoke with Bloomberg about how the devastating earthquake and tsunami in Japan has effected battery production for Toyota Motor Corp. hybrid automobiles for an article titled “Toyota To Resume Prius Production in Japan; Honda Extends Plant Closures.”

Arthur F. Thurnau Professor, Yili Liu, has been selected to receive the Jon R. and Beverly S. Holt Award for Excellence in Teaching for the third time. These awards are presented annually to one faculty member in Industrial and Operations Engineering and one in Materials Science and Engineering to recognize outstanding teaching.

Randy Rabourn, Director of Continuing Education and Project Manager in the Center for Ergonomics, retired after 25 years of service to the
Student & Alumni Announcements

University of Michigan. Randy received his MSIE from the University of Michigan in 1977, specializing in Occupational Health and Safety.

The Associated Press spoke with Matt Reed, IOE associate research professor, in April regarding the Ford F-150 recall. The recall was due to an electrical short in the F-150 pickup trucks which can cause the air bags to inflate without a crash and could injure drivers.

Professor Mark Van Oyen has received research funding from the National Science Foundation. The research project creates an innovative methodology for analyzing patient flow for guiding admissions and scheduling practices to smooth the census, and a proof of concept in an online decision support system. Successful application of this system will increase access by reducing patient turn-aways and delays to admission. It will also improve the quality of patient care by better scheduling staff to match the workload.

The award is presented for the best oral and written paper presented at the CoED session of the ASEE Annual Conference.

PhD student Troy Long tied for 1st place in the Young Investigators Symposium at The Great Lakes Chapter of the American Association of Physicists in Medicine with his presentation “Sensitivity Analysis for Lexicographic Ordering in Radiotherapy Treatment Planning.”

PhD student Marcial Lapp has been awarded the 2011 John A. Curtis Lecture Award for his paper “The Mobile Participation System: Not Just Another Clicker” by the American Society for Engineering Education (ASEE). The award is presented for the best oral and written paper presented at the CoED session of the ASEE Annual Conference.

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JOE alumnus Dr. Harriet Black Nembhard (PhD ’94) was promoted to full professor in the Industrial and Manufacturing Engineering Department at Penn State University. Dr. Nembhard’s research employs methods of statistics, quality, and productivity to make relevant real-world decisions. She is also Director of the Center for Integrated Healthcare Delivery Systems.

We regret to inform you that Seth Bonder passed away on October 29th. Seth was a professor in the IOE Department from 1965 to 1972 and was the founder of Vector Research, Inc. Seth loved the IOE Department and his generosity and wisdom will surely be missed by all of us. Please look for a tribute to Seth and his contributions to IOE in our next issue.

Jasmine Elan Way (BSE IOE ’10, MSE ’11) has received a 2011-2012 Fulbright U.S. Student Program scholarship to France, where she’ll teach English as a foreign language. Jasmine is one of only six Fulbright English teaching assistants going to France this year.

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PhD Student Makes Positive Impact on Airline Industry

Marcial Lapp is an IOE PhD student whose dissertation focuses on applied airline optimization. Marcial is currently working on a maintenance routing optimization problem which looks at when to perform maintenance on an aircraft. “This is similar to taking your car in for an oil change, except we have to make this decision for hundreds of aircraft and, unlike the car, the paths of travel for the aircraft are strictly defined.”

He is looking at both the planning phase, when to do that “oil change,” and the recovery phase, how to get back on track once the scheduled plan has been disrupted. He says, “Putting all the pieces together and determining an optimal plan is computationally difficult and requires us to devise new and clever ways to solve these problems.”

He says the topic was initially driven by his advisor and was an easy fit since he finds the airline industry fascinating. “Professor Amy Cohn is a wonderful advisor,” he says. “Whenever we have meetings to discuss my research, she is always full of new ideas and possible directions to explore a problem further. In addition, she is an expert in airline operations and thus not only has a deep understanding of the subject matter, but also knows many other researchers in this field. This is especially helpful for cross-university or cross-industry collaboration.”

Marcial says they’ve made great progress on the maintenance recovery problem in recent months. Disruptions often occur on the day of maintenance operations and, if aircraft are not maintained according to strict FAA rules, they are no longer allowed to fly. Marcial says, “Using our approach, an airline can optimize its maintenance plan when it is has been disrupted due to outside events.”

In the process of conducting his research, Marcial has appreciated the chance to collaborate with both academic and industry partners. He says these collaborations have helped him to shape his work into problems and solutions with real-world applications. The research Marcial is working on was seeded with an industry partner who provides airlines with the necessary information technology to solve problems such as the one Marcial is working on. “Solving such complex problems can now allow the industry partner to use our results and methodologies to develop and monetize a product that, in particular, focuses on the airline maintenance recovery aspect of operations,” he says.

One asset to Marcial in his interactions with industry partners is the fact that he is also a student at the University of Michigan’s Ross School of Business. On how business school has helped him in his IOE research Marcial says, “Instead of looking at a research problem with my applied optimization blinders, I now can also comment on the additional impact from both a finance and strategy perspective.”

Marcial says his research has given him a new appreciation of the airline industry and the difficulties they face. He points to the problem cases that often make the news and says that his research has led him to realize that those cases are the rarity. For the most part the system works very well. “To give you an example, an airline might have 3,000 flights per day. Let’s assume that each flight has 100 passengers, each of which bring 1.5 bags. This means that, for single day, a single airline has to handle around 450,000 bags. Given some of the latest statistics, only about 500 or so are wrongly routed or about 0.1%. I think this is incredible when you think about the operations that go into routing your luggage from the point of when you drop it off at the check-in counter to when you pick it up at your destination.”

Marcial plans to graduate in April of 2012 and hopes to become an assistant professor.
IOE Students Part of Award Winning Solar Car Team

The University of Michigan Solar Car Team is entirely student-run and is the largest student project team on University of Michigan’s campus. The team is made up of over one hundred members from across the university. It’s the number one solar car team in America and has won six National Championships.

Two IOE students have been a large part of Solar Car’s success in recent years. Eric Hausman is a sophomore who started working with the Solar Car team in his freshman year and Cecilia Yung is a senior who spent about a year and a half on Solar Car. Both students enjoy the multidisciplinary nature of the team. Students from engineering, LSA, business and many other disciplines join the team and can work in whatever area of the team they are interested in.

The team is divided into four main sections. The Engineering Division designs and builds the car. The Business Division advertises and procures parts and sponsorships. The Strategy Division maximizes the performance of the vehicle through testing and custom computer programs. The Operations Division oversees the logistics of the team and the races.

Eric has been involved in logistics and organization and Cecilia was on the operations team and was a driver of the Infinium during the American Solar Challenge of 2010. Eric is currently part of the core crew of thirty-five or so students, including the race team, who are working on recruiting team members and preparing for the 2012 American race.

Eric has been interested in Solar Car since at least second grade when his pinewood derby car was modeled after a solar car. He also says, “I’ve always been interested in organization and business.” In high school, he ran a variety of small businesses including selling rain barrels, doing yard work, tutoring, and technical support.

Given his interests, Solar Car seemed a perfect fit. Eric attended a Solar Car mass meeting in his freshman year and quickly joined the team. Cecilia was recruited by a friend who was already on the team and thought Cecilia could help with the team’s need for a spare driver and someone to help with logistics.

Both students stress how well Solar Car complements their course work. Eric decided to major in IOE because of his experience working with organization and logistics on the team.

And Cecilia’s interest area in IOE has moved from ergonomics to logistics in part thanks to her experience on the team.

Eric took an engineering course on solar power systems and says the class helped him understand the solar car even better. Because of his experience in that class and with the Solar Car team, Eric even went so far as to get his father to put solar panels on their house.

Eric says that Solar Car “provides a real world application to what students learn in class.” Cecilia echoes this sentiment. “How many times do students get to actually work with real logistics?” she asks. She and Eric have gained a lot of real world experience in logistics thanks to their time with the Solar Car team.

The race crew, made up of about twenty students, takes off fall semester...
to travel to Australia for the World Solar Challenge. The semi-truck and solar car are shipped over first and the crew picks them up when they arrive in September. From September until the race in mid-October, the race crew tests and works on the solar car and undergoes an 1,800 mile mock race before the true race even begins.

On October 20, 2011 the team finished third in the World Solar Challenge. They drove a total of thirty five hours and thirty three minutes over five days to reach the finish line. No other U.S. team has had back-to-back top-three World Solar Challenge finishes and this race brings the team up to five third place finishes in the challenge. The team has also finished first in the North American Solar Challenge six times.

Quantum, the car the team raced this year, is the result of over twenty years of perfecting solar car design. The team spends two years building each car. They’ve built eleven vehicles since starting the team in 1990. As soon as one car is finished, the building of a new car begins, improving on all the designs that have come before.

Both Eric and Cecilia stress what a huge logistical situation getting prepared for and driving in a race is. Aside from the semi and the solar car, the race crew has five caravan vehicles. In addition to getting the crew, vehicles, and supplies to Australia, the team has to figure out logistics such as camping and/or hotel lodging, feeding the team, and trying to get sponsorships to cover those costs.

The Solar Car team is completely self-supported and their business team has been very successful in getting sponsorships to cover their costs. For the Infinium race, they had sponsorships totaling $2 million. Cecilia says it feels amazing to end a cold call with a promise of sponsorship for the team.

All of the preparations, from building the car, to finding sponsorships, to finding campsites and hotels, lead to one thing – the race. Cecilia describes driving the car as “thrilling.” “It’s like a roller coaster but you get to control it,” she says. The car is so low to the ground that the driver feels every pothole and generally ends up with quite a few bruises. But it sounds like it was worth it. Cecilia says it was exhilarating crossing the finish line to see all the banners and people cheering for the team.

After this year’s race, Eric plans to stay with Solar Car. His goal is to be on the race team for 2013. Cecilia has left Solar Car after a year and a half with the team. She is now working with Formula Hybrid, a new electric motor formula racing team. She hopes she can share some of the business and logistics lessons she learned on Solar Car with the Formula Hybrid team. She’s already done a summer internship with Bosch LLC in logistics and supply chain and is looking toward a full-time job in logistics after graduation. She says she’s come to realize that you “hone instinct with logistics through experience.” Once she’s gained some more real world experience she does hope to return to school for an MBA or a masters degree in IOE or information management.

Electronic Newsletter Forthcoming
The IOE Department will be moving to an electronic newsletter within a year. To ensure you continue to get IOE News, please make sure your e-mail address and other personal information is updated in our files by going to http://www.engin.umich.edu/alumni/info/infoupdate.html
IOE Students Shine at Spotlight!

IOE students Katelyn Bevier, Stephanie Kuo, Xindi Mao, Nicolas Tempels, Ashwin Thatte, Ben Seavoy, and Ian Stuart-Hoff were among members of the winning teams for the 2011 Tauber Institute for Global Operations Spotlight! Competition. Over eighty graduate students from the College of Engineering and the Ross School of Business competed for over $30,000 in scholarships at the competition.

Teammates Stephanie Kuo (EGL, BSE/MSE Industrial and Operations Engineering) and Katelyn Bevier (EGL, BSE Mechanical Engineering/MSE Industrial and Operations Engineering) were on the winning team working with BorgWarner Thermal Systems on their project “Manufacturing Optimization at BorgWarner Cadillac Plant.” Stephanie and Katelyn were tasked with value stream mapping three main product lines and identifying excessive material handing times, inventory levels, and inventory footprints. They were able to group product lines while optimizing the floor plan layout to create available floor space for a new BorgWarner product.

The students also came up with a set of process changes including introducing multiple one-piece flow washers, purchasing additional quality check machines, and purchasing a base component line sequenced by the supplier. The changes Stephanie and Katelyn suggested will result in $1.15 million in material handling and inventory savings over the next five years, $383,861 of inventory elimination, 10.1 miles of reduction in daily material handling, and 8,500 square feet of newly available floor space which could allow for up to $6.3 million of annual revenue in new business production.

The second place team was comprised of Xindi Mao (EGL, BSE/MSE in Industrial and Operations Engineering & Financial Engineering), Ashwin Thatte (Dual MBA/MSE Industrial and Operations Engineering), and Nicolas Tempels (SGUS, BSE/MSE in Industrial and Operations Engineering). They worked with National Grid on a project titled “Improving Productivity and Decreasing Cost of Customer Meter Services.” The third place team consisted of Ben Seavoy (EGL, BSE/MSE Industrial & Operations Engineering), Ian Stuart-Hoff (EGL, BSE/MSE Industrial & Operations Engineering), and Edmund Chan (Master of Supply Chain Management) working with Cardinal Health on a project titled “Reducing Supply Chain Cost Using Improved Ordering Multiples.”
Class Spotlight: IOE 481

In IOE 481: Practicum in Hospital Systems, student teams work with the University of Michigan Health System (UMHS) to solve real problems that affect the Health System. Projects cover a variety of areas, including work measurement and control, systems and procedures, management, organization, and information systems. In addition to working on their projects, the students also attend lectures that deal with the hospital setting and project methodologies.

IOE 481 has been in existence for over thirty years. Fall Term course instructor, Mary Goulet Duck, took 481 herself in 1983 when she was an IOE student. In 1995 she returned to the University of Michigan and coordinated the project teams for 481 each year while the course was taught by Richard Coffee. Coffee was Director of the of Program and Operations Analysis Department at UMHS and taught 481 for over twenty years. In 2008 Mark Van Oyen co-taught the course with Professor Coffee. Professor Van Oyen took over the teaching of the course in 2009 and Duck became internal coordinator as well as an occasional guest lecturer. As internal coordinator she works on determining the projects students will work on, interacting with UMHS, coordinating with the IOE department, and facilitating the coordinators. She is teaching the course this term while Professor Van Oyen is on sabbatical. Mary Lind also serves an important role, meeting with students as a class and one on one to help them improve their technical communication skills.

Professor Van Oyen says the course “opens up [student’s] perspectives and shows them new possibilities.” Student teams in the course work on a semester long project with the UMHS. “The students are often learning for the first time how to deal with difficult constraints, organizational politics, and many real world complexities,” he says. They work closely with a client at UMHS who meets with the team weekly and provides them with the direction and contacts they need for their work. The client also determines a third of the team’s grade at the end of the project.

Projects are carefully chosen with a focus on whether they will be of benefit to the students and the Health System and whether they can be completed in a semester. Past projects have included looking at the handoff process between physicians from the emergency department to an inpatient unit and looking at the medication list process in the transition of care. The Chief Operating Officer of the Health System, Tony Denton, is the chief client and sets the direction and priorities for the projects each term. This semester the course is focused on length of stay reductions and productivity improvement so most of the projects touch on that subject.

In the past many projects have been grouped over several semesters with institutional endeavors such as Computer Order Entry (CPOE). Duck describes these as projects “related to process reviews prior to implementing and recommendations to process changes required for the implementation of the system, measurement of workload prior to and after, and required countermeasures needed for the system.” She says the results of these projects have had a great impact on the Health System.

While the professors are there to guide the students and help them make connections between the projects and their coursework, it is the teams who do the work using the knowledge they’ve gained through their time in IOE. “Above all, I like it when teams are trying to figure out how to approach a

CONTINUED ON PAGE #14
IOE Advisory Board

The IOE Department is proud to announce its new advisory board. The advisory board gives advice to the department chair and provides strategic help to the department. Our advisory board members are:

- **Joshua Aaron**, President, Business Technology Partners
- **Joel Brown**, Senior Vice-President, Worldwide Operations, OpenTable
- **Jill Feldman**, President, Strategic Development Associates
- **Richard Hamilton**, Principal, Health Management Associates
- **Rob Holt**, President & CEO, Super Radiator Coils
- **Clyde “Bill” Johnson**, President, Chandler Industries
- **Erica Klampfl**, Technical Leader, Ford Research & Advanced Engineering
- **Donald J. Kunz**, Corporate and Securities Department Chair, Partner, Honigman, Miller, Schwartz and Cohn, et al
- **Ray Muscat**, Senior Vice-President, Operations Engineering, Herman Miller Inc.
- **Allan F. Pfitzenmaier**, CEO, Bryllan, LLC
- **P. Craig Russell**, Managing Director, Goldman Sachs & Co
- **Reuben Slone**, Executive Vice-President, Supply Chain, OfficeMax
- **Marlin Thomas**, Dean, Graduate School of Engineering & Management, Air Force Institute of Technology
- **Liz VerSchure**, General Manager, Aeroderivative Services, GE Energy
- **Sona Wang**, Managing Director, Ceres Venture Fund
- **Bethany L. Weeby**, GE Capital - Retail Consumer Finance VP & General Manager, Chevron

**Board Spotlight: Joel Brown**

Joel Brown has been Senior Vice President of Worldwide Operations at OpenTable since 2001. OpenTable is the leading supplier of reservation, table management, and guest management software for restaurants. In addition, the company operates www.opentable.com, the world’s most popular website for making restaurant reservations online. Brown built and leads the Client Relations, Field Operations, and Customer Support teams.

In addition to being a member of the IOE Advisory board, Joel and his wife Lorraine recently established the Joel and Lorraine Brown Graduate Student Instructor Award which recognizes one outstanding GSI each year.

**What are some memories from your time in IOE or the University of Michigan that stand out?**

I do have very fond memories of my IOE studies and my time in Ann Arbor...
in general. I loved the classes for both their theoretical foundation and their practical application. I made good friends with folks who shared these academic interests. We all liked to work hard, but also liked doing things together outside of the classroom/library. I also enjoyed my stint as President of Alpha Pi Mu, working with a team of smart folks and getting to know our approachable faculty better. Finally, how can you not love the Ann Arbor college experience? That Michigan aura must have rubbed off on my family here in California, for my son is now a happy Maize and Blue student. He came home at one break sporting a block M tattoo on his back. I’m not an “ink” supporter, but I didn’t protest that one too much.

**How do you think your IOE education prepared you for where you are today?**

As an LSA freshman, I spent hours in the library (no Internet) researching where I wanted to focus my undergraduate education. After that thorough research and introspection, I decided that the IOE program would interest me the most and prepare me the best. I was not disappointed. I enjoyed making things work optimally, applying quantitative techniques to business processes. I used those skills in the business world: doing operations and systems consulting at a number of varied client engagements (manufacturing, banking, food processing, electronics assembly and more). My IOE background also prepared me very well for the rigor of my graduate studies in business administration. I felt I had a bit of head start during the first year of business school as we developed the quantitative skills needed for business operations and financial analysis. In fact I ended up running a few tutoring sessions for my classmates – a great way to make friends! I continue to exercise these quantitative muscles in the things I do today.

**How do you feel the advisory board benefits both the board members and the IOE Department?**

I’m honored and delighted to participate on the IOE Advisory Board. I so enjoy returning to the IOE team to talk about the key issues of the day such as curricula, research, department strategy, organization, etc. I find it stimulating conversation and it’s inspiring to hear how students, faculty and administrators are innovating. Hopefully, the board can give Professor Daskin and the team some helpful insights and outside perspective. The board is a diverse group from all around the country and from many industries. The discussions therefore generate many opinions, rather than a single point of view.

**What are your hopes for the future of the advisory board?**

I hope the group continues to add value by providing input on the department’s direction. I particularly appreciate how Professor Daskin is thinking about how the department will stay relevant and maintain its leadership position amidst a rapidly changing business and technology climate. For instance, the healthcare industry – consuming a huge and growing share of GNP – presents a fertile ground for the application of IOE techniques. And trends in cloud computing and the ever-declining costs of processing and storage suggests an opportunity to glean information and draw conclusions about things that were once difficult to quantify. I also hope we continue to see samples of the work our graduate and undergraduate students are doing. Our group enjoyed previous presentations, and I hope the presenters appreciated our input and suggestions.

**Why is it important to you to maintain a relationship with the IOE Department?**

The IOE Department made a large university smaller and more personal, and it prepared me very well for my future. I’ve been away from the department for many years, and it’s very nice to get reacquainted. The IOE Department has maintained its great national reputation over these years, and I’d like to do what I can to perpetuate that.

**What made you and your wife decide to establish the Joel and Lorraine Brown Graduate Student Instructor Award?**

One of things I enjoyed most as president of Alpha Pi Mu was recognizing outstanding teaching in the department. It was a challenging job since there were many good teachers and the best methodology for conducting the survey was not immediately obvious. In fact, I considered consulting a professor, but there was an obvious conflict of interest! As I thought about giving back to the University of Michigan in some small way, this seemed like a perfect way to reflect that past interest in recognizing dedication to teaching our undergraduates. I thank Professor Daskin for listening to my interests and putting this idea forward.
problem or how to work together better as a team and I have some insights that help them get over the hurdle and build a more successful team and solution,” says Professor Van Oyen.

Duck says the team up between IOE and the Health System is “a win-win for both UMHS & the students.” The students bring “creativity, analytical review, and fresh eyes” to the problems they work on. The UMHS gets a solution to a problem and the students get a unique opportunity to apply what they’ve learned in their coursework to real-world situations and a chance to work as part of a team. In addition, students get “mentoring from seasoned Industrial Engineering professionals.”

By the end of the course, students will have improved their technical communication skills and professional teamwork skills. They’ll have experience in working directly with a client and making professional proposals and presentations. They also come away with an advanced knowledge of the key problems in healthcare systems.

The course has been a career changing experience for many students. “We’ve even had areas so impressed with their students that they’ve hired them and many students change careers over to healthcare,” says Duck. There are IOE grads in various roles in healthcare institutions across the country, some even go to medical school after the course. But, for those who don’t pursue healthcare as a career, the knowledge and experience gained in the course is helpful in any industry.

In Fond Memory of Professor Gary Herrin

Gary Herrin, an outstanding engineering statistician and gifted teacher who served as a faculty and administrator at Michigan Engineering from 1973 to 2010, passed away on August 18 at the age of 65.

The first director of the Center for Ergonomics, Herrin was instrumental in developing guidelines for manual lifting that have been acknowledged around the world as the best way to prevent musculoskeletal injuries in industry. His statistical analyses showed how different types of manual exertions could cause serious injuries and illnesses, said Don Chaffin, the Richard G. Snyder Distinguished University Professor Emeritus and a former director of the Center for Ergonomics.

Among his other achievements, he showed how the quality of products being produced depends on the specification of work requirements, and how lean manufacturing concepts could improve product quality.

He is remembered most, though, for his generosity, warmth, and sense of humor, colleagues say.

“Gary was a great, yet gentle and beautiful person who lightened up the room by his very presence and who will be missed by all who knew him,” said Mark Daskin, the Clyde W. Johnson Collegiate Professor of Industrial and Operations Engineering and department chair.

“Gary was a great colleague,” Chaffin said. “He was not one to shy away from true collaboration. His office door was always open to those with interests in solving complex imperial problems. He had a very unique way of asking questions that made people think about their problems with new insights, often leading to improved solutions to their problems.”

Professor Gary Herrin

photo courtesy of UM College of Engineering

Herrin was born February 18, 1946 in Cincinnati, Ohio. He received his PhD in Industrial and Systems Engineering from The Ohio State University in 1973, the same year he joined the faculty of Michigan Engineering as an assistant professor in the Department of Industrial and Operations Engineering. He became the first director of the Center for Ergonomics in 1982, and was promoted to full professor in 1988. He was assistant dean for undergraduate education from 1998 to 2005 and associate dean for undergraduate education from 2005 to 2007.
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Congratulations PhD Graduates!

Katrina Maria Appell, Spring/Summer 2011, A Contingency Theory Approach to the Deployment of Lean Principles in Advanced Research and Complex Product Development Environments, Chair: Jeffrey K. Liker, employment: Optiprise, senior lean consultant supporting Caterpillar

Sarah M. Bonzo, Fall 2011, Network Alignment in Healthcare: A Socio-Technical Approach for System-Wide Improvement and Patient Safety, Chair: Jeffrey K. Liker, employment: Rochester General Health System, Manager, Operational Readiness - Epic


Katherine A Heynoski, Winter 2011, Understanding Change Dynamics: Examining the Underlying Patterns that Shape Change Processes, Chair: Jeffrey K. Liker, employment: Research Consultant, Battelle for Kids

Neal Wiggermann, Spring/Summer 2011, The Effect of Flooring Surface Compliance on Plantar Pressures and Discomfort During Prolonged Standing, Chair: W. Monroe Keyserling, employment: Hill-Rom, Ergonomics Lab Manager