



Making Sense of Complicated Systems: A Conversation with Professor Angelia Nedich



Q: What is the engineering problem you are working to solve?

A: Modern technological systems—including wired and wireless communication systems (such as computers and mobile cells), transportation systems, power generation and distribution systems, and data systems—are large and distributed, both spatially and informationally. They are complex, interconnected, dynamic and often extremely large (the Internet, for example, which is consistently growing). The dynamic of these complex networked systems is multidimensional, as it includes information state, number of users, and physical location and interconnectivity due to mobility of the system components. Thus, these systems and their dynamics have various uncertainties both internally (within the system) and externally, depending on the environment and system users.

Q: What is your role in trying to solve the problem of complex technological systems?

A: My research interest is in the efficient use of such systems, which necessitates, among many aspects, a

comprehensive study and analysis for understanding their functional capabilities and limitations. My research interest broadly lies in the development of models, mathematical theory, and tools that can provide us with an analytical framework as well as reliable prediction of the behavior of complex, interconnected systems. There is a wide scope of issues that are of interest to me, ranging from information spread and retrieval over a network; optimization within a network; cooperative and competitive behavior; and optimal control and decision-making in networked systems.

Q: How will your research impact the lives of people reading this?

A: Understanding the behavior and the efficient use of interconnected network systems is of paramount importance for the existing and envisioned intelligent transportation networks, power networks, and sensor networks for climate monitoring, soil-moisture monitoring, or water-quality monitoring systems. Knowing the efficiency and reliability of systems is critical in these applications, because their performance will greatly impact the quality of human life.

In 2008, I received an NSF CAREER Award that funded part of my research on new computational models, theoretical advances, and optimization algorithms for large-scale distributed networked multi-agent systems. Successful completion of those research activities will lead to new efficient designs of decentralized coordination and optimization algorithms for large network systems. The funding has supported partially (or in full) four graduate students – three PhD and one MS. In this work I have also collaborated with colleagues and graduate students of ECE at Illinois and EECS at MIT. Recently, our inter-university team – including Professor V.V. Veeravalli as the leading PI, Professor T. Basar and myself (as co-PIs), and our collaborators at the University of Michigan – has received large funding from NSF to conduct research on fundamental problems in decentralized signal processing and distributed decision-making that arise in networked systems.

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ISE Alumnus to Buy NFL's Jacksonville Jaguars

*Excerpted from an article
by Rick Kubetz,
College of Engineering*

"I am honored to have recently signed an agreement with Wayne Weaver and his partners to purchase the Jacksonville Jaguars," Shahid Khan (BSIE 1971), said in a press release. "Owning a team in the NFL has long been my personal and professional goal. Becoming owner of the Jacksonville Jaguars would be a dream come true for me and my family, but above all, would be a privilege."

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From the Department Head



Dear Alumni and Friends,

It is my pleasure to share with you the accomplishments and successes that the department has garnered through its students, faculty, and staff since our last newsletter. Our students continue to excel and obtain good job placement; our faculty have had a great year in research output; and our staff are being recognized and promoted for their dedication to service. I have enjoyed the opportunity to meet many of you in person, which allowed me to learn about your own successes, and listen to your comments as well as your advice for the department. I am most grateful for your passion and willingness to share your thoughts and ideas with me.

On December 14, the Master of Science in Financial Engineering (MSFE) program graduated its first cohort of 25 students. A great majority of these students spent this past summer engaging in internships with 20 companies and are ready to embark on a new chapter of their professional careers with permanent employment in the financial industry. The second cohort of the MSFE program enrolls 44 students from eight countries, and includes eight students from the U.S.

Please join me in congratulating Xin Chen as our newly tenured associate professor, effective August 16, 2011. Additionally, we have a number of faculty members considered for promotion and tenure in our current academic year. We wish them success in the review process. With three recently promoted faculty members to the tenured associate rank, and the anticipation of more next year, we started a special seminar series featuring these faculty this fall. Ali Abbas kicked off the series in October, followed by Dušan Stipanović in November, and concluded with Xin Chen in December.

On the staff side, Heidi Craddock was promoted to assistant director of undergraduate programs with responsibility for managing and overseeing the operations of our BS degree programs in general engineering and industrial engineering. As the principal administrative assistant in the senior engineering projects class with a dual role of chief department support, Debra Hilligoss was promoted to the position of administrative aide. Randy Elkins, assistant to the head, was awarded a 2011 Outstanding Staff Certificate of Merit by the University's Dads Association. As department head, I am very fortunate to be assisted by these and other dedicated staff members. They deserve our deepest thanks and congratulations.

The department welcomes two new faculty and two staff members. Joining us last August from MathWorks, Inc., Assistant Professor James Allison has been very busy setting up his research program, writing grant proposals, and teaching a component design course

in the fall semester. After completing his postdoctoral year at Princeton University and having a recent paper selected as a best paper by the prestigious *SIAM Journal on Control and Optimization*, Assistant Professor Alex Olshevsky is off to a great start in his academic career; Alex joins us in January 2012. Erin Kirby has replaced Chad Rohlfs as the interim associate director of advancement. As the major gift officer for ISE, Erin has been traveling extensively, connecting with many of our alumni, and updating them about the most recent developments in the department. Leslie Davison-Pirie has replaced Tracy McAllister as office manager for undergraduate programs. Leslie is quickly learning her new job and fast becoming an invaluable resource.

In addition to the many articles included in this newsletter, there are several exciting accomplishments of our doctoral students and their advisors. Dr. Conrad S. Tucker, student of Assistant Professor Harrison Kim, and Dr. Scarlett Miller, student of Professor Alex Kirlik (a department affiliate), recently began their tenure-track assistant professor positions in the Industrial Engineering Department at Penn State University. Another doctoral graduate of Harrison Kim, Dr. Shen Lu, began his career with employment at Bloomberg in August. The PhD thesis of Behrouz Touri, student of Assistant Professor Angelia Nedich, has been accepted for publication in the prestigious Springer Theses series. Assistant Professor Uday Shanbhag and I jointly supervised Dane Schiro, a student who spent two summer months at the Mathematics and Computer Science Division at Argonne National Laboratory as a Givens Associate, a highly competitive position for advanced graduate students to intern at Argonne.

All in all, the department has had a very gratifying year and we all look forward to even more successes in the years to come. As always, the department is truly grateful for all the dedicated support of its alumni, and for this, I thank you. We continue to need your help. We would like to hear from you; please drop us a line, visit us, and keep in touch.

Yours sincerely,

A handwritten signature in blue ink that reads "Jong-Shi Pang". The signature is fluid and cursive.

Jong-Shi Pang
Department Head and Caterpillar Professor
Industrial and Enterprise Systems Engineering
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104 South Mathews Avenue
Urbana, IL 61801
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Alumni, Faculty, Students Honored at ISE Awards Ceremony



ALPHA PI MU DISTINGUISHED ALUMNUS
John LaVanne, vice president of Alpha Pi Mu, presented Richard Q. Blackwell the Alpha Pi Mu Distinguished Alumnus Award.



EXCELLENCE IN ENGINEERING LEADERSHIP

GE junior Katherine Koritz was named the second recipient of the ISE Alumni Board ExcEL Award. This prestigious award recognizes an ISE junior who demonstrates excellence in engineering leadership. Along with a monetary award and trophy, the recipient is awarded a junior membership to the ISE Alumni Board and serves as co-chair of the board's student enrichment committee.



GAMMA EPSILON DISTINGUISHED ALUMNUS
Eric Chern was named the recipient of the 2011 Gamma Epsilon Distinguished Alumnus Award.



CERETTI AMONG ISE'S 2011 CATERPILLAR FOUNDATION SCHOLARS

ISE Department Head and Caterpillar Professor Jong-Shi Pang is pictured with Stacey Ceretti, one of this year's Caterpillar Foundation Scholars. Congratulations to Stacey and to the following Caterpillar Scholars who were unable to attend the Awards Ceremony: Jakob Jaster, Joseph Loesche, and Anirudh Ramanathan.

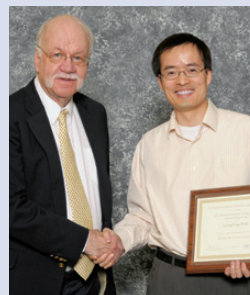


Joseph Gardner



Travis Wilson

HONORING SERVICE WITH DISTINCTION
Heidi Craddock and Lynnell Lacy were honored to present the ISE 2011 Distinguished Service Award to Joseph Gardner (BSGE 2011) and Travis Wilson (BSIE 2011) in recognition of outstanding service to the department. Congratulations, Joe and Travis!



FENG HONORED FOR OUTSTANDING TEACHING IN INDUSTRIAL ENGINEERING
Dr. James Franklin Sharp attended the ISE Spring 2011 Awards Ceremony to present the 2011 Sharp Outstanding teaching Award in Industrial Engineering. Liming Feng is the first recipient of this prestigious award, which is generously sponsored by Dr. Sharp. Congratulations, Liming!



ALPHA PI MU & GAMMA EPSILON OUTSTANDING TEACHING ASSISTANT
On behalf of Alpha Pi Mu and Gamma Epsilon, John LaVanne presented the Outstanding TA Award to Jayash Koshal for his outstanding ability to impart knowledge to students in an atmosphere conducive to learning.



SHANBHAG HONORED FOR TEACHING EXCELLENCE
Uday Shanbhag was named the recipient of the 2011 Alpha Pi Mu and Gamma Epsilon Teaching Excellence Award.

Student Spotlight

JF Lincoln Foundation 2011 Undergraduate Competition

ISE's Senior Engineering Project Course garnered seven awards for 2011, including gold and silver awards. We are very proud of these winning students and their advisors for excellent work in the projects submitted to the Lincoln Arc Welding Foundation. Congratulations to the following teams:



Gold

Quality Control of Silicone Layer in Extruded Polyethylene Film

Daniel Kim
Alex Langston
Tracey Liu
Michael Williams
Advisor: Harrison Kim

Bronze

Liquid Carbon Dioxide Pumping Application

Kevin Carrington
Alex province
John Small
Victoria Smalls
Advisor: Carolyn Beck

Merit

Cable Puller Redesign for Fast Motor/Gear Repair and Replacement

John Mersch
Clarissa Wong
Rahul Dhond
Lauren Hovland
Advisor: Harrison Kim
Cold Heading Set-up Changeover Time Reduction
Christopher Glimco
Jenna Montague
Kelly Snodgrass
Michael Elijah
Advisor: Harry Wildblood



Silver

Die-Cut Tortilla Quality Assurance Improvement

Indra Banerjee
Fernando Marchini
Harold Akins IV
Joseph Janiczek
Advisor: Negar Kiyavash

Air Mattress Design for Medical Applications

Kassandra L. Kross
Debra C. Reitz
Hana Roh
Joseph W. Stuber
Advisor: Harry Wildblood

Emulsion Interface Sensing Technology Development for Oil Processing Systems

Andrew Dai
Alexandra Haser
Kory Kraft
Zhe Zhao
Advisor: Scott Burns

Senior Engineering Projects are funded with an honorarium to ISE as part of its ongoing commitment to providing students with real-world business and engineering challenges. To explore your possibilities for collaboration, contact Harry Wildblood, Coordinator of the Senior Engineering Project Course, via email at wildblod@illinois.edu.

College of Engineering Scholarships Awarded to ISE Students

Engineering Visionary Scholars

CALVIN BARNES NICCOLLS MEMORIAL SCHOLARSHIP
Alejandro J. Murillo, General Engineering

Other College Scholarships

CARYN TERESE CASAZ MEMORIAL SCHOLARSHIP
Lauren M. Kelly, Industrial Engineering

CATERPILLAR FOUNDATION ENGINEERING MERIT SCHOLARSHIP
Marlo P. Goldstein, General Engineering

ENGINEERING SPECTRUM SCHOLARSHIP
Gillian Wyman, Industrial Engineering



Touri Thesis to be Published in Springer Series

The PhD dissertation by Behrouz Touri titled, "Product of Random Stochastic Matrices and Distributed Averaging," has been accepted for publication in *Springer Theses Series*. Behrouz was advised by ISE Assistant Professor, Angelia Nedich. Congratulations Behrouz!

What's Your Story?

We welcome the opportunity to publish your success stories. Please send them via email to Lynnell Lacy at lynnell@illinois.edu.



Marlo P. Goldstein
General Engineering

Alumni Association Recognizes Senior 100

Two ISE seniors were named to the 2011 Senior 100 Honorary, an Alumni Association program that acknowledges notable Illinois seniors for both their past achievement and their future commitment to the University. The program serves a two-fold purpose: to honor what these select 100 have already accomplished and to recognize the skills of leadership and loyalty these new graduates will bring to the world at large.



Samuel Michael Marks
General Engineering

Selection of Senior 100 honorees is based on:

- academic standing (minimum grade point of 3.0 on a 4.0 scale)
- demonstration of past involvement, initiative, and leadership in campus and community activities
- assessment of the applicant's potential for maintaining effective engagement with their alma mater following graduation.

Congratulations Marlo and Sammy!

Bronze Tablet Recipients

Selection for the Bronze Tablet recognizes continuous high academic achievement and is awarded to students in the top 3% of their college graduating class. Recipients' names are inscribed on the Bronze Tablet, which hangs in the Main Library at the University. The 2010-2011 class of the College of Engineering boasted six recipients of this distinguished honor.

DECEMBER 2010

Luis Steven Linshiu, Industrial Engineering

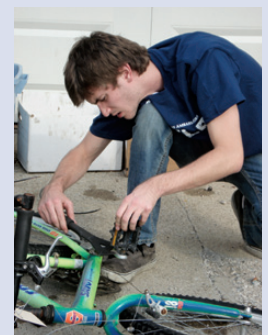
MAY 2011

Jacob William Arnold, General Engineering
Matthew Steven Dubois, General Engineering
Marlo Paige Goldstein, General Engineering
Adam C. Rule, Industrial Engineering
Patrick Michael Shanley, General Engineering



ISE Students Give Back to C-U Community

More than 20 ISE students volunteered their time during iHelp, where they worked to repair bicycles. iHelp takes place at the start of Homecoming week each year.





ISE Team Chosen for NSF I-CORPS Inaugural Class

By Rick Kubetz, College of Engineering

A research team from the Department of Industrial and Systems Enterprise Engineering (ISE) at Illinois is one of 21 teams for the inaugural class of National Science Foundation (NSF) Innovation Corps (I-Corps) awards.

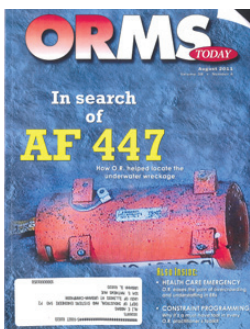
"NSF's core mission is to fund basic research in all fields of science and engineering," explained Subra Suresh, director of the National Science Foundation. "I-Corps supports this mission by helping to transform scientific output into technological innovation. Innovation Corps awards will help to strategically identify nascent science and engineering discoveries, and will leverage NSF's investment in basic research for technology innovation."

While the knowledge gained from NSF-supported basic research frequently advances a particular field of science or engineering, some results also show immediate potential for broader applicability and impact in the business world. These results may be translated into technologies with near-term benefits for the economy and society.

As one of the first projects chosen for this new initiative, the Illinois team's IDecideFast is a web-based application for effective decision making for the layperson.

"Our proposal will enable widespread use of decision analysis and will incorporate it into daily lives of individuals," explained Ali Abbas, an associate professor in the ISE department, and principal investigator for the project. "Anyone who is interested in making a decision—personal, financial, medical and bidding—will have the ability to log on to the web system and receive up-to-date methods for preference and belief elicitation, and interact with other decision makers facing similar decisions. The decision platform will also provide a unifying framework for experienced decision modelers to upload their templates for dissemination."

According to the NSF website, the I-Corps program will initially support up to 100 projects annually, selecting up to 25 teams on a quarterly basis to assess the commercial viability of their previously-supported basic research. Spanning a broad range of target products, geographic locales and research fields, the teams will receive guidance from private- and public-sector experts, participate in a specially designed training curriculum, and receive \$50,000 to begin assessing the commercial readiness of their technology concepts. In total, the awards were representative of six NSF directorates: Engineering; Computer and Information Science and Engineering; Biology; Mathematics and Physical Sciences; Social, Behavioral and Economic Sciences; and Education and Human Resources.



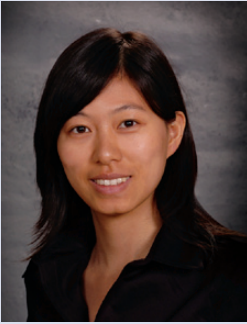
Abbas Receives Publication Award; Featured in ORMS Today

On November 14, The Decision Analysis Society of the Institute for Operations Research and the Management Sciences presented the 2011 Publication Award to Ali E. Abbas and James E. Matheson for the paper, "Normative Decision Making with Multiattribute Performance Targets," published in the *Journal of Multi-Criteria Decision Analysis*, 2009.

Additionally, an article written by Abbas, Scarlett Herring, Matthew Robbins, Karen Simms, and Chris Spetzler was featured in the August 2011 issue of *ORMS Today*, volume 38, number 4. The article, entitled "Peer-to-Peer Decision Training," highlights Abbas' collaborative work with the Decision Education Foundation—a program he leads—which teams the Champaign County Juvenile Detention Center (JDC) with Peer Ambassadors (PA) and teaches African American youth about aligning decision making with values and realizing the possibilities and alternative outcomes for every decision they make.



Left to right: Karen Simms, Elizabeth Bozek, Scarlett Herring, Matthew Robbins, the peer ambassadors, and Ali Abbas.



Zhou Heads NSF-funded Research on Simulation Optimization

Excerpted from an article by Rick Kubetz, College of Engineering

Enlu Zhou an Assistant Professor in the Department of Industrial and Enterprise Systems Engineering (ISE) has received a \$200,000 grant from the National Science Foundation's Division of Civil, Mechanical, and Manufacturing Innovation (CMMI) for a simulation optimization study.

"The research objective of this award is to create new simulation optimization algorithms that combine rigorous theoretical performance guarantees with the robust empirical behavior of a class of random search techniques called the model-based methods," Zhou explained, adding that the research approach is based on integrating the principle of the well-known Expectation-Maximization (EM) algorithm from the field of statistics into model-based methods.

"Through exploiting a novel connection to the EM algorithm, this research will investigate a unifying framework to design and implement new model-based algorithms for solving a broad class of simulation optimization problems with very modest computational effort." These algorithms will be studied in terms of their properties (such as convergence and convergence rate) using a fusion of theories and tools from EM, stochastic approximation, and Quasi-Newton methods. A variety of applications from biostatistics to electric power systems will also be tested for the purposes of evaluating the practical utility of the developed techniques and algorithms.

Zhou joined the ISE department in August 2009, after completing her PhD in electrical engineering at the University of Maryland, College Park, in 2009. Her research interests include stochastic control, Markov decision processes, and simulation optimization.



Beck and Salapaka Receive NSF Funding

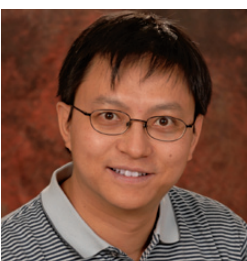
Srinivasa Salapaka (principal investigator; associate professor in MechSE) and ISE Associate Professor Carolyn Beck (co-principal investigator) have been notified of National Science Foundation funding for their research, "A Tractable Computational Coverage and Clustering."

Their research seeks to develop a computational framework addressing dynamic clustering and classification problems defined over large-scale networks.



NSF Awards Grant to Peng

In June, the National Science Foundation awarded a grant of \$200,554 for support of ISE Assistant Professor Jiming Peng's project entitled, "Sparse Solutions to Classes of Quadratic Programming Problems: Theoretical Fundamentals, Solving Strategies and Applications."



Indefinite Tenure Awarded to Chen

The Board of Trustees notified ISE Assistant Professor Xin Chen of approval for his promotion to associate professor with indefinite tenure, effective August 2011.

Chen obtained his PhD from MIT, MS from the Chinese Academy of Sciences, and BS from Xiangtan University. His research interest lies in optimization and supply chain management. He received the Informs Revenue Management and Pricing Section prize in 2009. He is coauthor of the book, "The Logic of Logistics: Theory, Algorithms, and Applications for Logistics and Supply Chain Management," now in its second edition.



Kiyavash Earns NSF CAREER Award

Negar Kiyavash has received an Early Career Development Award from the National Science Foundation. Her research, "A Timing Approach to Network Forensics," will address problems in the area of network forensics that arise in packet-based communication of information. A key feature of the research approach is the use of timing as an under-utilized degree of freedom that provides rich statistical structure about the information dynamics.

"In forensic applications, timing can help us link events and even understand causation and intent," said Kiyavash. "It gives us insight into potential threats." Kiyavash's work is an ambitious multidisciplinary research program that targets both theoretical and practical fundamental problems in security.

Kiyavash credits the supportive environment in her department and the college, her students, and her collaboration with other colleagues as key components in receiving the award. "Research at Illinois is very synergistic," she said. "Involvement in multidisciplinary research across the college inspires my research."

Kiyavash joined the faculty in 2009, after earning both her MS and PhD in electrical and computer engineering from Illinois. She also holds a BS degree in electrical and computer engineering from Sharif University of Technology, in Tehran.

NSF's CAREER Award is given to junior faculty "who exemplify the role of teacher-scholars through outstanding research, excellent education, and the integration of education and research within the context of the mission of their organizations."



Angelia Nedich

Nedich and Research Team to Receive \$1M NSF Grant

Decentralized signal processing and distributed decision-making in networked systems

Angelia Nedich and Tamer Basar, along with principal investigator Venu V. Veeravalli, have won an NSF grant of \$1 million (for Illinois), in collaboration with a team at the University of Michigan. The principal objective of the project is the investigation of fundamental problems in decentralized signal processing and distributed decision-making that arise in modern networked systems including sensor networks, communication networks, transportation networks, climate monitoring systems, soil-moisture monitoring systems, water-quality monitoring systems, and surveillance systems. In all such systems, efficient decentralized signal processing and distributed decision-making are of paramount importance, as they can significantly improve network performance, which in turn can improve the quality of human life.

See our cover story to learn more about Nedich and her research.



Tamer Basar



Venu V. Veeravalli



Harrison Kim



Uday Shanbhag

2011 Engineering Council Outstanding Advisors

ISE's Harrison Kim and Uday Shanbhag were selected as recipients of the 2011 College of Engineering Council's Outstanding Advisor Award. Recipients of this award are the top 10 percent of College of Engineering advisors selected by students. It is an honor to recognize their dedication to the academic success of our students and their commitment to excellence!



Thurston Receives NSF Grant to Explore, Evaluate New Design Processes

The research objective of Gutszell Professor Deborah Thurston's collaborative award is to explore and evaluate new design processes, based on immersive technology, that support design team interaction in ways that result in designs that could not be achieved with traditional interfaces. These methods will be grounded in two distinct research fields: analytic methods for tradeoff analysis under uncertainty (University of Illinois) and the use of virtual reality techniques for product design (Iowa State University). The impact of this research will be to provide a powerful new approach to complex product/system design, which utilizes both analytical methods and immersive design computer technologies.

If successful, these approaches will result in the creation of unique new products, as the far-reaching effects of potential design changes will be experi-

enced by members of the design team. Resources will be used more efficiently, since their economic, technical and environmental value throughout the product lifecycle will be visually represented for the design team. A set of design case studies will be developed and made freely available on the web for educational purposes. These case studies will be integrated into engineering-oriented industry-sponsored senior design courses. With the case studies' special emphasis on a realistic experience of the collaborative design process, anticipated impacts include increased participation and retention of women in engineering. New technology will be transferred to industry through student-industry projects. Design of the educational materials will follow current guidelines on "changing the conversation" to reflect the diversity of engineering in all aspects.



Pang and Luo Receive EURASIP 2011 Best Paper Award

Caterpillar Professor and Department Head Jong-Shi Pang, along with Professor Tom Luo (University of Minnesota), was selected by a committee of experts to receive the EURASIP 2011 Best Paper Award for their work, "Analysis of Iterative Waterfilling Algorithm for Multiuser Power Control in Digital Subscriber Lines." The awards ceremony was held during the EUSIPCO 2011 Conference in Barcelona, Spain, this past summer.



Reis Receives ASNT Fellowship Award

Congratulations to Henrique Reis! His nondestructive testing research proposal, "X-ray Tomographic and Ultrasonic Velocity and Attenuation Measurements of Wooden Blocks Exposed to Controlled Decay," was selected to receive the 2011 American Society for Nondestructive Testing (ASNT) Fellowship Award. Recognition was given at the Annual Awards Banquet of the ASNT Fall Conference and Quality Testing Show in Palm Springs, California, in October 2011.



Sreenivas Interviewed Regarding BART WiFi Rollout

ISE Associate Professor and Associate Head Ramavarapu S. (R.S.) Sreenivas was interviewed and quoted in the *San Francisco Chronicle* regarding the delayed rollout of the BART WiFi service.

In his 2007 study for the Illinois Department of Transportation (IDOT), Sreenivas concluded that high-speed Internet on transit systems could indeed have positive impact on quality of life, and was quoted regarding BART and other Si-Fi transit: "It's absolutely a no-brainer; it has to be done."



Abbas Organizes Highly Successful Workshop in Palo Alto

Associate Professor Ali Abbas organized an NSF-DRMS workshop titled, "Decision Analysis: Visions for the Future," in Palo Alto, California. Attendees included Ken Arrow (Nobel Laureate in Economics), John Pratt, Ronald Howard, Ralph Keeney, Sig Hecker (Emeritus Director of Los Alamos National Labs), John Weyant (co-recipient of the Nobel Peace prize with former Vice President Al Gore), and many others.



Feng Recognized for Undergraduate Teaching Excellence in Industrial Engineering

During the annual ISE Awards Ceremony on April 15, Dr. James Franklin Sharp presented Liming Feng with the 2001 Sharp Outstanding Teaching Award in Industrial Engineering.

This award was endowed by a philanthropic gift from Sharp of New York, NY (originally from Chester, Illinois). Sharp received a BSIE from Illinois in 1959 and a PhD in industrial engineering from Purdue University. After faculty positions at Rutgers and NYU, and a management position at AT&T, he founded Sharp Seminars in New York, and became a leading provider of training for the three-year series of Chartered Financial Analyst (CFA®) Exams.



Wozniak Receives IEEE Power and Energy Society's Distinguished Service Award

Associate Professor Louis Wozniak received the IEEE Power and Energy Society's (PES) Distinguished Service Award for chairing its Energy Development and Power Generation Committee. The award was presented at the PES 2011 General Meeting in Detroit.

Fall 2010 ICES List of Teachers Ranked as Excellent by Their Students

**indicates an Outstanding rating*

BARICH, J*	GE400
BLOCK, D	GE420
BURGON, H	GE361
DOUGLASS, C* (TA)	GE101
HALL, W	GE411
KOSHAL, J (TA)	GE330
KWAK, M* (TA)	GE330
LACY, L	GE390
PRICE, N* (TA)	GE320
RALPH, M* (TA)	GE320
SHETTY, O (TA)	GE101
SREENIVAS, RS	IE523

Spring 2011 ICES List of Teachers Ranked as Excellent by Their Students

**indicates an Outstanding rating*

BARICH, J*	GE400
BLOCK, D	GE423
BURGON, H.	GE361
FENG, L	IE526
MCGOVERN, M (TA)	GE312
NEDICH, A	IE598
PRICE, N (TA)	GE312
SENALIK, C (TA)	GE312
SHANBHAG, V	IE360
SHETTY, O (TA)	GE101
TIWARI, A (TA)	GE101
WILLIAMS, A (TA)	GE101
ZHOU, E	IE525

Department Updates

New Arrivals



James Allison, *Assistant Professor*

James Allison comes to us from MathWorks, Inc. in Natick, Massachusetts, where he was a senior engineer working in the area of modeling, simulation, and design of dynamic engineering systems. While in Massachusetts, he also taught at Tufts University in the Department of Mechanical Engineering. His research interests include engineering system design, multidisciplinary design optimization, integrated physical and control system design, and design for energy efficiency.

James earned his PhD in mechanical engineering at the University of Michigan, and master's degrees in mechanical engineering as well as industrial and operations engineering. He worked at Ford doing engine design optimization, and at GM working on hybrid power train architecture design.

James was an NSF Graduate Research Fellow, and is a member of Phi Kappa Phi, Tau Beta Pi, and Pi Tau Sigma honor societies. He is also a member of the American Society of Mechanical Engineers, American Institute of Aeronautics and Astronautics, International Society for Structural and Multidisciplinary Optimization, Society of Automotive Engineers, and the American Society for Engineering Education. In addition to engineering, James enjoys outdoor recreation, including mountain and road biking, rock climbing, hiking, and canoeing.



Leslie Davison-Pirie, *Office Manager for Undergraduate Programs*

Leslie Davison-Pirie began her new position as the office manager for ISE Undergraduate Programs in July 2011. She works with the undergraduate students in the department and provides support to the assistant director of undergraduate programs and the coordinator of development, alumni and student relations. Although new to ISE, Leslie has worked at the University for 11 years and comes to us from the Counseling Center where she worked as an office manager for three of those years.

Prior to working at the University, Leslie was employed at Centennial High School in Champaign as an office secretary.

Leslie was born and raised in Urbana-Champaign and currently resides in St. Joseph, Illinois, with her husband, three children, grandson, and two dogs.



Erin Kirby, *Interim Associate Director of Advancement*

Erin Kirby is an alumna of the University of Illinois with a master's in higher education administration. She also holds a bachelor's degree from Miami University in business journalism.

Erin began her career in advancement during graduate school, when she worked for the College of Engineering managing its alumni board and annual fund. During graduate school, Erin received a competitive Reuss Fellowship at the U of I Foundation, where she gained more experience in gift development and planning.

For the past two years, Erin has served as assistant director of advancement of the Department of Physics in the College of Engineering, and is excited to have added ISE to her work portfolio.

Erin is from Champaign and feels fortunate to serve her hometown's university and her alma mater.



Alex Olshevsky, *Assistant Professor*

Alex Olshevsky received BS degrees in electrical engineering and applied mathematics from Georgia Tech and his master's and doctoral degrees in electrical engineering and computer science from MIT.

He is interested in the mathematical theory of feedback and system design and is currently investigating the design of policies which will allow large collections of autonomous agents—such as formations of vehicles and flying drones, mobile sensors, or routers in a communication network—to function reliably in unknown and constantly evolving environments. Alex is particularly focused on the possibility of designing engineering systems inspired by biological principles, for example, by mimicking the way schools of fish share information, make decisions, and execute complex maneuvers.

Alex has received a SIAM paper award for a publication in the *SIAM Journal on Control and Optimization*, chosen to be reprinted in the *SIAM Review* and has received an NSF graduate research fellowship. He currently is serving a fellowship at Princeton and will join the ISE department in January 2012.

Department Updates



Elkins Receives Prestigious Campus Honor

Randy Elkins has been chosen as a 2011 Outstanding Staff Certificate of Merit recipient, awarded by the University of Illinois Dads Association. Congratulations, Randy, on this well-deserved honor!

Transitions



Heidi Craddock

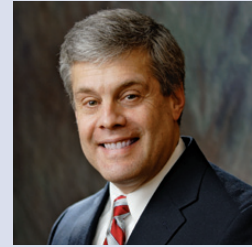
Please join us in congratulating Heidi Craddock, who has been promoted to chief advisor and assistant director of undergraduate programs. Reporting to the interim associate head of undergraduate programs, she is responsible for the daily operations of the Undergraduate Advising Office and works with the Course and Curriculum Committee. Congratulations, Heidi!



Debra Hilligoss

Also join us in congratulating Debra Hilligoss, who was recently promoted to the position of administrative aide in recognition of her new role as the principal administrative assistant in the Senior Engineering Projects Course, with dual responsibility for chief department support.

Retirement



The Jerry S. Dobrovolsky Distinguished Professor, David E. Goldberg, retired from the University in December 2010. Recognized worldwide for his pioneer efforts in modernizing the delivery of engineering courses, Goldberg co-founded and co-directed the Illinois Foundry for Innovation in Engineering Education (iFoundry).

Goldberg recently founded and is President of ThreeJoy Associates, Inc., a leadership coaching firm and change consultancy established to serve individual and organizational clients in higher education. He continues hands-on educational transformation through regular assignments as a visiting professor and advisor to senior leadership, most recently at Illinois, TUDelft, and the National University of Singapore.

ISE is grateful for Goldberg's extraordinary contributions and his many years of dedicated service, and we wish him the best.

THE ILLINOIS DISTINGUISHED LECTURE SERIES IN OPERATIONS RESEARCH



Ralph Tyrrell Rockafellar

Professor Emeritus of Mathematics
Department of Mathematics
University of Washington, Seattle

Adjunct Research Professor
Department of Industrial and Systems Engineering
University of Florida, Gainesville

Ralph Tyrrell (Terry) Rockafellar has long been associated with the University of Washington, Seattle, where he is Professor Emeritus of Mathematics, and he is also now Adjunct Research Professor of Systems and Industrial Engineering at the University of Florida, Gainesville. His interests span from convex and variational analysis to problems of optimization and equilibrium, especially current applications in finance, engineering and economics involving risk and reliability.

In addition to being a winner of the Dantzig Prize given jointly by SIAM and the Mathematical Programming Society (1983), Professor Rockafellar has gained international recognition for his work through honorary doctorates bestowed by universities in a number of countries. INFORMS awarded him and Roger Wets the 1997 Lancaster Prize for their book *Variational Analysis*, and in 1999 he was further honored by INFORMS with the John von Neumann Theory Prize for his fundamental contributions to the methodology of optimization. He has authored over 200 publications.

Lecture Series Featured Rockafellar on Optimization

The Illinois Distinguished Lecture Series in Operations Research is sponsored by Judith S. Liebman, Professor Emeritus, Mechanical Engineering, and Jon C. Liebman, Professor Emeritus, Civil Engineering. ISE is grateful to the Liebmans for their support.

Visit ise.illinois.edu for information about the Spring 2012 lecture as it becomes available.

Master of Science in Financial Engineering



The Master's Program in Financial Engineering (MSFE) took in its first students in the fall of 2010. That class of 25 students graduated this past December. While it is too early to report on the placement record, futures appear to be quite bright, with a small fraction of the class already placed with a variety of firms, including proprietary traders, hedge funds, and regulators. Prior to graduation, 92% of the class held summer internships and all were engaged in corporate-sponsored practicum projects in their final semester. This has given an intended and distinctly practical flavor to the application of constructs learned in all of their other class work. We wish them all well.

And now, as of August 2011, a new class of 44 students has entered the program. They will graduate in December 2012. The new class has slightly different characteristics than the previous class; average quantitative GRE is slightly higher at 89th percentile. Average verbal GRE is also higher at the 78th percentile. More interestingly perhaps are the undergraduate majors of the incoming class—electrical engineering and mathematics being the most common.

As an initiative to expand the program and attract the best students, up to 12 in-state scholarships will be offered in the upcoming admission season for the class of 2013. The scholarships are for 50% of tuition and are competitively awarded within the eligible class of Illinois residents who apply. Four such scholarships were awarded to the class of 2012.



Sabria Kushad

MSFE Announcements

Introduced in the previous edition of *ISE News*, the department is happy to announce that Sabria Kushad has been promoted to assistant director of the MSFE Program. In this role, she has accepted additional responsibilities and continues to be a key player in MSFE admissions, student affairs, marketing, and assisting the program's director, Morton Lane.



Nadja Robot

Nadja Robot moved to Champaign from Oakland, California, in January 2011, just in time to experience the great "snowpocalypse." She began working as an office support associate for the MSFE program in early August.

Prior to her move, Nadja spent 10 years at Cinder Block LLC, an Oakland-based music merchandising company. She studied photography at California College of the Arts and spent her pre-college years in Ukiah, a small town about two hours north of San Francisco.



Alumnus Shahid Khan Honored as Lincoln Laureate

Engineering alumnus Shahid Khan (BSIE 1971) was one of six distinguished Illinoisans honored in April as a Lincoln Laureate, the state's highest award for achievement.

Khan, who is the president of Flex-N-Gate Corp., and Timothy Nugent, founder of the Division of Disability Resources and Educational Services at the University of Illinois were the two local honorees receiving the Order of Lincoln medallion from the Lincoln Academy of Illinois. Other Lincoln Laureates honored this year include Richard and Mary Lackritz Gray, Shirley R. Madigan, and former Illinois state senator and comptroller Dawn Clark Netsch.

A native of Pakistan, Khan worked at Flex-N-Gate in Urbana while still a student at Illinois. After graduation, he established his own company, Bumper Works, and eventually acquired Flex-N-Gate in 1980. Today, Flex-N-Gate is one of the 200 largest private companies in the US. With nearly 50 plants and 9,500 workers around the world, its clients include BMW, DaimlerChrysler, Ford, and GM.

"We have great respect and appreciation for Shahid and all his professional and personal achieve-

ments in the community," said Molly Tracy, associate dean for advancement at the College of Engineering.

In 2006, Khan received the College of Engineering Alumni Award for Distinguished Service, "for outstanding contributions to the automotive industry and to the University of Illinois." A member of the UI Foundation Board of Directors, Shahid, and his wife, Ann Khan, have supported academic programs in the College of Engineering, the College of Business, the College of Applied Health Sciences, as well as athletic programs, such as the Atkins Tennis Center.

The Lincoln Academy of Illinois was established in 1964 to honor Illinois' most distinguished citizens. The annual ceremony is traditionally rotated among Springfield, Chicago, and other university communities. This year's Lincoln Academy convocation and investiture of laureates was chaired by Stanley and Judy Ikenberry and Michael and Virginia Hogan and held at the Krannert Center for the Performing Arts on April 16.

Portions of this story were excerpted from articles in The News-Gazette by Debra Pressey (Feb. 9, 2011) and Christine Des Garennes (April 10, 2011) as well as the College of Engineering website.

Photo: L. Brian Stauffer, University of Illinois News Bureau.



Shahid and Ann Khan



Jaguars *continued from cover*

Khan is buying the team from majority owner Wayne Weaver, who has been the majority owner since the team's inception nearly 17 years ago.

"Shahid Khan is a great American success story and he will be an outstanding owner for this

franchise and for this community," Weaver said in making the announcement. The sale of the team will not be finalized until early January 2012, following a league vote on the sale, which Weaver said he expects will be passed unanimously.

McGrath Named to Board of GEYFCS Directors

Tim McGrath has been named to the Glen Ellyn Youth and Family Counseling Service (GEYFCS Board of Directors. GEYFCS helps children and their families with academic and community counseling services. McGrath is a National Board Certified Counselor, guidance counselor, and math teacher at Glenbard South High School in Glen Ellyn, Illinois. He lives in Glen Ellyn with his wife, Lynda, and two children.

Share your successes with us

We welcome the opportunity to publish your success stories. Please send them via email to Lynnell Lacy at lynnell@illinois.edu.



Bradley Drake Mottier
Vice President and
General Manager,
Business and General Aviation,
GE Aviation, Cincinnati, OH
BS, 1979, General Engineering,
University of Illinois
at Urbana-Champaign
MS, 1981, General Engineering,
University of Illinois
at Urbana-Champaign
MBA, 1989,
University of Chicago

Mottier Receives Engineering Alumni Award for Distinguished Service

In 1980, while a graduate student at Illinois, Bradley Drake Mottier was hired as an independent consultant by Slick Electro, a small aviation company in Rockford, Illinois, to work on engineering projects. After completing graduate school, Mottier joined the company, which later changed its name to Unison Industries, as a senior development engineer. Between 1980 and 2002, Mottier moved up through the ranks, holding various leadership positions in engineering, manufacturing operations, marketing, and sales, and helping Unison grow to become the world leader in high-energy ignition and permanent magnet alternator systems for airborne, marine, space, and industrial applications. During those years, Mottier was awarded US patents for technologies that enabled numerous aviation world records, and he received industry and NASA recognition for his work. Today, virtually every aircraft in the free world flies with a Unison product on board.

When GE acquired Unison in 2002, Mottier stayed on as president to lead and integrate the business into GE aviation. In 2005, Mottier took a new role to

become a GE corporate officer and vice president and general manager of GE Aviation Services. In 2008, he left Aviation Services to form a new division to focus GE technologies and infrastructure in the business and general aviation market. Today, the new Business and General Aviation division is leading the development of innovative products and services for non-commercial, non-military aviation operations and has already secured commercial programs that will generate over \$1 billion of annual revenues by 2020.

Mottier has a distinguished record of service to the fields of science and engineering. He currently serves as vice president of the Sontag Foundation and director of the General Aviation Manufacturers Association, where he leads the Technical Policy Committee. He is a member of the President's Council for the University of Illinois and the University's Innovation Leadership Advisory Board. He is a former member of the Department of General Engineering Alumni Advisory Board, and received its Distinguished Alumnus Award in 2003.



Robert Meyer (left) pictured with Don Orseno, outgoing president of AARS.

Meyer Named Honorary Member of AARS

Exemplifying excellence in the railroad industry led to the recent induction of honorary members Jack Barriger, Bob VanderClute, Earl Currie, and ISE alumnus Robert Meyer. For Meyer, retirement from a lifetime of railroading didn't mean he was going to completely cut ties. He and his wife, Edna, who was also honored for her service to AARS, have been key components of successful AARS conferences. Bob is a life member of the Association of Railroad Superintendents.

Excerpted from the Association of Railroad Superintendents Journal, Issue 60, published in the third quarter of 2011.

Robbins Wins IIE Pritsker Award

Matthew J. Robbins, 2010 PhD graduate of ISE, won the 2011 Pritsker Doctoral Dissertation Award from the Institute of Industrial Engineers (IIE) – First Place.

The annual IIE Pritsker Doctoral Dissertation Award recognizes outstanding graduate research in the field of industrial engineering. Robbins' dissertation, "Exploring Pediatric Immunization Markets Using Operations Research and Game Theory," was advised by Dr. Sheldon H. Jacobson.

Neicamp Joins POLARIS

Henry Neicamp (BS 1980) has joined POLARIS LaboratoriesT as its new Field Services Manager. POLARIS LaboratoriesT is a full service fluid analysis laboratory headquartered in Indianapolis. Neicamp resides in Marion, Illinois, with his wife Donna and daughter Robyn.

ISE Giving



Dear Alumni and Friends,

Last fall, I accepted the opportunity to serve as the Associate Director for Advancement in your home department of Industrial and Enterprise Systems Engineering. Faculty, staff, and alumni have all welcomed me graciously, and I look forward to learning more about the students, research, and many of you during my travels across the country.

In the few months that I have been part of this department, I have learned that diversity is a distinguishing feature of our alumni population. We have approximately 6,500 ISE alumni in the world, with home addresses ranging from Alabama to the Virgin Islands. ISE alumni work in a variety of fields including law, medicine, business and, of course, engineering.

Our records, maintained by the University of Illinois Alumni Association and the Foundation, are only as good as we can make them. It is important for us to know where our legacy lies: you, our alumni, are one of our most significant resources as we continue to educate the next generation.

For this reason, please help us keep in touch! With quickly changing technology, as well as limited financial means, many campus units are relying more on electronic means of communication. Currently, we only have 35% of departmental alumni email addresses; we need to increase that percentage.

Although we're 6,500 strong and dispersed throughout the world, it is important to communicate the successes we share. Feel free to contact me at any time regarding your whereabouts, or any questions you may have about the department. I look forward to meeting many of you in the future. Stay in touch and Go Illini!

Warm regards,
Erin Kirby
Interim Associate Director of Advancement
ekirby2@illinois.edu

Find us and join!

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LinkedIn: University of Illinois Industrial & Enterprise Systems Engineering (GE & IE)



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- ISE Fellowship Fund

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Alumni Board



Greetings From the ISE Alumni Board!

As a long-time member of the ISE alumni board, I have been enthused to see the steady growth in the department's general and industrial engineering programs. Through the merger of general and industrial engineering into a single department, strategic hiring, and an emphasis on both high-quality undergraduate engineering education and state-of-the-art research, the quality and reputation of the department has never been higher. I am proud of the department's record of success and would like to see it continue.

Nevertheless, the challenges are great. Dwindling State coffers and increasing fiscal demands have placed significant constraints on the department's research, academic, and service objectives. Plus, demands to make engineering education relevant in the face of rapidly changing technologies and methods makes our mission increasingly difficult to achieve. These financial and educational-content issues are not easily solved.

As alumni, we have two means to help ISE navigate this tricky terrain: donate our time by sharing our expertise and experience with the students and staff, and/or donate our money by giving back in appreciation for the outstanding education we received. Both time and money are necessary. Financial contributions are an essential way for alumni to assist the department. From sponsoring a fellowship, to funding a research project, to donating to the general fund, contributions of any size and purpose are a tremendous way for alumni to support ISE and its students. You can discuss opportunities for contributions with Erin Kirby (ekirby2@illinois.edu), our interim associate director of advancement.

My real goal in writing this letter, however, is to discuss other ways in which you can support ISE: through the donation of your time. Such donations make the content of an industrial or general engineering education more relevant. As we know, the contributions of an engineer can multiply with experience. Illinois does a great job of educating engineers with the building blocks of an engineering career. We can provide students with a view into the rich career possibilities that a degree in IE or GE can provide. Some approaches established in ISE for these kinds of donations include:

Be an Engineer-in-Residence: Spend a day on campus talking with students about your experiences in building a career from the engineering foundation you received at Illinois.

Host an on-site visit: Invite a student group to tour your plant or other place of employment. Provide a real-world view into the work life of an ISE graduate. Or, volunteer to mentor an engineer for a day in a job shadowing program.

Talk to student groups: Whether giving a presentation to a class of undergraduates enrolled in IE/GE 390 or meeting with a student society, there are many opportunities for sharing your experiences with ISE students.

Sponsor a senior design project: Many of our students report that the most useful part of their educational experience is the senior design project. By sponsoring a project, you can provide a real-world perspective to engineering undergraduates and have a fresh set of eyes looking at your difficult problems.

Conduct mock interviews: Discuss resumes, common interview questions, and career strategies with ISE students who will soon be looking for jobs. If you don't live near campus, you can conduct mock interviews by phone.

Host a social event: Provide an opportunity for alumni and students to get together in an informal setting. Recently, more than 20 students and some of our alumni gathered for a fun night of bowling at the Illini Union!

Advocate in your company: Promote hiring ISE graduates, sponsoring student projects, and funding faculty research in your company.

If you are interested in participating in any of these activities, or if you have other ideas about how you might be able to contribute, contact Lynnell Lacy (lynnell@illinois.edu), Coordinator of Alumni and Student Relations.

The core mission of the ISE alumni board is to provide the structure and opportunities for the interactions described above to take place. Also, the board provides guidance to the department as it carries out its teaching and research mission. The board comprises about 30 members and meets on campus twice each year. Members are active during the year, serving on committees such as Business Perspectives, Student Enrichment, Advancement, and Alumni Relations. The board provides yet another way for ISE alumni to contribute to the ongoing mission of the department. And along the way, it provides great networking opportunities for its members.

If you are interested in learning more about the board and its activities, please contact me (rhenneman@yahoo.com). I would like to hear your ideas about how we, as graduates and friends of ISE, can continue to enhance the quality of ISE programs.

Best Regards,

Richard L. Henneman, PhD

ISE Alumni Board, Immediate Past President
BSIE 1980, MSIE 1981

Alumni Board Members Inducted Spring 2011

Katrina Appell is a lean consultant at Optiprise specializing in lean product development. She has a BS from the University of Illinois in general engineering along with an MSE and a PhD in industrial and operations engineering from the University of Michigan. She has interests in the use of lean principles in nontraditional environments and engineering education. In addition to her research and teaching assistantships she worked at U of M's Center for Professional Development, U of M's Center for Research on Learning and Teaching, Competing Values, Whirlpool Corporation and The Center for Automotive Research while in graduate school. Katrina also served as the Women in Engineering IOE Graduate Student Peer Mentor. While at Illinois she was a member of and held executive board positions in the Illinois Society of General Engineers (ISGE), the Gamma Epsilon Honor Society for General Engineers, and the Illini Waterski Team.

Cameron Croft's professional focus is connecting major donors with charities through his company, the C2 Group. In the process of developing these relationships, he has helped start a few non-profits in addition to several of his own personal ventures that all have a common theme of "connecting people." Cameron studied engineering at the University of Illinois and served for two years as president of the Chicago Illini Club. When he isn't pursuing philanthropic interests, he stays very active with waterskiing, beach volleyball, soccer, golf, rock climbing and his newest interest, running.

Jim Newman is responsible for Acquity Group's operations, including recruiting, HR, IT consultant operations, internal applications, and Acquity University. His team is responsible for developing and implementing practices that include service offerings, methodologies, QA programs, and intellectual capital management. Before joining Acquity Group, Jim was Vice President and Global Knowledge Management Solution Leader at marchFIRST, with responsibility for the analysis, design, and implementation of solutions in the areas of portals, content management, data warehousing, and business intelligence. He was also VP at Utilities International, and began his career as Director of Network Architecture Planning at AT&T/Ameritech. Jim earned his BS in general engineering at Illinois and his MBA from the Kellogg School of Management at Northwestern University.

Brian Truesdale completed his BS in general engineering from the University of Illinois in 1994 with a specialization in project management, economics, and computer science. During his undergraduate years, he was actively involved in ISGE and Gamma Epsilon. After taking some MBA courses at the University of Michigan-Dearborn, he attended the Kellogg School of Management and earned an executive master of science in product development and new product development in 2010. He is currently the General Manager of ITW Switch & Sensor Group, comprised of ITW Switches US in Buffalo Grove, Illinois; Ark-les Transportation in Stoughton, Massachusetts; and ITW Switches Europe in Portsmouth, United Kingdom. Brian has championed the sponsorship of two Senior Engineering Course Projects with ISE, and has actively recruited engineering graduates from the University of Illinois. He is a member of the ITW Patent Society and holds seven US patents with nine additional patents pending.



The ISE Alumni Board Needs You!

We have a new and exciting opportunity for alumni to become more involved with the department. The goal of the Alumni Relations Committee is to connect alumni with each other, typically through events. We are looking for alumni in the Chicago area who would like to be part of our Host Committee, which will provide valuable feedback about events that might be attractive to you and other ISE alumni, attend events, spread the word to fellow alumni in your network, and hopefully bring some alumni with you to the events!

Want to be on the Host Committee? Please send your name, degree, graduation year, and email address to me (brad.j.gillette@gmail.com). Opportunities to serve in this capacity are limited, so please let us know ASAP!

A special event will be planned in early 2012 for all Host Committee members. At this event, we will thank members for their help and share details of what we need from you.

Sincerely,

Brad Gillette, co-chair

ISE Alumni Board Alumni Relations Committee

Angelia Nedich *continued from cover*

Q: Why are you passionate about this problem and where does your research go from here?

A: Many networked systems are inherently spatially distributed and often extremely large in size. Inherent to the distributed nature, overall network information is fragmented and mainly available locally without a single point of access to the entire network-wide information. In the absence of central authority, control and information processing in these networks are particularly challenging and require the development of new protocols for information exchange and optimal operations. In all modern networked systems, efficient decentralized and controlled signal processing, distributed decision-making, and the timing of information are critical for efficient and reliable network performance.

The problem of decentralized decision-making is important in many applications where some

network-wide statistics of data-attribute distribution need to be computed while the privacy of the information at each communication node (data center) is to be preserved. This is particularly true in data-mining applications over networks, and web-based ranking systems for various products such as movies, music CDs, books, etc.

The theoretical research in decentralized signal processing and distributed decision-making will be also supported with a practical sensor web design intended for environmental monitoring. One of the sensor network systems that we will consider for our future experiments and demonstration is a soil-moisture monitoring system. This effort will include several graduate students at ISE and ECE, as well as post-doctoral fellows.

Read more about Nedich's research team and their \$1M NSF grant on page 8.

In Memoriam

R.E. "Dick" DeVor

Richard E. ("Dick") DeVor, College of Engineering Distinguished Emeritus Professor of Manufacturing, passed away in August at his home in Lake Mills, Wisconsin. He was 67. Born on April 18, 1944, in Milwaukee, he received BS and PhD degrees in mechanical engineering from the University of Wisconsin-Madison. He married Jearnice Luedtke in 1968.

DeVor had served on the University of Illinois faculty since 1971. He was elected to the National Academy of Engineering in 2000, the highest honor that can be accorded an engineer in the United States. He was a dedicated researcher and teacher, and he mentored more than 150 MS and PhD students who have assumed leadership roles in academia and industry.

Throughout his career, DeVor received numerous teaching awards from the University of Illinois and other respected groups and associations. He was a fellow of the American Society of Mechanical Engineers and the Society of Manufacturing Engineers. DeVor had a passion for serving his community. Memorials may be made to the Lake Mills Area Community Foundation.

George Armstrong

George Richard "Dick" Armstrong, 69, of Oswego, died December 29, 2010, at Illinois Veterans' Home in LaSalle, Illinois. Born August 12, 1941, in Macomb, he married Nannette Smith in 1966. He was commissioned in the US Navy in 1964, and was a Commander in the Supply Corps when he retired after 20 years of service.

Armstrong earned a master's degree in petroleum management from the University of Kansas and headed the fuel department at the Naval Supply Corps Depot in Yokosuka, Japan. After he retired from the Navy, the Armstrongs returned to Oswego, where he started his own financial consulting and tax preparation business, Armstrong Enterprises. He was an avid golfer with a permanent tee time and enjoyed benefit golf outings. He was a licensed pilot with multiple ratings and co-owned a single-engine airplane. Survivors include his wife; a son, Errin (Shirley) Armstrong of Woodbridge, Va.; a daughter Carin (Tim) of Tullos, Avenue, Md.; eight grandchildren; three sisters; a brother; and extended family.

Excerpted from the Beacon News on December 31, 2010.



Industrial and Enterprise Systems Engineering ISE News

Winter 2011/2012

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Jong-Shi Pang
*Department Head and
Caterpillar Professor*

Lynnell Lacy
*Coordinator of Development,
Alumni and Student Relations*

2012 Alumni Board Officers

Timothy Phillis, *President*

Richard Henneman, Ph.D.
*Immediate Past President
Membership Chair*

Amee Green, *1st Vice President*

Richard Q. Blackwell,
2nd Vice President

For more information or to submit news items or articles of interest, contact:

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