Producing the Best

Three top scholarships for Dechand

When Dawn Dechand was in elementary school and had barely lost a close competition, her mother offered the following words of wisdom: "Another day, another judge, another try, another decision." Now a senior in biological and agricultural engineering with a Goldwater and not one, but two Udall scholarships to her credit, Topeka native Dechand said, "I believe that philosophy applies every day in many ways." She first applied for the prestigious Barry M. Goldwater Scholarship in her sophomore year but was not selected by the panel of university professors to represent K-State at the national level. Encouraged by then-scholar advisor Beth Powers to instead apply for the Morris K. Udall Scholarship, Dechand forged ahead, even though the application was due in less than one week. That spring, she became the 11th K-Stater to win the Udall.

"After not getting nominated for the Goldwater, I was hesitant to reaply in 2001," Dechand said, "but my department head Dr. Koeller and my close friends told me I should." But once again, she also applied for the Udall. All Udall scholars are required to attend a conference in Arizona in August the year they win. "I would have reapplied for the Udall just to get another chance to go to that conference," she said. "It's hard to explain the sense of optimism it instills—the honor to be a part of a group of motivated, intelligent individuals that truly believe they can change the world for the better." As a Goldwater nominee in 2001, Dechand anxiously checked the Web daily where the winners were to be posted. In April, she and two other students brought the number of K-State Goldwater scholars to 43—a tie for second place with Harvard for the most Goldwater scholarship winners. Only Princeton, with 45, has produced more.

Claiming "shock and relief" for that win, Dechand admitted feeling a "sense of unfairness" when later that month she won her second Udall, helping K-State to a second-in-the-nation ranking in total winners for this award as well.

James Holshen, current K-Stater scholarship advisor, called Dechand to tell her she had received the Udall, but that K-State's other nominee, Ben Champion had not.

"In my opinion, Ben was the more deserving candidate," she said, "but I guess the committee saw something in my application they were looking for." Her mother's quote, coming true again ... Dechand credits her choice of K-State engineering for her undergraduate degree as a strong impetus toward her scholarship success.

"I feel the bio-ag engineering environmental program allows students interested in the environment a unique opportunity to develop that interest into a career," she said. "The professors are great about helping with this development and also allow you to participate in research in your chosen area." After completing research the summer of her freshman year in a microbiology laboratory on campus, Dechand said she realized she was more of a "fixer" than a "preventer" and wanted to work on biological remediation. The next summer she took a position as an environmental engineering intern with Canfield in Iowa. While viewing that as a positive experience, she said it also "cemented" her decision to work in research instead of industry. Following that, next summer she served as an Energy Research Undergraduate Laboratory Fellow at the Department of Energy's Idaho National Engineering and Environmental Laboratory.

Citing her future plans as "highly dependent on where my fiancé ends up," Dechand does plan to go on to graduate school, another area her education here has prepared her for.

"In looking at graduate programs in environmental engineering, I've noticed that many of the first semester courses I have already taken or will take as an undergraduate, I will feel well prepared no matter what graduate program I go to.

"A lot of universities," she continued, "spend a significant amount of time saying they're the best and citing sources that say they're best. K-State does it differently. The College of Engineering prepares its students for the 'real world' through coursework and allowing them to participate in award-winning activities and programs. They don't just say they're the best—they're proving it."

—by Mary Rankin
Sometimes it takes a crisis to give us an honest perspective of how our college impacts the nation and the world. Events of September 11 certainly qualify as imperus for us to step back and consider that view. What is the role of the engineer in light of September 11? Though perhaps it hasn’t changed in any great measure, surely it has intensified. The technical world we work in is highly sophisticated and enormously complex. It is extraordinarily demanding in asking the engineer to provide society with the methods and means of maintaining public safety, health, and welfare, while protecting our environment, creating wealth, and raising the quality of life. We are members of a profession that exists to serve society.

And we are a part of a college of engineering that exemplifies that service. In these pages of Impact, consider some of our alumni who are meeting that call—Gen. Richard Myers, chairman of the Joint Chiefs of Staff; Warren Staley, a world-class corporate leader as CEO and chairman of Cargill, Inc.; Mike Manley and Neera Singh, successful entrepreneurs and members of the distinguished Class of 2001 of our Hall of Fame.

Our faculty and students carry the same banner—Kirby Chapman’s research on the critical infrastructure needs of our nation’s energy supply system; Dawn Dechand’s scholastic excellence focused on study and analysis to preserve our environment; award-winning faculty who mentor and position our students on how to respond to crisis in team situations where they must be agile, competitive, and succeed under stress.

In the days ahead, we’ll be looked to more than ever. Whether to build safer buildings, design defense technology for the military, or come up with the innovations that will generate wealth for our economic security—it’s a time for our profession to take center stage. May we be inspired by the noble purpose of our task.

Terry S. King
Terry S. King, Dean

Team members pictured:
Clockwise from top left:
Jay Nightingale, sophomore, ME
John Aschenbrenner, senior, MIS
Francisco, sophomore, ME
Scott Hummack, senior, ME
Matt Mota, senior, ME
Chris Farmer, senior, MATH
John Blessing, senior, CMPEN
Norman Gillison, professor
EECE, adviser
Ruth Douglas Miller, assist. professor, EECE, adviser
Jeff Ergel, junior, ME
Ryan Pooley, senior, ME
Michael Bowerman, junior, EE
Jeff Snyder, senior, EE
Ryan Mott, senior, CMPEN
Casey Quinn, sophomore, ME
Damiel Soldan, freshman, CMPEN
Brett Baisch, graduate student, ME
Prakash Krishnamurthi, professor, MNE, adviser


The squad broke in its new car, CATalyt, which had been designed and built for this competition. All cars competing in the race were powered by solar energy. Three other Big 12 universities also participated, including University of Missouri-Columbia which finished 11th, Iowa State which finished 16th, and Texas A&M which finished 27th.
The value of a K-State engineering education

Warren Staley, left, chairman and CEO, Cargill, Inc.; Terry King, center, dean of the College of Engineering; Gen. Richard Myers, right, chairman of the Joint Chiefs of Staff

Gen. Richard Myers and Warren Staley—two Kansas State College of Engineering graduates. Both members of the class of 1965—Myers earned a B.S. in mechanical engineering; Staley earned a B.S. in electrical engineering.

Both went on to receive an MBA—Myers from Auburn University, Staley from Cornell University. Both have risen to the top of their respective career fields—Myers is the chairman of the Joint Chiefs of Staff, our nation’s highest ranking military official. Staley is the chairman of the board and CEO of Cargill, Incorporated, the largest privately owned corporation in the United States.

Both were on the K-State campus the weekend of Oct. 26–27. Myers, in the Midwest visiting military facilities, had lunch with K-State ROTC students and was a guest in the college’sskybox for the KU–K-State football game. Staley delivered a Distinguished Lecture on campus on Friday, and also attended the game as a guest of the college.

Both agreed to interviews for Impact, sharing thoughts on the value of their undergraduate education in engineering, offering advice to today’s engineering students, and taking a look at what the future might hold for the 21st century engineer.

General Richard B. Myers

As chairman of the Joint Chiefs of Staff, Myers is the principal military advisor to the President, Secretary of Defense, and National Security Council. He entered the Air Force in 1963 through the K-State ROTC program and is a command pilot with more than 4,100 hours flying, including 600 combat hours during the war in Vietnam. Among his career highlights, he has served as vice chairman of the Joint Chiefs of Staff, commander of the Strategic Air Command, and as commanding general of the United States Air Forces in Europe. He retired as chairman of the Joint Chiefs of Staff in 1997.

"As an engineer, I have been fortunate to work with some extraordinary people in some very challenging situations. My career has been filled with opportunities to solve complex problems and to lead teams of engineers.

"I believe that engineering is not just about solving technical problems. It’s about understanding the bigger picture and how our actions can impact the world around us. Engineering is about making a difference.

"I encourage today’s engineering students to think creatively and critically. Don’t just accept the status quo; challenge yourself to find better solutions. Engineering is about pushing the boundaries of what is possible and creating something new.

"Finally, I advise students to always be open to learning. The field of engineering is constantly evolving, and new technologies and methods are being developed every day. Keep an open mind and be willing to adapt to change.

"I hope that these thoughts and advice will be valuable to you as you continue your engineering education and pursue your careers.

"Thank you for this opportunity to share my experiences and thoughts with you. I wish you all the best in your future endeavors.

--by Mary Rankin

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Staley shared his belief that we deal with new technologies more frequently than ever before, and a technical education is a big advantage. His own engineering degree gave him good analytical and problem-solving skills. He learned how to think about new problems, approach, and solve them.

In the real world, very few people solve problems by themselves. "My engineering education," he said, "through team projects in labs and classes, prepared me well for the teamwork of the real world. The interplay of the coursework also taught me how to balance the other aspects of my life with the engineering workload. Much of this learning came about from making some mistakes. College is a wonderful place to be exposed to new opportunities, to stretch yourself, and to learn when maybe you try too much and something goes wrong."

To today’s engineering student, Staley offered this: "Do well at what you’re doing. If you don’t, you won’t have the opportunity to go to the next level. Be the best engineering student you can be right now. You won’t have a chance to do it over."

Another point: "Get involved in areas outside of your studies. Don’t just join any organization that comes along if you can’t be active in it. Know what you’re getting into, commit to it, and gain experience in a leadership role."

Commenting on his practices at Cargill, Staley said, "We look for people who’ve had experience in internships. If one is good, two are better. They help you find out what you want to do and what you’re good at. Summer employees give honest feedback about your on-the-job performance."

The engineers of the 21st century are going to have...
Gathering on the evening of Nov. 3, more than 130 guests, faculty, staff, and students of the College of Engineering took part in festivities of the annual Seaton Society Banquet. Following dinner in Hale Library, awardees were recognized in three categories: Kansas Faculty of Distinction, Professional Progress Awards; and the college's highest honor, the Hall of Fame—class of 2001. At the conclusion of the program, many attendees moved onto the Engineering Complex atrium for the annual Engineering Ball, sponsored by the College of Engineering Student Council.

Natural gas pipelines in this country transport natural gas from Kansas and the Gulf of Mexico to numerous locations throughout the United States. The pipelines are large, sometimes more than four feet in diameter, and operate at pressures up to 10,000 psi. At intervals of approximately 60 miles along each pipeline, a compressor station houses massive reciprocating engines, ranging from 3,000 hp to more than 10,000 hp each, that pump the natural gas through the system.

Almost any aspect of these large engines has been and continues to be the focus of research at the National Gas Machinery Laboratory (NGML), under the direction of Kirby Chapman, associate professor of mechanical and nuclear engineering.

While initially located in Salina, in a more supported by the city of Manhattan, K-State, and industry, the lab was relocated in 2000 to a new, 13,000-square-foot facility in Manhattan's industrial park. With substantial computational resources and a new and improved turbocharger test and research facility, three full-time staff, eight graduate research assistants, and nearly 20 undergraduate students work at the lab on a regular basis to improve the transport of natural gas through the nation's pipeline system. The lab is not only utilized for research activities, but is also used for classroom instruction.

"The infrastructure of our nation's pipeline system is quite old," Chapman said. "The pipeline and the engines were installed in the 1940s and have been operating ever since. Cost of this infrastructure exceeds $200 billion, making it impossible to replace these older engines with new ones. Hence, the industry's approach is to improve and retrofit new technologies rather than replace engines."

Primary funding at the lab comes from the private sector and the Kansas Technology Enterprise Corporation (KTEC). The private sector funding involves a consortium of U.S. pipeline companies, as well as several pipeline companies from Europe and...
Faculty of Distinction

Left to right:
David A. Schmidt, professor, computing and information sciences, The Bob and Betty Hope Engineering Chair
David R. Fitchen, dept. head and assc. professor, architectural engineering and construction science, The John R. and Dorothy M. Barnes Architectural Engineering Chair
Sutton F. Stephens, asst. professor, architectural engineering and construction science, The G.E. Johnson Construction Science Chair

Professional Progress Awards

Back row, left to right:
Ronald J. Minarcini, CE 1960, M.S. 1961
Richard L. Donaldson, EE 1965
Senior Vice president and general patent counsel, Texas Instruments—retired
Charles M. (Mike) Manley, EE 1973
Software entrepreneur, Silicon Valley Angel
Wayne J. Iese, Jr. 1978, Ph.D. 1980
Professor of industrial engineering, assoc. vice chancellor, executive assoc. dean, Texas A&M
Front row, left to right:
Donna D. Kottowitz, CE 1975
Manager of water supply management, Afgl Petroleum Co., Inc.
Neera Singh, CE 1983
Co-founder, Board of directors, MEC International

Back row, left to right:
Bill Brumgard, ME 1993
President, Brumgardt Benjamin B. Company
Don Suderman, Afgl 1978, M.S. 1981
Director of technical services, Busking Magnetic Co.
David Carr, CE 1981
Senior technical leader, Dow Chemical Company
Perry Hossfeld, CNS 1983
Co-founder, Lithos Contracting, Inc.

Front row, left to right:
David Douglass, ME 1981
President, Honeywell Federal Manufacturing & Technologies
Paul Kolbeck, IE 1969
Vice president, Colas, Inc.

energy transport system

Asia. The KTEC funds are used to match industry funds and to commercialize new technologies developed at the lab. Chapman explained.

"Because the engines that boost the natural gas are fueled by the same natural gas," he said, "they act as a necessary parasite on the pipeline system. Therefore, one of our areas of research focuses on increased efficiency in our methods of transport."

The Clean Air Act Amendment of 1990 brought more stringent emission requirements from the EPA. So while working to optimize efficiency, the lab must also strive to reduce emissions.

"The primary pollutant is nitric oxide," Chapman said, "which can lead to respiratory ailments if the concentrations are too high. While natural gas engines tend to be very clean burning, we continue working with the Mid-America Commercialization Corporation to investigate novel ways to create even cleaner combustion processes by focusing on the way that air flows into the engine and is mixed with fuel."

The lab recently received a grant from the U.S. Department of Energy to develop a computational system to simulate and optimize the nation's natural gas pipeline system. The project will include faculty from both computer science and mechanical and nuclear engineering and will require the services of six graduate research assistants.

"The objective," Chapman said, "will be to create a real-time simulator of the pipeline system that can be used to prevent situations like the recent one in California where that state could not receive enough natural gas to produce its electrical power needs. Our goal is to develop a system that will prevent that kind of catastrophe."

Research activities are guided by a group of industry professionals who meet with lab staff three to four times per year, and are targeted at ensuring the availability of a reliable source of natural gas now and in the future.

"Having a lab that targets one of Kansas' best resources while affording the opportunity to educate students directly for this industry is a definite benefit to the College of Engineering," Chapman said. "The state and much of the country also benefit by enjoying our research successes."

"Kerby's work at the NGLM is of real importance to the future of our nation's energy supply system," said Byron Jones, associate dean for research and graduate programs, and director of the College of Engineering Experiment Station. "His use of research funding not only brings wide recognition to the college, but also makes an important contribution to our society in general."

—by Mary Rankin
Dow/KSU Diversity Partnership formed

The Dow Chemical Company announced in October a commitment of $1.5 million to the K-State Foundation to establish the Dow/KSU Diversity Partnership.

On campus for the event and speaking on behalf of Dow was executive vice president Arnold Allemang, a member of the College of Engineering Advisory Council.

"Dow has funded multicultural scholarships and programs in K-State's College of Engineering since 1998," Allemang said. "Now we are very pleased to establish a diversity partnership with K-State that supports program initiatives in three colleges and several other areas."

Eight engineering students have received Dow Diversity Scholarships since 1999. Funding for the College of Engineering Multicultural Engineering Program and Women in Engineering and Science Program is included in the new partnership.

William Stavropoulos, chairman of the board of directors at Dow Chemical Company, addresses the audience in Fiedler Auditorium as part of the Provost's Lecture Series Sept. 28.

Hightower honored for 40 years of service

The state of Kansas has recognized Ray Hightower, assistant dean of student services for the College of Engineering, for his 40 years of public service.

Gov. Bill Graves presented a commemorative pin to Hightower and several other state employees Oct. 24, 2001, at the Kansas Capitol building to mark the occasion.

"It was an honor for the governor to take time out of his day and acknowledge our years of service," Hightower said.

Hightower has served the state and the university's College of Engineering as an instructor, assistant professor, assistant department head of nuclear engineering, and assistant director of the engineering experiment station. He has worked in the engineering student services office since 1976.

Because of the large number of students currently enrolled in the college, Hightower no longer teaches courses but serves full time as assistant dean. He provides coordination and direction of all student service functions related to academic issues and advising activities, from new student enrollment through graduation.

"This award recognizes Ray Hightower's impecable service to the university as well as the state of Kansas," said Terry King, dean of the College of Engineering. "In his 41 years, he has assisted thousands of students coming through our programs."

—by Jennifer Ryan

The value of a K-State engineering education

continued from page 5

to be "people with a broad perspective," as "engineers can tend to be too narrowly focused," he said.

"The engineering college at KSU is correctly focusing on group and team efforts in its classes," Stailey said. "Students need to take those classes with an understanding that we live in a changing world where there will be much discussion on how to achieve objectives. Engineers must develop strong communication skills, written and oral."

"I'd also recommend that every student take one basic course in biology and one in genetics before graduation. Biotechnology is going to change our world. We will deal with it in the rest of our lives," he said.

"It will take a basic knowledge of these subjects in the future to be able to participate in discussions about some engineering applications."

On changes since the events of 9/11, Stailey said, "What happened on September 11 merely pointed out the challenges that were already there. People must now think about life in a more diverse world. We all need to think harder about how we could improve the standard of living of people around the globe. Engineers will play a key role."
1961
Richard Steedman (EE) retired in November 2000 from his position as a facility and engineering manager at Texas Instruments in Dallas, Texas.

1964
David Dodson (NE) retired from a 35-year career as a software development engineer. He recently earned a master’s degree in Christian education at Dallas Theological Seminary. He and his wife, Darla, are serving as missionaries in Africa. P.O. Box 80, Kijabe, Kenya, East Africa.

1957
Larry Martin (EE) was listed in the North Bay Business Journal as one of the “Fathers of Telecon Valley.”

1970
Randy Ellis (ME) was named vice president and chief information officer of FMC Technologies, a spin-off of FMC Corporation. randall.ellis@fmc.com.

1982
Jim Verrill (CE) is currently a senior construction engineer for the MNLG Tiga project in Benuhu, Sarawak, Malaysia. He recently celebrated his 15-year anniversary with Kellogg Brown and Root. evb@pdjizying.my

1984
Danny E. Minks (ME) and his wife, Joloth, announce the birth of their daughter, Ashley Joloth, on Sept. 10, 2000. Ashley joins a sister, Emily, and a brother, Danny. Dan is a principal staff mechanical engineer with Motulac in Scottsdale, Ariz. 2003 E. Finley St., Gilbert, AZ 85296.

Todd Vest (ME) graduated from Rensselaer with his master’s and doctoral degrees in mechanical engineering. He joined General Motors in 1989 and is an engineering group manager in the materials department. Todd has been married to his wife, Sharon, for nine years. They have two children: Kolly, 6, and Michael, 4. While Todd currently lives deep in Big 10 country, he is an avid K-State football fan with a purple pennant in his office.

1985
Gretchen Williams (ARE) recently was married to Jim Coleman. She and her husband manage the East Coast branch of Engineering Economics, Inc., in Roanoke, Va. Gretchen has been with EEI for 10 years, gretchencoleman@msn.com.

1988
Michael Osborne (EE) and his wife, Pam, announce the birth of their third child, Heather Ann. Heather joins six-year-old Nick and four-year-old Holly. Michael is an advisor engineer with IBM Corp. in Rochester, Minn. rochor@worldnet.att.net.

Lisa Fiele (CHE) recently became a partner at Decision Strategies, Inc., as a decision process specialist. lfeile@decisiostrategies.com.

1989
Jay Angleyer (CE) and his wife, Arzu, announce the birth of their son, Logan Samuel, on March 9, 2001. Logan was welcomed by his two-year-old sister, Lauren.

1991
Kevin Fischer (EE) and his wife, Leslie, announce the birth of their daughter, Abigail Ann, on May 16, 2001. Abigail was welcomed by her brother, Andrew Stephen, who was born on March 22, 1999. Kevin is employed with Boulton Northern Santa Fe Railway as an information systems developer.

1992
Udya Talwar (EE) was promoted to vice president of supply chain management at PerkinsElmar. He recently completed his master’s degree in business administration at Loyola College. He and his wife, Smita, have an eight-month-old son, Saif. 2004 Willow Glen Ct., Crofton, MD 21114.

1994
Bryan Johnson (CIS) and his wife, Joanna (Reading) (CIS), announce the birth of their first child, Rachel Mae, on May 11, 2001. Bryan is working for OAO Corp., as a computer network defense analyst in Colorado Springs, Colo. Joanna works as an independent Web design consultant and stays home to care for their daughter.

Raymond J. Kaiser (ET) and his wife, Jackie, welcomed their son, Kelley Elmore Kaiser, on Dec. 27, 2000. The family also purchased their first home in Odette, Kan., in June 2000. Raymond was promoted to an engineering technician for the Honeywell Corp. in July 2000. In December, Raymond received his Six Sigma Green Belt certification at the company, which is a program used to reduce cycle time of an operation.

1998
Shirley Robinson (CB) married Brandon Walker on April 28, 2001, in Fairfield, Kan. Shirley is an associate system developer with SAS Institute, Inc., in Cary, N.C.

Chris Hansen (NE) graduated from the Massachusetts Institute of Technology in December 2001 with a master’s degree in technology policy. He was married on July 28, 2001, to Ulka Joshi of Millington, N.J. He and his wife have moved to England to pursue doctoral degrees. chhansen@mit.edu

1999
Mark L. Williams (ME) is a first lieutenant in the U.S. Air Force. He recently received his aeronautical rating and pilot wings upon completion of joint specialized undergraduate pilot training at Vance Air Force Base, Okla. He is flying the F-22 Raptor at Randolph Air Force Base, Texas.

Deaths
1932
Robert (Bob) Wayne Cunningham (CE) died March 21, 2001, in Sedalia, Mo. He worked for the Kansas State Highway Department, and then served in the U.S. Army as a lieutenant colonel during World War II. He also served with the U.S. Army Reserve in Africa. He worked as the city engineer and then city manager of Emporia, Kan., from 1950 to 1960. He served as the Sedalia city engineer from 1960 to 1967 and as the city’s director of public works from 1967 to 1991, when he retired. He is survived by his wife, Hazel Hauser Cunningham, and two sons, Gary and Jack.

1950
Jerome Jay Wilson (AgE) died June 17, 1998. He worked as an engineer for Boeing in Seattle, Wash., for 33 and one-half years.

Kevin M. Peirce has joined the K-State College of Engineering as a development officer charged with major gift solicitation. In this capacity he will present and market the objectives, achievements and needs of the college. Peirce is a 1992 graduate of K-State with a B.S. degree in hotel and restaurant management. His employment background includes serving as vice president of Furlong States and as restaurant manager for the Hyatt Regency in Colorado, as well as managing Harry’s Uptown restaurant in Manhattan. He and his wife, Krissie, also owned and operated the bed and breakfast establishment, Fairchild Inn, located two miles from the K-State campus.

He has been active in area community programs including the Aggieville Business Association, Chamber of Commerce, and the Manhattan Bed and Breakfast Association.

“We are pleased to have someone with Kevin’s qualifications join our development team,” said Terry King, dean of the College of Engineering. “I’m sure with his contributions, we will continue to expand our success in this area.”

Peirce joins team as development officer

Kevin M. Peirce
Impact

Three in a row for 1999-2000

College of Engineering - Kansas State University - Fall 2001