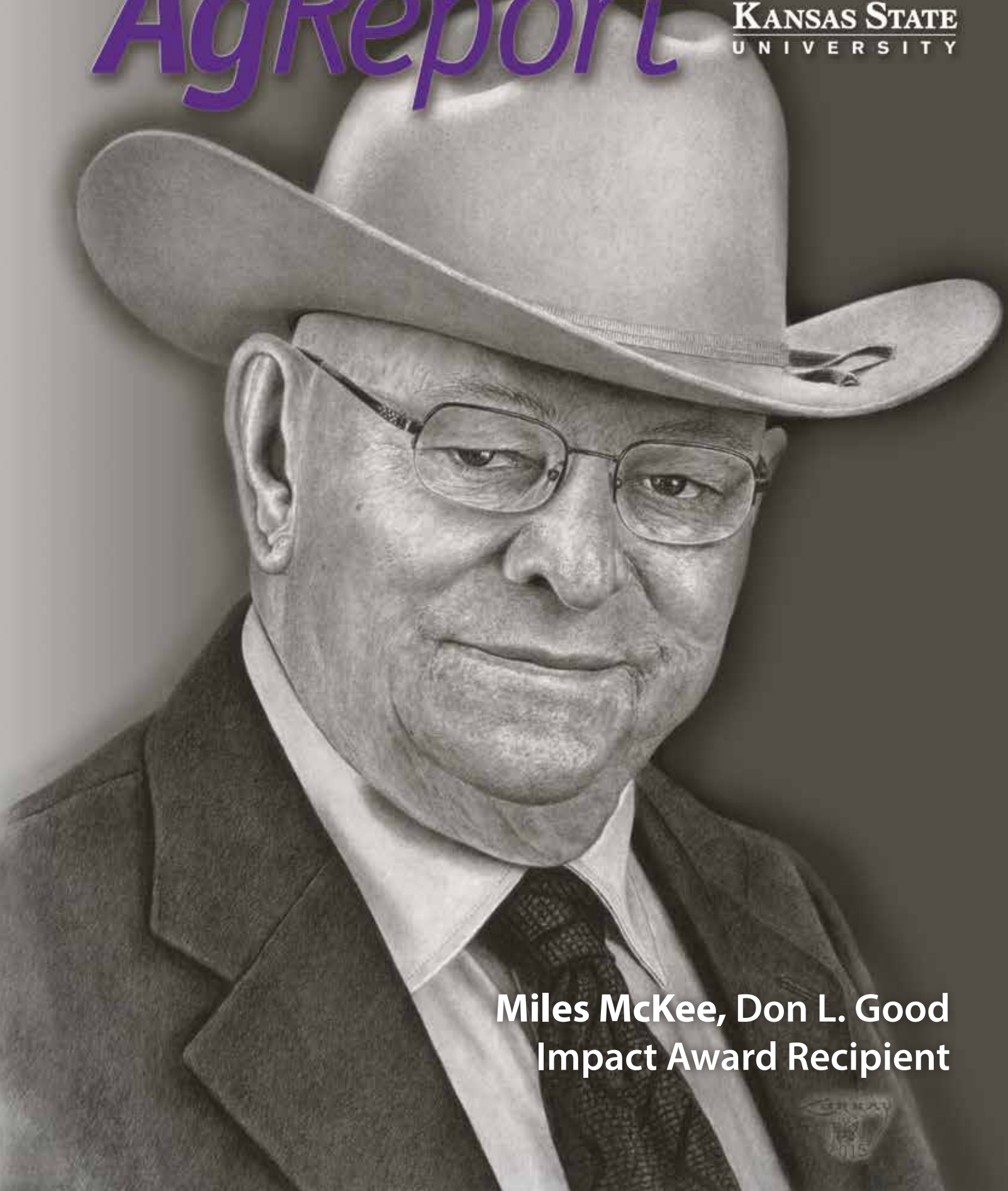


AgReport

College of Agriculture • Spring 2016

KANSAS STATE
UNIVERSITY



**Miles McKee, Don L. Good
Impact Award Recipient**

From the Dean and Director



John Floros (seated), dean of the College of Agriculture and director of K-State Research and Extension, reviews a Kansas Forest Service publication as Larry Biles, state forester, readies his presentation for the annual statewide staff meeting.

As the world's population grows to an estimated 9.6 billion people by 2050, experts predict that the world's farmers will have to produce as much food over the next 50 years as they have ever produced throughout our history. The increased production must be done in ways that protect limited natural resources.

Meeting those objectives will require new scientific breakthroughs in multiple fields, such as food safety, crop and livestock production, water usage, and nutrition to offset foodborne pathogens, emerging plant and animal diseases, children's health risks, and climate variability.

To address those needs, our students learn sound basic science principles from accomplished faculty in classrooms, research facilities, and through various judging teams and organizations. They also apply that knowledge through internships. The excellent turnout at the recent Agri-Industry Career Fair shows that employers are eager to offer internships and jobs to K-State students and graduates.

Our graduate students have done well in poster competitions and the new three-minute thesis competition. It's important for our students to

effectively communicate the value of their research to other scientists and to the public.

We have multiple successful long-term industry partnerships and continue to seek new ones that align with the university's mission. By preparing students for the future, conducting relevant research, and training the existing workforce, we bring economic value to the state's economy.

More than 1,100 attended the Department of Animal Sciences and Industry Family and Friends Reunion last October. What a wonderful way for our alumni and friends to reconnect with each other and learn about the outstanding accomplishments of our great students and faculty. Plans are underway for this year's reunion on October 7.

I encourage you to attend the third annual Henry C. Gardiner Global Food Systems Lecture at 7 p.m. on October 3 in McCain Auditorium. Jay Famiglietti, hydrologist and professor at the University of California-Irvine, will be the speaker.

John D. Floros

John D. Floros
Dean and Director

AgReport

Spring 2016

College of Agriculture
and
Kansas State University
Agricultural Experiment Station
and Cooperative Extension Service

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On the cover

Miles McKee, animal sciences and industry professor emeritus, was honored with the first Don L. Good Impact Award at the Animal Sciences and Industry Family and Friends Reunion on Oct. 9, 2015.

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Drawing by Dino Cornay.

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Thank you to those who completed the online *AgReport* survey.

We continue to analyze the data to improve our communication with you.

Preliminary analysis indicates a preference for the printed version, but there is interest in electronic delivery formats. If you prefer to read the *AgReport* online and not receive a printed copy, please send an email to gloria@ksu.edu.

We appreciate your support and interest in the College of Agriculture and K-State Research and Extension.

News Briefs

Wiley Named Interim Provost for Diversity



Kansas State University has named Zelia Wiley as interim associate provost for diversity.

Wiley has served as assistant dean for diversity and director of the Diversity Programs Office in the College of Agriculture and K-State Research and Extension since 2003. During that time, multicultural student enrollment in the college has increased by more than 400 percent.

“Dr. Wiley has been essential to the growth of multicultural students in the College of Agriculture,” said Provost and Senior Vice President April Mason. “She also brings a wealth of leadership skills to assist Kansas State to be a more inclusive campus to all.”

Wiley continues to oversee the college’s

Diversity Programs Office and advise the K-State student chapter of Minorities in Agriculture, National Resources, and Related Sciences.



Kansas 4-H Recognition

Kansas 4-H received the Extraordinary Quality Program Award by States’ 4-H International Exchange Programs for their participation in the 2015 global citizenship youth exchange programs.

State coordinators Rose Scott and Mary Kay Munson; agents Berny Unruh, Barton County, and Brenda Taxeras, Leavenworth County; and volunteer Jennifer Pfortmiller, Stafford County, were recognized at a national conference in New Orleans for their significant contributions.

Kansas 4-H global citizenship and international exchange programs have been operating since 1948 and are led by Deryl Waldren, extension specialist, 4-H Youth Development.

Jagger Harvey to Lead USAID Lab



Courtesy of Jagger Harvey

A plant molecular geneticist with extensive experience in addressing international food and agriculture challenges will direct the university’s U.S. Agency for International Development’s Feed the Future Innovation Lab for the Reduction of

transportation, and other factors.

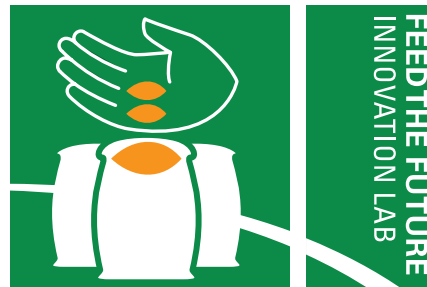
Harvey is a senior scientist at the Biosciences Eastern and Central-International Livestock Research Institute Hub in Nairobi, Kenya

“I am eager to play a role in enabling the strong team at K-State to reduce post-harvest losses in an expanding set

Post-Harvest Loss. He will begin his new duties May 16.

Jagger Harvey will lead the \$8.5 million project that helps the countries of Bangladesh, Ethiopia, Ghana, and Guatemala reduce the amount of food lost or contaminated after harvest.

In some parts of the world, up to half of the food produced is never consumed due to improper storage, handling,



Post-Harvest Loss Reduction

of countries, gleanings insights that can help address this challenge at home and abroad, and improving livelihoods in the countries where the lab currently works,” said Harvey.

“This project also is valuable to farmers in Kansas and the United States,” said John Floros, dean of the College of Agriculture and director of K-State Research and Extension. “What we learn in conducting research and working with some of the world’s poorest farmers can often be applied to our own agricultural practices.”

The lab is one of four projects awarded by USAID to the university since 2012. Together, those projects are funded for nearly \$100 million.



This small roving GPS-guided phenotyper, developed by a K-State research team, is equipped with cameras and sensors to gather and analyze plant data quickly as it moves through the field.

Creative Research Garner NSF Grant Extension

The National Science Foundation has given a big thumbs up to Kansas State University research on determining the most promising plant traits to help increase food production.

The NSF is awarding a creativity supplement for “A Field-Based High-Throughput Phenotyping Platform for Plant Genetics,” a project led by Jesse Poland, assistant professor of plant pathology and assistant director of the Wheat Genetics Resource Center.

Originally funded for \$768,054 in 2013, the supplement will extend the project for two years with additional funding of \$871,561. The NSF granted the extension for special creativity based on outstanding scientific/technical progress achieved under the grant.

“If we can do a better job of more accurately measuring a larger number of lines, we can do a directly better job of selecting, and we can build better prediction models,” Poland said.

The creativity supplement will help Poland and his collaborators from the University of Arizona, the Maricopa Agricultural Center, and the U.S. Department of Agriculture teach others to use the equipment by offering workshops.



Building for the Future

Go to www.ksu.edu/challenges to access the 2016 annual report and related videos.

The report focuses on how K-State Research and Extension addresses the five grand challenges facing Kansas — global food systems, water, health, developing tomorrow's leaders, and community vitality.

Mugler Remembered

One of David Mugler's favorite sayings was, “They don't care how much you know until they know how much you care.” For over 30 years, Mugler showed College of Agriculture students and faculty how much he cared.



Courtesy of University Archives

David Mugler (B.S. '59 agricultural education, Ph.D. '69 food science), former associate dean and director of resident instruction, 79, died Feb. 5, 2016.

After fulfilling his military obligation and teaching vocational agriculture, Mugler returned to K-State in 1964 as acting assistant dean of agriculture.

Over the next 34 years he taught classes and held various college administrative positions.

Mugler believed strongly in having experienced teachers as advisers. He developed “Ag in the Classroom” to train teachers at every level to integrate agricultural concepts in their teaching.

Mugler earned numerous awards and recognitions on the national, state, and local levels. During his tenure, he served as president of Faculty Senate, the National Agricultural Alumni and Development Association, and Phi Kappa Phi.

In 1999, the College of Agriculture Alumni Board established the annual David J. Mugler Teaching Award to recognize faculty who share Mugler's passion for teaching.

Innovative Facility Benefits Southeast Kansas



From left: Lyle Lomas, head of the Southeast Agricultural Research Center; Ernie Minton, associate director for research and associate dean of graduate programs; John Floros, dean of the College of Agriculture and director of K-State Research and Extension; Daryl Buchholz, associate director of extension and applied research; and J.D. McNutt, director of the Southeast Area Extension Office, prepare to cut the ceremonial ribbon.

The new Southeast Research and Extension Center in Parsons serves as home for area researchers and extension specialists.

On Nov. 5, 2015, about 225 people attended the dedication of a facility that brings together researchers from the Southeast Agricultural Research Center, who were located in Parsons, with extension specialists, previously located at the Southeast Area Extension Office in Chanute.

“The new facility shows Kansas State University’s commitment to production agriculture in southeast Kansas,” said Rich Felts, president of Kansas Farm Bureau. “It provides support for area producers to operate as efficiently as possible.

“We are fortunate that K-State Research and Extension has made an investment in southeast Kansas and continues to provide objective, unbiased research information.”

Felts (B.S. ’70 animal science) owns and operates Felts Farms near Liberty. He has chaired the Montgomery County Extension Board and served on the State Extension Advisory Council.

The 13,289-square-foot building’s main conference room has state-of-the-art audiovisual equipment. It can accommodate 175 people or divide into smaller meeting rooms. A catering

kitchen is available for conferences and workshops.

The building has 10 offices for faculty and an open common area for support staff, as well as another small conference room. A new laboratory supports agricultural research programs.

“The new Southeast Research and Extension Center in Parsons is an exciting addition to our area,” said Connie Pelton Kays (B.S. ’81, M.S. ’84 animal science) of Weir. “It shines a spotlight on the work K-State Research and Extension does for our communities — from research to

Area residents and guests listen to presentations at the Southeast Research and Extension Center dedication.



Don Dornier

disseminating the information through our local extension agents.

“By providing a collective space for researchers and extension specialists to interact, it also provides meeting rooms used to share information to improve the quality of life for southeast Kansas residents. We look forward to the positive impact the new facility will have on our region and on the state.”

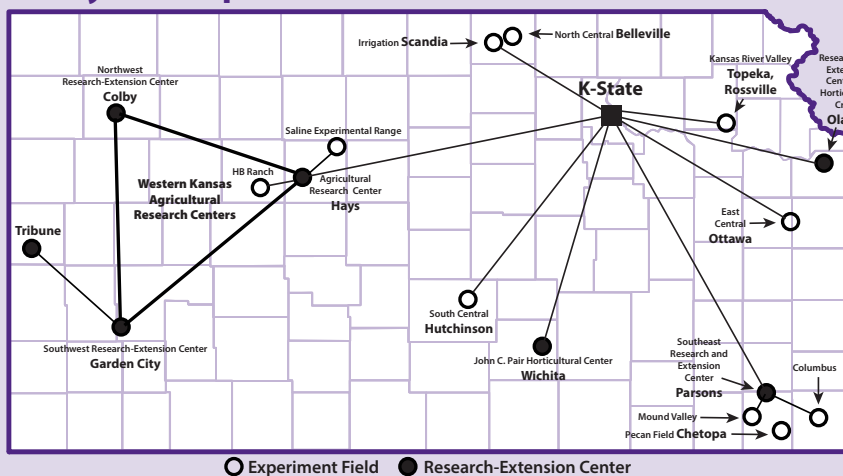
Kays advocates for greater national support and understanding of the land-grant university system as a Council for Agricultural Research, Extension, and Teaching representative.

Center Quickly Proves Beneficial

Equipped with technology for conference and communications capabilities, the Southeast Research and Extension Center provides much-needed space for regional educational events.

At least 750 people have attended meetings and workshops at the center with more events on the schedule. Topics included updates on agricultural law, crop and livestock research, seasonal pasture burning, family and consumer sciences subjects, and how to deal with animal predators.

Why Multiple Research-Extension Centers?



Kansas may not have mountains or beaches, but climatologist Mary Knapp can verify that Kansas climate and soils fluctuate greatly from border to border.

“The elevation of Columbus in southeastern Kansas is 871 feet, and St. Francis in northwest Kansas rises to 3,661 feet,” said Knapp. “Rainfall can differ from 17 inches per year in the northwest to more than 50 inches in the southeast. Soils, average frost date, and growing seasons also vary.”

When conditions are so different, it’s easy to see why one-size-fits-all information won’t produce the best results. To provide all Kansans with reliable information, K-State Research and Extension strategically locates facilities across the state.

For more climate and weather information, go to climate.ksu.edu and mesonet.ksu.edu.



PEPSICO



Beneficial Partnerships



Kansas State University's emphasis on working with corporate partners to support programs and students has not happened by chance. Rather, it's a very focused pursuit that makes good sense.

"When you look at what is happening with state and federal funding, and in many respects higher education, support for most public universities is dwindling," said John Floros, dean of the College of Agriculture and director of K-State Research and Extension. "It's not just in Kansas, it's all across the country. Most public institutions have a lot less financial support than they had 10 and 20 years ago."

Without support from private companies, universities face what can be an unpopular decision: raising tuition, which makes it more difficult for students and families to afford a college education.

"You start quickly realizing that we have to find alternatives," Floros said. "One alternative is to work closely with other entities who have similar interests, to achieve something good for them and something good for us."

Cargill Boosts Multicultural Enrollment

A good example of that is the College of Agriculture's partnership with Cargill, Inc., a relationship that celebrates 20 years in 2016, though the two groups have worked together in some form since the 1960s.

The Minneapolis-based food company, which reported \$120.4 billion in revenues for fiscal year 2015 and is ranked by *Forbes* magazine as the largest

private company in the United States, has supported students, programs, and buildings for many of those years.

In 2008, the company worked with the university to create Project IMPACT, a program to help recruit and retain multicultural students in agriculture, business, and engineering by providing 'College for a Day' experiences, tutoring, scholarships, and a six-week summer live-in program.

From 2013 through 2015, Cargill provided \$1.2 million for Project IMPACT. The university reports that it has experienced increased enrollment in multicultural students every year since 2008, and a 93.2 percent increase in the target disciplines, as of 2014. Also, 100



Freddie L. Richards, professor and former dean at Prairie View A&M University, spoke to students during the Diversity Student Leader Program on Jan. 25. John Deere sponsored the event.

percent of Project IMPACT scholars were placed in jobs after graduation.

Cargill's support also includes a partnership with the university's office for Career and Employment Services, and a gift of \$500,000 to help build the Cargill Feed Safety Research Center.

Common Interests are Key to Success

The Cargill relationship proved successful because both groups worked to develop common goals.

"A cornerstone of any potential engagement of the College of Agriculture with companies is to align interests, because no partnership can stand without meaningful benefit to both parties," said Kent Glasscock, president of the Kansas State University Institute of Commercialization, which helps develop corporate partnerships and licensing opportunities for basic research at the university.

"The university's strategy is to engage specific companies so that we can come to understand where they believe a global market opportunity resides," Glasscock said. "We aim to understand the science and technology innovation needs to meet those market demands, and to align the company's needs with specific college and university capabilities."

Two large companies — General Mills and PepsiCo, Inc. — are recent examples of research partnerships at the university.

"It is increasingly apparent that Kansas State University and the College of Agriculture are high on the list of every major food and agriculture company in the country."

Based in Minneapolis, General Mills reported sales of \$17.9 billion in fiscal year 2014. The company recently moved two of its scientists to the Kansas Wheat Innovation Center in Manhattan to help develop improved wheat varieties with superior nutritional and processing qualities.

"It's our belief that this approach will increase the quality of consumer products through decreasing additives in processing and increasing the utility and function of whole-grain products," said

Eric Jackson, a geneticist and systems biologist with General Mills Crop Biosciences, one of two scientists now in Manhattan.

PepsiCo has had a cooperative research agreement with the K-State Sensory Analysis Center since 2005. A long-term project on acceptance of food products led to that company's introduction of cheese-flavored snacks in Asia.

PepsiCo also invested more than \$150,000 with the university's extrusion lab on projects related to fruit and vegetables in snacks, extruded product development in international markets, and more.

"It is increasingly apparent that Kansas State University and the College of Agriculture are high on the list of every major food and agriculture company in the country," Glasscock said. "What we have to offer is in demand, particularly our ability to innovate, educate, and professionally develop their staff."

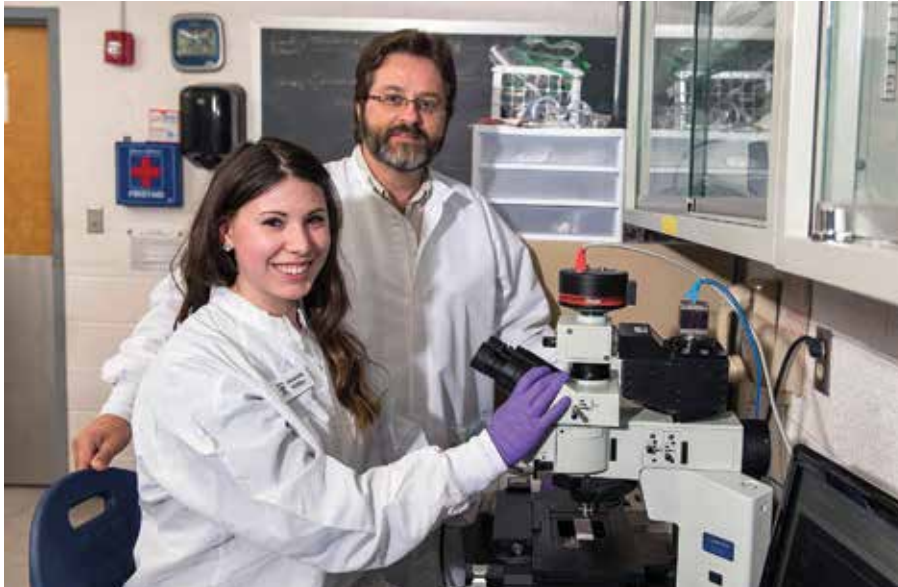
"The challenge is for the College of Agriculture to find new models of engaging the global private sector in ways that both advance the company's ability to meet the global demand while at the same time advancing the mission of Kansas State University."

Talent, Innovation, Training

Floros said that companies are drawn to the College of Agriculture for three reasons.

- **Students.** "We train students well and get them ready for the marketplace. The future of companies depends on that talent. It benefits them and benefits us to work together."
- **Research and Innovation.** "That is what we do, this is who we are, and we hire faculty with that in mind — to do research, to innovate, and to look for new things and breakthroughs."

"In most cases, new ideas that come up in an academic environment don't find their way into the world for 10 or 20 years. If we can work closely with companies, maybe they can help us innovate better. Maybe they can help us with research and provide a better innovation pipeline."



Professor Randy Phebus works closely with a stakeholder advisory board on a \$25 million grant related to Shiga toxin-producing *E. coli*. The grant includes an education component to train tomorrow's scientist such as Amanda Wilder, food science master's student.

• **Training for the Professional Workforce.** “Just like the world is changing fast, so is technology and science. Companies hire people, give them tools to do their job, then five years later the toolbox may be different. We can help them with that. We can help them retool and help their people understand how to use the new tools.

“We’re a land-grant university,” Floros said. “We try to deal with

issues within the state. Well, one of the issues within our state is economic development. As part of who we are and what we do, we’ve got to help the state with economic development. As we get closer to the private sector, we also bring value to the state economy.”

Research with Integrity

Randy Phebus, professor in animal sciences and industry and the Food Science Institute, is working on a \$25 million grant from the USDA National

Institute of Food and Agriculture (NIFA) to reduce the incidence of Shiga toxin-producing *E. coli*, a group of bacteria that causes more than 265,000 infections in U.S. beef each year.

While that project was funded through NIFA’s Agriculture and Food Research Initiative (AFRI), Phebus noted that testing their findings in real-life settings with industry partners makes the work more valid.

“Those companies are anxious to get on board,” Phebus said. “From their viewpoint, they see this big thing happening in research and want to be part of it. They lend us their expertise, plant access, technology development, and all of the products we need to do our research.

“In our AFRI grant, we couldn’t be even halfway to where we are in year four if we didn’t have the 20 industry people on our stakeholder advisory board, guiding us, and giving us access to the plants.”

Still, the research needs to be in line with the university’s mission, Floros said.

“We are not going to compromise our integrity,” he said. “We need to continue to do research with integrity because that’s the bottom line of being an academic institution.”

Support Heightens Value to Students

Floros said many other company relationships are helping to create opportunities for students.

John Deere and Kansas State University have held a partnership for more than 30 years. The Illinois-based company has funded scholarships for undergraduate students in hopes of attracting those students to internships and permanent positions with the company.

Recently, John Deere also developed research contracts with the Advanced Manufacturing Institute in the College of Engineering.

Wenger Manufacturing of Sabetha has provided extrusion equipment to the Department of Grain Science and Industry; Archer Daniels Midland of Chicago has offered feed science scholarships; and the CHS Foundation



Eric Maichel, Bioprocessing and Industrial Value-Added Program operations manager, explains the grain extrusion process, which forces product through a dye to create a specific shape.

has supported the O.H. Kruse Feed Technology Innovation Center and provided scholarships for students.

In the process, faculty often get better equipment for their classrooms, and the university broadens its reputation for outstanding education. In some of those cases, College of Agriculture alumni working at companies help develop a relationship with their alma mater.

"You go to a school for four, five, or six years, get a degree, and find a job. At that moment, your degree has a certain value," Floros said. "If you got that degree 20 years ago and find yourself looking for a job today, the value of that degree is not what it was 20 years ago. Its value is what people think it is worth today. It behooves our alumni to help us get better because as our reputation improves, they themselves get more value."

Pat Melgares



New wheat varieties being grown in a Kansas Wheat Innovation Center greenhouse.

Courtesy of Kansas Wheat Innovation Center

Cargill Executive Delivers Henry C. Gardiner Global Food Systems Lecture

Greg Page, executive chairman of Cargill, addressed climate change and how our food production system reacts to those changes during the second annual Henry C. Gardiner Global Food Systems Lecture Series on Oct. 12, 2015.

A large crowd of students, faculty, and interested citizens attended the lecture in McCain Auditorium on the Kansas State University Manhattan campus.

Here are a few excerpts from his speech:

Climate change is not a particularly popular subject in much of the heartland, but at Cargill, we have come to believe that it is important to have serious conversations about what we can do now to accommodate a range of climate scenarios and for agriculture to take part in those conversations and in making reasonable preparations.

Why? Because of all the things that are challenging about farming under any circumstances, it becomes more difficult with a growing population and in the presence of a more quickly changing climate.

Land-grant universities have historically been important contributors to developing the science, the technology, and the human talent and ingenuity that has enabled the global food system to move the world further from famine than ever before.

We are also the beneficiaries of an excellent educational foundation that KSU provides. We have more than 500 KSU graduates currently working at Cargill and contributing to our success.

Page also answered questions from the audience.



Greg Page, Cargill executive chairman (standing at left), met with students at the K-State Alumni Center.

Dan Dornier

While on campus, Page toured the O.H. Kruse Feed Technology Center, which houses the Cargill Feed Safety Research Center; the International Grains Program Institute; and the Leadership Studies Building. He also met with students and university administrators.

The Gardner family established the lecture series to honor Henry C. Gardiner and present educational, thought-provoking information to the public.

A full transcript of Page's speech is available at <http://www.k-state.edu/globalfood/lecture-series/PageTranscript.pdf>.

Jay Famiglietti, hydrologist and professor at the University of California-Irvine will present the next Gardiner lecture on Oct. 3, 2016.

Family & Friends REUNION

Animal Sciences and Industry



Great food, music, games for kids, and reconnecting with old friends drew more than 1,100 people of all ages to the inaugural Animal Sciences and Industry Family and Friends Reunion on Oct. 9, 2015, at the Stanley E. Stout Center.

The event had multiple goals: provide an annual opportunity for alumni to reconnect, offer an update on the department, and present the Don L. Good Impact Award.

K-State's Livestock Meat and Industry Council (LMIC) established the impact award to honor Don L. Good (M.S. '51), who made a difference in thousands of lives during his 40-year career at K-State as a livestock judge, professor, coach, and department head.

"This award is meant for animal agriculture 'game changers,'" said Patsy Houghton (B.S. '77, M.S. '79), LMIC board member. "The awards committee felt like the award was a worthy venture; that's when the idea for an annual AS&I Family Reunion surfaced."

Warren Weibert (left), LMIC chair, presents the inaugural Don L. Good Impact Award to Miles McKee. The commemorative artwork was created by Dino Cornay www.dinocornayart.com.

The event name was amended to include the department's many friends across campus, the state, and country.

McKee Honored

The inaugural Don L. Good Impact Award was presented to Professor Emeritus Miles McKee (B.S. '50, M.S. '53). The relationship between Good and McKee started when McKee was a student and a member of the 1950 national championship livestock

judging team coached by Good.

McKee taught thousands of students during his tenure at K-State; however, he made his greatest impact through advising.

"Miles looked for the best in students and never gave up on any student," said Dave Nichols (M.S. '79, Ph.D. '82), professor and teaching coordinator. "I can cite numerous successful graduates who would tell you how much Miles influenced their lives."





Event entertainment included K-State cheerleaders and the pep band.

McKee officially retired in January 2005, but he continues to help with student advising and chronicling the department's history.

To commemorate the award, McKee received a framed original piece of art by Dino Cornay (B.S. '80), which includes images of Good and McKee. Adults attending the event received a commemorative print. The cover photo is taken from the print by Cornay.

Event Sponsors

It took 14 months to work out the details for the large event, which ranged from the junior wildcat barnyard for the kids to a retiree reception and photos for past faculty and staff.

"We wanted everyone to feel welcome, from our littlest junior wildcat to the oldest and most revered members

of our AS&I family," said Houghton.

Major reunion sponsors include the family of Clifford and Bernice Houghton, Kelly (DVM '87, Ph.D. '88) and Marcie Lechtenberg and family, Richard (MAB '04) and Sarah Porter, KanEquip and Jim and Barbara Meinhardt, Warren and Carol Weibert and family, and Jerry (B.S. '72) and Julie Bohn.

"The LMIC was established jointly by the animal sciences and industry department and Kansas livestock and meat industry leaders in response to the 1966 tornado devastation on the K-State campus," said Warren Weibert B.S. '69), LMIC chair.

"The board of directors meets three times a year, and it provides advisory support to department

educational programs, physical facility enhancements, research projects, and to enhance education and understanding between the department and industry."

Mark Your Calendars

Plan to attend the second annual Animal Sciences and Industry Family and Friends Reunion on Oct. 7, 2016.



Future K-Staters enjoy the junior wildcat barnyard.

KANSAS FARMER



BY SCOTT STEBNER

FOREWARD BY RICHARD FELTS

Book of Compelling Photos Benefits Students

A Kansas State University graduate student approached Kansas Farm Bureau about collaborating on a coffee table book featuring Kansas farmers and ranchers. After more than a year of hard work, the profits from the book are going toward student scholarships.



Debbie Lyons-Blythe (B.S. '88
agricultural journalism)



Orrin Holle (B.S. '03
agricultural economics)



Kent Winter (B.S. '77, M.S. '79 agronomy)

Scott Stebner — a California native, former teacher, and accomplished photographer — moved his family to Kansas to pursue a master's degree in agricultural education and communication. The idea for the book came from his concern about the declining number of U.S. farmers and consumers' lack of connection to where their food is produced.

"When Scott approached us with the idea to showcase Kansas farmers and ranchers and fund scholarships, it was a no-brainer," said Meagan Cramer, Kansas Farm Bureau director of communications and marketing.

Cramer provided the names of a few Kansas Farm Bureau members for Stebner to interview and photograph.

After the initial interviews, Stebner presented a sample of his work to the KFB board for approval. The board endorsed the project.

"We couldn't wait to share Scott's work with a larger community," said Cramer. "We knew people would enjoy the faces and stories of these hardworking Kansas families."

Stebner traveled the state to cover a broad range of subjects, many of them K-State College of Agriculture alumni.

The book showcases 25 Kansans. The final subject, Joe Schmitz, was chosen through a contest. His daughter, a K-State agricultural communications and journalism student, nominated him.

Photos from the book were featured September 4–8, 2015, in the K-State

Student Union and March 6–April 3, 2016, at the Volland Store in Alma.

Stebner (M.S. '15) is a research assistant for the university's Center for Rural Enterprise Engagement.

In addition to those featured above, these alumni are pictured in the book: Animal Sciences and Industry (ASI) — Craig Good (B.S. '75), Bob Mertz (B.S. '76), John Pendleton (B.S. '79), Matt Perrier (B.S. '96), Randal Debler (B.S. '02 park management and conservation, B.S. '04 ASI); David Foster (B.S. '03 ASI/agricultural communications and journalism); Agricultural technology management — Larry Dahlsten (B.S. '66) and Jeff Bathurst (B.S. '97).

To order *Kansas Farmer*, go to kfb.org/ksfarmerbook.

Precision Ag Team Leads the Way



Imagine watching a big tractor advancing across a field. Unknown to you, inside the cab a revolution has taken hold. And the pace of change has become so rapid that even the most savvy producers are struggling to implement the new technology, said Antonio “Ray” Asebedo, assistant professor of agronomy in precision agriculture.

Odds are that the tractor operator doesn’t look at the field before setting things in motion by turning on the tractor’s Global Positioning System (GPS).

“Once the tractor’s position has been entered into the computer, the operator pulls up the field’s colorful set of Geographical Information System (GIS) soil condition maps,” Asebedo said. “The computer has analyzed every inch of the field for nutrient levels, soil pH, water, and organic matter content. A different set of GIS maps shows the yields from the past several seasons.”

With this information, the operator uploads the data into a computer that controls fertilizer application rates, seeding rates, or even hybrid selection. The tractor and application or seeding equipment take over from there. If the

crop is already growing, the operator can access remote-sensing data collected the day before to check crop condition, which lets the computer know exactly what to apply where as the tractor crosses the field.

Data Collection

Technology to collect electronic data on soils and yields — and create digital maps from that data — has been in place for about 10 years.

Remote-sensing equipment that measures the “color” and presumed health of growing crops also has been used for several years, said Ajay Sharda, assistant professor of biological and agricultural engineering in precision agriculture and machine systems. This electromagnetic wavelength sensing technology may consist of small unmanned aerial systems (sUAS), handheld or boom-mounted sensors, or mobile platforms, Sharda said.

With new technology collecting mountains of digital data on farms across Kansas and the nation, the goal is to figure out how producers and agronomists can use this “big data” to optimize profit per acre.

This is the problem a team of K-State agricultural scientists is

working hard to solve. There is also a fundamental question about who owns this data, added Terry Griffin, assistant professor of agricultural economics.

“Producers and agribusiness concerns are really struggling with this question,” Griffin said. “It’s a matter of privacy for many producers, and in some cases this issue has limited the use of precision agriculture technology.”

A Team Approach

Researchers from several disciplines make up K-State’s precision agriculture team, but the core members include: Asebedo (B.S.’10, Ph.D.’15 agronomy); Sharda; Griffin; Brian McCornack, associate professor of entomology; Kurt Carraway, Kansas State Polytechnic applied aviation research center; Rob Aiken, research crop specialist; and assistant agronomy professors Ignacio Ciampitti and Lucas Haag (B.S.’05 agricultural technology management; M.S.’08, Ph.D.’13 agronomy).

This team has developed a comprehensive approach to address issues involved in precision agriculture. The effort involves the three core functions of a land-grant university: teaching, research, and extension.

The Department of Agronomy

currently offers 12 courses related to precision agriculture and has proposed a precision agriculture option for undergraduate majors. Ajay Sharda teaches a course, which has attracted students across the colleges of Engineering and Agriculture.

Areas of Research

Algorithm development for machine-based recommendations and assessments. Today's sensors can accumulate more data and analyze it in many ways, but the value of this information depends largely on human interpretation. Asebedo and others are developing better algorithms, formulas for solving problems, to serve as the brain for the equipment.

"We are conducting considerable work in this area as it is probably the most underdeveloped important area in precision agriculture right now. Without the appropriate algorithm platforms, sUAS does little more than take pictures," Asebedo said.

Satellite Remote Sensing — Normalized Difference Vegetation Index (NDVI) maps. Team members analyze satellite imagery weekly and produce maps of photosynthetic activity, which are widely distributed through K-State's Agronomy eUpdate. The maps show the current vegetative conditions in Kansas and the U.S., offering comparisons to the previous year and the 27-year average condition.

Spectral Sensors. Handheld, machine-mounted, autonomous mobile platforms and sUAS are being tested to quickly and accurately estimate current vegetative conditions. Spectral readings can be used to determine nutrient needs and yields, genetic yield potential of early-crossing lines, and insect infestations.

GPS and GIS technology. Much work remains to link the results of yield and soil mapping with variable-rate technology, said Lucas Haag.

A common question is whether a low-yielding area should receive more fertilizer to increase yields, or less fertilizer because the yield potential isn't there. Many farmers leave this interpretation up to their agribusiness suppliers, but better algorithms would



Members of K-State's precision agriculture team (L-R): Terry Griffin, Lucas Haag, Rob Aiken, Brian McCormack, Ignacio Ciampitti, and Ray Asebedo. Ajay Sharda and Kurt Carraway are not pictured.

help farmers make their own decisions regarding variable-rate applications.

Variable-Rate Controllers and Technology. Producers use precision agriculture technology to translate the data collected into specific instructions for equipment to apply expensive inputs. The objective is to make the farming operation more efficient, Sharda said. To address this goal, K-State research involves precision planting, spraying, and dry fertilizer technologies.

Small unmanned aerial systems. There are many potential uses for this technology once producers and others are allowed to use it for business purposes. In the meantime, K-State scientists are authorized to use sUAS technology for research purposes and have been able to correlate remote data with on-the-ground crop conditions.

Data management and analysis. With multiple years of data being collected on the farm, GIS software is essential for generating site-specific recommendations. Asebedo and Sharda use various software packages to develop data fusion algorithms to integrate soil and crop sensor data to identify crop stress and produce accurate recommendations.

Big data management and analytics. In addition to the big question of how to interpret and analyze the data into useful information for producers, there is an equally big question about

who should own the data and where it should be stored. Private agribusiness companies may want to own this big data, but producers are wary of this, said Griffin.

K-State Leading the Way

Through K-State Research and Extension meetings and field days, the precision ag team explains research results and helps answer questions. For example, Haag, who is stationed at the Northwest Research-Extension Center in Colby, educates producers on the importance of calibrating combine monitors, which is the key to getting accurate yield maps.

Carraway at Kansas State Polytechnic and several researchers and specialists from the Manhattan campus have featured sUAS technology at field days and developed publications.

"There is tremendous potential for precision agriculture technology to increase efficiency and productivity in agriculture. We're just at the beginning of this exciting new frontier," Asebedo said.

"At K-State, we have a great team of forward thinkers working in this field," he added. "As we get this new technology working together with the best possible algorithms and data analysis, we'll be helping producers in Kansas and the entire region for many years to come."

Steve Watson

Student Highlights



Jessica Bramhall, senior in agronomy from Seneca, examines weed seedlings in a greenhouse. In addition to her research project, she is president of the Wheat State Agronomy Club; a member of the agronomy forage bowl team, which won successive national titles; and an alternate on the national champion crops judging team. She also placed third in the visual presentation contest and presented a poster at the agronomy associations meeting in November 2015.



Erin Bush was a member of Team USA that placed first overall at the International Soil Judging Contest in Gödöllő, Hungary, in September 2015. Bush, junior in agronomy from Franklin, Indiana, placed fourth high individual. The contest included participants from 28 countries. Bush qualified to represent the United States by finishing among the top four at the 2015 National Soil Judging Contest last spring.

Jack Oattes, senior in animal sciences and industry from Cobden, Ontario, was the overall winner of the National Collegiate Livestock Judging Contest in Louisville, Kentucky. K-State's 2015 team was the first K-State team to win the American Royal Judging Contest in Kansas City, Missouri, since 1999. Chris Mullinix coaches the team.

Michael Cropp, senior from Damascus, Maryland, and Montana Percell, junior from Park City, earned \$1,000 Kansas Meat Processors Association scholarships. They were recognized at the KMPA convention in Manhattan.

Georgia Biggs, junior in animal sciences and industry, received one of two new \$1,000 Military Spouse scholarships offered by K-State Global Campus.

"I moved to Oceanside, California, to be with my husband who is currently stationed on Camp Pendleton," Biggs said. "Being able to go back to school has given me a huge comfort and sense of normality. Education has always been something I have been passionate about, and K-State made it easy for me to continue."



The annual Agri-industry Career Fair brings companies to campus to meet with students about job and internship opportunities. Ninety-five companies and 374 students participated in the Jan. 26, 2016, event in the K-State Student Union.



Graduate Students Excel in Three Minutes or Less

Communicating an 80,000-word thesis in three minutes sounds challenging, but College of Agriculture graduate students proved they were up to the task in Kansas State University's first Three Minute Thesis competition.

Eleven of the 30 applicants represented the college, with six advancing to the Top 10: doctoral students **Ryan Schmid**, entomology, Kingsley, Iowa; **Jared Crain**, genetics, Woodward, Oklahoma; **Jessica Thomson**, entomology, Allen, Texas; **Regina Enniful**, agronomy, Ghana; and **Marcus Olatoye**, agronomy, Nigeria; and **Jere Noel**, animal science master's student, Wichita.

Along with the time limit, finalists made their presentations without notes and using only one slide for an audience of Manhattan community members and K-State faculty and students.

Schmid earned first place for his presentation on capturing Hessian flies using a smart-trap design and the process of deploying the flies once they are captured. He will represent the university in the 2016 Midwestern Association of Graduate Schools' Three Minute Thesis Competition, April 6–8, in Chicago.

Jere Noel, animal science master's student from Wichita, won the People's Choice Award for her research on identifying causes of fatigue in pigs using electromyography.

Being able to condense research in a way that can be easily understood is a marketable skill, whether the students stay in academia or pursue a job in industry, said John Ruberson, professor and entomology department head.

"Our goal as graduate educators must be to make not just effective researchers, but effective communicators of that research," Ruberson said.

Agronomy Student Receives Scholarship

Noortje Notenbaert is one of 10 students nationwide awarded the new \$25,000 Monsanto Graduate Student Scholarship.



A native of Belgium, Notenbaert came to America at the age of 21. After serving three years in the military, she enrolled at K-State and earned dual degrees in biology and geography.

She enjoyed soils classes and chose to get another bachelor's degree in agronomy. She now is pursuing a master's degree in agronomy with a focus on soil microbiology under Chuck Rice, university distinguished professor of agronomy.

Her research looks at differences in microbial community structures within the rhizosphere of different corn hybrids.

"After achieving my educational goals, I plan to apply myself in a research environment that focuses on improving crop production, while also working toward a better environment," Notenbaert said.



Capitol Graduate Research Summit

Graduate students presented Kansas-related research at the Capitol Graduate Research Summit in Topeka.

Marcus Olatoye, agronomy Ph.D. student, received the \$500 BioKansas scholarship. His research focuses on understanding the genetic basis of adaptive agro-ecological traits in sorghum and how these can be used to develop molecular genetic tools to breed better adapted and yielding sorghum varieties for Kansas farmers. His advisor is Geoffrey Morris, assistant professor.

Caroline Ylioja, animal science Ph.D. student, received a \$500 scholarship to the K-State Graduate School. Her research supports the use of byproduct feeds in dairy cattle diets, in terms of efficient use of feed resources and the human food supply, and highlights the ability of ruminant animals to consume feeds that are not edible by other livestock or by people. Barry Bradford, associate professor, is her faculty mentor.

Crops Team Sweeps Competition



The Kansas State University Collegiate Crops Team has won its seventh straight national championship. The team (l to r): Dr. Kevin Donnelly (coach), Marshall Hay (assistant coach), Michaela Simmelink, Ben Coomes (assistant coach), Nicole Sudbeck, Brett Manville, Samantha L'Ecuier, Jessi Bramhall, Sarah Zerger, and Hayden Guetterman.

The K-State Crops Team swept the team and individual awards at both the Kansas City and Chicago contests, capturing the national championship for the seventh year in a row and 14 of the past 17 years.

Samantha L'Ecuier, junior in agronomy from Morrowville, took

first place overall at both contests. She won all three components at Kansas City, with perfect scores in both grain grading and seed analysis. At Chicago, she also had a perfect score in grain grading and was first in seed analysis and second in identification. Her overall

score of 1796.8 out of 1800 possible points in Kansas City was the fourth highest ever in the contest, and the highest since a perfect overall score in 1965.

Nicole Sudbeck, sophomore in agronomy from Seneca, was second overall in both contests. Michaela Simmelink, senior in animal sciences and industry from Downs, placed third in both events. She also had a perfect score in grain grading in Kansas City for a first place tie with L'Ecuier.

A sweep of all three contest parts and the top three individual placings at both contests had only been accomplished once in the 82-year history of the contests — also by K-State in 2009.

Additional team members include agronomy majors Brett Manville, Valley Falls; Hayden Guetterman, Bucyrus; Jessica Bramhall, Seneca; and Sarah Zerger, Cheney.

Professor Kevin Donnelly coaches the team. Assistant coaches were Ben Coomes, agronomy senior from Girard, and Marshall Hay, agronomy graduate teaching assistant from Lynnville, Iowa.

Product Development Teams Advance

A team of food science students finished third overall, first among all U.S. teams, at the 2016 Research Chiefs Association (RCA) Student Culinology competition in Denver, Colorado. In addition to the award, the team was invited to present its Gold Standard product at the upcoming Institute of Food Technologists annual meeting in Chicago, Illinois.

K-State also finished third overall in the student poster competition and first in the innovative concept/product development category.

Team members include Steve Ross (team captain), Audrey Boeken, Josh Wilson and master's student Yuda Ou.

To qualify, teams submitted a written proposal for a frozen retail, single serving, microwaveable meal based on Rocky Mountain/Southwest regional cuisine. The top six teams submitted manufactured frozen dishes. During the final round, teams made their product onsite for a side-by-side match test.

Food science graduate students Yuda Ou, Ziyi Linghu, Karthik Pandalaneni, and Megan Crawshaw are among the top six teams to compete in the National Dairy Council New Product Competition in April 2016.

Teams from the U.S. and Canada competed to develop a new product that makes dairy the go-to food/beverage for consumers who want physical or mental energy. The K-State team developed "FuelBites" — a chewable dairy snack that provides an excellent source of dairy protein.

Kelly Getty (B.S. '88, Ph.D. '99 food science), associate professor, and Jayendra Amamcharla, assistant professor, coach both teams.





Lobby Now Valuable Study Space

Comfortable furnishings, new flooring, improved connectivity, and a wall of living plants transformed the Throckmorton Hall lobby into a popular study and meeting space.

“When I met with the department’s student advisory board about how to use fee resources, they suggested renovating the lobby,” said Candice Shoemaker, head of the Department of Horticulture, Forestry and Recreation Resources.

Shoemaker asked Cathie Lavis, associate professor of landscape management, to chair the lobby renovation committee; Jeff Skibins, assistant professor of recreation resources, to coordinate the electrical needs; and Kim Williams, professor of greenhouse management, to investigate putting in a green wall.

The committee worked closely with the university’s Division of Facilities,

especially Mark Taussig, associate director for campus planning and project management, and Tim Brunner, plant manager for the power plant and utilities.

“The new design of the lobby, as well as the installation of the green wall, have truly brought life to Throckmorton,” said Pallace Schnittker, Horticulture Club vice president. “As a horticulture student, I am excited to learn more about how the green wall operates and discover more about interior landscaping.”

Williams and Greg Davis, associate professor of landscape design, teach a new Interior Plantscaping course.

“We can now incorporate hands-on green wall design, installation, and maintenance into the class, Williams said. “This brings an important new dimension to the knowledge and experiences that we can impart to our

students as they prepare for careers in horticulture. Interior plantscaping is an exciting career avenue in horticulture with expanding opportunities.”

Ag Student Council representative Caitlynn McVey added, “I use the lobby more now that we have the green wall, just because it gives me the feel of being outdoors even when it is cold outside.”

Shoemaker said she is pleased with how the students are using and caring for the space.

“Before the renovation, the lobby was very dull and not of much use to the students,” said Tyler Lutz, Horticulture Club president. “Now, the space provides a better one-on-one situation for students to communicate and study. The Horticulture Club appreciates the change for our officer, advisor, and planning meetings. We try to keep this area in great shape so it will last for a very long time.”

Department Notes

Agricultural Economics

The Oklahoma State/Kansas State 2014 Farm Bill Decision Tool and Educational Program received the Outstanding Extension Program Award from Western Agricultural Economics Association. Affiliated K-State agricultural economics faculty: **Art Barnaby**, professor; **Rich Llewelyn** (B.S. '84 agronomy, M.S. '88 agricultural economics, Ph.D. '95 economics), extension assistant; **Robin Reid**, extension associate; and **Mykel Taylor**, assistant professor.

Awards presented at the Agricultural and Applied Economics Association (AAEA)/ Western Agricultural Economics Association (WAEA) conference: **Jason Bergtold**, associate professor, earned the WAEA Outstanding Undergraduate Teaching Award, Less than 10 Years Experience. **Nathan Hendricks** (B.S. '05, M.S. '07 agricultural economics), assistant professor, received the AAEA Outstanding American Journal of Agricultural Economics Article Award for, *Crop supply dynamics and the illusion of partial adjustment*. **Vincent Amanor-Boadu**, professor, was voted the inaugural chair of AAEA Africa. **Allen Featherstone**, department head, began his term as a director of the AAEA Executive Board.

Ronald Sullivan, senior in international agribusiness from Paola, is one of two Kansas State University finalists for the 2016 Harry S. Truman Scholarships, which provides up to \$30,000 in financial support for graduate education.

Agronomy

The Forage Bowl Team took first place honors in the National Forage Bowl Competition for the second year in a row. The format is similar to the popular game show Jeopardy, where a moderator asks questions about forage production, management, and utilization. Team members are Jessica Bramhall, Seneca; Cole Renner, Norton; Cami Roth, Sterling; Alexandria Mustain,

Leavenworth; and Derek Balzer, Belle Plaine. Assistant Professor Doohong Min coaches the team.

Animal Sciences and Industry

Michael Tokach (M.S. '88 animal science), university distinguished professor, was named the 2015–2016 Distinguished Alumnus by the North Dakota State University College of Agriculture, Food Systems and Natural Resources.

Communications and Agricultural Education

The Agricultural Education Club hosted the first Ag Ed VIP Day in November to introduce future students and parents to the program and provide insight into career opportunities.

Entomology



Michael Smith, professor, is part of a new five-year, \$4.8 million research project supported by the USDA's National Institute of Food and Agriculture, which intends to find genetic material in Johnsongrass that could help fight the noxious weed and improve grain sorghum's tolerance of these pests.

Michael Kanost, university distinguished professor of biochemistry and molecular biophysics and an ancillary professor of entomology, was elected a 2015 fellow of the Entomological Society of America.

Greg Zolnerowich, professor, was named the Arthur F. Beyer Distinguished Alumnus by Midwestern State University in Wichita Falls, Texas.

Kirby Stafford (M.S. '79) was honored as the 2015 Department of Agronomy Distinguished Alumnus. He is vice director, chief scientist, and state entomologist at the Connecticut Agricultural Experiment Station. Stafford also works with local health departments and the Connecticut Department of Public Health on community-based projects for the prevention of Lyme disease. While on campus, he gave a lecture on Ticks, Inquires, and Insect Invasions.

Food Science Institute

K-State's food science program was ranked No. 25 in the United States by College Values Online. The ranking considered tuition; financial aid; return on investment; and the number of minors, concentrations, or areas of emphases offered.

Grain Science and Industry

The department alumni and friends tailgate will be Sept. 24, 2016. Festivities start two hours before kick-off of the Kansas State/Missouri State football game at the IGP Conference Center across from Bill Snyder Family Stadium. RSVP by Sept. 10 to 785-532-6161 or roxana@ksu.edu.

Jennifer Frederick, USDA National Needs doctoral fellow in grain science, earned the James R. Coffman Honor Council Student Award student from the Kansas State Honor and Integrity System.

The Grain Elevator and Processing Society (GEAPS) program earned the University Professional and Continuing Education Association Central Region's 2015 Celebration of Excellence Award for Innovative Noncredit Program at the UPCEA Central Region Conference.

Horticulture, Forestry and Recreation Resources

Evaluation of Atmospheres within Urban Home Lawn Microclimates, by Kenton Peterson (Ph.D. '13 horticulture), **Dale Bremer** (M.S. '94, Ph.D. '98 agronomy) and **Jack Fry** (B.S. '82 horticulture), professors of turfgrass science, was

published in the September–October 2015 issue of *Crop Science* and the research highlights of the December 2015 *CSA News*, official magazine for members of the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America.

Horticulture and agronomy graduate students and interns from Zamorano attended the annual Chase County Conservation District banquet. The grad students **Raul Osorio** and **Nicole Gutierrez** talked about their research, while interns **Denisse Benitez**, **Andrea Osorio**, and **Marco Granadino** described the agriculture and geography of their home countries of El Salvador, Honduras, and Ecuador. The audience was particularly interested in how bananas, coffee and cocoa were produced and processed.

Kansas Forest Service

Thad Rhodes (B.S. '00 park resources management), district five rural forester, was named the 2015 Forest Conservationist of the Year at the Kansas Wildlife Federation's 65th annual meeting in Wichita on Feb. 27. Rhodes oversees 14 north-central Kansas counties.

A \$13 million dollar grant that covers the majority of costs to plant trees and improve the quality of woodlands is available to Kansas landowners. Through the Resource Conservation Partnership Initiative (RCPPI), landowners located in 13 high-priority watersheds in eastern Kansas, may apply at their local Natural Resources Conservation Service offices. RCPPI is offered through the Environmental Quality Incentives Program. Research documents that healthy, well-managed woodlands improve the quality of water in watersheds. Research also suggests that planting trees adjacent to streams and rivers is a direct deterrent to the sedimentation of federal reservoirs, which provide water to two-thirds of Kansans.

Plant Pathology

Eduard Akhunov, associate professor, collaborated with Jorge Dubcovsky, University of California–Davis, on a breakthrough study that identifies one of the wheat genes that controls response to low temperature exposure, a process called vernalization.

Doug Jardine, professor, received the North Central Region Distinguished Service Award at the National Epsilon Sigma Phi Conference.

College of Agriculture

Don Boggs (M.S. '77 animal science), associate dean, received the Honorary America FFA Degree at the 2015 National FFA Convention & Expo, Oct. 28–31 in Louisville, Kentucky. The award is given to those who advance agricultural education and FFA through outstanding personal commitment.

K-State Research and Extension

The 2015 Engagement Incentive grant recipients: *Reaching new audiences in 4-H*, **Debra Bolton**, family and consumer sciences specialist, Southwest Research-Extension Center; *Engaging Kansas produce growers in strengthening on-farm produce safety and quality education and outreach*, **Londa Nwadike**, assistant professor and extension

food specialist, K-State Olathe; *Tap to togetherness: Community-based participatory research using kinesthetic learning among families and their young children*, **Bradford Wiles**, assistant professor and extension specialist, early childhood development, Julie L. Pentz, assistant professor in the School of Music, Theater, and Dance, and Janice Schroeder, parent educator, Parents as Teachers.

Debra Bolton also received the Diversity/Multicultural Award at the National Epsilon Sigma Phi Conference.

Former Dean Honored

Fred Cholick received the Association of Public and Land-grant Universities Experiment Station Section's Award for Excellence in Leadership.

He accepted the award at the North Central Regional Association of Agricultural Experiment Station Directors on Nov. 15, 2015, at the organization's annual conference in Indianapolis.

In 2004, Cholick became dean of the College of Agriculture and director of K-State Research and Extension. He accepted the position of president and CEO of the Kansas State University Foundation in 2010 and retired March 31, 2015.



Pat Brady (B.S. '78), right, hosted a tour of Brady Nursery, Wichita, for Jason Griffin, director of the John C. Pair Horticultural Center, and K-State Research and Extension specialists and agents interested in horticulture. The family operation was founded by Joe Brady (B.S. '50). Three of Pat's children — Sara, Becky, and Steven — are K-State students.

Soil Microbiologist Earns Two Honors

Charles “Chuck” Rice, university distinguished professor of agronomy, has been appointed to a three-year term as chair of the Board on Agriculture and Natural Resources, a major program of the National Academies of Sciences, Engineering, and Medicine. He also was chosen as the first recipient of the Mary L. Vanier University Professorship.

NASEM Board Chair

The National Academies of Sciences, Engineering, and Medicine are private, nonprofit institutions and include scientists, engineers, physicians, and researchers that provide expert advice on some of the world’s most pressing challenges.

“The board will be tackling several issues including genetically modified organisms, agricultural workforce, and water resources,” Rice said. “Several groups have identified the lack of quantity and quality of the agricultural workforce from those without advanced

degrees to doctorates. The U.S. agriculture and food industry must have a properly trained workforce to remain competitive while sustaining the environment.”

Rice served two three-year terms on the board before being named chair.

“We are fortunate to have faculty members like Chuck Rice,” said John Floros, dean of the College of Agriculture and director of K-State Research and Extension. “Chuck’s important contributions to agriculture and the environment through his research and teaching are known internationally. The NASEM could not have chosen a more fitting person to lead the Board on Agriculture and Natural Resources.”

University Professorship

Rice received the five-year Mary L. Vanier University Professorship, which honors and provides financial support to innovative faculty who are doing exceptional work.

“Endowed professorships, such as this one, are an integral factor to Kansas State University having the ability to recruit and retain distinguished faculty who conduct research on our campus and teach and mentor our students,” said April Mason, provost and senior vice president.

In his most recent work, Rice has focused on soil and global climate change, including carbon and nitrogen emissions in agricultural and grassland ecosystems, plus soil carbon sequestration and its potential benefits to the environment.

As part of that work, he was a member of the United Nations’ Intergovernmental Panel on Climate Change that received the Nobel Prize in 2007.

“This endowment will enhance my research and outreach on soil microbiology at K-State,” Rice said. “The additional funds will greatly help with travel, equipment needs, and support the students in my program.”



Dan Donnet

Newest Hall of Fame Inductee



Courtesy of Jack Lindquist

Lindy Richardson Lindquist has touched the lives of more than 21,000 young Kansans. For her dedication to 4-H and its programs, she was inducted into The National 4-H Hall of Fame in October 2015.

"It takes a dedicated and caring woman to help raise a child and be

more concerned about others than herself, and it's even more rare when it's 'raising' thousands of children and keeping those relationships as young people grow into adulthood," said Rhonda Atkinson, associate director of the Kansas 4-H Foundation. "She taught by example that the best thing

The Kansas Senate and House recognized Lindy Lindquist for her service. From left: Sen. Tom Hawk, Manhattan; Sen. Elaine Bowers, Concordia; and Rep. Susan Concannon, Beloit, with Lindy and Jack Lindquist.

young people can do with their lives is provide service to others."

Lindquist worked as an agent in Chase and Douglas counties. She later served as Kansas' first state and national 4-H events coordinator and created many new programs, including the Kansas 4-H Youth Council.

In retirement, she continues to positively influence the lives of those around her. Many former 4-H protégés remain in contact with her, including 15 who became extension agents.

In February 2016, the Kansas House of Representatives and Senate each recognized Lindquist for her service to Kansas youth.

She is the 13th Kansan to be inducted into the Hall of Fame; Kansas has the most inductees of any state.

Prasad Honored for Dedication to Students, Research



Division of Communications and Marketing

P.V. Vara Prasad, professor of agronomy, received a Commerce Bank and W.T. Kemper Foundation Distinguished Graduate Faculty Award at the December 2015 Graduate School commencement ceremony.

"Dr. Prasad has had a tremendous positive impact on his profession at the national and international levels," said Gary Pierzynski, agronomy department head. "He has taken our crop physiology program to new heights in a number of areas, trains many graduate students and visiting scholars, and is a prolific publisher in high-impact journals."

Prasad researches how crops respond and adapt to changes in the environment, and he develops ways to

Vara Prasad, professor of agronomy, inspects plants in a Throckmorton Hall growth chamber.

help farmers understand and overcome environmental stresses that can affect crop production. He has received more than \$62 million in research funding from state and national agencies.

He was recently elected a fellow of the Crop Science Society of America.

In addition to his teaching and research duties, Prasad is the director of the Feed the Future Sustainable Intensification Innovation Lab, funded by the U.S. Agency for International Development, and K-State's Great Plains Sorghum Improvement and Utilization Center. Prasad presented a lecture on his research to the campus community on March 1.

"USAID recognized his stellar credentials and vision when they awarded K-State the \$50 million Feed the Future Sustainable Intensification Innovation Lab," said Pierzynski.

Class Notes

'40s

The Beezley's were honored as the 2015 K-State Family of the Year. Patriarch **William "Bill" Beezley** (B.S. '40 agronomy) and son, **Jerome** (B.S. '71 dairy production), played football for the Wildcats.

'50s

Luther James "Jim" (B.S. '50 agronomy) and **Lorraine Gaskell**, Chanute, celebrated their 65th wedding anniversary on Aug. 13, 2015. Jim was employed by the USDA Soil Conservation Service for 40 years.

Jack L. Neal (B.S. '50 entomology) and wife **Joan** celebrated their 68th wedding anniversary Sept. 7, 2015.

Richard Fleming (B.S. '53 agricultural journalism) was inducted into the Nebraska Journalism Hall of Fame.

Since the age of 50, **Marvin**

Hachmeister (B.S. '56 agricultural education, M.S. '61 education) has run one lap for every year he has been alive at the Ahearn Field House track. A group joined him on March 16 to run 85 laps — about 10.5 miles. Hachmeister taught agricultural education 1979–1989 then biological and agricultural engineering until he retired in 1996.

'60s

Clait E. Braun (B.S. '62 agronomy), Tucson, Arizona, received the Spirit of Defenders Science Award. He has been active in wildlife research and management activities for more than 45 years.

Ken Stielow (B.S. '67, M.S. '69 agricultural economics) was honored as Stockman of the Year at the March 3 Stockmen's Dinner.

'70s

Jerry Bohn (B.S. '72 animal science), general manager of Pratt Feeders, was named Department of Animal Sciences and Industry Distinguished Alumnus.

Kirby Stafford (M.S. '79) was honored as the 2015 Department of Entomology Distinguished Alumnus. He is vice director, chief scientist, and state entomologist at the Connecticut Agricultural Experiment Station. Stafford also works with local health departments and the Connecticut Department of Public Health on community-based projects for the prevention of Lyme disease. While on campus, he gave a lecture on Ticks, Inquires, and Insect Invasions.

'80s

Heidi Bright (B.S. '83 agricultural journalism) published her book, *Thriving Soup: A Feast for Living Consciously During the Cancer Journey*. She received the 2014 Voices of Women Award from *Whole Living Journal*.

'90s

Tim Marshall (B.S. '98 agricultural economics), Barber County agriculture and natural resources agent, and wife, **Stephanie**, announced the birth of **Paisley Rose** Oct. 7, 2015.

Mark Fowler (B.S. '92 milling science and management, M.S. '06 agricultural economics) accepted the position of president/CEO of Farmer Direct Foods, Inc. He was associate director of the IGP Institute.

'00s

Justin Waggoner (B.S. '00, M.S. '01 animal science) and wife, **Stephanie**, announced the birth of **Cassidy Rose** on Feb. 2, 2016. Justin is beef systems specialist at the Southwest Research-Extension Center.

James Lattimer (B.S. '02 animal science, Ph.D. '12 nutrition) joined the Department of Animal Sciences and Industry as an assistant professor.

Austin (B.S. '08 agribusiness) and **JoEllyn Argabright** (B.S. '08 nutritional sciences) welcomed daughter, **Cooper Jean**, Jan. 10, 2016. JoEllyn is the K-State Research and Extension—

Rawlins County family and consumer sciences agent. Austin farms and ranches with his family near Atwood.

Anthony (B.S. '04 animal science) and **Jamie** (B.S. '05 animal science) **Rathbun** welcomed their fourth child, **Karaline Lee**, Jan. 21, 2016. Anthony is a rancher, and Jamie is the K-State Research and Extension—Midway District family and consumer sciences agent.

Caleb (B.S. '05 agricultural technology management) retail development manager for Winfield Solutions, and **Janae McNally**, K-State Research and Extension—Frontier District 4-H agent, announced the birth of **Gentry Jack** on Jan. 13, 2016.

Nicole (B.S. '01 animal science) and **Keith Bryant** (B.S. '05 animal science) announced the birth of **Audrey Gene Bryant** on May 30, 2015.

Matt Gourlay (B.S. '08 horticulture), Colbert Hills Golf Course, was named a finalist by his peers for the 2015 Superintendent of the Year award presented nationally by TurfNet.

Garet (B.S. '06 feed science and management) and **Jaymelynn Farney** (B.S. '07, Ph.D. '12, animal science) welcomed daughter, **Ashlynn Kay**, on Feb. 13, 2016. Garet works for M&M Herefords and Wildcat Feeds, and Jaymelynn is an assistant professor/extension beef systems specialist.

'10s

Feed science and management alumni **Brooke (Jones) Dutton** (B.S. '10), quality manager at Bill Barr & Co., Inc., and **Ryan Roberts** (B.S. '10, M.S. '13) quality assurance manager at Lortscher Animal Nutrition Inc., have been selected for the International Production and Processing Expo's Young Leaders 30 Under 30 program.

Josh Sinning (B.S. '13 food science) competed in 2016 RCA Professional Culinology Competition. His team finished first overall and Gold Standard Product for the American Culinary Federation judging.

Recent K-State Research and Extension Hires

Monte Vandever (B.S. '84, M.S. '86 agricultural economics) southwest area extension specialist, agricultural economics.

Caleb Barkman (B.S. '11 animal science) Pottawatomie County agriculture and natural resources agent.

Alyssa Rippe (B.S. '13 animal science) Twin Creeks District livestock and horticulture agent.

Shannon Rogge (B.S. '14 animal science) Pawnee County agriculture and natural resources agent.

Billie Chesney (B.S. '15 animal science) Grant County agriculture and natural resources agent.

Kelsey Hatesohl (B.S. '15 horticulture) River Valley District horticulture agent.

Ashley Stiffarm (M.S. '15 horticulture) District 4 forester.

In Memoriam

Glenn Busset (B.S. '41 agricultural economics), 100, Manhattan, died March 2, 2016. From 1942 to 1981, he served Kansas 4-H in various positions. He also worked overseas at Hyderabad, India; the Philippines; and Japan. In 2005, he was elected to the National 4-H Hall of Fame.

Robert A. Leonard Jr. (B.S. '47 agronomy), 97, Manhattan, died Dec. 1, 2015. He was a Kansas Farm Bureau field man, owned several businesses, and worked at Capper's Weekly.

Elmer Blankenhagen (B.S. '48 animal science), 94, Exton, Pennsylvania, died Feb. 11, 2016. He worked for Swift and Company, as a Riley County agricultural extension agent, and a southwest district agent.

William "Bill" Richards (B.S. '48 milling science and management), 90, Laguna Woods, California, died Oct. 28, 2015. He worked as a trainee for Albers Milling in Oakland then returned to Manhattan, where he operated and managed various businesses.

Fred Merrill (B.S. '49 milling science and management), 91, Mission Hills, died Oct. 20, 2015. He served as president of ADM Milling Co. He established Cereal Food Processors in 1972. He chaired the KSU Foundation, Crop Quality Council, and North American Millers and Kansas Wheat Improvement associations.

John H. Barnes (B.S. '51 agricultural economics), 86, Newton, died Feb. 12, 2016. He was an agent in Brown and Harvey counties. He produced a local agricultural radio show and wrote more than 1,500 newspaper articles.

Roger Dean Wolfe (B.S. '60 feed science and management), 76, Hiawatha, died Aug. 28, 2015. He was manager/CEO of White Cloud Grain Co., president of the Kansas Fertilizer and Chemical Institute and the Kansas Grain and Feed Association, and served on various boards and committees, including the Dean and Director's Advisory Council.

Lot Forman Taylor Jr. (B.S. '64 animal science, B.S. '72 civil engineering), 76, Woodward, Oklahoma, died Aug. 30, 2015. He was a licensed engineer, ran Prairie Land Environmental Remediation, and was a farmer/rancher.

Larry Hendershot (B.S. '70 biology, M.S. '77 grain science), 67, Hereford, Texas, died Nov. 14, 2015. His passion was research and development in the agriculture industry.

Harold Storer (B.S. '71 feed science and management), 67, Manhattan, died Jan. 10, 2016. He worked for Texas Instruments, Frito Lay, J.W. Allen, and as a middle school math teacher.

Ann Marie (Kane) Religa (B.S. '85 agricultural education), 53, Newton, died Nov. 4, 2015. As a 4-H agent in Rice and Harvey counties, she touched the lives of thousands of 4-H youth, families, volunteers, and colleagues.



World War II veterans Ed Call (Ph.D. '67), left, and Herman Westmeyer visit during a Nov. 17, 2015, animal sciences and industry retiree and friends breakfast at the Stanley E. Stout Center. Westmeyer (M.S. '65) had celebrated his 103 birthday two days before.

Michael Dikeman (B.S. '66, Ph.D. '70) created a presentation with comments and memorabilia provided by Westmeyer and Call. Audience members also shared their military service.



Westmeyer served as a county agent in Lane, Barber, Harper, Ford, and Harvey counties (1936–1978). He said, "I saw a lot of gruesome things during the war. Instead of thinking about those, I went out and helped farmers."

Call was an extension dairy specialist and faculty member at K-State from 1963 to 1984. He died on Jan. 5, 2016, at the age of 89.

Alumnus Joins Foundation Staff

Drew Goering, a native of Inman, recently joined the Kansas State University Foundation as a development officer for the College of Agriculture.

Goering grew up showing livestock through 4-H and was involved in FFA. He graduated in 2012 with a degree in park management and conservation with an emphasis in recreational business. As a K-State student, he worked at the Call Hall Dairy Bar.

"I was involved with the Kansas State Student Foundation, which has given me a little background as I kickoff working for the foundation," said Goering.

For the last four years, he worked for FarmHouse International Fraternity doing recruitment and retention work with current and new universities.

"I enjoy what I'm doing, especially the opportunities to meet our alumni and friends and to be the bridge between them and the university," said Goering. "I'm looking forward to fundraising for the college's various needs."

He joined about 80 College of Agriculture alumni in the West Stadium Center of Bill Snyder Family Stadium on February 6 for a pregame meal, tour, and program before cheering the Wildcats to an 80 to 69 win over No. 1 ranked Oklahoma State University.



From left: Don Boggs (M.S. '77), associate dean of agriculture, and Drew Goering (B.S. '12) development officer, visit with Dan (B.S. '62) and Beth Bird (B.S. '61) as they enjoy the Feb. 6 "Pre-Game with K-State Ag" event at the West Stadium Center.

Ag Alumni Class Notes

Submit your notes to www.ksu.edu/agreport or fill out this form and return it to:
Gloria Holcombe

Department of Communications and Agricultural Education
1612 Claffin
208 Umberger Hall
Manhattan, KS 66506-3402
or email to: gloria@ksu.edu

Name_____

Spouse's Name_____

City_____ State_____ ZIP_____

Home Phone_____ Email_____

Graduation Date(s)_____ Degree(s)_____

Employer_____

Title_____

Feel free to attach more information.

Ag Alumni Board

Kelsey Olson, Manhattan, president (B.S. '05 agribusiness, M.S. '09 agricultural economics)

John Coen, Wellsville, president elect (B.S. '81 agricultural education)

Lindsey Huseman, Ellsworth, past president (B.S. '06, M.S. '10 agricultural education)

Aaron Gasper, Abilene, secretary (B.S. '04, M.S. '06 agricultural economics)

Ardery Rustin, Ag Council rep (junior, animal science)

Carrie Carlson, Ag Ambassador rep (junior, food science)

Weylan Bosse, Leawood (B.S. '04 bakery science and management)

Russ Brown, Wichita (B.S. '91 animal science)

Keith Bryant, Garden City (B.S. '05 animal science)

Michael Burns, Dodge City (B.S. '06, M.S. '08 agricultural economics)

Jill Casten, Manhattan (B.S. '02 agricultural economics)

Joe Curran, Farlington (B.S. '89 agricultural education)

Kevin Donnelly, Manhattan (B.S. '72, M.S. '74 agronomy)

Michael Duff, Manhattan (B.S. '05 agribusiness, M.S. '07 agronomy)

Cory Epler, Lincoln, Nebraska (B.S. '01, M.S. '03 agricultural education)

Drew Goering, Manhattan (B.S. '12 park management and conservation)

Jason Grady, Manhattan (B.S. '99 animal science, DVM '03, M.S. '08 biomedical science)

Abby Janssen, Geneseo (B.S. '97 animal science)

Diane Johnson, Fort Worth, Texas (B.S. '85 animal science)

Cassie Jones, Wamego (B.S. '07, M.S. '09 animal science)

Tim Luginsland, Lenexa (B.S. '85 agricultural economics)

Mike McClellan, Palco (B.S. '84 agricultural economics)

Rick Perkins, Wichita (B.S. '88 agricultural education)

Kelly Perrier, Wichita (B.S. '02 food science/agribusiness)

Larry Smart, Frankfort (B.S. '87, M.S. '91 agricultural education)

Mary Soukup, Ellsworth (B.S. '07 agricultural communications and journalism)

Lee Weis, Bavaria (B.S. '85, M.S. '89 agricultural education)

Scott Winter, Hillsboro (B.S. '05 agribusiness)

Don Boggs, associate dean (M.S. '77 animal science)

Sandy Klein, events and projects coordinator (B.S. '06 agricultural education, M.S. '11 curriculum and instruction)

40 Under 40

Farm Journal Media's 40 Under 40 awards recognize young leaders who will be instrumental in meeting the 2050 challenge — feeding nine billion people living on Earth by 2050. Four K-State College of Agriculture alumni are among the 2015 40 Under 40 leaders.

For 11 years, **Larry Keenan** (M.S. '03 animal science) has been building a career in genetic evaluations, predictions, and breed improvement for the Red Angus Association of America.

Growing up on a cow-calf operation in Oklahoma, Keenan understood at an early age the importance of genetic evaluation technology and the ability to put it into practice.



Larry Keenan

As director of breed improvement, Keenan oversees genetic predictions, which includes current tools as well as the development of new tools to help commercial producers make better selection decisions and achieve overall goals for their operations.

Ryan Meyer (B.S. '00 agricultural

economics) works for Creekstone Farms in Winfield, Kansas, as head of cattle procurement, contracting, and risk management.



Ryan Meyer

Meyer said a series of experiences, starting with the family farm, led him to his current position.

He interned with the Chicago Mercantile Exchange then worked at Future Beef for two years, where he learned the intricacies of cattle buying, beef marketing, and international trade. He joined Creekstone in 2003.

Brad Foote (B.S. '99 animal science) manages Imperial Beef, a feedyard near Imperial, Nebraska, where nearly all feed inputs are locally sourced. Manure from the pens is returned to local farm ground, plus calves and yearlings come from local ranches.



Brad Foote

"It's a benefit to everyone, said Foote. "We're able to meet our needs, and our neighbors find a ready and competitive market for their goods."

He and his family own and operate five feedyards in western Kansas and southwestern Nebraska.

"We have a passion for feeding cattle," said Foote of the family business. "It's what we love to do. We strongly believe we need to be leaders in feeding the world a good product. We want to be part of producing a safe, healthy product for the world to enjoy."

Joe Kovanda (M.S. '04 agricultural economics), vice president for Bartlett Cattle Company, has earned a reputation for his market expertise.



Joe Kovanda

He began his career at Bartlett in cattle procurement/risk management, then worked for JBS Five Rivers Cattle Feeding LLC, before returning to Bartlett in his current position.

He serves as the beef industry advisor to the Commodity Futures Trading Commission and vice chairman of the National Cattlemen's Beef Association Live Cattle Marketing and International Markets Committee.

Ed Greiman, chair of the NCBA committee, said he depends heavily on Kovanda.

"If I'm going into a meeting, I want to take the smart guy with me," said Greiman. "Joe's innovative, methodical in his analytics, and never passes up the chance to consider a new idea."

Courtesy of Farm Journal Media

Donations and Scholarships



Supporting Agricultural Education

Two men named Howard greatly influenced the life of Bob Broeckelman (B.S. '70, M.S. '72, Ph.D. '88). The first was Howard Wallace, the FFA teacher in Oakley, where Broeckelman grew up. "He took a personal interest in me," said Broeckelman. "I ended up being a state officer and highly involved in FFA. It totally changed my life."

Then Broeckelman went to K-State and majored in agricultural education, largely because of the positive influence of Howard Wallace (B.S. '60, M.S. '67). This is when he met the second Howard — Professor Howard Bradley (B.S. '30, M.S. '37). Bradley was more than a teacher to Broeckelman; he was a mentor and father figure.

Because of the positive impact these two men had on his life, Broeckelman and wife, Bunny, created the Dr. Bob and Bunny Broeckelman Agricultural Education Scholarship. It will support Kansas agricultural education students — who are also members of Alpha Gamma Rho fraternity — while they are doing their teaching internship semester.



"We like helping those who are firm in their commitment to be ag teachers," said Broeckelman. "We're supporting agricultural education because we believe in the education and leadership development FFA gives to kids."

Bradley's wife, Eunice, established the Howard R. Bradley Memorial Scholarship in 1997. This year's recipient is Blair Nickelson, senior in agricultural education from Graham County.

By Marisa Larson

The Innovation and Inspiration Campaign supports K-State's goal to become a top 50 public research university by 2025. The College of Agriculture's \$100 million target will fund these priorities:

Student success — \$40,000,000

- General undergraduate and graduate scholarships help students pursue a quality education.
- Study abroad experiences prepare students to work for companies with a global focus.
- Diversity in the student body and workforce generates ideas to meet future challenges.
- Extracurricular support provides hands-on experience, such as judging teams and presentations at national meetings.

Faculty development — \$23,000,000

- Endowed professorships and chairs allow the college to attract and retain outstanding faculty (see the new Mary L. Vanier University Professorship on page 22).
- Research supports agriculture, the state's largest industry, to meet the challenge of feeding more people without additional resources.
- Faculty need quality resources and professional development opportunities to excel in their discipline and help students.

Facility enhancement — \$12,000,000

- New buildings with advanced technology are essential for training future scientists and leaders.
- Renovations improve safety and usability of aging buildings and labs.

Excellence funds — \$18,000,000

Provide deans and department heads with flexibility to pursue opportunities or address emerging needs for students and faculty.

Programmatic support — \$7,000,000

Address additional funding needs to maintain essential existing programs.

Contact: Kim Schirer, 800-432-1578
kims@found.ksu.edu

KANSAS STATE
UNIVERSITY

Henry C. Gardiner
Global Food Systems Lecture

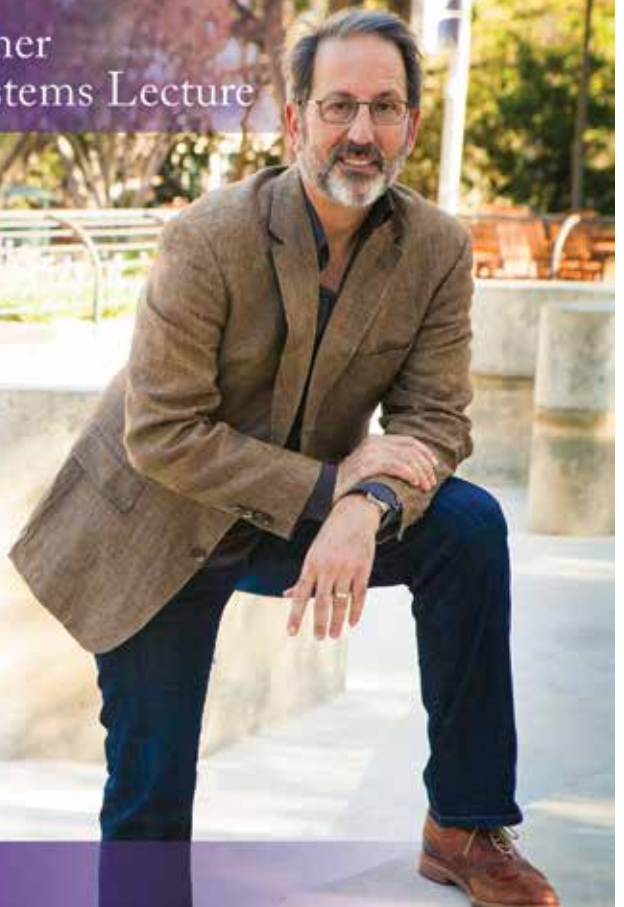
Jay Famiglietti

Hydrologist and Professor
University of California-Irvine

Monday, October 3, 2016, at 7 p.m.
Kansas State University
McCain Auditorium

Water, Food, and Energy:
*Interwoven Challenges to Sustainable
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<http://www.k-state.edu/globalfood/lecture-series/>



KANSAS STATE
UNIVERSITY

Animal Sciences and Industry

Family & Friends REUNION

Friday, October 7, 2016

5:30 p.m. to 9:30 p.m. at the Stanley E. Stout Center
Celebrate with K-State Animal Sciences and Industry family and friends
Food, music, and fun for all ages

Pre-registration deadline: September 23

All attendees are invited to the AS&I tailgate in Cat Town two hours
before the Oct. 8 K-State/Texas Tech game.

asi.k-state.edu/familyandfriends



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2016 Don L. Good Impact Award



Wild for Ag Weekend April 29-30, 2016

Ag Alumni Scholarship Golf Tournament, Friday, April 29, Colbert Hills Golf Course

Four Person Scramble — \$125 Individual Entry Fee

Registration fee includes: cart, range balls, practice facility, golf, ag alumni merchandise, door prize entry, drink tickets, and dinner following the tournament

Registration — 10:30 a.m.–11:45 p.m. Shotgun Start — Noon

Awards Reception, Saturday, April 30

2016 Award winners

4 p.m. — K-State Alumni Center

Distinguished Alumnus: **Bob Broeckleman**, B.S. '70 agricultural education, M.S. '72, Ph.D. '88 adult and occupational education

Outstanding Young Alumnus: **Anne Hazlett**, B.S. '95 agricultural journalism

David J. Mugler Outstanding Teaching Award: **Shannon Washburn**, B.S. '95 agricultural education, M.S. '99 secondary education

New Graduate and Alumni Dinner

6–8 p.m. — K-State Alumni Center Cost: \$25

Recognition of fall and spring graduating seniors

For additional information, contact Sandy Klein at 785-532-5121 or sandy@ksu.edu

Golf Tournament Sponsors

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