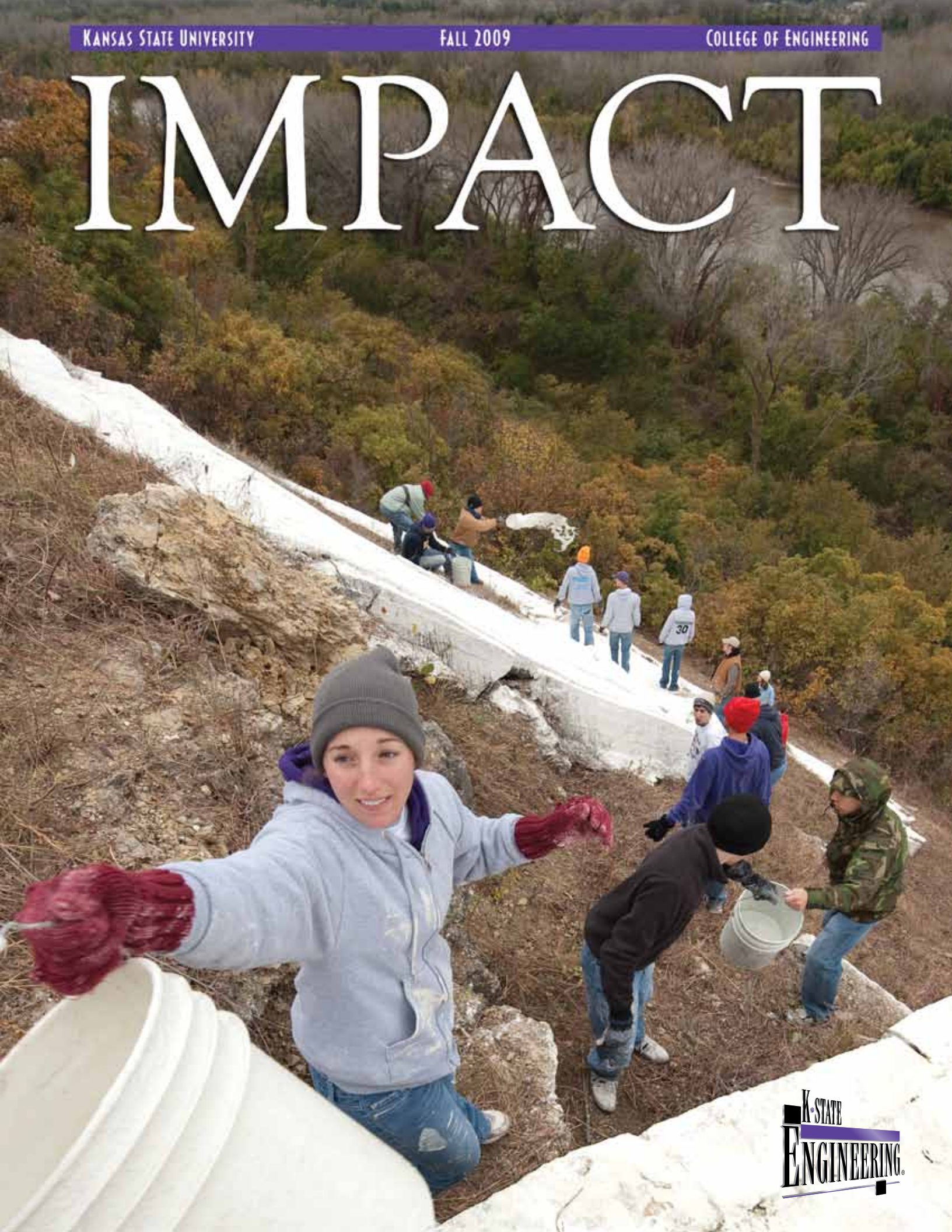
Kansas State University Fall 2009 College of Engineering

# IMPACT



K-State Engineering

## On the cover . . .

Samantha Schmaderer, junior in ARE, hands up a bucket for more white-wash as more than 40 Tau Beta Pi members and faculty advisor Larry Satzler gathered on K-Hill Oct. 10 for a morning of cleanup duty. Tau Beta Pi initiates have taken on the annual task of clearing brush, picking up trash, and whitewashing the concrete K and S since 1974. **Pictured below**, tethered students work on the steeper-faced K. **Above**, a long-view shot of Prospect Hill, better known as K-Hill, south of Manhattan on the west side of Hwy-177. The K was constructed by College of Engineering students and other volunteers in 1921, with the S added in 1930.

### Mark your calendar

**Engineering Career Fair**
February 9, 2010

**Open House**
April 23–24, 2010

**50th class reunions**
April 28–30, 2010

**Seaton Society Celebration**
May 1, 2010

**Commencement**
May 15, 2010

Cover photo by David Mayes ■ Photo adaptation by Bob Davis

# MESSAGE FROM THE DEAN

Gov. Mark Parkinson, **left**, and Dean John English

I could not have been more pleased when Kansas Gov. Mark Parkinson declared to the Board of Regents that higher education must be a priority for our state, and engineering education a particular focus of this precedent.

And then a week later, I had the distinct honor of meeting with Gov. Parkinson here in my office where I was able to point out specifics of how our vision of being a "highly ranked college," supported by our communities of excellence, does indeed line up with his goal of seeing all Kansas engineering schools ranked in the top 100 by U.S. News and World Report. Right now we are listed as the "64th best undergraduate engineering program at schools where the doctorate is the highest degree." To put that in perspective, that makes us the 4th best engineering program in the Big 12!

The success of our faculty is the driving force of this recognition. I could not be more proud of the accomplishments of faculty like Douglas McGregor, Mary Rezac, Ruth Miller, and Ray Yunk that you'll read about in this issue. We've filled the department head openings in chemical and mechanical and nuclear engineering with two top-notch professors, Jim Edgar and Don Fenton, respectively. And we're moving forward in our search for permanent department heads for biological and agricultural and civil engineering. An exciting aspect in our search for the new head of civil engineering is our ability to offer with that position the Civil Engineering Professorship Honoring Dr. Robert Snell, a collective effort funded by our civil engineering alumni.

Alumni are such a dynamic part of the College of Engineering at K-State. This issue our feature story focuses on Stuart and Janie Curtis. In getting to know this wonderful couple and in touring their manufacturing plant in Dodge City, it was immediately obvious to me why they are such a success story.

It was an honor to have our advisory council members on campus this fall for productive work sessions and discussions. I want to especially thank outgoing chairperson Cathy Ritter, CE '75, for a year of inspired leadership, as well as say how much I look forward to working with next year's chair, Carl Ice, IE '79, and chair-elect, Jim Johnson, CNS '84. Another fall highlight was the return visit of former faculty member Raj Nathan and his wife, Diana, IE '83. Dr. Nathan delivered an inspiring message on entrepreneurship as part of our Eyestone Lecture Series.

I know you'll join me in congratulating our student teams and their many top rankings, and I hope the activity of our Tau Beta Pi students on the cover brings back some fond memories of a familiar landmark in the Manhattan area—K-Hill.

John R. English

Dean of the College of Engineering

# INSIDE THIS ISSUE

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***Issue No. 23***
***Fall 2009***

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***Photographer***
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K-STATE ENGINEERING®





National Science Foundation

# Grant to help train Ph.D. students in sustainable biorefining

A multimillion-dollar grant from the National Science Foundation will help K-State train new Ph.D. students in developing the technology and policies needed for sustainable biorefining.

K-State has received a five-year grant of nearly $3.2 million from the foundation's Integrative Graduate Education and Research Traineeship program, known as IGERT, for the project "From Crops to Commuting: Integrating the Social, Technological and Agricultural Aspects of Renewable and Sustainable Biorefining," or ISTAR.

Mary Rezac

Principal investigator is Mary Rezac, professor of chemical engineering. Co-principal investigators are Peter Pfromm, professor of chemical engineering; Jeffrey Peterson, associate professor of agricultural economics; and Kyle Douglas-Mankin, professor of biological and agricultural engineering.

The need for biofuels and bio-based products is important as they can substantially improve environmental quality, rural economies and national security, Rezac said.

> "Kansas' biomass resource base represents a significant source of potential alternative energy and consumer products."

"Making biorefining more viable will require the efforts of scientists and engineers who have been trained to understand the complexity and the degree of sustainable production of fuels from biomass that is needed," she said.

"The K-State ISTAR project will prepare a diverse group of new doctoral students to have a comprehensive perspective on the biorefining industry through an integrated, interdisciplinary graduate program for achieving transformative advances in the development of next-generation biorefineries," Rezac said. "As a result of this program, decisions regarding biofuels production will be guided not only by technological and agricultural feasibility, but also by the impact of the proposed technology on society."

Over its five-year run, the program will serve about 33 Ph.D. students—to be called IGERT Fellows—in engineering, the agricultural sciences and the social sciences.

**continued on page 13**

# *Raj Nathan* delivers Eyestone Lecture

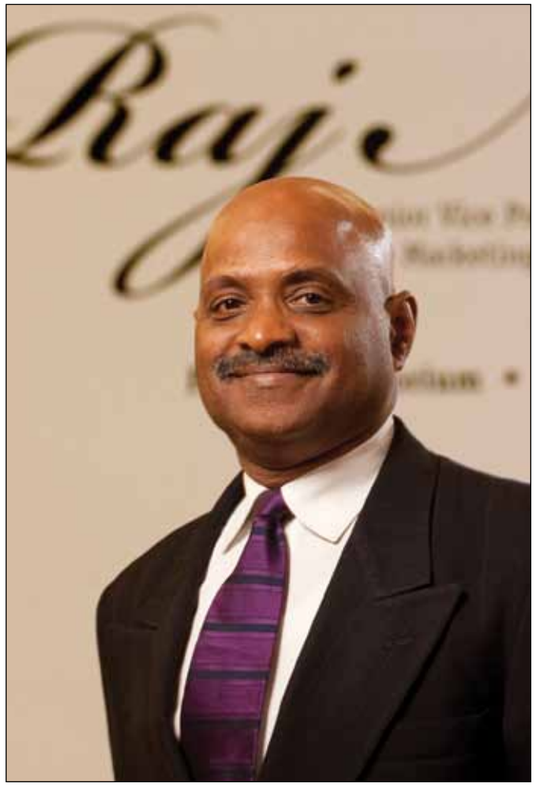
Raj Nathan, senior vice president and chief marketing officer of Worldwide Marketing and Business Solutions Operations, Sybase, presented "Being an Entrepreneur in an Established Company—Not an Oxymoron," Oct. 23 in Fiedler Hall Auditorium as a part of the College of Engineering Eyestone Lecture Series.

Challenging the prevalent assumption that innovation, entrepreneurship and risk taking are the sole domain of small start-ups, Nathan, from personal experience and the innovation record of established companies, articulated why this view is biased and restrictive and also highlighted the value of a sound education and the required values needed to succeed in the professional world.

Nathan is responsible for all marketing initiatives for Sybase, the sixth-largest software company in the world, and its subsidiaries, Sybase iAnywhere and Sybase 365. In this role, he leads a global marketing organization setting Sybase's technology direction and go-to-market initiatives.

Before entering private industry, Nathan taught four years in the department of industrial engineering at K-State, where he initiated a new program in manufacturing and systems engineering and started an advanced systems institute. During this time, he was awarded the prestigious James L. Hollis Award for Excellence in Undergraduate Teaching and named the Steel Ring Advisor of the Year.

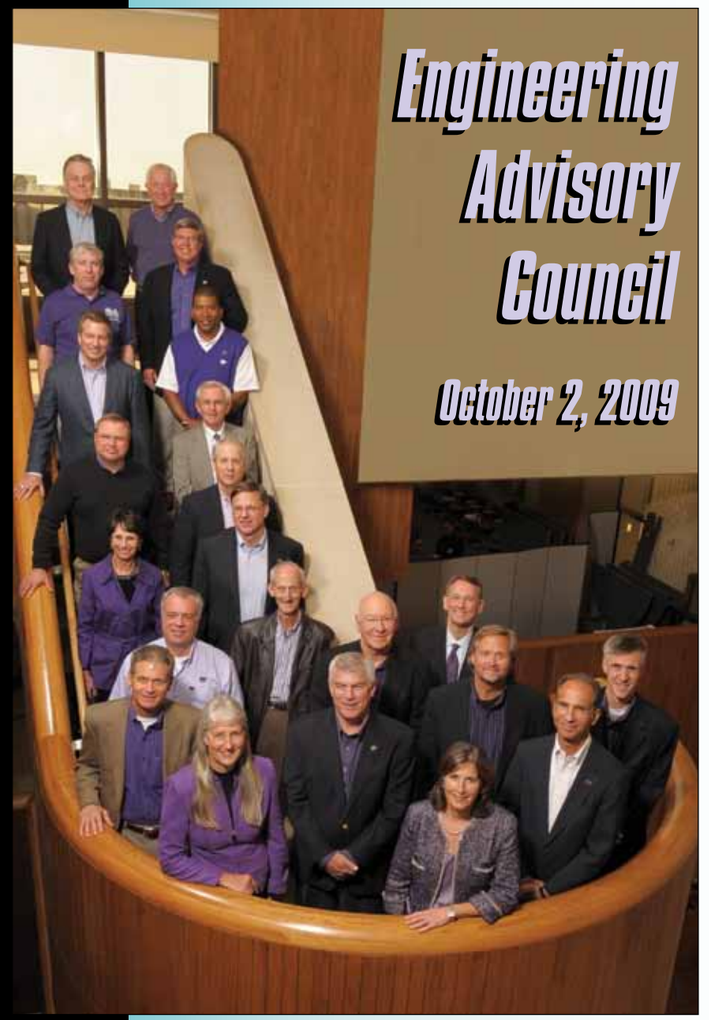
Nathan earned his doctorate and master's degrees from Iowa State University in industrial engineering, as well as a bachelor's degree in mechanical engineering from the University of Madras, in India.






# Engineering Advisory Council

## October 2, 2009



K-State President Kirk Schulz addressed the College of Engineering Advisory Council breakfast session, Oct. 2, in the Carter Learning Center. Above, **left to right**, outgoing advisory council chair, Cathy Ritter; John English, dean of engineering; 2010 advisory council chair, Carl Ice; and President Schulz.

**Clockwise from upper right:**

**James L. Tadtman '67**
President, Wildcat Construction Co., Inc.

**Randall R. Coonrod '74**
President, Coonrod & Associates Construction Co., Inc.

**Raymond C. Dempsey, Jr. '90**
Senior Vice President, BP

**John W. Walters '60**
President, Kansas Entrepreneurial Center

**Marc R. Ramsdale '79**
Vice President, Developing Technologies Operations, Eastman Chemical Co.

**Dana Mathes '79**
Director, Environment, Health, and Safety Operations, The Dow Chemical Co.

**Robert B. Thorn '50**
Partner, Finney & Turnipseed Transportation & Civil Engineering, L.L.P.

**Richard M. Kerschen '64**
President and Chairman of the Board, The Law Company, Inc.

**Kent Glasscock '76**
President and COO, National Institute for Strategic Technology Acquisition and Commerecialization

**John R. English**
Dean, K-State College of Engineering

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President, GenerAction LLC

**Susan C. Tholstrup '81**
Process Improvement Manager, Shell Exploration and Production Co.

**Thomas C. Paulson '73**
Vice President, Canadian Capital Projects—retired, ConocoPhillips Canada

**Cathy S. Ritter '75**
President, Constellation Design Group, Inc.

**Brenton L. Heidebrecht '79**
Principal, Financo, Inc.

**Joe E. Farrar '70**
President and CEO, Farrar Corp.

**Debra L. Miller '76**
Secretary of Transportation, Kansas Department of Transportation

**Mark Hutton '77**
President, Hutton Construction Corp.

**Steven M. Theede '74**
Chief Executive Officer—retired, Yukos Oil Co.

**Wayne A. Harms '76**
Vice President, ExxonMobil Upstream, Ventures (East) Limited

**Jerry L. Wilbeck '66**
President, Marketing Unlimited, Inc.

**Not in attendance:**

**Randall D. Groves '78, '79**
Chief Technology Officer, Teradici, Inc.

**Donna D. Kottwitz '75**
Manager, Reservoir Management, Eni Petroleum Co., Inc.

**Scott D. Love '80**
Fellow, Heavy Oil Research and Development and SS, ConocoPhillips

**Michelle C. Munson '96**
President, Aspera, Inc.

**Walter F. Robinson '72**
Vice President of Sales, IP International, Inc.

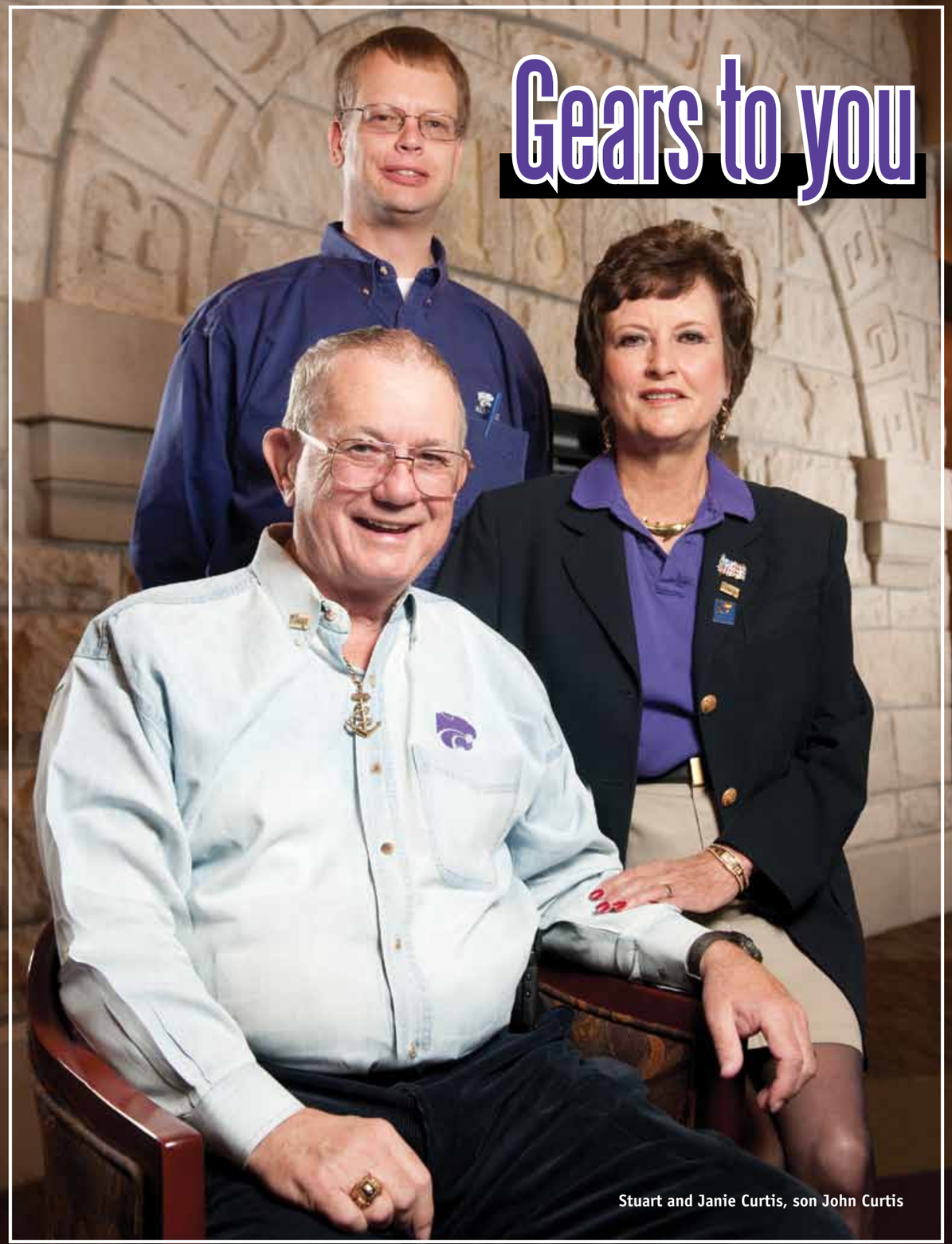
**Douglas G. Smith '71**
Senior Vice President, Infrastructure Services, Tetra Tech, Inc.

**Greg Tucker '78**
Senior Vice President, Process Improvement, Copart, Inc.

**Mike Valentine '90**
Senior Vice President and General Manager
U.S. Client Operations, Cerner Corp.

**Lewis Von Thaer '83**
President, Marketing Unlimited, Inc.
Process Improvement Manager, Shell Exploration and Production Co.

# Gears to you



Stuart and Janie Curtis, son John Curtis

From humble roots to a worldwide parts supplier—Curtis Machine Co., Inc., Dodge City, Kansas, continues to be a success story in the world of gear, gearbox and precision machined parts production.

Stuart Curtis, co-owner and now partially retired, holder of B.S. and M.S. degrees in industrial engineering from Kansas State, has built and guided the Curtis Corporation to be the largest manufacturer of small right-angle bevel gearboxes in North America.

A key component to this is Janie Wullschleger Curtis, Stuart's wife of 46 years, and chief executive officer and co-owner of the business. Also a K-State graduate, HE '63, she is actively involved in day-to-day operations of the company from the Curtis home in Marco Island, Fla.

"We got tired of the snow and cold in Dodge City and moved to Marco Island—it's beautiful here and we love it," Janie said. "I enjoy my work and plan to continue."

And back in Dodge City is son and president of the company, John Curtis, B.S. K-State nuclear engineering, M.S. MIT nuclear engineering. He is the on-site eyes of the 67,000-square-foot operation producing gears and gearboxes for hundreds of applications from agriculture, transportation and military machinery, to flood control, petroleum distillation, food processing equipment and textile machinery.

The plant in Dodge City currently has 70–75 employees—down from the one-time high of more than 200, largely due to computerization of the manufacturing process.

"I like to credit our employees whenever possible," Stuart said. "Their work ethic and dedication to the company has brought us much success. And our son John must be given real credit for that success as well."

"He's an outstanding son," Janie said, while taking the "success" question in little different direction.

"Who better to credit for our success than Stuart?" she said. "He's our resource person—the one who's done it all!

"And K-State has played a big role—none of this would be possible without the education component."

> "…K-State has played a big role—none of this would be possible without the education component."

The K-State education connection extends to the Curtis' other son, Stuart Jr., who holds a B.S. in industrial engineering from his parents' alma mater, but is not associated with Curtis Machine.

Of their five grandchildren—two boys and three girls, Janie said, "It's still too early to see if they'll follow in the family footsteps of engineering education."

Maybe too early by today's standards but probably not by those of their grandfather's day—as Stuart started in the business at age eight when it was his job to run an abrasive cut-off saw in his father's 20 x 30 foot job shop behind the family home in Dodge City. He was the night shift supervisor at age 12, as the company had begun performing sub-contract work for the aircraft industry.

After completing his master's degree in 1964, Stuart returned to Dodge City and realized the small-time family operation was locked into a "feast or famine" cycle, totally controlled by others' production demands outside the company's control.

"We needed a product line," he said.

"Stuart set out then and there to design the standard line of our gears and gear boxes that are the core components of our company today," Janie said.

"Starting out, it would take three to four days of calculations to come up with a gear design—getting the best torque, etc.," Stuart said. "Of course now with a computer, that same application takes three minutes."

"He did all those formulas and calculations by hand with a slide rule that has his initials on it," Janie said. "We hang it on the Christmas tree now. It's a nice antique."

Over a span of more than 40 years, Stuart generated hundreds of innovative manufacturing processes and engineering designs, wrote computer programs, and designed thousands of gears and gear boxes.

Curtis gearboxes are found in both the industrial and agricultural markets, with most sales on the industrial side. A Curtis gearbox has been used in a machine that manufactures microchips, and 90 percent of the frozen pizza in the world is produced by devices with Curtis gear boxes. Curtis is an ISO 9001-2000 quality certified company.

Stuart holds two patents on gear box designs. He developed the first in the 1970s—the hypocycloid—designed for water-driven circle irrigation systems.

The second came about in the late 1990s when he was commissioned by a commercial steering company to design a steering gear box. Many of the trucks and buses on the road today use this uniquely designed mechanism.

The second patent also became the design so valued by the Army and Navy for its mine-resistant, ambush-protected personnel—MRAP—vehicles used in Iraq, and the smaller, lighter M/ATVs used in Afghanistan. This Curtis gear box design is on the MRAP Humvees with v-shaped bellies that are so highly resistant to explosions and whose design has saved countless lives of military personnel exposed to IED attack over the past years.

"We are proud and pleased to be contributing to the support of our military in this way," Stuart said. "And our employees who manufacture these gear boxes are proud and pleased as well for the contribution they are making."

"Some of our employees connected to those serving in the war wear their loved ones' photos on their uniforms while at work and building the gear boxes," Janie said.

Curtis Manufacturing operates as a supplier to "prime" companies who directly contract with the government agencies needing the gears and gear boxes.

"We contracted one time to be a prime," Stuart said, "but never again—the paper work explaining the conditions that had to be followed in supplying for the military was heavier than the gear boxes we were contracting to build."

Supplying for the military involves contracting with primes across the world. Late this spring the company will begin providing gear boxes to an MRAP prime contractor that supplies the Canadian military. Two other prime clients supply military vehicles for Turkey and Australia.

"Another interesting international link right now," Janie said, "is an in-house order for a gear box that will go to the Czech Republic to operate an electron-beam radiation cell. The box had to be 100

**continued on page 10**

# Team competitions reveal talent and winning ways

- For the second time in the last three years, Kansas State University's Aero Design Team won first place overall in the regular class event at the annual SAE Aero Design Competition West. This year's competition was March 6–8 in Van Nuys, Calif. K-State was among the 31 teams from around the world participating in the regular class event. Adviser: Terry Beck, MNE

- Four Kansas State University students in construction science and management tied for first place among 50 teams in an international concrete construction competition sponsored by the American Concrete Institute, March 15–19. The competition involved developing a proposal for the restoration of a pedestrian overpass in Houston, Texas. Advisers: Kimberly Kramer, Richard Pikul, both ARE/CNS

- The Kansas State University Quarter-Scale Tractor Team won second place at the 12th annual International Quarter-Scale Tractor Competition sponsored by the American Society of Agricultural and Biological Engineers, May 29–31, in Peoria, Ill. This is the 11th consecutive year this student-led team has finished in the top three in the competition, which includes seven first-place finishes. Advisers: Ed Brokesh, Pat Murphy, Darrell Oard, Lou Ann Claassen, all BAE

- The K-State ChemE-Car Team earned first place in performance at the American Institute of Chemical Engineers' Mid-America Regional ChemE-Car Competition, April 3–5, at the University of Missouri at Columbia, and received the "Golden Tire Award" for the most creative vehicle design in the national competition. Adviser: Walter Walawender, CHE

- After placing second in the steel bridge design contest at the American Society of Civil Engineers Mid-Continent Conference, Kansas State University's Steel Bridge Design Team advanced to the national Student Steel Bridge Competition, May 22–23 in Las Vegas, Nev., where they finished 25th out of 47 teams. Adviser: Hayder Rasheed, CE

- The biological and agricultural engineering robotics team, for the third year in a row, took first place at the 2009 Robotics Student Design Competition sponsored by the American Society of Agricultural and Biological Engineers. Adviser: Naiqian Zhang, BAE

- K-State's architectural engineering team took first place in the systems selection category at the 2009 ASHRAE Student Design Competition. Advisers: Julia Keen and Fred Hasler, ARE/CNS

- A team of CIS students placed 10th out of 200 teams in a 2009 regional computer programming competition sponsored by the Association of Computing Machinery. Adviser: Dan Andresen, CIS

- The SAE Formula Team placed fifth overall and first in fuel economy at the 2009 Society of Automotive Engineers Virginia Competition. Adviser: Dan Swenson, MNE

- The Mini Baja Team placed 25th overall in the 2009 SAE Mini Baja Competition. Adviser: Greg Spaulding, MNE

- The concrete canoe team placed fifth at the American Society of Civil Engineers Regional Conference. Adviser: Asad Esmaeily, CE



Photo by Amy Pruss ■ Photo adaptation by Rich Gardner


**Above,** SAE Formula Team members, **left to right:** Jacob Roth, Tim Mourlam, Michael Zinke, all MNE, with Mason Smith at the wheel.

**Left,** Aero Design Team members, **left to right:** Dana Bloom, Janessa Wedel, Erik Hellmer, Brian Anderson, Esteban Maradona, Matt Roberts, John Elson, Vishrut Patel, Joshua Goertz, Alex VanDyke, all MNE, and adviser, Terry Beck.

**Above,** ChemE-Car Team members, **left to right:** Mark McClure, Matti Kuykendall, Kevin Turner, Nam Nguyen, Katerina Voigt, Jordan Groskurth, Megan Young, Justin Peterson, Ashley Mayo, Ben Clubine, Damon Guyett, all CHE, and adviser, Walter Walawender.

**Left,** Quarter-Scale Tractor Team members, **left to right:** Jared Unrau, ATM; Mark Neeland, BAE; Benjamin Ross, BAE; Matthew Shepheard, ATM; Devin Mangus, BSE; Jared Selland, BAE; Lloyd Martin, BAE; Brent Schinstock, BSE; David Becker, BSE; Douglas Grollmes, BAE; Joshua Ogle, BAE; Nicholas Depenbusch, BSE.

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*Seaton Society members are recognized annually for their gifts of $500 or more to the College of Engineering. The following contributed between July 1, 2008, and June 30, 2009:*

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*Every effort has been made to produce a comprehensive listing of donors for the calendar year July 1, 2008, through June 30, 2009. We apologize for any incorrect listings, misspellings or omissions, and extend our sincere thanks for your support. Questions about the donor list should be directed to Kelly Sartorius, Senior Director of Development, College of Engineering, Kansas State Foundation, 2323 Anderson Ave., Suite 500, Manhattan, KS 66502; 785-532-7500 or 800-432-1578.* * = deceased

# SMART Lab team receives R&D 100 Award

A neutron detector created at Kansas State University has been named one of the top 100 technologies of the year.

Douglas McGregor, professor of mechanical and nuclear engineering, and his team of researchers designed and developed a microstructured semiconductor neutron detector that was given a 2009 R&D 100 Award. The award is sponsored by R&D Magazine and recognizes the year's 100 most technologically significant new products introduced into the marketplace.

SMART lab team, MNE grad students, professors and staff, **left to right:** C.J. Solomon, Walter McNeil, Prof. Douglas McGregor, Prof. Ken Shultis, Eric Patterson, and Steve Bellinger.

"What a proud accomplishment for Dr. McGregor and his team to be recognized in this way," said John English, dean of K-State's College of Engineering. "The quality of research being conducted by the faculty and students in our nuclear engineering program certainly speaks well of our excellence in this area."

The microstructured semiconductor neutron detector is a portable device designed to detect neutrons, a signature radiation emitted by some nuclear materials used in nuclear weapons. An R&D 100 Award signifies that a product has merit as one of the most innovative new ideas of the year, nationally and internationally, and is recognized as a mark of excellence by national laboratories, universities, industrial companies and government agencies.

"We are all pleased to be recognized with an R&D 100 Award for the years of work that have gone into developing this technology," McGregor said. "The students and faculty who helped design, fabricate and test the detectors have much to be proud of, and we hope to see the product commercialized soon."

McGregor and his Semiconductor Materials and Radiological Technologies (SMART) Laboratory team first demonstrated an early version of these neutron detectors in 2001. The devices initially were designed as neutron dosimeters, which measure neutron radiation dosage for radiation workers. Since then, the devices have been improved with lower noise, lower leakage currents, larger size and increased detection efficiency. They can now be used for various applications requiring robust compact neutron detectors. These latest detectors operate on just a few volts and can yield more than 45 percent thermal neutron detection efficiency.

Several instruments have been manufactured with the new technology, including compact dosimeters, remote neutron detector arrays and wireless neutron monitors The SMART Laboratory mass produces the detectors at a low cost. This allows for wide-scale detector deployment for detection of illicit nuclear materials, for monitoring of international safeguards agreements regarding nuclear materials and to protect personnel.

The neutron detector research has resulted in more than 20 publications and two allowed patents. The research was supported primarily by the U.S. Department of Defense through the Defense Threat Reduction Agency and by the National Science Foundation through an Instrumentation for Materials Research-Major Instrumentation Projects grant.

**—K-State Media Relations**

## Gears to you **continued from page 5**

percent gray iron with no aluminum. I worked with an engineer in the UK in securing the order, but the final destination is the Czech Republic."

"The international market is a competitive one," Stuart said. "About 10 years ago we lost a lot of business to China when they were able to undercut American companies on price. But we're getting a lot of those customers back now due to our quality and delivery."

"'Made in the USA' is becoming important to our customers again," Janie said.

"We used some Chinese products ourselves for awhile, but found we were spending a lot of money on quality control. Now we're back to mostly U.S.-sourced components in our products," Stuart said.

So even in challenging economic times, things are looking positive in the gear and gearbox market.

"John will be heading to K-State again soon on a recruiting trip as we are needing to hire another engineer for our staff," Janie said.

The Curtis' K-State ties have remained strong over the years with Stuart being a charter member of the Presidents Club, and a past member of both the President's Economic Task Force for the State of Kansas and advisory council for the K-State Engineering Advanced Manufacturing Institute. He is a member of the K-State IE advisory council, received the College of Engineering Distinguished Service Award in 1994 and was inducted into the College of Engineering Hall of Fame in 2002.

With Janie content in maintaining her status with the business, Stuart's partial retirement has given him time to pursue another interest—boating. He passed the Coast Guard certification to be a power boat squadron leader and is now an officer in the Merchant Marines. Although he could captain deep-sea pleasure boat cruises for hire, Stuart said he would rather take friends out on the water or son John and the grandchildren deep-sea fishing when they visit.

**–by Mary Rankin**



# Noteworthy

### Edgar to head chemical engineering

James Edgar, professor, has been named head of the department of chemical engineering at Kansas State

Jim Edgar

University. He assumed his new duties Aug. 1.

Edgar joined the chemical engineering faculty at K-State in 1988 as an assistant professor. He became a full professor in 1997 and served as interim department head in 2003–2004.

"We are extremely pleased to welcome Dr. Edgar to our leadership team," said John English, dean of the College of Engineering. "The department of chemical engineering and the college will be well served by his strong credentials and demonstrated skills in leadership, administration, research and teaching."

Edgar earned his bachelor's in chemical engineering from the University of Kansas in 1981 and completed a doctorate in chemical engineering from the University of Florida in 1987. His research is focused on the processing of wide-band gap semiconductors. He has directed research projects funded by the National Science Foundation, Office of Naval Research and several joint grants and gifts from industry.

He has served as a reviewer for 26 professional journals and is a recipient of K-State's Commerce Bank Distinguished Faculty Award, William H. Honstead Professorship in Chemical Engineering, Outstanding Scientist Award and College of Engineering Research Excellence Award.

Edgar replaces Professor Mary Rezac.

### Yunk earns LEED certification

Ray Yunk, associate professor of architectural engineering and construction science, became the first university faculty member in the world to be certified as a Leadership in Energy and Environmental

Ray Yunk

Design (LEED) Accredited Professional in building design and construction.

While there are more than 100,000 LEED Accredited Professionals, Yunk said fewer than 20 have earned the building design and construction designation.

"Green buildings and sustainable design and construction have been a rapidly growing focus area of the industry over the last several years and it is an area that students get excited about," Yunk said. "This certification represents a continuation of the commitment that our faculty stay current in professional practice in order to bring the latest design and construction applications into the classroom."

The LEED professional credentialing program was developed to encourage green building professionals to maintain and advance their knowledge and expertise. The certification earned by Yunk provides an advanced level standard for professionals participating in the design and construction phases of high-performance, healthful, durable, affordable, and environmentally sound commercial, institutional and high-rise residential buildings.

Yunk earned a bachelor's degree in architectural engineering and construction science from K-State in 1988, and then earned a master's degree in architectural engineering from K-State in 2004. He has been a licensed professional engineer since 1992 and a Leadership in Energy and Environmental Design Accredited Professional since 2004.

### Fenton named MNE department head

Don Fenton, professor, has been named head of the department of mechanical and nuclear engineering. He assumed his new duties Aug. 1.

Fenton joined the mechanical and nuclear engineering faculty at K-State in 1986 as an associate professor. He became a full professor in 1992 and has completed 22 years of service to the department. His recent teaching assignment areas include heat transfer, thermal systems, industrial projects senior design, electrical generating power plants, indoor environmental engineering, thermodynamics and honors research.

"I have every confidence in Don Fenton's ability to take on the academic and administrative challenges of this position," said John English, dean of the College of Engineering. "He is a valued colleague and we are extremely pleased that he will be at the helm of mechanical and nuclear engineering."

Don Fenton

Fenton earned his bachelor's in mechanical engineering from K-State in 1969, and completed both a master's and doctorate in that discipline from the University of Illinois in 1970 and 1974, respectively. He began his career as a research engineer for the IIT Research Institute and then the New Mexico Solar Energy Institute. His first academic appointment was associate professor at New Mexico State University in 1977, where he remained until coming to K-State.

He is a recipient of the American Society of Mechanical Engineers Region VIII Centennial Award and the Society of Automotive Engineers' Ralph R. Teeter National Education Award, and is a National Aeronautics and Space Administration Summer Faculty Fellow.

Fenton replaces Professor Mo Hosni.

# Alumni Profiles

## Recognitions

### 1962

**Ed Wambsganss** (CE) was honored with Colorado Construction Magazine's first-ever Legacy Award, given annually to

an individual who has had a significant impact on the local industry and his or her community during a lifetime of work. Wambsganss enjoyed a long and productive career in the Denver area as a successful contractor, manager and industry leader who started two well-known local construction firms, Western Empire Constructors Inc. and Western Summit Constructors Inc. He is known for his work in mentoring young construction professionals and for his involvement with AGC Colorado, an association he once served as president. Retiring in 2008, he and his wife, Eunice, continue to live in Denver.

### 1965

**Vernon Wegerer** (EE), Moline, Ill., has been inducted into the Quad Cities Area Business Hall of Fame by Junior Achievement of the Heartland. As a 2009 Laure-

ate, he was selected for entrepreneurial achievement, adherence to the highest moral and ethical principles, as well as demonstrated civic responsibility and community involvement. He is the president of TBA Development in Moline.

### 1988

**Kevin McLain** (CE, M.S. '03), a geotechnical engineer for the Missouri Department of Transportation,will be inducted into Golden Key at Iowa State University where he is currently pursing a master's degree in construction and engineering management. He is a 2006 recipient of the College of Engineering Professional Progress Award.

### 1990

**Sheila Hayter** (ME), PE, senior research supervisor, National Renewable Energy Laboratory, Golden, Colo., was installed as vice-president of the American Society of Heating, Refrigerating and Air-Conditioning Engineers at its 2009 Annual Conference. As a vice president, Hayter is a member of the board of directors and the executive committee and serves as vice chair of the Publishing and Education Council.

### 1993

**H. Leroy Pritchard** (CE), Emporia, Kan., has been certified by the Society of Wetland Scientists as a Professional Wetland Scientist, one of only five Kansans with this certification. He worked for the USDA Soil Conservation Service for 32 years before forming Pritchard Consulting as a natural resources planning and management service. He has a second degree from K-State in agriculture and an M.S. in business from Emporia State.

### 1996

**Cannon Clifton** (CHE), MD, PE, has completed his residency as a doctor of anesthesiology from the University of Texas Health Science Center. He will be working for Star Anesthesia, LLC in San Antonio, Texas.

### 1998 2000 2003

Three K-State ARE alumni have been selected by the Consulting-Specifying Engineer Magazine as 2009 "40 Under 40" winners, an annual listing of "some of the best and brightest minds in our industry." All three are employed by ccrd partners, Dallas, Texas, and include **Kevin Miller**, 1998, PE, project manager,; **Danna Jensen**, 2000, PE, LEED AP, senior associate electrical engineer; and **Abby Lipperman**, 2003, B.S. and M.S., PE, associate electrical engineer.

## Retirements

### 1978

**Doug Spencer** (ME) retired in May 2009 from his position as vice president, Orlando Utilities Commission Customer Connection, Orlando, Fla. He started with the company in 1984 as a power plant engineer and was promoted many times throughout his career. One of his final tasks for OUC was overseeing the design and daily construction of the company's 10-story garage and office building in downtown Orlando.

## Deaths

### 1937

**Kemp E. Barley** (CE) died April 16, 2009, in Tyler, Texas. He had been a petroleum engineer for Marine Drilling Company. He is survived by three daughters, 10 grandchildren and 21 great-grandchildren.

### 1942

**Wayne Wittenberger** (ME) died July 15, 2009, in Evanston, Ill. In 2005, he established the Thomas Jackson Scholarship in Mechanical Engineering at K-State.

### 1958

**Robert H. Doremus** (ME), Houston, Texas, died May 21, 2009, after a courageous battle with leukemia. He retired from a long career with IBM in 1991. He had also served in the U.S. Army and Army Corps of Engineers, remaining in the Army Reserves and leaving as a captain in 1968. He is survived by his wife of nearly 52 years, Pat, and three sons and seven grandchildren.

**Ingolf "Stubby" Eugene Thorson**, retired K-State emeritus professor of engineering, died May 8, 2009, in Manhattan, Kan. He began his teaching career in 1948 in the College of Architecture, going on to create and develop the K-State Construction Science Degree Program, seeing it through to full accreditation. He retired in 1981. He is survived by his wife of 63 years, Barbara; two daughters and two sons; 10 grandchildren and 16 great-grandchildren.

## Wanted: Your Updates

We are interested in following the career paths and accomplishments of our alumni, focusing on promotions, advancements, awards and honors, job changes and of course, retirements, as well as death notices.

Please send your information in these categories to—

Send to: **Impact Editor**
**Engineering Communications**
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**133 Ward Hall**
**Manhattan, KS 66506**

E-mail: **impact@engg.ksu.edu**



# Faculty awards

Faculty honored at the 2009 Fall Convocation, **above, left to right:** Prof. Ronaldo Maghirang, BAE, Myers-Alford Memorial Teaching Award; Prof. Walter Walawender, CHE, Charles H. Scholer Faculty Award; and Assoc. Prof. Todd Easton, IMSE, James L. Hollis Memorial Award for Excellence in Undergraduate Teaching and Clair A. Mauch Steel Ring Advisor of the Year Award. **Side photos, top to bottom:** Assoc. Prof. Donghai Wang, BAE, Frankenhoff Outstanding Research Award; Prof. Donald Lenhert, ECE, Robert R. and Lila L. Snell Distinguished Career Award for Excellence in Undergraduate Teaching; and Prof. Danny Rogers, BAE, Larry E. and Laurel Erickson Public Service Award.

# Grant to help train Ph.D. students in sustainable biorefining

**continued from page 2**

K-State faculty from the colleges of engineering, agriculture, and arts and sciences will be involved. International education opportunities also will be available for students and faculty with partner universities in Austria, Belgium, France and Brazil.

"We are very excited to receive this grant because it reflects the growing national recognition of the expertise K-State has developed in the area of renewable and sustainable biofuels," said Ruth Dyer, K-State interim provost. "The grant also highlights the demonstrated record of this K-State research team in working in an interdisciplinary fashion and shows how this interdisciplinary approach and setting will benefit the education of the IGERT Fellows."

Along with classroom instruction, the students will participate in seminars, workshops, field experiences and an annual conference, as well as serve as research mentors to undergraduate students to gain experience as research directors, said Douglas-Mankin who is leading educational innovations in the project.

Additional support for the program includes $781,000 from the Kansas Bioscience Authority and $500,000 and substantial in-kind support from K-State.

University resources involved with the project include the Center for Sustainable Energy, which organizes and supports bioenergy-related research and educational activities at K-State. Broadly defined, bioenergy-related research funding received by the university exceeded $12 million in fiscal year 2008, Rezac said.

"Kansas' biomass resource base represents a significant source of potential alternative energy and consumer products," she said. "Researchers at K-State have already developed new varieties of crops adapted to our climate, novel technologies for processing Kansas crops into fuels and consumer products, and models to predict the eco-economic impact of biofuels production."

Other university resources to be involved include the Wheat Genetics Resource Center, K-State Center for Sorghum Improvement, Soil Carbon Center and the National Science Foundation Industry/University Collaborative Research Center in Biofuels Research and Development. The center was established in 2008 and supports research and education in bioenergy production, promotes partnerships between K-State researchers and industrial producers, and provides leverage for other research-related activities.

The Integrative Graduate Education and Research Traineeship program is a National Science Foundation-wide program intended to meet the challenges of educating U.S. Ph.D. scientists and engineers with the interdisciplinary background, deep knowledge in a chosen discipline and the technical, professional and personal skills needed for the career demands of the future.

**—K-State Media Relations**

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# Miller recognized by DOE for wind turbines program

Eight Kansas schools have their own wind turbines and seven more are set to receive them because of the efforts of a K-State professor researching alternative energies.

Ruth Douglas Miller, associate professor of electrical and computer engineering, received an award for Outstanding Leadership in the Application of Wind for Schools from the U.S. Department of Energy's Wind Powering America program.


Ruth Miller

"This award is recognizing not just wind turbines up at the schools, but the number of K-State engineering students involved in helping getting them going," Miller said. "The interest from the student body here at K-State and engineering students pursuing careers in renewable energy is big."

Through the U.S. Department of Energy, the Wind Applications Centers in each of six states, including Kansas, help K–12 schools install small wind turbines for educational purposes.

The U.S. Department of Energy identified states with strong wind energy potential but minimal realization. Under DOE's National Renewable Energy Laboratory program, Miller is funded as Kansas Wind Applications Center director. Six states, including Kansas, have been funded to help K–12 schools install small wind turbines for educational purposes.

Wind turbines installed at Ell-Saline High School, Brookville, USD 307; Concordia High School, Concordia, USD 333; Greenbush, the Southeast Kansas Educational Service Center, Girard, USD 612; Fairfield High School, Langdon, USD 310; Blue Valley High School, Randolph, USD 384; Sterling High School, Sterling, USD 376; and Walton Elementary School, Walton, USD 373 have been supported by Horizon Wind and Tradewinds Energy. A wind turbine on K-State's campus was supported by Westar Energy.

Districts slated to get wind turbines later this year are Pretty Prairie USD 311, Deerfield USD 216 and another yet to be chosen. Sites selected to receive wind turbines in 2009–2010 are Colby County Community College, Colby, in consortium with several area school districts; Smoky Valley USD 400, Lindsborg; Appanoose Elementary School, Pomona, USD 287; Solomon USD 393; and Hope Street Academy, Topeka, USD 501.

Miller's own research has focused on where to site turbines and the applications of wind energy, such as studying how to best integrate it into the power grid. Miller is also working with Decent Energy Inc. in Leawood to site a solar energy system on the K-State campus.

**—K-State Media Relations**


Photo by Rich Gardner