

Impact



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Dieter Myers and Kelli Simmelink

Impact

A “sedimental” journey

“I like the idea of sustainable systems. If we can mimic Mother Nature and how she has sustained herself, we have a better chance of sustaining our lives.”

This is the philosophy of Stacy Hutchinson, assistant professor of biological and agricultural engineering. And support of that contention is evident in her current research at Ft. Riley involving tank training maneuvers, soil erosion, and water quality.

Funded by the Strategic Environmental Research and Development Program, whose combined monies come from EPA, DOD, and DOE, Hutchinson is in year one of a four-year, \$1.3 million project. She and co-PIs, biological and agricultural engineering professors James Steichen and Naiqian Zhang, are studying soil erosion processes occurring at tank training grounds at Ft. Riley.

During maneuvers, the tanks tear up the ground and destroy the grass cover. Rain-produced runoff carries the sediment off the field and eventually into the nearby water source. In the case of Ft. Riley, this means the sediment enters Three-Mile Creek, a tributary of the Kansas River.

“Sediment, by mass,” Hutchinson said, “is the largest non-point source pollutant we deal with in the nation. Each state must now set a total maximum daily load (TMDL) of sediment allowed in a river branch without impeding the intended use of water.

Eventually, these limits will be enforced with fines by the EPA. This is particularly important in Kansas, as we drink our surface water.”

Thus the research is a two-part process—determining how much sediment is getting into the streams, and how to best prevent it from doing so. The sediment itself is detrimental because too much of it reduces light penetration through the water, whereby plants don’t grow, and fish and aquatic life lose their

food source.

“We are also looking at the type and amount of pollutants in the sediment,” Hutchinson said. This includes petroleum by-products from the tank activity, phosphorous and nitrogen runoff from agricultural activity on adjoining leased farmland in the area, and even fecal bacteria from local wildlife—deer, turkey, and elk herds.

A secondary goal, besides meeting TMDL limits, is preservation of the Topeka Shiner, a fish, protected under the Endangered Species Act, which lives in the tributaries of the Kansas River.

“Ft. Riley has one of the largest populations of this fish in the state of Kansas,” Hutchinson said. “If there’s too much sediment in the water, it can’t survive.”

Determining amounts of sediment involves fieldwork and lab experiments. Fieldwork generates samples, which are brought back to an analytical wet lab in Seaton Hall. Results from bench-scale experiments there generate ideas that send the researchers back to the field.

On the prevention side, Hutchinson and her team are looking at vegetative buffer zones that slow runoff precipitation and trap the sediment before it reaches the water source. They are developing three field sites adjacent to the tank training grounds with different lengths, slopes, and types of vegetation.

“We’re going to help Ft. Riley determine how much vegetation it will take to settle out the sediment from this tank activity,” Hutchinson said. “How long does the buffer zone need to be? What plant types work best? What slope is most effective?”

“We will develop a decision tool so the military can better understand the effect of their training exercises on the environment. Results of this research will help us develop natural means for protecting our water systems, while still being able to promote military readiness and national security—which of course is important too.”

In the short term, data from this research will be shared with other military installations to help them understand the most effective functioning of buffer zones in terms of slope, length, and type of vegetation. In the longer scenario, Hutchinson hopes to look at buffer effectiveness across the landscape—near agriculture fields, and in suburban areas and urban centers.

“Right now, Topeka, Overland Park, and Lenexa have instituted buffer ordinances,” Hutchinson said, “whereby new development projects in a city must buffer their surface streams with native vegetation.”

continued on page 7



Message from the Dean



As engineering educators, we sometimes get locked into thinking that our business is preparing lectures, giving exams, evaluating projects, and doing research. But in reality, our discipline exists to serve society. Sometimes it is good to get away from the classrooms, laboratories, and computers, take a step back, and see what impact we're making on the world around us.

In many ways, this spring issue of Impact affords us just that view, through the stories

on activities of our faculty, alumni, and students.

Stacy Hutchinson, while focused on a research project here in eastern Kansas, will likely produce results that will affect water supplies in the state, the nation, and around the world.

Peter Pfromm, from his laboratory in Durland Hall, is helping to develop the next generation of biotechnology that will expand the ability to improve our quality of life.

Tom Logan was called to service halfway around the world in order to apply his engineering and construction expertise on a runway project that will aid in the defense against terrorism.

Ed and Eunice Wambsgans built a successful engineering enterprise to provide needed facilities for a safe and productive society, and now have turned their attention toward investing in the next generation of engineers. We also see evidence of that investment in the names of the Seaton Society members and reported success of the Telefund drive.

The students have captured this vision of the link between engineering and the betterment of society, as they recently hosted the 82nd annual Engineering Open House with their chosen theme of "Making Tomorrow Possible." We try to make sure our scholars are sufficiently inspired for their engineering careers by bringing in speakers like astronaut, Franklin Chang-Diaz, and aerospace engineering professor, Robert Ash. And we also challenge their future planning when we honor an alumni fellow, distinguished service awardee, and leader of the year, and bring these individuals in to interact with and address our young people.

Gordon Brown, MIT dean of engineering, 1959-68, perhaps said it best, when he penned, "Engineering is not merely knowing and being knowledgeable, like a walking encyclopedia; engineering is not merely analysis; engineering is not merely the possession of the capacity to get elegant solutions to non-existent engineering problems; engineering is practicing the art of the organized forcing of technological change . . . Engineers operate at the interface between science and society . . ."

We must enter that arena, keeping this larger vision in mind.

Terry S. King
Terry S. King, Dean

SEATON SOCIETY

Seaton Society members are those who contribute \$500 or more annually to any area in the College of Engineering. The college recognizes the following 2003 members:

Founders Level: The Seaton Society awards lifetime membership to its founders. Each has made a commitment in excess of \$100,000 to engineering education excellence.

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That K-State

connection

It's that "Kansas" thing—that intangible quality that can mark who we are and what we're capable of becoming.

Ed Wambsganss, CE '62, put it this way: "I feel my parents and my upbringing on a Kansas farm was like a plant that was placed in fertile ground."

His wife, Eunice, added: "I don't think people in every part of our country are as blessed as Kansas people in growing up where we did. We were very blessed that our parents worked hard, taught us to work hard also, and gave us the opportunity for Eddie to go to college."

And it's also a "Kansas State" thing, as Ed added, "K-State fertilized, watered, and cared for me until I was able to show promise. Eunice and I have a clear conviction that our country will only remain strong if we reinvest in our young people. We think K-State does just that."

The Wambsganss, true to their beliefs, have made that investment commitment to young people and K-State through a series of significant gifts to the Dean's Program Enhancement Fund and a recent generous bequest to the College of Engineering that will benefit faculty and students for years to come.

Ed began his career right after graduation when he was recruited and hired by a Kansas general contractor who at that time "only hired from K-State." Martin K. Eby, CE '29, had just received a contract for his firm to build Titan missile bases in and around Wichita. For the next 10 years, Ed worked with Eby Construction at several locations in several different states.

"My experience working with Mr. Eby was invaluable. I learned how to do things the right way," Ed said. "It was about people first, respecting them and their families and what was important to them. K-State provided my technical capability, and this fellow K-Stater taught me what I needed to start up a successful construction company—to be able to provide opportunities for others, as well as build facilities that a vast number of people were able to use and appreciate."

Ed and Eunice started their own small construction company from the bedroom of their home in Denver, Colo., in 1973. Eunice handled receptionist duties, payroll, and accounts receivable, while filling duties of runner, housewife, and mother of three.

The business grew quickly. "The harder we worked, the luckier we got," Ed said. "Over the next 10 years we moved that office from our bedroom three more times, and Eunice was able to go back to being a full-time wife and mother."

The company built varied projects throughout Colorado from office buildings to bridge and highway work, to water and wastewater operations—a sector they eventually specialized in, in Colorado and surrounding states.

In recent years, Ed merged his company, Western Summit, with TIC, another major heavy industrial firm, which he said had "the same cultural and core values" as he and Eunice. He stayed on with day-to-day operations for a few years and since leaving has been active on the board of directors of the parent company, as well as serving on advisory boards of a few other construction companies.



Eunice and Ed Wambsganss

K-State and again from my fellow K-Stater, Mr. Eby, who hired me." Must be that "Kansas" thing . . . that "Kansas State" thing . . .

—by Mary Rankin

Love named Alumni Fellow

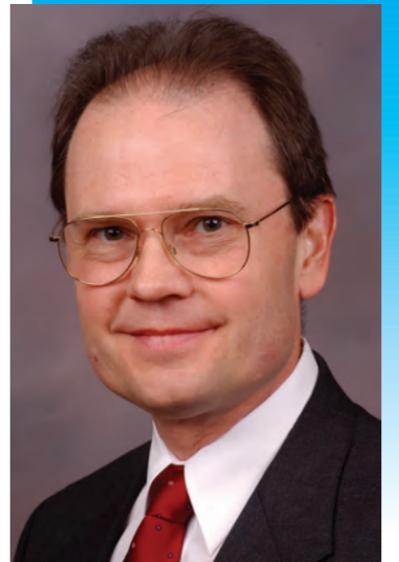
Scott D. Love, ChE '80, has been named the 2004 College of Engineering Alumni Fellow in recognition of his distinguished career. He is a fellow in the research and development group of Downstream Technology at ConocoPhillips.

He began his career with Phillips Petroleum Co. in 1980 at their Borger, Texas, refinery as a process engineer, next moving to Bartlesville, Okla., in 1987 to do process design in corporate engineering for the firm.

In 1991 he was promoted to technical director at Phillips' specialty chemicals plant in Borger, Texas, and then returned to Bartlesville to work in research and development in 1993.

Love was elected director of the American Institute of Chemical Engineers for 2003-2005. A native of Overland Park, Kansas, he was honored with the College of Engineering Professional Progress Award in 2000.

"Scott Love has had an impressive career with ConocoPhillips," said Terry King, dean of the College of Engineering. "It was an honor to have him on campus in February to interact with our students and represent to them the



Scott Love

Cargill Fellowship: A 'catalyst' for advancement



Peter Pfromm

Initiating and strengthening ties between researchers in the College of Engineering and researchers and engineers at Cargill in the area of bioprocessing. This is the purpose of the \$25,000 Cargill Faculty Fellowship recently awarded to Peter Pfromm, associate professor of chemical engineering.

"The research and education aspects of this fellowship," Pfromm said, "should serve as a 'catalyst' to advance bioprocessing through both science and human resources."

One of the oldest technologies devised by mankind, ancient times examples of bioprocessing still used today include fermentation to provide wine and beer, use of yeast to leaven bread, and pickling to preserve certain foods.

"The common characteristic of bioprocessing," Pfromm said, "is that we use whole organisms or parts of their molecular 'machinery' to produce desired molecules."

"In the modern sense, bioprocessing encompasses the production of useful molecules using living things (ranging from microorganisms to cells, and to whole organisms like plants) or certain pathways devised by these living things."

He cited modern examples such as ethanol as fuel, penicillin as an antibiotic, human insulin for diabetics, biodegradable plastics, laundry detergent enzymes, and the hepatitis B vaccine. Ongoing work in the laboratories at K-State involves using enzymes to produce fragrances from by-products of wood processing, and converting lactose to oligosaccharides, a "functional food" with beneficial effects for humans. Other exam-

ples of bioprocessing in the College of Engineering can be found at <http://www-personal.ksu.edu/~pfromm/cargill.html>, a Web site created by Pfromm.

Pfromm, who has a master's degree in process engineering from the University of Stuttgart, Germany, and a doctorate in chemical engineering from the University of Texas at Austin, said resources provided by the fellowship will allow him to involve more undergraduate and graduate students in bioprocessing research.

"Everyone involved in bioprocessing in the College of Engineering will do their best to show ourselves worthy of the continued trust and engagement by Cargill."

"I feel honored by this opportunity. It is industry's strongest statement of confidence when a company invests resources in academia," he said.

Pfromm is a recipient of the 2002 Scientific Excellence Award from the National Textiles Center, holds two patents, and has authored or co-authored numerous journal publications and two books.

Cargill, Incorporated, an international marketer, processor, and distributor of agricultural, financial, food, and industrial products and services, is a strong supporter of the College of Engineering. Other funding and gifts to the college include scholarship support, the Cargill Advanced Technology Classroom and Cargill Video Projection Carts and upgrades, and the Cargill Multicultural Engineering Mentor Program and Lecture Series.

—by Mary Rankin

Open

H O U S



(clockwise from above) Dean Terry King, left, ARE/CNS department head, Dave Fritichen, center, and Stubby Thorson, right, former ARE/CNS department head, reconnect at retired faculty reception; Don Gemaehlich, EECE alumn, left, chats with Assoc. Dean Rich Gallagher, right, at faculty reception; Kelly Simmelink, sr. IMSE and 2004 St. Patricia, waves to the crowd; and Willie the Wildcat dons a Steel Ring blazer and joins the parade festivities.

Lt. Commander/Instructor—Logan



Tom Logan

Imagine, in one day, going from snow cover to 90-degree heat with 95 percent humidity, or from all the creature comforts of home to tents, cots, and two-gallon, solar-heated water bag showers. Throw in a few snakes and interesting insect varieties, and rice every meal, and you'll start to get the picture of Tom Logan's recent Navy Civil Engineer Corps two-week assignment in the Philippines.

Logan, an instructor in architectural engineering and construction science at K-State, departed Manhattan Feb. 20, deployed on a two-week joint military operation assigned to rebuild an airfield runway in Magsaysay, the Philippines, to combat terrorist activities in the region. A Lt. Commander in the Naval Reserves with 28+ years of both active and reserve military service, Logan served as supply officer for the 400 active duty and reserve troops assigned to the runway project.

"I was in charge of logistics," he said, "-getting people and supplies to the right locations at the right time to move the airfield project along."

Part of his unit's training exercise, Logan said, was "to see if we could be integrated into a military construction scenario and accomplish something positive using both our construction skills and our military skills. There is a real need for this type of construction support to be able to be

effective anywhere in the world with little or no notice."

The Balikatan Exercise '04 was actually begun in the Philippines in the 1990s, but due to a breakdown of U.S.-Philippine relations and extensive damage to the base there from volcano eruptions, the U.S. left the area. Following events of 9/11 and the kidnapping of American missionaries Martin and Gracia Burnham, the U.S. has gone back into the area as support against al-Qaida-linked terrorist groups spreading into the country from nearby Malaysia with a goal of establishing a separate Islamic fundamentalist state.

"When the airfield is completed," Logan said, "it will be used for training exercises by both the Philippine army and U.S. forces in preparation for a possible intervention of foreigners and an uprising against the government."

While Logan was in the Philippines, his ARE/CNS department head, Dave Fritichen, and fellow instructor, Sabrina Sandburg, were covering his classes back at K-State.

A key component of successfully combining a civilian career and reserve military duty, Logan said, is planning ahead and having an employer who will work with you in meeting the demands of your military commitment.

"Understanding the value of long-term planning is one



(clockwise from far left) Award-winning quarter-scale tractor pulls BAE float in Open House parade; young visitors check out the mechanics of solar car, Catalyst; CE display of gumdrops and toothpicks challenges the building skills of this pair; family group enjoys a turn at a flight simulator during MNE tour; MNE skit features a "Flintstones' frolic"; medical mayhem or good medicine--EECE students examine the question; annual CE-sponsored bridge building event a high-light for high school teams; and large crowd takes in skit antics in front of Seaton Hall.

'04

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2004 Open House Awards

- Outstanding Department Award--ARE
- Yellow Brick--ARE
- Freshman Sophomore Display--CNSM
- Curriculum Display--CNSM
- Technical Display--BAE
- Limited Class Display--ARE
- Open Class Display--CNSM

St. Pat and St. Patricia

- St. Pat--Dieter Myers, sr., ARE
- St. Patricia--Kelli Simmelink, sr., IMSE

Engineering Banquet Awards

- Advisor of the Year--Tom Logan, instructor, ARE/CNSM
- W. Leroy Culbertson Steel Ring Leadership Scholarship--Audra Dudte, sr., ARE



pulls double duty

of the lessons from my military experience that I try to stress to my classes," Logan said. "Another is a learned trait that a leader takes care of his charges. I have a deep level of care for my students that is not only reflected by my interest in their academic success, but in building strong personal relationships with them as well."

Evidence of this is Logan being named Steel Ring's Advisor of the Year for 2004, a student-nominated and student-elected distinction.

"I'm really honored by this," he said, "and I hope it reflects my commitment to them and their future as engineers and construction specialists."

Logan said he was able to use one aspect in particular of his recent Philippine experience in his Construction Operations class. He showed the students slides of the airfield project in Magsaysay, pointing out to them that it's one thing to complete a building project in Kansas City, but quite another to do so in an entirely foreign environment.

"I wanted them to realize there are construction and engineering jobs all around the world, and you can't always count on being able to do things like they're done in the U.S.," he said.

Logan said it is "a real challenge" at this stage of his life

to be a good employee, spouse, parent, and still perform his Navy job "every day of [his] life." His unit, based in Shreveport, La., maintains a full-time construction battalion operation but only meets two days a month. That translates to many hours of evening and weekend work maintaining correspondence, etc., to keep the operation running and ready.

While his father was not in the military, his father-in-law, grandfather, and several uncles all served. And his son, Ryan, a member of the Army National Guard, recently returned from a year's deployment for the war in Iraq.

"I guess you could say military service is a priority in our family," Logan said. "And my strong rapport with my department head and support from the College of Engineering certainly makes it easier to do this dual duty of instructing students and serving our country."

—by Mary Rankin



Tom Logan, above center, shares a stop at ARE "Wheel of Fortune" display with visitors at Open House 2004.

Company/Leader of the Year



Dean Terry King, left, receives a check from Rand Berney, ConocoPhillips, when representatives from the company made a campus visit April 14. The \$250,000 will be shared between the Colleges of Engineering and Business, the Office of the President, and Career Services. The gift to the College of Engineering was divided as follows: Office of the Dean, \$25,000; general support; ChE, \$25,000, ME, \$10,000, and EECE, \$10,000; scholarships/fellowships: ChE, \$22,500; ME, \$22,500; and special programs: MEP, \$15,000 and WESP, \$7,000.

In a separate recognition, Tau Beta Pi named ConocoPhillips as its 2004 Company of the Year, and Rand Berney as its Leader of the Year. ConocoPhillips is an international, integrated energy company, with 39,000 employees worldwide. Berney, a 1977 graduate of K-State in accounting, is a controller at ConocoPhillips, headquartered in Houston, Texas.

Career fair



Marcellus Seamster, jr. in computer science, right, talks with an ExxonMobil representative at the College of Engineering Career Fair, Feb. 10 in the Engineering Complex atrium. Nearly 20 corporate and government employers met with students at the annual event sponsored by the college, the Multicultural Engineering Program, and K-State Career and Employment Services.

ChemE department under new leadership



Mary Rezac

Mary Rezac, professor, has been named head of the department of chemical engineering, the first woman to hold such a position in the College of Engineering.

"We are extremely pleased to welcome Dr. Rezac to our leadership team," said Terry King, dean of the college. "Her credentials are impeccable, and she has demonstrated skills in leadership, administration, research, and teaching."

Rezac joined the faculty at Kansas State in 2002 as an associate professor in chemical engineering. Prior to this, she had been an associate professor in the school of chemical engineering at the Georgia Institute of Technology, Atlanta. Her areas of expertise include polymer science, and membrane separation processes and their applications to biological systems and environmental control.

"This is a time of tremendous opportunity for the chemical engineering profession in general and Kansas State University in particular," Rezac said. "I look forward to working with the faculty, students, alumni, and friends of the department as it continues to grow and evolve. I'm very impressed by the dedication of these groups to the continued success of this department."

Rezac earned her B.S. in chemical engineering from Kansas State in 1987, and completed both an M.S. and Ph.D. in that discipline from the University of Texas at Austin in 1992 and 1993, respectively. She has more than 50 publications to her credit and is a joint-inventor on two patents. She has directed research projects funded by the National Science Foundation, Department of Agriculture, Department of Energy, American Chemical Society, Environmental Protection Agency and others. During her academic tenure she has guided the research of more than 40 undergraduate and graduate students.

Coffee shop



Students gather between classes at the Campus Grounds Espresso, a new coffee shop that opened in January in the Engineering Complex atrium. Items served include espresso and coffee drinks along with teas, hot chocolate, and a variety of pastry items. Though run by a private company, a portion of the espresso bar's profits are returned to the college for support of student groups.

Growth, advancement expected for WESP



Kimberly Douglas

"K-State's Women in Engineering and Science Program, WESP, with its national visibility, has built a solid foundation for making a difference in the lives of women and girls. It is exciting to accept this position with the Colleges of Engineering and Arts and Sciences, and contribute to a strong and vital scientific and engineering workforce for the future."

These are the words of Kimberly Douglas, newly hired director of the Women in Engineering and Science Program. Assuming her duties March 1, Douglas came to Kansas State from Oregon State University, Corvallis, Ore., where she was an associate professor and associate department head for undergraduate operations in industrial and manufacturing engineering.

"We are extremely pleased to have Dr. Douglas at the helm of this program," said Terry King, dean of the College of Engineering. "Her background and enthusiasm for WESP's goals are sure to be an asset in attracting more young women to our engineering and science programs."

Established in 1999, the Women in Engineering and Science Program is a joint venture of the Colleges of Engineering and

Arts and Sciences designed to assist in the recruitment and retention of women in science, mathematics and engineering disciplines. The program provides mentoring and career advising for undergraduate and graduate women, and conducts outreach activities funded by federal agencies and corporate sponsors for middle school and high school girls.

"Dr. Douglas' credentials represent well her ability to serve as a role model for young women who will choose to pursue studies in the sciences and engineering," said Stephen White, dean of the College of Arts and Sciences. "I'm confident WESP will continue to thrive under her leadership."

Douglas completed her Ph.D. in industrial and management systems engineering at Arizona State University in 1993, and received both her M.S. and B.S. in that discipline from Oklahoma State University in 1989 and 1987, respectively. She is a registered professional engineer in the state of Oregon and currently serves as an Accreditation Board for Engineering and Technology evaluator for the Institute of Industrial Engineers.

Alumni News

1950

Robert B. Thorn (CE), a partner in Finney & Turnipseed, Transportation & Civil Engineering, L.L.P., has been selected as an honorary member of the ASCE, the society's highest honor. He is only the 552nd person to be inducted in 150+ years of the organization. He was also elected vice-president of ASCE's Zone III, representing 13 Midwest states, Mexico, and Central Canada. He and his wife, Bernita, live in Topeka and have two grown children and four grandchildren. bthorns@cox.net

1957

Leon Heidebrecht (CE, TE '64) spent 27 years with the DOD in Virginia as a senior transportation engineer. He retired to Florida in 1991. 914-697-8593

1964

Larry D. Loomis (IE) has retired after 33 years in commercial banking. He and his wife, Randee, have moved to Manhattan, Kan., and are looking forward to golf games and attending K-S state events. Larry is also a docent-in-training at the Konza Prairie Biological Station. 785-587-9394

1970

David Gorman (EE), Topeka, is employed by Westar in the transmission line design group.

1978

Dale E. Swink (ARE), P. E., S.E., founded DES Engineers, P.C., Meridian,

Idaho, in September 2000. The firm performs structural engineering for architects, contractors, owners, and government agencies. dale@desengineers.com

1980

Terry C. McGugin (EET), Merritt Island, Fla., is manager of parachute operations at Kennedy Space Center, currently working towards "return to flight" of the space shuttle. mcgugin@usa-spaceops.com

1989

Robert Marshall (EE) and his wife Shelley, Overland Park, Kan., adopted a baby boy, Carson Eduardo Marshall, on Oct. 28, 2003. He was born Nov. 28, 2002, in San Marcos, Guatemala. Robert is currently working as a software engineer for Celeritas Technologies.

1992

John Pickett (ME) and his wife, Chris (DVM '94), Shawnee, Kan., announce the birth of a son, Noah James, on Nov. 28, 2003. He joins sister, Alicia, and brother, Joshua. 913-422-8478

1994

Clayton Walenta (ME, MS '98) is a lead engineer in the core engine section of Cat Electronics, Caterpillar Inc., Peoria, Ill. He entered 6 Sigma Black Belt Training in January 2004, and would also like to announce the birth of his first child, Grace Delaney, on Sept. 24, 2003. ckone2000@insightbb.com

Deaths

Donald R. Hummels died Feb. 19, 2004, in Manhattan, Kan. He joined the K-State electrical engineering faculty in 1970 as an assistant professor, after completing B.S., M.S., and Ph.D. degrees from Arizona State University. He was promoted to associate professor in 1974 and full professor in 1981. From 1982 to 1989, he served as department head. He retired in May 2001. He was appointed the LeRoy Paslay Professorship in 1988 and won numerous teaching awards while with the college. Hummels is survived by his wife, Kay, three daughters, two sons, and 10 grandchildren. Memorials may be made to the KSU Foundation for the Donald R. Hummels Electrical and Computer Engineering Scholarship Fund.

1929

Glade W. Hurst (EE), Kansas City, Mo., died July 27, 2002.

1935

A. Neil McCormick (ChE), Yarrow Point, Wash., died Aug. 25, 2003.

1947

Theodore W. Shidler, Jr. (ME, MS '48), Salem, S.C., died Nov. 8, 2003.

1956

Donald E. Schnieder (CE), Wichita, Kan., died Dec. 20, 2002. He was a Durham School Services bus driver and retired civil engineer for the city of Wichita. He is survived by his wife, Joyce, two sons, and two grandchildren.

1957

Charles R. Myers (ARE), Mission, Kan., died Jan. 31, 2004. He was president of Myers Brothers, which designed, sold, and serviced automotive and industrial equipment in the Midwest, and was also a founding partner of the Heartland Group, an automotive representation firm. He is survived by two daughters, and one brother, Richard (ME '65), chairman of the Joint Chiefs of Staff.

Keep Connected

Take a few minutes to jot down job changes, births, deaths, professional or other activities, your retirement, or remembrances you'd like to share. Send your news to *Impact* by mail, e-mail, or fax, as listed below.

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"Sedimental" journey

continued from page 1

Towards that end, she is currently teaming up with the Water Pollution Control Division in Topeka to explore potential pollutant-removal rates and design standards using bioretention cells. These are vegetated depressions designed to handle runoff directed from parking lots and other areas with impervious surfaces. Contaminates are removed from the runoff as it passes through the vegetation and underlying soil, and then is either discharged through drains at the bottom of the cell or allowed to enter the groundwater supply. This research is partially funded by the USDA National Agroforestry Center, the Kansas Center for Agriculture Resources and the Environment, and the K-State Agricultural Experiment Station.

With three degrees in civil engineering—B.S., Montana State University and M.S. and Ph.D., Kansas State, Hutchinson said she's always found the interface of biology and dealing with natural systems offered in biological and agricultural engineering a good fit.

"I've never liked the concept," she said, "of my children or grandchildren having to deal with the consequences what I might create through changes of chemical structure, etc. I mean, we all thought at one time that Freon was the answer to all our problems.

"We need water. Clean water. Mother Nature knows what she's doing. The more closely we are able to imitate her in the handling of our water issues, the more likely we'll be able to treat our problems successfully."



Tank maneuvers take toll on soil.

—by Mary Rankin

Memories from an Open House past



Alumnus Henry F. Schrader (IE '50) wrote "bearing gifts," i.e., the above knife sharpener, a promotional item for the 1949 College of Engineering Open House, crafted in one of the machine shop courses using WWII surplus machinery. Schrader wrote, "After reviewing the two-page spread of the 2003 Engineering Open House, it is making the 1949 Open House look like a bunch of fledgling amateurs." Now living in Lombard, Ill., he went on to share that his shop courses "were of great value" as he "spent 36 years in the safety profession with the largest writer of workers compensation insurance in the country." Adding that "many of the safety devices most people take for granted and we all use daily were pioneered by my employer."

Impact

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Editor

Mary Rankin

Art director

Rich Gardner

Graphic designer

Bob Davis

Photographer

Dan Donnert, Al Rankin



From Kitty Hawk to Mars

Secrets of the Wright Brothers explored

Orville and Wilbur and Kitty Hawk, N.C- familiar names in the history of manned flight were the topic of Robert Ash's presentation, "Uncovering the Secrets of the Wright Brothers," for the Eyestone Lecture on Dec. 1.

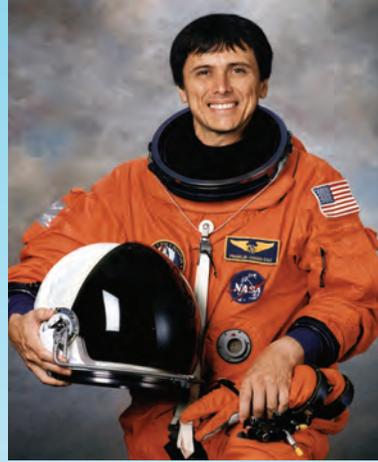
Ash, a professor of aerospace engineering and interim vice president for research at Old Dominion University in Norfolk, Va., was heavily involved with testing of the reproduced flying machine used in the re-enactment of the 50th anniversary of the Wright brothers' first flight on Dec. 17.

A 1963 mechanical engineering graduate of K-State, Ash went on to complete both his master's and doctorate in mechanical engineering from Tulane University. While at K-State for the lecture, he also visited an aerodynamics class in the department of mechanical and nuclear engineering.

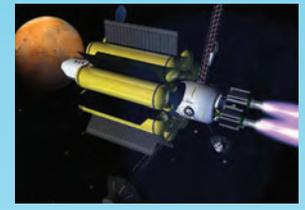
The Eyestone Lecture Series, established in 2000, is funded by an endowment from the late Fred and Mona Eyestone. Fred Eyestone, a 1941 K-State graduate in electrical engineering, was a member of the College of Engineering Advisory Council and a recipient of K-State's Distinguished Service Award.



Robert Ash



Franklin Chang-Dias



Hispanic astronaut speaks on Mars mission

Astronaut Franklin R. Chang-Diaz brought audience members "closer to Mars and the stars" at a speech April 14, sponsored by the Society of Hispanic Professional Engineers and

the Cargill Multicultural Engineering Mentor Program and Lecture Series. He spoke on the topic of "Extended-Duration Missions Beyond Earth's Orbit," which focused on the first human-operated mission to Mars scheduled for May 2018.

Chang-Diaz, the first Hispanic NASA astronaut in space and a native of Costa Rica, is director of the Advanced Space Propulsion Laboratory at the Johnson Space Center. He received a bachelor's degree in mechanical engineering from the University of Connecticut in 1973 and a doctorate in applied plasma physics from the Massachusetts Institute of Technology in 1977. He is a veteran of a record-tying seven space flights and has logged more than 1,601 hours in space, including three space walks.

The Society of Hispanic Professional Engineers is the largest national organization for Hispanic professionals and students in engineering, math, and science, and promotes the development of Hispanics in engineering, science and other technical professions. The K-State chapter was founded in 1989 and includes about 40 members.



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