ALUMNI Connections

Fall 2012

Gift Funds IMSE Logistics Professorship

For Carl and Mary Ice, the motivation behind their support of Kansas State University is giving back to the place they feel gave them so much.

To that end the couple has been generous on numerous and varied fronts from serving on department, college, and university-level committees, funding scholarships, helping with the annual Powercat Auction, and hosting receptions in their home for alumni and prospective students alike.

Carl and Mary Ice

Now, as part of a major gift to the university, the Ices have endowed a logistics professorship in the Industrial and Manufacturing Systems Engineering department.

"Thanks to Carl and Mary's gift, we have an exciting opportunity to advance the department," said Brad Kramer, IMSE professor and department head. "We will be recruiting a senior faculty member who we envision will collaborate with faculty across campus, as well as engage with industry to expand our capabilities in logistics research and education."

According to Carl Ice, who received his bachelor's in industrial engineering in 1979, this gift was the next step in their evolution of supporting K-State.

"Like many, we began with student scholarships," he said. "Both Mary and I were the recipients of scholarships when we were in school and know the difference that kind of support can mean to a student."

The Ices have funded scholarships in the both the College of Engineering and the College of Human Ecology, where Mary graduated in 1980 with a bachelor's degree in home economics education. She also received her master's degree in adult,

Continued on page 3

THIS ISSUE

Miller Receives IMSE Professional Progress Award

In March, Mark Miller (IMSE'92) was among nine other Kansas State University engineering alumni to receive the *Professional Progress Award* during the 2012 Seaton Society celebration. The award recognizes successful alumni within the first 20 years of their professional careers.

"I was humbled and honored to receive the award. I never imagined as I graduated 20 years ago that I'd be back at KSU, walking across a stage again!"

Miller, who grew up in St. Marys, a small town 30 miles east of Manhattan, was always a Wildcat fan but K-State wasn't his only choice. "I looked at other schools, but KSU impressed me. It was one of only three schools in the nation to have won

Continued on page 6

Engineering Humanitarian Response

When a disaster strikes a natural human response is to act. In the rush to respond multiple agents work independently to provide relief as quickly as possible. Unfortunately, this uncoordinated effort often leads to suboptimal results. Critical questions can be overlooked. Where's the best location to place a hospital? What's the most efficient and equitable way to distribute supplies? How can monetary resources best be used? What synergies can be realized through coordinated planning?

The study of humanitarian logistics seeks to proactively improve the response to disasters by focusing on supply chain issues such as availability of resources, transportation, tracking tools, and cooperation of teams involved in the operation. IMSE assistant professor Jessica Heier Stamm is taking humanitarian logistics beyond emergency preparedness and response, using both traditional and novel industrial engineering techniques to develop decision support systems for those responsible for responding to disasters.

Continued on page 3

2011-2012 Advisory Council

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Department Matters

A note from IMSE department head Brad Kramer

Greetings from Manhattan! These are exciting times in IMSE at K-State. Our programs are strong and growing.

In this issue, you will hear about some great new investments that our alumni have made in improving our program. Among other things you'll also read about Dr. ZJ Pei being named a University Distinguished Graduate faculty member and learn about the innovative work our newest faculty member, Dr. Jessica Heier Stamm, is involved with. We hope you'll also enjoy an introduction to one of our students who is also a captain on K-State's equestrian team.

Probably the biggest news to share with you is the unique and unprecedented opportunity we have to grow our program. The Kansas legislature is providing additional funding to the College of Engineering in order to increase the number of engineering graduates by 50 percent within the next ten years. This funding will require a dollar for dollar match up to $3.5M year to grow Engineering programs.

Our undergraduate program graduated more than 40 students this year compared to an average of 26 graduates per year over the previous five year period. With additional resources, I believe we can graduate more than 60 students per year. My goal is that these students will continue to be taught by an outstanding faculty who are actively engaged in their education and who demand that they complete challenging, team-based projects as part of their curriculum, just like each of us did. Reaching that level would require more faculty and other resources. It would also mean that we would be the third largest IE program in the middle part of the U.S. I admit that to accomplish this feat and maintain our family atmosphere will be a daunting challenge, but I believe, with your help, we can accomplish this goal.

At the same time, President Kirk Schulz has outlined a vision to be a Top 50 public Research University by 2025 (www.k-state.edu/2025/). Key to us doing our part is to increase our research expenditures, Ph.D. graduates, and research output, usually defined by publications, patents and the like. Our faculty is already successfully publishing the results at a high rate. This year, the IMSE faculty published 3.0 journal articles per faculty member.

In comparison, National Research Council data from 2000-2006 showed that K-State IMSE faculty were then publishing at a rate of 1.4 journal publications per faculty member per year. Our faculty would have ranked ninth in the country during that time period among doctoral granting institutions (OR, Systems Engineering and IE field). In the past five years we averaged 1.4 Ph.D. students graduated each year. But in 2011 three doctoral graduated from our department and we have enough students enrolled to continue at this pace. At this rate, we would be in the top 40 programs in the nation and our research expenditures already rank us in the top 30 in the nation.

To help us exploit these opportunities to advance our programs, our Advisory Council has recommended that we establish the IMSE Professional Academy. This new organization will work to advance both the department and our alumni. It will be a way for each of you to be actively engaged in the ongoing success of Industrial and Manufacturing Systems Engineering at K-State. More information is provided on page 6, as well as on our website imse.ksu.edu.

One question I've been asked fairly frequently is the difference between the Academy and our Advisory Council. Traditionally, the Advisory Council has focused on reviewing the department and advising the department faculty on operational issues such as curriculum, educational objectives, and assessment. Members are restricted to two, three-year terms and by necessity must be limited in number of active members.

The Academy, on the other hand, is focused on helping us to significantly advance and develop the IMSE department, its students, and alumni. It will actively engage a large number of our alumni in working to help our students, faculty, and other alumni in a way that will make our department stronger. It is also intended to bring old friends together with new - and have fun!

We want you to be involved in strengthening and growing our department. Stay tuned for more details.

Bradley A. Kramer

Engineering Humanitarian Response continued from cover

"Every supply chain faces challenges in delivering the right quantity and type of product to the right place at the right time," said Heier Stamm. "However, designing and managing systems to deliver aid to those affected by natural disasters is especially difficult given additional challenges such as damaged infrastructure and constantly changing conditions."

According to Heier Stamm, one factor that is frequently overlooked but has a significant impact is the influence of multiple and decentralized decision makers.

"There are often a wide range of entities involved in these supply chains, including government, military, private, and non-governmental organizations and individuals," she explained. "While they all share a common goal – to help those affected by the disaster – each party operates based on their own objectives and levels of information, which often leads to duplication of efforts, waste, and in the worst cases aid not reaching those who need it most."

IMSE Assistant Professor Jessica Heier Stamm

"Traditional optimization approaches would advocate the adoption of a centralized decision maker to coordinate the entire response," Heier Stamm continued. "But in disaster scenarios this is frequently impractical or impossible. Through my research I am identifying methods and novel approaches that enable decentralized systems to approximate the performance of centralized systems."

A current focus of study is the impact of decentralized decision making on the treatment of cholera in Haiti following the January 2010 earthquake. More than 110 different organizations responded to this outbreak by establishing cholera treatment facilities. These facilities were primarily located within a densely populated but relatively small geographic area.

The goal of the research was to quantify the potential to improve access to care by modeling the desirable components of a centralized system while maintaining the same resources as the decentralized system.

Using integer programming models, Heier Stamm and IMSE graduate student Brian Moore were able to identify optimized locations for adequate and more equitable access to cholera care in Port-au-Prince and throughout Haiti. While treatment centers were still concentrated in more populous areas, a greater number were opened in suburban and rural areas.

"The intent of this research is not to mandate where organizations should place their treatment centers," Heier Stamm said, "but rather to quantify the differences between the actual decentralized response and the potential for improved accessibility, to identify coordination structures between organizations that can mitigate the impact of decentralization, and to create dynamic models to support facility planning for areas that encounter disease outbreaks like that experienced in Haiti."

"We find that more equitable access can be achieved using the same resources that were available in the actual response. Furthermore, we have embedded our optimization models into a rolling horizon framework that is capable of supporting decisions about where to locate new treatment facilities over time as resource availability or disease patterns change. The next step will be to identify incentives or other coordination mechanisms that will encourage independent organizations to locate facilities in a way that improves access. The approach that we are developing is applicable in other scenarios in which multiple agencies respond to infectious disease outbreaks or disasters."

Ice Professorship continued from cover

occupational, and continuing education from K-State in 1988. Additionally, the couple has endowed a journalism scholarship in the College of Arts and Sciences.

From there the couple funded other initiatives. The Ice Family Student Emergency Fund was created to provide assistance to students whose crisis situations may derail the pursuit of a K-State degree. Later, the couple established several relief funds following the June 2008 tornado that touched down on K-State's Manhattan campus.

In considering their latest gift, the Ices directed their contributions towards undertakings that would best advance the goals of the receiving department or college.

"In talking with Dean English and Brad (Kramer, IMSE department head) it became clear that a logistics professorship would not only make the IMSE department better, but could help the college and university meet their K-State 2025 goals."

"Professors are an important part of the K-State experience," continued Carl Ice. "They have a huge impact on not just their students, but their college and the university as a whole." The Ice Professorship will be the first funded professorship within the IMSE department.

Moreover the opportunity to fund a professorship in logistics was a natural fit for Carl, who has spent his career in the railway industry and is currently the president and chief operating officer of BNSF Railway. In addition to the gift to the IMSE department, the Ices have directed portions of their donation to renovating Justin Hall, home to the College of Human Ecology, the West Stadium Center, Athletics, the K-State Alumni Association, and Student Services.

While their hearts may inspire their giving to K-State, they do so with a great degree of certainty.

"We have tremendous confidence in the leadership at K-State," said Carl Ice. "With K-State 2025 and now the University Engineering Initiative Act the university not only has a plan, but measurable goals to work towards."

The Ices hope their gift will inspire others to give back to K-State. "K-State is a special place," said Mary Ice. "We have been very blessed and are pleased to have the opportunity to do what we can to make the university a better place for everyone."

Carl and Mary Ice are long-time supporters of the university and continue to be involved in in a variety of ways. Both serve on the Board of Trustees of the KSU Foundation and Carl is also a member of the foundation's Board of Directors. They are members of the KSU Foundation's President's Club, a philanthropic leadership organization for friends and alumni of K-State, and the Land Grant Legacy Society, an organization for those who have included K-State in their estate plans. In addition, the Ices are members of the College of Engineering Seaton Society and the College of Human Ecology Legacy of Excellence Honorary Society at premier levels, and are Gold Members of the National Leadership Circle for the Ahearn Fund. Carl Ice is a past chair of the College of Engineering Advisory Council and a former member of the IMSE Advisory Council. Mary Ice is a member of the K-State Alumni Association Board of Directors, the Ahearn Fund Advisory Group, and College of Human Ecology Alumni Advisory Board, where she is president-elect.

Creating the "Next Big Thing"

Two guys, a garage, and a dream to bring the latest technology advances to the masses (not to mention more than a few all-nighters). Sounds like the story of two Steves from the Silicon Valley in the 1970s. But this tale has a purple twist. And no Steves.

IMSE doctoral student Mark Haynes and senior Geoffrey Miller took second place in the graduate division of K-State's "Next Big Thing" competition. Their company, Free-Works LLC, seeks to provide low-cost automated fabrication solutions to craftsmen, hobbyists, and do-it-yourself enthusiasts.

According to Haynes, the inspiration for the company was borne out of his own frustration.

"Whether a person is into wood working, metal working, RC airplanes, figurines, sculpting, or any other crafting activity they lack the equipment necessary to make high quality products that are competitive within the industry," he said. "These individuals' innovation and creativity are restricted because they don't have access to the high end production equipment available to large corporations."

"With Free-Works LLC's product the Dream-Smith, individuals will be able to create parts of any imaginable shape – out of almost any material," Haynes continued. "Users will be able to create decorative wooden furniture, replacement parts for their automobiles, figurines, model houses, circuit boards, and much more."

Mark Haynes (left) and Geoffrey Miller make adjustments to the Dream-Smith prototype.

The Next Big Thing attracted more than 270 registrations and over 70 feasibility plans submitted. With their second place showing Haynes and Miller were awarded $2,000, funds they plan to invest in their new venture. The pair also secured space in K-State's Venture Incubator, providing them with space and business support services.

Now the pair is concentrating on developing the machine and sales. "We're concentrating on direct sales for now for two reasons," Miller said. "We can demonstrate how easy it is to operate, and more importantly, we get input on how to make it better."

"We've learned so much from this process," Miller continued. "Now we're ready to take more risks, open up what we can do with the next prototype, and create an affordable, quality product."

Congratulations Graduates!

The Industrial and Manufacturing Systems Engineering department is proud to announce its 2011-2012 graduates. In total, 55 students received degrees including 33 bachelor of science, nine BS/MS, and 11 masters, and two doctoral.

BS Industrial Engineering

Ahmad Alayed, Saudia Arabia

Lisle N. Alderton, Sedgwick

Hazem Alkotami, Saudia Arabia

Grant Bauer, Pawnee Rock

Jennifer Bernard, Overland Park

Chelsea L. Brown, Hutchinson

Curtis A. Bryant, Leawood

Bradley N. Carrender, Wamego

David W. Curtis, Manhattan

Nick Felder, Topeka

Paula B. Foutch, Overland Park

Nathaniel Gardner, Burr Oak

Karmen Harris, Lenexa

Taberie Hartshorn, Timkin

B.F. Harvey, Lawrence

Karl Hertel, Hutchinson

Ashley M. James, Overland Park

James Kelley, Lecompton

Brian Krueger, Augusta

Abagail Lewis, Derby

Christopher Martin, Overland Park

MaKayla Maurath, Oakley

Katie Bryn Mayfield, Texico, N.M.

Thad Millsap, Meade

Ali Kaan Ozkilic, Turkey

Hayley Ann Rudiger, North Newton

Derek Stockebrand, Yates Center

Meaghan Shroyer, Buhler

David Spidle, Hesston

Jordyn Storey, Wichita

Jared S. Thomas, Overland Park

Audra C. Walker, Lawrence

You Zhou, China

BS/MS Industrial Engineering

James Bailey, Leavenworth

John Harrington, Shawnee

Andrew Huschka, Ottawa

Chelsea Irvine, Overland Park

Matthew K. James, Clay Center

Samantha Marin, Saint Francis

Thomas B. Morrison, Overland Park

Brian Moore, Westmoreland

Brant Roney, Andover

Phil Sylvester, Ottawa

Graduate Degrees

Mark Eilert (MEM), Beloit

Aditya Gund (MSIE), India

Edgar Hernandez (MEM), El Paso, Tex.

Michelle Hitt (MSOR), Pelham, Ala.

Daniel Karkle (Ph.D.), Brazile

Sanket Kulkarni (MSIE), India

Balaji Lolla (MSIE), India

Robert Nelson (MEM), Emporia

Robert Richards (MSIE), Overland Park

Justin Shadish (MEM), Moon Township, Pa.

Kristen Stottenberg (MSOR), Manhattan

Behnam Tavokol (MSIE), Iran

Pengfei Zhang (Ph.D.), China

Riding Towards an IE Career

Horsemanship is a western-style equestrian event where riders are judged on maintaining correct body position and ability to control the horse's movements through a set pattern of seven to nine maneuvers. The event takes discipline. It also requires the ability to adapt quickly as competitors often have only a short timeframe to memorize the pattern and acquaint themselves with their ride.

For Hannah Ribera, an industrial and manufacturing systems engineering (IMSE) junior those traits that give her the edge in the arena are also ones she relies on to succeed in the classroom. Finding balance between her roles as a member of K-State's equestrian team and as a student isn't always easy, but one – with discipline – Ribera has become adept.

The IMSE department has as much to do with Ribera's decision to come to Kansas State as the opportunity to join the equestrian team. "While continuing to compete in college was a goal of mine, I knew preparing for my career was the most important thing for my future," she said. "I had done my research and knew I wanted to major in industrial engineering because the skills from this degree can be applied in so many different industries."

Hannah Ribera
Photo courtsey of K-State Sports

"It came down to two schools," she continued. "In the end, what I liked about K-State was it had a good IE program and a 'homey' feel. Then, when I got the offer to ride for the university that was just the icing on the cake."

The newest addition to K-State Athletics, equestrian is a two season sport, with competitions in the fall and spring. In addition to practicing three times per week in the arena, athletes also have regular strength training sessions and work in the barn about ten hours each week caring for the horses. Additionally, as a team captain, Ribera also has frequent meetings with her coaches and teammates.

"It is a huge time commitment," Ribera said noting that once competitions start she may be spending upwards of 20 hours on her sport. "I've become a very good multi-tasker."

And her dedication has paid off. During the 2010-11 season, her sophomore year, she finished with overall record of 10-6-2, which included four straight wins at the 2011 Varsity Equestrian National Championships where the Western team was Reserve National Champions for the second straight year. In addition to being named a team captain, during the fall season of her junior campaign she was 5-2 and received MVP honors on her final match of the season against Big 12 rival Oklahoma State.

Planning for her future still figures prominently into Ribera's hectic schedule. She was named to the Big 12 Commissioner's honor roll in 2009-2010. In 2011 she had a summer internship with ConAgra Foods and is with General Mills for 2012.

While Ribera wouldn't trade her experience with the equestrian team, striking that balance between athletics and academics does involve a degree of give and take. "I wish I had more time to be involved with the IIE program, or engineering ambassadors," she said. "I also don't have much down time. But, even though I'm very busy I'm happy with my choices."

To learn more about K-State Equestrian visit kstatesports.com/sports/w-equest

IMSE Senior Awarded National Scholarship

Jordan Bever, Hutchinson, is the receipient of the 2012 Material Handling Education Foundation's Conveyor and Sortation Systems Honor Scholarship. She is one of 28 students nationwide to receive an award from the foundation. The scholarship recognizes superior academic achievements.

Bever, a senior, is in the IMSE department's concurrent bachelor's and master's program. She is the department's 32nd student to receive an award from the Material Handling Education Foundation.

A K-State honors list student, Bever received the Lynn Bussey Memorial Graduate Award and scholarship from the department of industrial and manufacturing systems engineering in April. She is a 2008 graduate of Hutchinson High School and the daughter of Jim and Janet Bever.

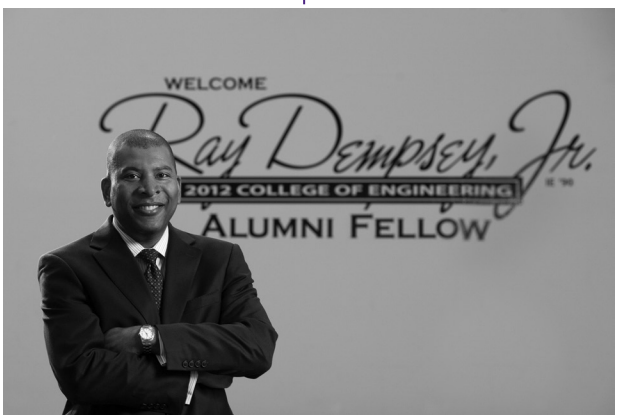
Andrew Waldman, a senior in the industrial and manufacturing systems engineering department, has been chosen as one of Kansas State University's 2012 Student Ambassadors. He, along with Phillicia Thomas, a junior in journalism and mass communications, were selected from a group of six semifinalists by student vote during Homecoming Week. The ambassadors began their one-year term in January.

Student ambassadors visit with prospective students and alumni; attend Student Alumni Board meeting and activities; assist with programming on campus like class reunions, All-University Homecoming Committee and other special events; and assist the president's office as needed.

IMSE Graduate Named College of Engineering Alumni Fellow

Ray Dempsey, Jr., BSIE '90, was honored as the 2012 College of Engineering Alumni Fellow.

Dempsey is a 22-year veteran of BP America, where he currently serves as vice president, government and public affairs based out of Washington D.C. He has held a variety of management and operational roles in engineering, environmental, strategy, and financial areas of BP's operations in the U.S. and abroad. Prior to his current position, Dempsey served as vice president, strategy and portfolio for BP's fuels value chain strategic performance unit where he had responsibility for crude oil and fuel products market analysis.



While on the K-State campus to receive the honor, Dempsey gave several presentations where he discussed current business and industry trends, as well as met informally with students and faculty.

"We are very proud of Ray," said Brad Kramer, IMSE professor and department head. "In addition to his many professional accomplishments, he is always seeking ways to give back to others. Every time he comes back to camus he makes a difference in the lives of our students."

Dempsey is the president of the BP Foundation and is a member of the Dean's Advisory Council for the College of Engineering at K-State. He is also a member of the BP Advisory Board for the National Society of Black Engineers and is a board liaison for the National Action Council for Minorities in Engineering.Dempsey and his wife, Alysia, have four daughters.

Alumni Fellows are chosen based on their high levels of professional accomplishment and distinguished service in their respective careers. The program is sponsored by the K-State alumni Association, the president's office and the Deans Council.

To view Dempsey's graduate seminar visit imse.ksu.edu.

Coming Soon to Your Inbox: This fall, the IMSE department will begin publishing an eNewsletter, *IMSE Online Connections*. This publication will provide timely information about happenings in the IMSE department, upcoming events, and alumni features. In order to ensure you receive our eNewsletter, please make sure your email address with the K-State Alumni Association is up-to-date.

Alumni Establish IMSE Academy

In the spring, a group of interested IMSE alumni came together to establish the IMSE Academy. The intent of the group is to create a connection point for members to the department, its students, faculty and alumni through various activities, events and initiatives, according to Tony Veith, the Academy's inaugural president.

"The purpose of the Academy is twofold," he explained. "First is to support the goals of the IMSE department. That may come in the form of funding scholarships, recruiting new students, or supporting other initiatives such as faculty research or study abroad programs."

"The second goal is to facilitate networking, mentorship, and learning opportunities for members," Veith continued. "We have so many successful alumni who have an interest in helping advance the careers of other IEs by sharing their experiences and expertise. Through the academy we hope to develop a formal mentorship program, as well as networking events that bring members together."

During the 2012-2013 academic year, the group will be hosting weekend events around football and basketball games where invited members can re-connect, have fun, and learn more about the Academy. Candidates for Academy membership must meet certain eligibility requirements and make a minimum monetary contribution to the department.

For more information about the Academy contact the IMSE department at imse@k-state.edu.

Professional Progress Award continued from cover

a national engineering competition. They also had more Fulbright and Rhodes Scholars than nearly any other public university. There was something special going on in Manhattan and I wanted to be a part of it."

While at K-State Miller developed strong friendships and benefited from an industrial engineering program that prepared him well for the workforce. "The emphasis on teamwork and multi-discipline problem-solving proved to be of tremendous value not only at the beginning of my career, but even today."

After graduating, Miller joined Accenture where he worked with a variety of local clients including Western Resources, Santa Fe, Yellow Freight, Sprint, and AT&T.

Over his nearly 20 years with Accenture, Miller has held a number of leadership roles. He is currently the lead solution architect for the Communications, Media, and Technology Operating Unit in North America. In this role he works with clients to develop industrialized support models for information technology and has been responsible for more than $1 billion in services over the past five years. Two patents are under consideration based on Mark's work.

Miller with College of Engineering Dean John English

Miller has remained involved at K-State with on-campus recruiting and classroom presentations. He has also helpedAccenture fund the IMSE Computing Lab, the College of Engineering Leadership Lab and the Career and Employment Services Workstations. He is a current member of the IMSE department's Advisory Council and Professional Academy, and a Seaton Society member.

In Remembrance: Doris Grosh, 1924-2012

Long-time IMSE professor Doris Lloyd Grosh died on June 8, 2012. She was 87.

"Mama Grosh" was a popular teacher in both the IMSE department, where she served for more than 20 years, and as a part of K-State's College of Engineering faculty where she was the first woman faculty member. In 1975 she received the College's Hollis Award for Excellence in Teaching, and was twice voted the IMSE department's most outstanding teacher by students. When she retired, IMSE students presented her with the first – and thus far only – department "Mother Hen Award."

Grosh graduated from the University of Chicago with degrees in math and physics in 1948. Following a year in Mexico, she attended K-State for her master's degree and then went to Purdue University to pursue her doctorate. There she met and married Gene Grosh. Her studies were interrupted while she raised three daughters, though she remained active in academia teaching math at Tulsa University.

In 1965 the Groshes moved to Manhattan so she could finish her doctorate in statistics. After graduating in 1969 she joined her husband as a faculty member in the IMSE department.

Grosh was a contributor and referee for Technometrics, Journal of the American Statistical Society, and IEEE American Society for Quality Control, and the American Statistical Association. She was a consultant or co-investigator for projects funded by the Nuclear Regulatory Agency, Kansas Department of Health and Environment, and Kansas Department of Transportation. Her first book, a Primer of Reliability Theory, was published in 1988. A second book, Linear Programming for Beginners, was completed after retirement.

She is survived by her daughters Kathy, Barbara and Margaret, as well as five grandchildren, two great-grandchildren, and a brother. She was preceded in death by her husband, Gene, and a grandson.

Memorial contributions may be made to the Manhattan Arts Center or the Gene and Doris Grosh Industrial Engineering Scholarship in care of the KSU Foundation.

Distinguished Company

Industrial and Manufacturing Systems Engineering professor Zhijian "ZJ" Pei is one of the 2011-2012 Commerce Bank Distinguished Graduate Faculty award winners.

The award recognizes faculty members who excel in research, teaching and mentoring K-State graduate students. The honor, which comes with a $2,500 honorarium, is supported by the William T. Kemper Foundation and the Commerce Bancshares Foundation and coordinated through the Kansas State University Foundation and the president's office.

IMSE professor ZJ Pei

Pei is an international authority on advanced manufacturing processes with particular emphasis on developing efficient abrasive processes for difficult-to-machine materials used in advanced applications. He is a recognized authority in the grinding of semiconductor materials and rotary ultrasonic machining processes.

Pei has obtained more than $3 million in research funding from federal and industrial sources. He has been published in more than 100 journal papers, 100 peer reviewed conference papers and has authored six book chapters. He has graduated seven doctoral students with four currently in process.

He is a fellow of the American Society of Mechanical Engineers and has received several awards, including the Frankenhoff Outstanding Research Award from the university's College of Engineering and the National Science Foundation CAREER Award.

Pei developed and regularly organizes a workshop to help young faculty members develop funded research. Sponsored by the National Science Foundation, these annual workshops have been attended by more than 1,100 professors nationwide.

Pei earned his doctorate in mechanical engineering from the University of Illinois at Urbana-Champaign, then completed four years of industrial experience and one year of postdoctoral research.

"It is a great honor to be selected for this award," Pei said. "I am very grateful to all the support I have received from the Graduate School, the College of Engineering, our department, my colleagues, my students and my wife and children. Without their support, I wouldn't be able to achieve much."

Lei Earns NSF Award

Though the summer sun may be waning, an IMSE associate professor is working on a better way to harness its energy thanks to a National Science Foundation (NSF) grant.

Shuting Lei received three-year, $276,000 award for his project "Defect Free and Robust Microstructuring Using Femtosecond Axiocon-lens-focused Beam with Application Focus in Thin Film Solar Cell Manufacturing."

According to Lei, a femtosecond laser is a devise that creates bursts of laser energy at an extremley fast rate. These ultra fast pulses are very precise and can shape materials at a molecular level without damaging adjacent areas.

Through his research Lei hopes to generate new fundamental knowledge in the area of femtosecond laser interaction with advanced materials that will serve as the scientific foundation on which new micromachining processes can be developed.

According to Lei, the proposed microstructuring process has applications in numerous areas. In the solar industry, the proposed scribing process could lead to a significant increase in conversion efficiency for thin film solar panels. Together with the potential of significantly reducing cost through roll-to-roll mass production this project may contribute to the nation's clean energy future.

Upcoming Events

IMSE Scholarship Reception
September 13
Cottonwood Room, K-State Union
Kansas State University

IMSE Academy Meeting
September 14
Leadership Studies Building
Kansas State University

K-State Family Day
September 15
(for more information visit the K-State website)

IMSE Advisory Council
November 2
Leadership Studies Building
Kansas State University

IIE Tailgate
vs. Oklahoma State
November 3
Bill Snyder Family Stadium
(check the IMSE website for event specifics)

Fall Commencement
December 8-9

Open House
April 19-20, 2013

For more information on these and other events, visit our website:
imse.ksu.edu

Alumni Connections is published by the Industrial and Manufacturing Systems Engineering department at Kansas State University. Questions about content, to change your address, or alumni update submissions should be directed to imse@ksu.edu. Our phone number is 785-532-5606.

KANSAS STATE UNIVERSITY | College of Engineering
Industrial and Manufacturing Systems Engineering
2037 Durland Hall
Manhattan, KS 66506-5100
443

90th Annual Open House

George Dantzig, as played by IMSE sophomore Tom Bolton, explains the development of and applications in industry of operations research as part of the IMSE department's Open House skit. Joining him on the "Histor[IE] skit stage were fellow IMSE students (from left) Sarah Pavlu, Brandon Mais, Josh Dohrmann and Lauren Hylton. Of the six Open House awards the IMSE department earned first place finishes in the Limited Class display and the Open Class display. The department earned second in the overall competition. The IMSE 2012 Open House co-chairs were Bolton and Senior Chelsea Brown.