A winning ‘Formula’ at Arrowhead
As part of a university-wide effort, K-State President Kirk Schulz declared earlier this year that “Kansas State University will be recognized nationally as a top-50 public research university.” Also known as Vision 2025, achieving this foundational goal is critically important to the continuing success of K-State graduates seeking employment or entrance to graduate school, our Ph.D. students seeking research opportunities, and our faculty who consistently compete for grant funding and research dollars.

It is our good fortune that in 2008 our college had established its own vision statement, which just happens to align extremely well with Vision 2025: “The Kansas State University College of Engineering will be a highly ranked college providing quality education within a research environment that develops engineering leaders to benefit society.”

I certainly credit our department heads and task force committee for having the prescience to understand that being a highly ranked research institution is in no way mutually exclusive from being a great university overall.

As Kansas State and the College of Engineering become more research focused, all of our university undergraduate programs will be further energized and thrive, creating an environment of constant renewal and sustainability. As our engineering undergraduate students are more purposefully exposed to and engaged in the research elements of our faculty and graduate students, they will find themselves seated at the edge of the technology arena, soon to understand even more fully that the field of engineering is dynamic and not static.

Because we shape ourselves by decisions that in turn shape our environment—a paraphrase from French environmentalist Rene Dubos, reaching this level of sustainable development is a challenging concept. Yet it is clear from these pages of IMPACT that our progress is already strong. Accompanied by the visionary leadership of our alumni advisory board, you will read of our students and teams competing and ranking nationally, and our faculty garnering prestigious research grants while earning top awards and recognition.

Through a combined commitment and determined action, I believe K-State and our college are well on their way to achieving these goals and seeing their visions accomplished by 2025 and beyond.

John R. English
Dean of the College of Engineering
Engineering Advisory Council—Sept. 24, 2010

John English, dean of engineering; Carl Ice, outgoing advisory council chair

“I serve in this capacity because it is a small way of thanking the college for the education and benefits I received. We all are the beneficiary of others who invested time and money in the College of Engineering. The strengths we must not overlook or ever fail to capitalize on are the quality of our students and faculty."

—Jim Johnson, 2011 College of Engineering Advisory Council Chair

“There is enormous satisfaction in being a part of seeing the college fulfill its promise of becoming one of the nation’s premier engineering institutions. I’m proud that K-State continues to provide the same outstanding educational opportunity today that I enjoyed as a student.”

—Carl Ice, outgoing 2010 College of Engineering Advisory Council Chair

Faculty rise to ‘Fellow’ status

The following 22 members of the College of Engineering faculty hold the status of “Fellow” within their respective professional societies and associations. The designation of Fellow is commonly granted for continuing distinguished service, encompassing as well, an individual’s significant and valuable contributions to the goals and scholarly endeavors of the organization.

- John R. English, dean and IMSE professor, EEE Fellow, 2003
- Dick Hayter, assoc. dean emeritus, ASHRAE Fellow, 1990
- Donald E. Rathbone, dean emeritus, IEEE Fellow, 1997
- Tom Roberts, asst. dean of recruitment and leadership development, ASEE Fellow, 2010; NSPE Fellow, 2010
- John W. Slocombe, BAE professor, NACTA Fellow, 1990
- Mustaque Hossain, CE professor, FASCE Fellow, 2009
- Hani Melhem, CE professor, FASCE Fellow, 2009
- Hayden Rasheed, CE assoc. professor, FASCE Fellow, 2010
- Robert W. Stokes, CE professor, FASCE Fellow, 2008; FITE Fellow, 2008
- Larry L. Erickson, CHE professor, AICHE Fellow, 2003
- Kirk Schulz, K-State President and CHE professor, ASEE Fellow, 2008; AAAS Fellow, 2007
- Walter P. Walawender, CHE professor, AICHE Fellow, 2002
- Elizabeth Unger, CIS professor emeritus, CSAB Fellow, 2010
- Ruth A. Dyer, senior vice provost and ECE professor, AWSIS Fellow, 2006; IEEE Fellow, 2008
- Michael S.P. Lucas, ECE professor emeritus, IEEE Fellow, 1993
- Ruth Douglas Miller, ECE assoc. professor, ASA Fellow, 2000
- Amil Fahwa, ECE professor, IEEE Fellow, 2003
- David L. Soldan, ECE professor, IEEE Fellow, 2001
- Z3 Pei, IMSE professor, ASME Fellow, 2010
- Mohammad H. Hosni, MNE professor, ASME Fellow, 2001; ASHRAE Fellow, 2005
- J. Kenneth Shultis, MNE professor, ANS Fellow, 2004
Wayne Harms, CHE ’76, and Steve Kirchhoff, ME ’79—each with a 30-plus-year career and a vice president title at ExxonMobil, the world’s largest publicly traded international oil and gas company—a story of two K-Staters who’ve taken their engineering education and Midwest values to the global arena in energy production... 

The beginning—choosing K-State
Wayne Harms, a native of Newton, said he knew what he wanted to study in college, but where to do it was the unanswered question. “I visited the major universities in Kansas—Wichita State, KU, KSU—and in the end, my most influential friends went to KSU. I had always enjoyed math and science in high school,” he said. “There really was no question about engineering... just which kind. And even though I thought it was the most difficult, I chose chemical engineering due to the faculty and scholarship opportunities.”

Steve Kirchhoff took a bit more circuitous route to his engineering destination.

“Growing up in farm country in Kansas,” he said, “I spent most of my youth convinced I wanted to be in veterinary medicine. KSU was THE school for vet medicine, so I was strongly pointed that way. But in my freshman year of high school, I attended an Engineering Open House and was amazed at the kinds of things engineers did. From that point forward, I realized myself to be an engineer. Mechanical engineering seemed to me to have the most exciting exhibits that year, and the job opportunities seemed a lot broader at that time too, so I signed up and never looked back.”

ExxonMobil—launching global careers
“I interviewed with many companies on campus as graduation neared,” Harms said. “But I ended up choosing ExxonMobil’s upstream business due to the challenging job opportunities and the initial location—New Orleans! They really turned me into a petroleum engineer, which is pretty close to being a chemical engineer. The key was to learn how to solve unstructured problems, apply judgment to the business and communicate well.”

Over the years, Harms had offers to go to other companies but always chose to stay with his dynamic career at ExxonMobil, often changing jobs within the company about every three years. “Of course that involved relocating several times across the U.S. and the world. I was fortunate my family was flexible and eager enough to come along to every location,” he said. “It made us grow closer and cherish our time together. And that extends even today when my kids are spread out around the world in Los Angeles, Washington, D.C., and La Paz, Bolivia. We all found out how much you grow when you live in different cultures and have different experiences.”

Among those foreign assignments was a stint in Hong Kong, where in 1997 Harms became executive director of ExxonMobil Energy Limited. While there, he served as a member of the Asia Society and on the Hong Kong Chamber of Commerce Environment Committee. Harms moved to Doha, Qatar, in 2000 to become president and general manager, ExxonMobil Qatar Inc. In this capacity, he served as director of several companies including Qatargas, RasGas, Al Khaleej Gas Development and ExxonMobil Research Qatar Ltd., was vice chairman of the Qatar International Chamber of Commerce, and was a member of the American School Board of Trustees in Doha, Qatar.

In 2006, he returned his family to the United States and assumed the role as vice president, ExxonMobil Gas and Power Marketing Company, Houston, Texas, before taking on his current position of vice president, ExxonMobil Upstream Ventures (East) Limited. “Today, I have global responsibilities and travel quite a bit,” he said. “I recently finished one trip that took me to Moscow, Doha, Singapore, Tokyo, Beijing, Delhi and back to Moscow. “For an integrated energy company, growth is key to its future. My current position is to add to our oil and gas reserves by concluding commercial deals with other governments or companies, or to acquire whole companies if needed. I meet many leaders in the industry and have to understand the whole upstream business as well as ‘sell’ the ideas to our most senior management.”

Kirchhoff first connected with ExxonMobil through a summer internship. “I was still a year away from graduating and not yet interviewing for positions when I got a call from the Exxon recruiter visiting campus from the oil and gas production office in Andrews, Texas,” he said. “He convinced me to come in and talk with him about a summer job, which I ultimately accepted, spending three months on a project involving a mix of office and field work, including interaction with both the technical and operating teams.”

I was amazed at the skill, dedication and teamwork that I saw that summer, and frankly, I was somewhat blown away by the size and scale of the oil business. “I did go back to school with a long list of interesting companies to... continued on page 13
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Every effort has been made to produce a comprehensive list of donors for the calendar year, 2009. Through June 30, 2010. 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 Scortzus, Senior Director of Development, College of Engineering, Kansas State University Foundation, 1515 Bathesda Hall, Manhattan, KS 66506-5557, 785-532-7000 or 800-452-5939.
Faculty awards and honors

DEFENSE to DEGREE program

Three Kansas State University electrical and computer engineering professors will use a National Science Foundation grant for a project to help military veterans enter the work force at an accelerated pace.

Professors David Soldan, Don Gruenbacher and Noel Schultz will use the $146,000 grant for “From Defense to Degree: Accelerating Engineering Degree Opportunities for Military Veterans.” The project offers veterans accelerated undergraduate and graduate programs in electrical engineering, helping them obtain jobs more quickly, especially in energy systems.

The professors developed the idea in conjunction with the Post 9-11 GI Bill, which provides recent military veterans with up to 36 months of educational benefits, including financial support and housing allowances.

K-State’s close relationship with Fort Riley and other military institutions, as well as its long-standing reputation as a military-inclusive university, make it an ideal place to develop such a program, Soldan said.

“These military veterans are unbelievably motivated and capable and possess relevant operation experience, making them a great fit for advanced education and occupational opportunity in this technical field,” said Soldan, the project’s principal investigator.

“I think the ability to transition them from military service into the global work force in an efficient way is not only possible—it is something that we have a responsibility to do.”

Soldan personally understands the benefits of the GI Bill—he served in the U.S. Air Force from 1971–1975, and the bill helped him earn his master’s and doctoral degrees in electrical engineering at K-State.

The military project focuses on two areas: to help military veterans earn undergraduate degrees and to help those veterans with bachelor’s degrees in related fields earn master’s degrees. Veterans will be able to earn the degrees on an accelerated basis, depending on their technical work in the military. The project focuses on electrical engineering, and within that, energy systems, because

continued on back cover

2010
STUDENT COMPETITION
TEAM RESULTS

- ARE team—1st place—ASHRAE 2010 Student Design Competition, HVAC systems selection category
- BAE robotics team—1st place—ASABE 2010 Annual International Meeting, Robotics Championship
- BAE fountain wars team—2nd place—ASABE 2010 Annual International Meeting, Fountain Wars Contest
- CIS robotics team—2nd and 3rd placings—AAAI Conference on Artificial Intelligence
- Aero design team—1st in design; 17th overall—SAE Aero Design East; 3rd in design; 3rd overall—SAE Aero Design West
- Formula SAE team—7th in design (tied); 28th overall—Formula SAE California Competition
- Mini Baja team—15th in presentation; 22nd overall static; 62nd overall—Baja SAE Western Washington Competition
- Steel bridge team—1st in regions; 23rd at nationals—2010 Mid-Continent Student Conference
- Concrete canoe team—7th in regions—2010 Mid-Continent Student Conference
- ChemE-Car team—competed at regionals—AIChE Annual Meeting
CE professor named Fulbright Scholar

Sunanda Dissanayake, associate professor of civil engineering, has been named a Fulbright Scholar and will spend seven months in Sri Lanka. She will be teaching and assisting with curriculum enhancement at the University ofPeradeniya. She also will conduct research on reducing highway fatalities and injuries in Sri Lanka. The issue is sizable in Sri Lanka, as in many other developing countries, because of the mix of vehicular, pedestrian and other traffic on roadways. Poor roadway design also contributes to numerous fatalities and injuries. Dissanayake has conducted similar research on United States roadways for a number of years.

“It’s much needed in Sri Lanka because of the rapid rate of motorization that has happened without much planning,” she said. “They do not really do research related to highway safety.”

The Fulbright application process involved evaluation by the Fulbright Commission and an equal opportunity commission in Sri Lanka. Dissanayake submitted a research proposal and contacted a university in the host country to find a place to teach.

Becoming energized will be one of the greatest benefits of the Fulbright award, Dissanayake said. “Once in a while you need a change or a break—to go outside the regular routine, energize and come up with new ideas by using a different educational system than we have here,” she said.

Dissanayake is considering establishing a study abroad program for engineering students. The free education system in Sri Lanka means that financial responsibility would be limited to living and travel expenses. She also hopes to develop some collaborative research efforts between the two countries.

Alok Bhandari, professor and head of the department of civil engineering, said Dissanayake in the department’s second Fulbright Scholar since 2003.

“This award is a recognition of Dr. Dissanayake’s outstanding research and outreach programs in the area of transportation engineering,” he said. “As a Fulbright Scholar, she will serve as K-State’s ambassador in Sri Lanka while broadening her scholarly work to international road safety issues.”

The Fulbright Program is the flagship international educational exchange program sponsored by the U.S. government and is designed to increase mutual understanding between the people of the United States and the people of other countries. The U.S. scholar program sends approximately 1,100 American scholars and professionals per year to study abroad in 125 countries, where they lecture and/or conduct research in a wide variety of academic and professional fields.

Dissanayake came to K-State in 1982 and was promoted to associate professor in 2008. She earned a bachelor’s degree from the University of Moratuwa in Sri Lanka, a master’s from the Asian Institute of Technology in Thailand and a doctorate from the University of South Florida.

—K-State Media Relations

College of Engineering announces new department heads

Joseph P. Harner III has been named head of the department of biological and agricultural engineering, and Alok Bhandari will head the department of civil engineering and be K-State’s inaugural Dr. Joseph P. Harner Professor of Civil Engineering.

Robert Snell Professor of Civil Engineering

Harner came to K-State in 1983 with a 100 percent extension appointment in biological and agricultural engineering and responsibilities in programming related to grain and livestock systems. He has been serving as the department’s interim head since February 2009.

Harner is a registered professional engineer in Kansas and is active in numerous professional societies, including the American Society of Agricultural Engineers. He was named a fellow of the American Society of Agricultural Engineers.

Alok Bhandari is a registered professional engineer in Minnesota. His many awards and recognitions include the National Science Foundation CAREER Award and the Excellence in Student Advising Award from the American Society of Civil Engineers. He was a Miller Faculty Fellow at Iowa State University and a Big 12 Faculty Fellow.

“We are certainly pleased to welcome Dr. Bhandari back to K-State as department head,” English said. “His outstanding credentials and proven leadership skills will serve both civil engineering and the college well.”

Bhandari replaces Yacoub Najjar, professor of civil engineering, who is currently serving as interim department head.

Bartak named to development team

Amy Bartak has been named a development officer for the College of Engineering. She graduated from K-State in 2005 with a bachelor’s degree in computer engineering.

As a student, she served as president of Engineers Without Borders and was a member of the Tau Beta Pi engineering honor society. Before joining the K-State Foundation, Bartak was employed by the computer services division of the Engineering Ambassadors Program at K-State.

Several of these faculty also carry other professional credentials, including four members who have attained the LEED, or Leadership in Energy and Environmental Design Accredited Professional designation, from the U.S. Green Building Council, two structural en-

ngineers who have the Structural Engineer designation for design of structures in seismic zones; and one of the only female faculty members in the world to attain the High-Performance Building Certification Designation from the American Society of Heating, Refrigerating and Air-Conditioning Engineers Inc. The ARE program also had to submit a subjective, narrative evaluation outlining the extent of its curriculum devoted to licensure, ethics and professionalism. The evaluation had to explain the activities undertaken by the department to promote these values. Ethics and professional-ism are taught and promoted across the curriculum in various courses, Fritchen said. “Our faculty work as a team to promote unity among professions and ethical and standards in their classes to clear a meaningful message to the students that these are very important qualities of the engineering profession and that they directly impact their personal character and integrity,” he said.

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**Engineer ing education sparks global career paths**

continued from page 5

interview with a permanent position, but I kept comparing every one to Exxon, and ultimately I concluded I would not find a match to the quality of people and opportunities I had seen, even in remote place like Andrews, Texas.

He began his career with the company in Kingsville, Texas, as a production engineer for Exxon’s lease on the King Ranch in South Texas.

“After a time of intense development activity in that area, and everything I had seen the prior summer was multiplied by 10 in terms of pace and challenge,” Kirchhoff said. “I never really looked back to reconsider my decision to join Exxon, as every few years a new opportunity arise, either new technical opportunities, or supervisory and leadership roles, and ultimately the opportunity to work in an overseas assignment.”

The decision to move around the world to a completely different culture in Malaysia was a big step for the Kirchhoff family. But in 1994, he became engineering manager to Esso Production Malaysia, Inc.

“It was an incredible experience, as once again the scale of the business jumped by an order of magnitude. However, the people were the same top caliber I had grown to expect, and our family experienced life as ‘expat’ in a very positive setting,” he said.

After Malaysia, Kirchhoff moved to the United Kingdom, which is his host country to London, where he assumed responsibility for natural gas marketing in ExxonMobil’s joint ventures in Europe, including Rubergas, Gausine and BEB.

“The job in London gave me a chance to expand my views of the world and participate in some large-scale deal making,” he said.

And living as an expat in London was not all bad either, although I’m not sure my bank account will ever recover from the antique shopping my wife found time to do.”

In 2004, Kirchhoff moved back to the United States as planning manager for ExxonMobil Development Company. In 2007, he began his current position as vice president—American, ExxonMobil Gas and Power Marketing, where he leads a team that manages sales and purchases of the company’s natural gas and natural gas liquids production streams in the U.S., Canada and South America.

“My advice is to help set the direction and the team to be a liaison at the senior level with our customer and industry partners,” Kirchhoff said. In this capacity, he also serves as the company’s representative on the board of the Natural Gas Supply Association, a trade association for the industry focused on policy activity in Washington, D.C. He is also a member of the Natural Gas Council.

**Formative influences**

Both Harms and Kirchhoff credit the influence of their K-State educational experience, as well as their personal life philosophy, with serving them well in their successful career paths.

“The training of my engineering education in how to think and solve problems was very important,” Harms said. “Growing up in Kansas, you develop a strong work ethic, which is needed in the corporate world. Building friendships and knowing how to work with people is another skill that is honed at the university.”

“And certainly, work life balance is something to make sure you always work on. Only by keeping that perspective can you always keep in mind. Others depend upon you for company. Balancing work with people is another skill that is honed at the university. And certainly, work life balance is something to make sure you always work on,” Kirchhoff said.

“I learned to assimilate the fundamentals I was hearing in class and take those further through applications in labs and extracurricular projects,” he said. “That process has been repeated dozens of times over the course of my career and personal life as we’ve moved from job to job, and country to country. At K-State, that process seemed to happen very naturally and with a lot of fun along the way.”

“Being raised on a farm, with the strong ethical background that comes from a Christian community, and the work ethic that’s also required, was surprisingly good training for a career with a major oil and gas company. I find a lot of the commodity business fundamentals I learned through osmosis in working around cattle and grains apply every day in what I do—we just work on a different scale.”
continued from page 8

many veterans have specialized experience in those areas. Soldan said military veterans entering the engineering work force will help address shortages that are forecasted because of retiring engineers.

“One of the things we’re trying to do is better understand the existing knowledge level of these veterans because they have been working in technol-
gy in relevant opera-
tional contexts,” Soldan said. “Developing and implementing a tailored curriculum that recog-
nizes their knowledge and experience can serve as a powerful enabler in growing this professional work force, as well as provide excellent career opportu-
nities for former military members.”

The program will also provide military veterans with paid internships through the K-State Electrical Power Affiliate Program, which allows electrical power industries to support engineering students in electric power and energy systems. General Dynamics and several affiliates of the program, including Burns & McDonnell, Westar Energy and Omaha Public Power District, have already written letters of support for beginning the military project at K-State.

Schulz, K-State’s Paslay Professor of Electrical and Computer Engineering, is director of the Electrical Power Affiliate Program, and Gruenbacher is the head of the electrical and computer engineering department. Soldan, Schulz and Gruenbacher will spend the school year gathering a test group of 10 to 12 current students who are veterans and can help develop ideas and provide feedback. The professors plan to have a formal program in place by the begin-
ning of the 2011–2012 school year.

Although the profes-
sors are using the electrical engineering energy systems area as a starting point, they would eventually like to expand the program to other academic areas, including business, economics and foreign languages.

“This project is another compelling opportunity for K-State to employ its military-inclusive approach to ensuring success for our current and future military and veteran students,” said retired Army Lt. Col. Art De-Groat, director of military af-
fairs at K-State. “The effort that our engineering faculty are making should well achieve its goals—and more important, provide needed insights on the national level on how best to help military veterans transition to other lucrative forms of professional service.”

—K-State Media Relations