

College of Agriculture • Spring 2017

AgReport

KANSAS STATE
UNIVERSITY

International Efforts
Span 60 Years

Moving Forward



Distinguished Young Alumnus Dalton Henry, left, visits with Dean and Director John Floros before a reception honoring Henry. The college has had four alumni chosen for the award since 2013.

Five years ago, we created a comprehensive strategic plan to become a top 5 college of agriculture and a global destination for education, research, and extension. At this time, we have met or exceeded our goals.

Leading the University

The College of Agriculture continues to make major strides in student retention, graduation rates, and the ability to attract multicultural students. It's important to note that our students also are finding good jobs. We have a nearly 100 percent placement rate.

Much of our student success can be attributed to our excellent faculty advising, and the numerous leadership opportunities our students have through clubs and judging teams, hands-on learning at research facilities and labs, plus an emphasis on internships, summer jobs and study abroad opportunities.

We also lead the university in extramural funding for basic and applied research and extension. Last year, the College of Agriculture/K-State Research and Extension was fifth in the nation in terms of USDA/National Institute of Food and Agriculture

competitive funding, and USAID has now invested more international ag program funds at K-State than at any other institution in the country. In addition, a large amount of our grants and other funds come from the private sector. Our faculty direct projects that are relevant to Kansas and beyond.

Beneficial Partnerships

To ensure that we are preparing our students to meet tomorrow's global challenges, we reach out to industry partners. Many companies provide research funding to our faculty, scholarships and internships to our students, and tremendous support in many other ways.

Thank you to the many alumni and friends who provide valuable input on industry needs and show their support by serving on advisory boards/councils and attending events on campus and throughout the state. As an example, in January and February, we conducted four regional meetings to update K-State Research and Extension stakeholders about our progress and innovative programs and to seek their input and advice.

Future Needs

Success also brings challenges, with infrastructure being a major one — our infrastructure needs updating and rebuilding. We hired an architecture and engineering firm to evaluate our current facilities. They concluded that only 21 percent of our academic space is acceptable. The rest is in desperate need of renovation or complete rebuilding.

As a college, we have been successful in growing our student population and securing student success, increasing research grants and impact, expanding our outreach and helping the state's largest industry prosper, and raising more philanthropic funds to support our teaching, research, and extension programs; however, we have neglected our infrastructure for decades.

Our faculty and students need new and updated facilities to conduct 21st century research and carry out their teaching and learning activities. Throckmorton Hall, our newest teaching/research facility, was built in two phases from 1981 to 1994. Some buildings such as Waters Hall were built more than a century ago. Today, it is extremely expensive to bring such aging facilities up to current quality and safety standards.

These serious infrastructure challenges have prompted some faculty to work in shifts because of insufficient space, and others to not even apply for additional grants. Problems with quantity and quality space are reducing our competitiveness and limiting growth.

I am asking you to help us renew our infrastructure by reaching out and advocating to legislators and the Kansas Board of Regents. We need their financial support to move forward.

Go Cats!

John D. Floros

John D. Floros
Dean and Director

Make a difference by supporting the College of Agriculture.

Visit www.found.k-state.edu/agriculture

to find out how you can become part of the college's exciting future.



AgReport

Spring 2017

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

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On the cover: Desalegn Serba, millet breeder at the K-State Agricultural Research Center-Hays, evaluates the performance of pearl millet genotypes in Cinzana, Mali. The Sorghum and Millet Innovation Lab sponsors the project with collaborators from Mali, Senegal, Burkina Faso, and Niger. For more, see pages 10-13. Cover photo courtesy of Nat Bascom.

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News Briefs

K-State President Richard Myers spoke to students, faculty, and ranchers during the 104th annual Cattlemen's Day on March 3.

Myers told the crowd he was proud of his Kansas roots and how Kansans turn challenges into opportunities. He also acknowledged his love for K-State and higher education. Myers described a K-State education as a bargain that draws hundreds of Kansas high school students because of its quality faculty.

He said he has toured agriculture facilities on campus and hopes to swing through western Kansas and talk with producers. Myers noted that K-State's College of Agriculture infrastructure needs refreshing and should be a priority because of the importance of agriculture to Kansas and the Kansas economy.



Alumna Directs Sorghum Improvement Center

Industry veteran Sarah Sexton-Bowser (B.S. '08 agricultural economics) was named managing director of the [Center for Sorghum Improvement](#).

The center focuses on expanding markets for sorghum and increasing yield with research investment in such areas as plant breeding and field-level management. It also builds a diverse array of options for producers, such as increased sorghum use in livestock feeding, encouraging international sales, and experimenting in new markets.



CENTER FOR
SORGHUM
IMPROVEMENT

Sexton-Bowser said the center aims to achieve major advances because farmers have not seen significant private technology investments in sorghum for the last couple of decades.

Funding for the center comes from the Kansas Grain Sorghum Commission, the United Sorghum Checkoff Program, the College of Agriculture, and the Kansas Department of Agriculture.

Weber to Lead 4-H Youth Development

Wade Weber returns to Manhattan as the new state program leader and department head for [4-H Youth Development](#). He holds a master's degree in counseling and student development from K-State and had been leading 4-H programs at Iowa State University for the last seven years.



He has won numerous awards for bringing innovative approaches to youth activities in science, technology, engineering, and math (STEM); agriculture and natural resources; creative arts; precision agriculture; and animal science — all with a focus on college and career readiness.

Weber served as the state president of the National Association of Extension 4-H Agents in Iowa in 2014 and expanded 4-H youth program capacity in Iowa and South Dakota.

Before his time at Iowa State, Weber worked in Manhattan in local and regional director positions for InterVarsity Christian Fellowship/USA. In those positions, he coordinated efforts at nine different university campuses in Arkansas, Kansas, Missouri, and Nebraska and served as a program director for collegiate summer programs in Bolivia and Ukraine.

K-State Restructures Kansas Forest Service

The Kansas Forest Service recently marked two milestones: 130 years as a state agency (March 10, 2017), and 107 years as a division within Kansas State University.



On Nov. 17, 2016, John Floros, dean of the College of Agriculture and director of K-State Research and Extension, announced a structural change. The Kansas Forest Service is now housed as an independent agency within K-State Research and Extension instead of under the Department of Horticulture and Natural Resources.

This shift does not affect the principle functions or operations of the agency, which are guided by 16 legislated powers and duties, and its mission of “Care of Natural Resources and Service to People through Forestry.”

For more information on the
Kansas Forest Service, visit
Kansasforests.org



www.facebook.com/kansasforests-service



<https://twitter.com/KSForestService>



www.instagram.com/kansasforests-service/



Dean and Director John Floros, MANRRS President Adriana Meneses, and Interim Associate Provost for Diversity Zelia Wiley.

Floros Receives Wallace Kidd Award

K-State's [Minorities in Agriculture, Natural Resources, and Related Sciences](#) (MANRRS) chapter presented the [Wallace Kidd Award](#) to Dean and Director John Floros on February 15. The award honors Wallace Ray Kidd, who was the first African American to receive a K-State degree in entomology (1950) and serve on the Riley County Commission.

This biennial award established in 2005 recognizes those who demonstrate a commitment to diversity on the university campus or in the community through mentoring, outreach initiatives, and other activities that advance the institution's goal of inclusion.

At the award reception, Floros said he was especially touched because this was the first award he had received directly from students. Several MANRRS students spoke about how much they appreciated Floros' support.

MANRRS President Adriana Meneses presented the award to Floros. Meneses, junior in animal sciences and industry, recently received the Carver Spirit of Innovation and Service Award. The honor recognizes undergraduate students who show evidence of traits embodied by George Washington Carver including creativity, courage, dedication, and whose achievements in their educational development inspire and motivate other students.



Building for the Future

Go to www.ksre.ksu.edu/annual-reports to access the 2017 annual report and related videos.

The 20-page report shows how the College of Agriculture and K-State Research and Extension are tackling the five grand challenges facing Kansans — global food systems, water, developing tomorrow's leaders, health, and community vitality.

It also highlights the college's facility needs for the future.



Courtesy of Megan Holton

Megan Holton



Kyle Anderson

Pat Hackenberg (3)

It's a Grain-Based WORLD

Department trains leaders to meet future challenges



Mayra Perez-Fajardo



Gideon Butler-Smith

"We are the only program in the U.S. that trains its students to understand where grain comes from, who raises it, how it is stored, how it is further processed, and how that processing affects what people or animals ultimately ingest as part of the food supply."

—Gordon Smith

Training Global Leaders

With the world population expected to rise to more than 9.7 billion people by 2050, the pressure on the earth's resources has never been greater. To help meet that challenge, faculty in the [Department of Grain Science and Industry](#) are training future researchers and industry professionals in the areas of bakery science, milling science, and feed science.

Through their research efforts and humanitarian work, the team helps solve global malnutrition through novel food processing and enhanced means of grain storage to maximize the world's resources. This is accomplished through funding support via national grants as well as with industry partnerships. According to Department Head Gordon Smith, the department finds unique ways to address difficult challenges.

Undergraduate Education

Smith credits the faculty's industry experience for providing students with real-world learning opportunities. "All of the faculty are highly integrated with the industry and more than 80 percent

have industry experience, so they can train students to meet current and future demands."

The department averages 200 undergraduates and 50 graduate students annually. "About half of our graduate students are international, so we're training people who are going to work all over the globe," Smith added.

Undergraduate students participate in clubs related to their majors and an undergraduate honorary society. A graduate student organization offers hands-on activities and trips to national meetings.

Gideon Butler-Smith, Overland Park, said he appreciates all the experience he gains as a bakery science and management student.

"The Bakery Science Club focuses on running a small business and producing baked goods for the Manhattan community. I am the production manager this year facilitating the scaling, mixing, and baking of our cherished products," explained Butler-Smith. "This club allows students from all majors and backgrounds to experience the joy of baking and learn a little bit of science and business while they're at it."



Gordon Smith (left), grain science and industry department head, visits with Randy Cartmill, vice president of operations at the Columbia Grain Export Terminal in Portland, Oregon.

Kyle Anderson, a [feed science and management](#) student from Olathe, said he was amazed by how much real-industry experience he received through the O.H. Kruse Feed Technology Center and internships. “It showed me that I do enjoy the process of feed production and want to pursue this career after graduation.”

Those experiences helped Butler-Smith and Anderson secure industry jobs upon graduation. Butler-Smith will be working in production for Kroger Manufacturing in Utah, while Anderson will be designing feed processing systems and serve as a feed processing equipment dealer for Waitt Equipment in Indiana.

“The applicability of the education is why the department has 100 percent job placement and starting salaries that are only second to the College of Engineering,” stated Anderson.

He added that many of his peers have multiple job offers.

Smith noted that starting salaries for most graduates are in the \$55,000 to \$65,000 range, depending on the degree.

Megan Holton (B.S. ’11 [milling science](#)/bakery science) works as the head miller for Ardent Mills in Commerce City, Colorado.

“The KSU grain science program provided me with background knowledge that I apply every day in my job and helped instill a problem-solving mindset,” Holton said.

Learning Labs

As department head, Smith strives to constantly improve the student experience and lab facilities.

“We have world-class modern facilities including two training mills that are unparalleled anywhere,” Smith said. Those facilities are located across from Bill Snyder Family Stadium at the Grain Science and Industry Complex.

The department also has lab and classroom space in Shellenberger and Waters halls on the main campus that Smith hopes to upgrade.

“It’s a great testimony to our faculty that we continue to produce high-class

research and high-quality students in aging facilities,” Smith added.

For Mayra Perez-Fajardo (B.S. ’16 [bakery science and management](#)), working on two research projects was a big part of her educational experience. One involved seeing the effects of different tempering times on the milling of waxy wheat, and the other tested the effects of final product characteristics using quinoa and tapioca flour to create a gluten-free muffin.

“Conducting undergraduate research projects really fueled my passion,” Perez-Fajardo said. “Because I enjoy learning, I decided to expand my education and further challenge myself by pursuing a master’s degree.”

Her career goal involves a job that brings people together through food. She hopes to accomplish this through product development — creating new products or optimizing existing ones.

Relevant Research

Departmental research funding comes through state and federal competitive grants, humanitarian aid, and industry support.

“Our research funding is fairly balanced among those three,” Smith said. “Compared to most departments, we conduct more industry and humanitarian-based projects. We have significant humanitarian research



As students, Roberto Santana (B.S. ’14), Sam Cook (B.S. ’14, M.S. ’16), and Kylie Lieber (B.S. ’15) worked through milling exercises in the Shellenberger Hall milling lab.

being conducted in multiple countries including Tanzania, Ethiopia, Guatemala, Bangladesh, China, Ghana, and India.”

Sajid Alavi, professor and extrusion processing engineer, leads a project on sorghum nutrition funded by the USDA Foreign Agricultural Services. It aligns with the university’s Global Food Systems Initiative and focuses on improving child nutrition in Tanzania and other parts of the world where children suffer long-term health effects from poor diets.

Through this project, sorghum-based products fortified with proteins and micronutrients were developed and field-tested with families in Tanzania. “The future impact of this research is going to be global because these new nutritious products have the potential to impact millions of children,” Alavi said.

Kansas is the No.1 grain sorghum producing state. This research was partially funded by Kansas and U.S. grain sorghum producers who also reap benefits. “In the future, there could be hundreds of thousands of tons of these new products manufactured in the U.S. and shipped to 20–30 countries around the world,” added Alavi.

Industry Partnerships

Departmental success is linked to strong funding support from commodity groups and other industry partners.

“We have some of the most generous partners I’ve ever seen,” Smith stated. “Their generosity is continually demonstrated in practice to our students, faculty, and administration.”

Trainings through the [IGP Institute](#), formerly the International Grains Program, illustrate how partnerships benefit the department and professionals across the world. In 2016 alone, institute faculty trained 2,001 industry professionals from 67 countries in 80 courses through on-site courses and via distance education. These programs are made possible through support from the Kansas Soybean, Wheat, Corn, and Grain Sorghum commissions.

“The IGP Institute provides innovative and relevant education and technical programs to enhance the market preference, consumption, and



A young girl in Tanzania, Africa, drinks a fortified grain sorghum product developed at K-State.

utilization of U.S. cereal grains, oilseeds, and their value-added products for the global grain industry,” Smith said.

The classes and seminars are geared toward grain processing and flour milling, feed manufacturing and grain quality management, and grain marketing and risk management. Grain science faculty and industry professionals lead these hands-on trainings, which are adapted to meet the needs of the ever-changing industry.

“For example, technology continues to evolve as we try to process more types of grain into different finished products,” Smith said.

With the world’s growing population, the need for well-trained grain professionals has never been greater. Grain science students and alumni such as Anderson, Perez-Fajardo, Butler-Smith, and Holton are well equipped to meet these head on.

Butler-Smith summed it up by referencing the K-State alma mater, “The department shaped who I am today, and I will forever be grateful to the people who had an impact on my education. This department and university is a place I love full well.”



Flour millers from Nigeria and South Africa experience a Kansas wheat harvest during a field trip to the Kejr farm near Salina, with Shawn Thiele, IGP Institute flour milling and grain-processing curriculum manager, and Jason Watt, Buhler instructor of milling.

New Buildings, New Technology, *Same Focus*

Providing real-world experience for Kansas State University students has been the mission of the Purebred Beef Unit for generations. Each year, hundreds of students work and learn at the Purebred Beef Barn, east of Bill Snyder Family Stadium.

On March 3, university dignitaries and [Department of Animal Sciences and Industry](#) family and friends hosted the dedication and ribbon cutting for the new Purebred Beef Barns and the beginning of the next chapter for the unit.

“Our new facility will enhance our ability to serve students,” said Ken Odde, animal sciences and industry department head, “particularly hands-on learning in the areas of managing seedstock cattle (animals maintained for breeding purposes), sale preparation

and management, livestock judging, genetic evaluation of cattle, and calving management. The new facility also strengthens our research capabilities, especially in understanding genetic contributions to feed efficiency.”

New Facility

Several factors necessitated the replacement of the Purebred Beef Barn built in 1957.

“Since that facility was built, the campus and community have built up around it, creating incompatible land uses,” said Bob Weaber, faculty unit coordinator and [extension](#) cow-calf specialist. “Residential, office, and research facilities, including the [National Bio and Agro-Defense Facility](#) (NBAF), now surround the program.”

“In the last 60 years, best management practices for animal care and handling, feeding, reproduction and calving management have changed substantially. Similarly, beef cattle housing, livestock handling, and feeding facilities have improved considerably.”

With state-of-the-art equipment, the new facilities open a fresh chapter in the



Ribbon-cutting ceremonies for the Purebred Beef Unit on March 3: (l to r) Rachel Waggle, student; Bob Weaber, unit coordinator; Ernie Minton, associate dean for research and graduate programs; Del Allen, professor emeritus; April Mason, provost and senior vice president; John Floros, dean and director; Ken Odde, department head; Dennis Kerschen, The Law Company; and Brandt Skinner, student.

unit's history and dedication to student education.

The expanded unit includes the Headquarters and Calving Center, located near the Stanley Stout Center off Denison Avenue, and the Bull and Heifer Development Center, next to the existing Beef Cattle Research Center north of Marlatt Avenue.

Animals at the Headquarters and Calving Center will primarily be managed in pasture conditions. This location will include the calving and maternity barn, multipurpose space, office spaces, and an apartment for student workers. Animal holding pens, pasture space, as well as a barn for processing, feed storage, and mechanic shop are adjacent to this facility.

The Bull and Heifer Development Center includes covered feed bunks and an automated individual animal feed and water intake monitoring system situated in a drylot condition. The facility will include additional animal staging pens and a processing area.

"The Insentec technology being installed in the new center will enable

collection of individual feed and water intake records on all classes of cattle — cows, calves, and yearlings," Weaber explained. "This technology will really add to our capabilities of genetic selection and research at the unit. All

*Our new facility will
enhance our ability
to serve students,
particularly hands-on
learning ...*

bull and heifer selection candidates will go through the test allowing us to make better breeding decisions."

Focus on the Student

Unit cattle are used for teaching purposes in classes — such as Livestock Sales Management, Pregnancy

Diagnosis, Bovine Calving — and for competition in the annual Little American Royal. A portion of the purebred unit herd are sold in the annual Legacy Bull and Female Sale hosted the first Friday in March. This sale is unique to the nation because it is engineered entirely by students to give them hands-on, practical experience in purebred cattle marketing.

"The new facilities will strengthen the student experience through enhanced teaching opportunities for many of our classes and laboratory sections in a safe, modern animal housing and management facility similar to what our students might experience upon entry in the workforce," Weaber said. "Our mission will continue to be providing undergraduate and graduate students with practical experience in breeding, feeding, management and marketing of purebred seedstock. Livestock selection and general animal science courses give students the opportunity to evaluate quality cattle."



After the Purebred Beef Unit ribbon cutting, cattle producers attended the 40th annual student-run Legacy Bull and Female Sale in the Stanley Stout Center. The new facilities will enhance the student learning experience and generate valuable research-based information for ranchers. Students pictured in the ring work at the unit. About 30 students gained experience planning and running the sale.

Global Efforts Span 60 Years

Kansas State University now hosts four U.S. Agency for International Development (USAID) Innovation Labs — [Applied Wheat Genomics](#), Collaborative Research on [Sorghum and Millet](#), [Reduction of Post-Harvest Loss](#), and [Sustainable Intensification](#). Only the University of California, Davis has five innovation labs.

How did K-State achieve such success? It didn't happen overnight. Its global history began 60 years ago when Kansas State Agricultural College's (KSAC) School of Agriculture created the Office of International Agricultural Programs and signed an agreement to start development of Andhra Pradesh Agricultural University in India. William Pickett, horticulture department head, was the first director.

KSAC was officially changed to Kansas State University of Agriculture and Applied Science in 1959, and the School of Agriculture was renamed the College of Agriculture in 1964. President John F. Kennedy created USAID in 1961.

Wealth of Projects

From 1956 to 1972, 59 faculty, including Arthur "Dad" Weber, head of the Department of Animal Sciences and Industry (1944 to 1952) and dean of the College of Agriculture (1952 to 1961), worked in India, and 160 Indian faculty received advanced training, mostly in Kansas. The experience in India led to a similar 13-year project in Nigeria that involved 90 K-State faculty.

In 1976, agricultural economist David Norman obtained a major USAID grant

to promote the farming systems research approach in the U.S. and abroad. It included training programs, literature on the system for Hale Library, and annual symposiums and conferences. The initiatives helped form the International Association of Farming Systems Research and Extension, which has been used extensively throughout the world.

During his 38-year tenure at K-State, Norman worked in 70 countries. He was honored as a distinguished fellow of the African Association of Agricultural Economists.

In the '90s Phillip Stahlman, weed scientist at the Agricultural Research Center-Hays, consulted on establishing agricultural training centers in Kazakhstan, Ukraine, and Russia. He also hosted government officials, scientists, and land managers from those countries in Kansas. As a visiting fellow (2007 to 2008) at the University of New England in Armidale, New South Wales, he worked with local agronomists on weed management in oil-seed sunflower. As a result, he was featured on the cover of [Australian Grains Magazine](#).

Stahlman went to Malawi, Africa, twice in 2010 on behalf of a USAID group to educate and train agro-dealers on proper herbicide application and helped them establish 25 weed control demonstration plots. He also was a member of a multi-university delegation that visited Ethiopia to assess the progress and capital needs of five universities there. Stahlman retired in March 2017 after 42 years of dedicated service.



David Norman (back row, left) went to the Solomon Islands as a consultant to train local extension officers on elements of the farming systems approach with specific reference to conducting/analyzing farm trials and demonstrations. The project was sponsored by the Food and Agriculture Organization.



Pearl Millet, Then and Now

Bill Stegmeier, an alternative crops researcher at the Fort Hays Branch Experiment Station (now the [Agricultural Research Center-Hays](#)), created a breeding program for pearl millet in the early '70s. Pearl millet was a staple food and feed crop in Africa and Asia.

Richard Vanderlip, emeritus professor of agronomy who worked with Stegmeier, said they wanted to see if the crop would work as an alternative to sorghum in the sandy soils of central Kansas.

According to *The First 100 Years, A History of the Agricultural Research Center-Hays*: By 1978, the breeding program was linked to international crop improvement programs, including the International Crops Institute for Semi-Arid Tropics (ICRISAT) headquartered in Hyderabad, India, and the International Sorghum and Millet Cooperative Research (INTSORMIL) program. That cooperation resulted in the exchange of several thousand varieties, germplasm lines, and elite inbred selections of pearl millet.

Bill Stegmeier, crops breeder, explains advantages of growing pearl millet at a Hays field day.

By 1997, at least half of the pearl millet hybrids marketed by India's private growers were produced using female parents from the Hays program ... more than five million acres.

The Hays pearl millet program ended in 1999 but was revived in conjunction with the USAID Sorghum and Millet Innovation Lab. Desalegn Serba was hired as the millet breeder in 2016. The program develops genetically diverse parental lines that will produce high-yielding hybrids that withstand drought, high temperature, pests, and diseases.

Military Connections

To help military families, USDA and 4-H entered into a cooperative agreement with the U.S. Army Family and Child Services system. The goal was to create a 4-H club at each installation.

"The Army wanted to use 4-H because we had research-based material written to use in working with youth," said Marcia McFarland, 4-H Youth Development specialist.

The Air Force also implemented the project, and Navy/4-H programs were added in 2003.

In 2009, K-State Research and Extension initiated basic agriculture trainings for deploying soldiers from the Army's 1st Infantry Division at Fort Riley. From 2009 to 2011, four Kansas National Guard Agribusiness Development Teams attended trainings to prepare them for service in Laghman Province in Afghanistan.

The Larson Legacy

Vernon Larson became director of the Office of International Agricultural Programs in 1962 and added the title of K-State assistant provost for international programs in 1986.

Larson established formal relationships between K-State and universities and institutes in Paraguay, Costa Rica, Honduras, Mexico, France, China, and Botswana. He also helped form the Association of U.S. University Directors of International Agriculture Programs and the Mid-America International Agriculture Consortium.

An article from University Archives attributed to the KAES Editorial Office, provided this quote from Larson about how assignments overseas benefit Americans as well as the host countries.



Vernon Larson led international programs for 29 years, serving as director of the Office of International Agricultural Programs in the College of Agriculture and K-State's assistant provost for international programs.



Entomologist Jeff Whitworth explains how to identify spiders to the first Kansas National Guard Agribusiness Development Team.

"Agriculture in Kansas is based on knowledge received from other nations. Almost all of our crops and livestock originally came from other countries. Because of threats from insects and disease, we need to continually seek more resistant and resilient plant and animal resources."

The [Vernon Larson Lecture Series](#) was created in 1979 and remains one of the university's longest continuous lecture series. Larson retired in 1991.

A June 16, 1991, Manhattan Mercury article stated that Larson believed something had to be done about a world that is "part hungry and another part well-fed" and that goal is best achieved

through international programs in the land-grant school concept.

Moving Forward

Assistant Director Jim Jorns became acting director after Larson's retirement. Jorns accepted the leadership position in extension education in 1994, leaving the international agriculture position open.

Steven Graham (M.S. '81 grain science) was hired as assistant to the dean and director in 1995. Because of his experience in the Peace Corps, international agricultural programming was incorporated into his duties.

Robert Hudgens served as director from 1997 to 2004, when he accepted

a position with USAID in Jordan. Graham again stepped in to manage the program. Nina Lilja joined K-State as director in 2008.

Lilja credits Graham with keeping the program going between directors, working with Peace Corps volunteers, and helping coordinate international projects.

When she came on board, she looked for faculty with international experience and an interest in leading projects related to global issues. She found a wealth of expertise and interest, which led to applying for and receiving the four USAID Feed the Future Innovation labs. "Strategically focusing on our strengths adds value to our domestic work, allows us to compete for larger grants, and expands our collaborative network," said Lilja.

Student Advantages

Having faculty who have studied or worked abroad can bring a different perspective to classrooms.

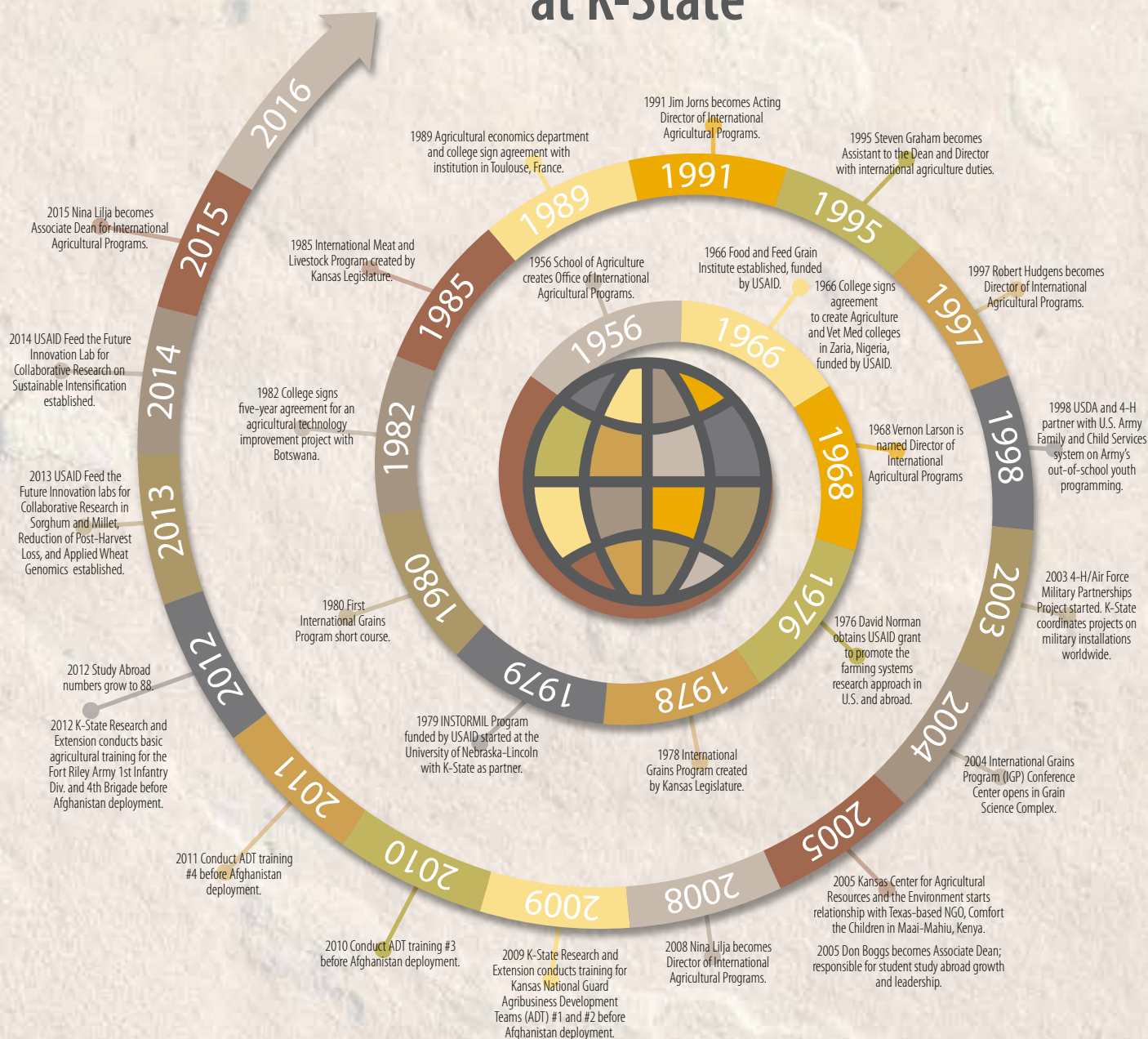
Don Boggs (M.S. '77 animal science) became associate dean of the college in 2005, taking on responsibilities for student study abroad growth and leadership. That same year Fred Cholic, dean of the college and director of K-State Research and Extension, approved financial support for students to study abroad.

In 2004, 24 [College of Agriculture](#) students studied abroad, and by 2016 that number had risen to 138 students.

"K-State's contributions to the world's well-being have been far-reaching, long-lasting, and multifaceted," said John Floros, dean and director.

"Recently, we have accelerated our international involvement not only because we need to produce better prepared graduates for a global economy, but also because most challenges ahead are global. As we try to address major issues in our food and agricultural systems, our environmental and natural resources, our people's health and our communities' vitality, it would behoove us to think globally and strategically. Our international efforts have always brought benefits back home to help the citizens of Kansas and the USA."

Celebrating 60 Years of International Agriculture at K-State



This article and time line capture a portion of the international work conducted over the last 60 years. A more complete time line, compiled by Steven Graham, is posted to www.ksu.edu/agreport.

Department Updates

[Agricultural Economics](#)

Tim Dalton, professor and director of the Sorghum and Millet Innovation Lab, serves as chair of the U.S. Agency for International Development Feed the Future Innovation Lab Council.

Barry Flinchbaugh, professor emeritus, offered insight on the next Farm Bill during a session at Cattlemen's Day on March 3.

[Agronomy](#)

Mary Beth Kirkham, professor, was elected an honorary member of the International Union of Soil Sciences at its Inter-Congress Meeting in Rio de Janeiro. She was the only person from the U.S. elected as an honorary member in 2016 and the first American woman to be elected. Kirkham will be recognized at the next World Congress of Soil Science in August 2018.

Curtis Thompson, professor and extension state leader, was recognized as a fellow of the North Central Weed Science Society at the organization's annual meeting.

Colby Moorberg, assistant professor, represents the university on the National Technical Committee for Hydric Soils, part of the USDA Natural Resources Conservation Service.

P.V. Vara Prasad, university distinguished professor, was elected a fellow of the American Association for the Advancement of Science.

Four researchers — **Nathan Nelson**, **Peter Tomlinson**, **DeAnn Presley**, and **Gerard Kluitenberg** — were awarded a three-year, \$468,599 grant from the USDA Natural Resources Conservation Service. The funding will be used to collect additional data on soil health for an existing project that is investigating cover crop and fertilizer management effects on water quality. It also will establish an on-farm demonstration site to illustrate the effects of cover crops on water quality and soil health.

Gretchen Sassenrath, associate professor, is developing a soil health research program in southeast Kansas in an effort to better understand the mechanisms contributing to soil erosion and the extent of erosion in crop production fields.

[Animal Sciences and Industry](#)

Chloe Creager, junior in animal sciences and industry, Olpe, was selected as a new research ambassador for the Office of Undergraduate Research and Creative Inquiry for the 2016-2017 academic year.

Michael Dikeman, professor emeritus, was named a 2016 K-State Open Access All Star for being one of the single authors with the most archive articles within the K-State Research Exchange. K-REx provides a platform to collect, preserve, and discover the creative and scholarly works of K-State students, staff, and faculty.

As of March 13, **Curtis Kastner**, professor emeritus, had 103 articles deposited in K-REx with 164,808 views or downloads.

Larry Berger, former faculty member at University of Illinois (1978-2009) and former department head at University of Nebraska (retired July 2016), was honored as the 2016 Animal Sciences and Industry Distinguished Alumnus on December 7.

Faculty and students hosted the biennial Kansas Junior Swine Producer Day on March 11. Participants included about 430 youth, parents, extension agents, and swine project leaders from 55 Kansas and two Nebraska counties. Topics included project selection, meat science, breeds and ear notching, proper grooming and clipping, nutrition and management, Youth Pork Quality Assurance® Plus training and certification, daily care, the state nomination process, and Veterinary Feed Directive impacts on show feed and showmanship.

[Biological and Agricultural Engineering](#)

Ajay Sharda, assistant professor, leads a nearly \$500,000 USDA/Agriculture and Food Research Initiative grant to advance robust models for irrigation scheduling and practices for efficient on-farm water management. Other grant partners include Professor **Danny Rogers**, William Hsu and Pavritha Prabhakar from computer science, and Richard Wang, assistant professor at the University of Kansas.

[College of Agriculture](#)

Nina Lilja, associate dean for international agriculture programs, currently serves as chair of the International Agriculture Section of the Association of Public and Land-Grant Universities (APLU) Board on Agriculture Assembly.

[Communications and Agricultural Education](#)

Kristina Boone, professor and department head, was among six distinguished alumni honored by Texas Tech University's College of Agricultural Sciences and Natural Resources. After more than 20 years at K-State, Boone has accepted the position of director at The Ohio State University Agricultural Technical Institute.

Jason Ellis (B.S. '98 animal sciences/agricultural journalism), associate professor in the department, was selected interim department head.

[Diversity Programs Office](#)

Zelia Wiley, interim associate provost for diversity, received a 2017 Spirit of Martin Luther King Community Service Award, from Manhattan's Martin Luther King Jr. Memorial Committee.

[Entomology](#)

Frannie Miller, integrated pest management coordinator, was the national winner in the Search for Excellence Award in Farm Health and Safety from the National Association of County Agricultural Agents. She

also received the 2016 Communicator of the Year Award from the K-State Department of Communications and Agricultural Education.

Grain Science and Industry

Yong-Cheng Shi, professor, received the Phil Williams Applied Research Award from the AACC International for his distinguished contributions to cereal science. He also was named a fellow of the organization.

Horticulture and Natural Resources

Sid Stevenson, associate professor, Bill Horvath, Master Angler from Leavenworth, and the Kansas Department of Wildlife, Parks and Tourism hosted a Fishing's Future youth instructor training clinic in Throckmorton Plant Sciences Center on Feb. 25. About 60 participants, including 12 students, were certified (pending background checks) through the workshop. Fishing's Future is a national program with substantial Kansas participation.

Park Management and Conservation students won the annual student leadership award at the Kansas Recreation and Park Association annual conference. Students also volunteered as session moderators and registration/welcome assistants. Faculty members **Ted Cable**, **Jeffrey Skibins**, and **Sid Stevenson** presented keynote lectures on interpretation and connecting people to parks.

K-State Research and Extension

JoEllyn Argabright, Rawlins County director, was named secretary of the northwest Kansas multicounty Western Prairie Food Farm and Community Alliance.

Awards at the National Association of County Agricultural Agents: **Stacy Campbell**, Ellis County agriculture and natural resources agent, Distinguished Service Award; **Abbie Powell**, Marais des Cygnes District agriculture and natural resources/4-H agent, Achievement Award.

Plant Pathology

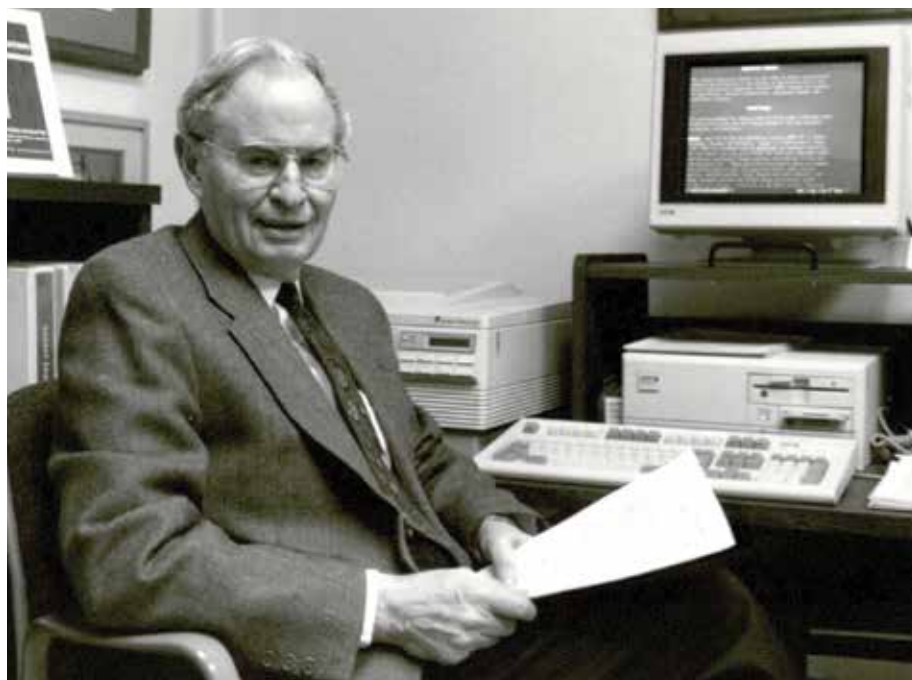
A team of scientists led by **Bikram Gill**, university distinguished professor and director of the Wheat Genetics Resource Center, isolated and cloned a gene that provides resistance to *Fusarium* head blight, one of the most destructive wheat diseases. Their findings are published online in the journal *Nature Genetics*. The article details about 20 years of research that included scientists in China and several American universities. The day after a Nov. 1 K-State news release by Pat Melgares, the publication ranked as the top story on *NSF Science 360*.

Harold Trick, professor; **Timothy Todd**, instructor; and **Jiarui Li**, research assistant professor, have designed and patented a soybean variety that protects against nematode parasitic infestation. The new variety could potentially save the soybean industry millions of dollars per year.

Barbara Valent, university distinguished professor, was in Washington, D.C., to encourage stronger funding of agricultural and food science in the 2018 Farm Bill. She leads a team that has developed new insight on managing rice blast disease, which is already a problem in the U.S. The devastating wheat blast fungus only occurs in South America and, most recently, in Bangladesh, and the team has developed the tools to quickly detect and try to defeat the fungus if it appears on U.S. wheat.

In Memoriam

C. Stephen Scheneman, 68, Columbia, Missouri, died Jan. 29, 2017. He came to K-State in 1989 as leader of extension professional and organizational development. He had instituted a statewide master's degree program for agents while at Virginia Tech University and continued that focus with K-State Research and Extension. He retired from this position in 2001.



Hyde S. Jacobs, 90, Manhattan, died Sept. 8, 2016. He served K-State in many capacities from 1957 to 1995: director, Kansas Water Resources Research Institute and the Kansas Evapotranspiration Laboratory; agronomy department head; assistant director, Cooperative Extension and director of agricultural programs; assistant to the dean of agriculture; legislative liaison; and Agriculture 2000 Committee coordinator. During his tenure as department head, construction of Throckmorton Hall Phase 1 was initiated, the statewide network of area extension agronomists was completed, and private funding for crop improvement research was enhanced.

Student Highlights



Courtesy of Carlos Flores

Student Diversity Program Winners

Carlos Flores, senior in agricultural economics, and Tiffany Carter, doctoral student in agronomy, were chosen as 2017 USDA Agricultural Outlook Forum Student Diversity Program winners. They recently attended the forum in Washington, D.C.

Flores was one of 20 undergraduate students chosen based on his "Agriculture as a Career" essay. Carter was among eight graduate students selected for essays on "The Greatest Challenge Facing Agriculture Over the Next 5 Years."

"USDA's Outlook Forum gives these students the opportunity to hear leaders describe their vision for the direction of agriculture's future," said USDA chief economist Robert Johansson. "USDA in turn welcomes the next generation to learn so they might excel to even greater heights in their careers."



The Capitol Graduate Research Summit

Three of the 10 graduate students who participated in the 14th Capitol Graduate Research Summit on March 10 were from the College of Agriculture.

- Regina Enniful, doctoral student in agronomy, Ghana, for "Characterization of parents of sorghum mapping populations exposed to water-deficit stress during the vegetative stage." Associate Professor Krishna S.V. Jagadish is her advisor.

- Jack Lemmon, master's student in animal science, Manhattan, for "Effects of intensive late-season sheep grazing following early-season steer grazing on population dynamics of *Sericea lespedeza* in the Kansas Flint Hills." He is advised by Professor KC Olson.

- Ryan Schmid, doctoral student in entomology, Kingsley, Iowa, for "Protecting Kansas wheat: Assessment of a novel Hessian fly monitoring strategy." Associate Professor Brian McCornack serves as his mentor.

Schmid's research focuses on developing a monitoring tool for Hessian fly, a significant insect pest of wheat. The results demonstrate the potential for light-emitting diodes to improve Hessian fly monitoring, which will give Kansas wheat producers much-needed information to make management decisions and reduce yield loss from this pest.

"As one of the top wheat-producing states, tools that help to protect this valuable commodity — and consequently the livelihood of a large portion of rural Kansas — are indispensable," Schmid said.



Division of Communications and Marketing

Eight graduate students prepare to compete in the 2017 Three Minute Thesis Competition finals on Feb. 16. Dave Lewis, KMAN morning radio host, narrated the contest.

Doctoral students in agronomy Anju Giri (third from left), and Olalere Marcus Olatoye (third from right) represented the College of Agriculture. Giri's topic was "Selection strategies of wheat under water-deficient conditions." Olatoye's topic was "Producing more with mess." The judges for the final competition were Coach Bill Snyder; Manhattan's Mayor Usha Reddi; and Manhattan Commerce Bank President Tom Giller.

Roger Cochrane, doctoral student working with Cassie Jones assistant professor of animal sciences, was recently awarded the Endeavour Research Fellowship to spend the fall 2017 semester studying in Australia. He will be working with John Pluske to study antibiotic replacements. Dr. Pluske was recently at K-State as the Fulbright Distinguished Chair in Agriculture and Life Sciences.

Johanie Rivera-Zayas, doctoral student in agronomy, was accepted as one of 13 students in the Caminos Thesis Competition in Food and Agricultural Sciences as a U.S. Department of Agriculture fellow. She will participate in the sixth annual Career Preparation Institute from the American Association of Hispanics in Higher Education, USDA/National Institute of Food and Agriculture, and Texas State University. She was selected for her thesis on the effects of fertilizer-nitrogen and cover crops on inbred maize yields. She earned her master's degree in agro-environmental sciences from the University of Puerto Rico.

Libraries Student Ambassadors

Leah Russell, freshman in agricultural communications and journalism, Gardner; Erryn Goods, sophomore in animal sciences and industry, and pre-veterinary medicine, Plumas Lake, California; and Shiwei Xu, master's student in grain science, China, were among 17 students chosen to serve two-year terms as K-State Libraries Student Ambassadors.

Academic Quadrathlon Advances

K-State's "3 She's and a He" team placed first overall among 17 teams in the K-State Animal Sciences Academic Quadrathlon.

Team members are Cameron Hayden, junior from Cassopolis, Michigan; MaRyka Smith, senior from Hoyt; Taylor Ochsner, junior from Andover; and Jenna Chance, sophomore from Lebanon, Indiana.

They will compete at the Midwest Animal Science Academic Quadrathlon in conjunction with the Midwestern section of the American Society of Animal Science meetings in Omaha, Nebraska.

Fourth and Pomeroy Associates of Clay Center has sponsored the team for 13 years.

Forage Bowl Team

The Forage Bowl Team took second place at the National Forage Bowl Competition in Roanoke, Virginia, in conjunction with the American Forage and Grassland Council Annual Meeting. K-State's Forage Bowl Team won the national championship in 2015 and 2016.

Team members, all agronomy majors, are Wyatt Oliver, senior, Smith Center; Cole Renner, junior, Norton; Derek Balzer, senior, Belle Plaine; and Alexandria Mustain, senior, Leavenworth. Doohong Min, assistant professor of agronomy, coaches the team.



The K-State Crops team — Jessica Bramhall, Sarah Zerger, Hayden Gutterman and coach Kevin Donnelly — earned a share of the national crops contest championship. K-State has won or shared the collegiate crops contest title in 20 of the last 23 years.

Bramhall, Zerger, Michaela Simmelink, Samantha L'Ecuyer, and Nicole Sudbeck took first place in the Australian Universities Crops Competition in Temora, New South Wales. Donnelly and Kim Kerschen, academic coordinator in agronomy, accompanied the team. The event was hosted by the Australian Grain Growers organization.

Class Notes

'50s

Calvin Drake (B.S. '55, Ph.D. '64, animal sciences), professor emeritus, received the World Simmental-Fleckvieh Federation Golden Book Award from the American Simmental Association.

'60s

Richard Janssen (B.S. '64 animal sciences) was named Stockman of the Year at the 47th Annual Stockmen's Dinner on March 2.

Kenneth Sorensen (M.S. '68, Ph.D. '70), emeritus professor at North Carolina State University, was named the 2016 Department of Entomology Distinguished Alumnus. He has worked heavily with fruit and vegetable production in the southeastern U.S., as well as improving vegetable pest management in Central America, the Caribbean, and India.

'80s

Kelli Cox (B.S. '86, M.S. '88 agricultural economics, EDD '08 educational leadership) accepted the position of vice provost for institutional effectiveness at the University of Missouri, Kansas City. She previously was director of the K-State Office of Planning and Analysis.

'90s

Darren Hibdon (B.S. '91 agricultural education), Frontier District crop production agent, earned a Distinguished Service Award from the National Association of County Agricultural Agents.

Jonie James (B.S. '91 animal sciences) is an extension agricultural economist for the Kansas Farm Management Association office in Hutchinson. She previously was the K-State Research and Extension – McPherson County agriculture and natural resources agent.

Wendy Fink (B.S. '92 anthropology, M.S. '98 agronomy/history) was named director, food, agriculture, and natural resources for the Association of Public and Land-grant Universities.

Richard Fechter (B.S. '93, M.S., '00 agribusiness), Rolling Prairie District director and agriculture and natural resources agent, was elected vice president of the National Association of County Agricultural Agents

Mark Dikeman (B.S. '96 animal sciences, M.S. '02 agricultural economics) is the new associate director of the Kansas Farm Management Association. He previously was the coordinator of professional development and training for KFMA.

'00s

Jesse McCurry (B.S. '00 agricultural journalism, M.S. '02 speech) is the executive director for Kansas Grain Sorghum. He previously was regional director for the National Sorghum Producers and United Sorghum Checkoff Program.

Sharon Thielen (B.S. '02 agribusiness; M.S. '05, Ph.D. '12 curriculum and instruction) is educational curriculum manager for the Kansas Corn Commission.

Jeanne Falk Jones (B.S. '02, M.S. '04 agronomy), northwest area multicounty specialist, was a national communications awards finalist in the computer generated graphics presentation category from the National Association of County Agricultural Agents.

Holly Dickman (B.S. '02 horticulture), Ellis County horticulture agent, earned an Achievement Award from the National Association of County Agricultural Agents.

Brandi Miller (B.S. '05 bakery science and management, MS '13 adult and occupational education) is associate director of the IGP Institute following an 11-month appointment as the interim associate director. She also serves as the IGP Institute online education and professional development coordinator.

Sandy Klein (B.S. '06 agricultural economics, M.S. '11 curriculum and instruction) is now assistant dean for

academic programs. She previously was event coordinator for the College of Agriculture.

Stacy Mayo (B.S. '07 agricultural communications and journalism) is director of industry relations for the Kansas Corn Commission.

Kimberly (B.S. '07 animal sciences) and **Jeremy Young** (DVM '06) announced the birth of daughter, Ryleigh Makenna, on Dec. 13, 2016.

Lindsay Bryant (B.S. '08 agricultural economics/animal sciences) is an extension agricultural economist for the Kansas Farm Management Association office in Dodge City.

'10s

Dena Bunnell (B.S. '10 agricultural communications/B.A. political science) joined the Feed the Future Innovation Lab for the Reduction of Post-Harvest Loss as program coordinator. She holds M.S. degrees in agricultural and resource economics and international agricultural development from the University of California, Davis. Prior to attending UC Davis, she served as an agricultural advisor for the USDA Foreign Agricultural Service in Kabul, Afghanistan.

Derek deBoer (B.S. '10 horticulture) is the garden store manager for Blueville Nursery Inc. in Manhattan.

Ty Josefiak (B.S. '10 agribusiness) and wife **Kayla** (B.S. '14 education) announce the birth of daughter, **Nora Ann**, on July 9, 2016. Ty is a farmer with Josefiak Farms.

Aaron Yoder (B.S. '11 horticulture) joined the Kansas Forest Service as an agriculture technician with the Conservation Tree Planting Program.

Alyson Lister (B.S. '12 animal sciences, M.S. '14 counseling and student development) is events coordinator for the College of Agriculture.

Nicole Crosson (B.S. '13 agricultural communications and journalism) joined K-State Research and Extension, Wyandotte County as a 4-H youth development agent. She previously worked as creative services coordinator for the American Hereford Association.

Ashley Zelenka (B.S. '15 animal sciences), first-year veterinary-medicine student, was chosen for the Veterinary Training Program for Rural Kansas, which provides financial incentive for veterinary students to practice in rural areas of the state upon their graduation.

In Memoriam

Cecil Eyestone (B.S. '44 agricultural economics), 96, Manhattan, died Oct. 1, 2016. He was involved with 4-H (1946–1977) as Montgomery County club agent, assistant state club leader, and extension specialist. He helped start the Manhattan Farmers Market and establish a World War II memorial on campus. In 2008, he was inducted into the National 4-H Hall of Fame in Washington, D.C.

Harold Brown (B.S. '50 agricultural journalism, M.S. '69 education), 88, Council Grove, died March 1, 2017. He worked for Indiana Farm Bureau, owned a poultry business, taught elementary school, then became a minister (1970–2013).

W. Dale Eustace (B.S. '59 feed science; M.S. '62, Ph.D. '67 milling science), 79, North Newton, died Jan. 31, 2017. He worked in the milling industry with International Multifoods, General Foods Corp., and Peavey Co. before joining the grain science and industry department in 1973. In addition to teaching and research, he presented seminars in Europe on the quality of hard red winter and conducted surveys on the milling industry in Bolivia and the corn milling industry in South Korea. He retired in 2006.

Charles V. Hall (Ph.D. '60 entomology), 93, Parker, Colorado, died Feb. 18, 2017. He was a horticulture faculty member from 1953 to 1974 and developed several watermelon varieties, including Crimson Sweet that is now grown in more than 50 countries. He retired from Iowa State University in 1990 as head of the horticulture department.

Lowell Moser (B.S. '61 agricultural economics), 82, Effingham, died Oct. 6, 2016. He worked as a soil conservation planner for the USDA in Holton and a district conservationist in Atchison

County. He raised Holstein, Hereford, and Angus cattle and showed them at local, district, and state fairs.

Dale Twaddell (B.S. '68 agricultural education) 71, Beloit, died, Feb. 7, 2017. He taught high school agricultural classes in the Randolph-Blue Valley and Phillipsburg school districts. He later worked for Farmland Industries in Kansas City, Missouri; a fertilizer plant in Burlington and a COOP grain elevator in Kirk, Colorado; farmed in Beloit; and advertising sales for the Solomon Valley Post and Wacanda Trader.

James “Jim” Gleason (B.S. '73 animal sciences), 76, Manhattan, died Sept. 25, 2016. As a young boy, he helped with the family farm near Spearville, producing a strong work ethic and love of farming.

Phillip Knight (B.S. '82 animal sciences), 56, Lyons, died Aug. 22, 2016. He was a farmer/cattleman and a member the Kansas Livestock Association and Alpha Gamma Rho at K-State.



From left, Ryan Rush, Brian Braden, Joanne Rush, and Joseph Hornung used succulents to decorate the ESPN Super Bowl set in Houston. Shortly before the Super Bowl, ESPN called Thriving Botanicals owner Joanne Rush to design and rent arrangements for their Super Bowl coverage. “We did the install on Tuesday, and it was absolutely amazing,” she said. Joanne ‘10 and husband Ryan ‘08 are both K-State horticulture graduates. They recruited K-State friends Braden ‘08 and Hornung, a master’s student, to help. “Business has been going really well. I always give K-State a shout out when people ask my background,” she said. “I couldn’t have done this business without my great education and internships.”

Iman Awards to Agronomist and Alumnus



Dave Mayes

Two faculty, P.V. Vara Prasad, left, and Robert L. Larson, received \$5,000 Iman Outstanding Faculty awards.

Prasad, university distinguished professor of agronomy and director of the Feed the Future [Innovation Lab for Collaborative Research on Sustainable Intensification](#), was recognized for his research.

Larson (B.S. '85 veterinary medicine, DVM '87, Ph.D. animal science), professor and Edgar E. and M. Elisabeth Coleman Chair of Food Animal Production Medicine and executive director of Veterinary Medical Continuing Education, received the teaching award.

Prasad's research mainly focuses on understanding responses of food grain crops to changing environments — temperature, water, and climate variability — and developing crop management strategies.

His nominator, John Floros, dean of the College of Agriculture and director of [K-State Research and Extension](#), said, "He has made, and continues to make, outstanding contributions in all areas of K-State's land-grant mission. He is one of the most productive and

accomplished faculty members in the College of Agriculture."

Bonnie Rush, executive associate dean of the College of Veterinary Medicine and head of K-State's clinical sciences department, nominated Larson.

"Dr. Larson's philosophy of teaching is to equip future veterinarians and advanced trainees with problem-solving

skills that will support their careers regardless of their specific path," Rush said.

For nearly a decade, Larson has served as the executive director of continuing education for the College of Veterinary Medicine. He served two terms on the K-State Graduate Council and has served as chair of the Student Affairs Committee. From 2008 to 2009, he served as the interim director of the Master of Public Health program and currently advises more Master of Public Health students than any other faculty member.

Introduced in 2007, the annual Dr. Ron and Rae Iman Outstanding Faculty Awards are sponsored by the K-State Alumni Association and are made possible through the generosity of Ron and Rae Iman.



Kisekka Earns Innovator Award

The Foundation for Food and Agriculture Research, a nonprofit organization that supports innovative science addressing food and agriculture challenges, recognized Assistant Professor Isaya Kisekka, as a "New Innovator in Food and Agriculture Research."



Courtesy of Isaya Kisekka

Kisekka's award supports his work in improving water-management strategies on farms. He is based at K-State's [Southwest Research-Extension Center](#) in Garden City.

He and a team of researchers are working to find the best ways to maximize the use of irrigation water on crops in western Kansas, including an irrigation system that attaches drip lines to existing center pivot systems. The work has implications for any region in the world and is especially important where water supplies are limited.

As one of nine recipients, Kisekka will share in a \$4.8 million award over five years. Matching funds from each awardee's respective institution will reinforce the foundation's investment of as much as \$300,000 per recipient. This is the first year for the FFAR New Innovator award.

Improving Wheat Breeding through Mobile Apps

As global populations rise, food demand skyrockets, and climate variability threatens food security — access to mobile technology becomes commonplace.

Plant pathologists Jesse Poland and Trevor Rife are part of an international team developing mobile phone and tablet applications that enable breeders and scientists around the world to accelerate development of improved plant varieties.

The Basic Research to Enable Agriculture Development (BREAD) Program has \$1.5 million in funding from the National Science Foundation in partnership with the Bill & Melinda Gates Foundation.

Other project partners include Cornell University, Texas A&M University, the International Institute of Tropical Agriculture, and the International Institute for Maize and Wheat Improvement.

Associate professor Poland (B.S. '03 agronomy, M.S. '04 plant pathology) and graduate research assistant Rife (Ph.D. '16 plant pathology) had developed Field Book, an app for collecting field research notes. Through the BREAD project, the team plans to develop new mobile apps to collect phenotypic plant data, such as disease resistance, plant height, or seed size in the field, much more efficiently and at a much lower cost than is currently possible.

"This is the next step for us. After seeing the rapid uptake of Field Book, it confirmed for us the incredible potential mobile applications have in the world of agriculture, and in particular for plant breeding," Poland said.

"Rapidly producing new climate-resilient, high-yielding and nutritious plant varieties is critical to improving food security, income, and economic welfare. To do this, we need to equip breeders with the tools to tackle this big task on a global scale."

The project also is part of K-State's leadership in global food systems research.

As a graduate student, Rife was recognized as a 2015 Future Leader in Science by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America for his interest and engagement in science advocacy. The 18 award winners received a trip to Washington, D.C., to participate in the societies' annual Congressional Visits Day, where they met with their members of Congress and advocated for agricultural and environmental research.



Kansas State University's Jesse Poland, left, associate professor of plant pathology, and Trevor Rife, graduate research assistant in plant pathology, review 1KK, an app they developed to analyze seed lots. More information about the app can be found at bit.ly/2bEkrzV.



New 4-H Hall of Fame Inductee

Kansas native, Ann Domsch, has spent more than 55 years serving children and families.

Her experiences with the [4-H Youth Development](#) program as a child led her to a career with K-State Research and Extension.

For the positive difference she's made with countless children and families, Domsch was inducted into the National 4-H Hall of Fame October 7 in Washington, D.C.

In her nomination letter, Kansas 4-H colleagues wrote, "Whether it is a new 4-H initiative, 4-H agents with a programming need, or young people with an idea, Ann is the first to say 'let's go.'"

She served as the Rawlins County family and consumer sciences/4-H agent. Next, she took on the role of 4-H Youth Development specialist for southeast Kansas.

Domsch retired in 2001 but returned to coordinate the state 4-H Horse Program and organize the district 4-H and Kansas State Fair Horse Show entries.

From 2005 until this year, she coordinated Kansas: Operation Military Kids, part of a national effort to support children and families of active duty, National Guard, and Army Reserve members.

Domsch is the 14th Kansan to be inducted into the Hall of Fame. Kansas has the most inductees of any state.

Addressing the Business Side of Farming

During worst farm income slump in 30 years, conferences offer information, resources

When Kansas State University [agricultural economists](#) put together programs to address the struggling farm economy, they drew from questions they had fielded from farmers and ranchers. They presented eight “Top 10 Considerations to Navigate in a Struggling Farm Economy” conferences across the state to address the how-to and what-ifs farmers and ranchers face.

“I think my aha moment was when the stat was put on the board that 2015 Kansas farm income was the lowest since 1985,” said Mark Nelson, Miami County crop and livestock producer.

It was helpful to get the state and national perspective regarding the current farm economy, Nelson said, and the segment on rental rates reminded of the importance of communication with landlords and keeping everything in perspective when negotiating for land.

“It encouraged me to take a closer look at our costs of production,” said crop and livestock producer John Brenneman about the Salina session. Participating in such events, he said, gives him the opportunity to learn and share ideas and experiences with K-State experts, industry representatives, and other producers.

The program touched on many things producers were already concerned with and offered ideas they may not have considered, said Megan Westerhold, K-State Research and Extension agent in the Marais des Cygnes District. It got producers thinking about decisions they need to make now and what changes they might make moving forward.

“One of the land-grant university’s missions is to serve the residents of Kansas with research-based extension programs,” said Allen Featherstone, head of K-State’s [Department of Agricultural Economics](#). “If we can be helpful to producers with agricultural finance and farm management education, then we need to be out in the state.”



From left: Allen Featherstone, agricultural economics department head, and Andrea Burns, director, K-State Research and Extension – Ford County, talk with a producer at one of the eight sessions.

Department of Agricultural Economics

“We were fortunate to have a good mix of producers, landowners, lenders, and ag consultants at our meeting,” said Westerhold. “It was interesting to hear the feedback. They all thought it was a good meeting, but each group took something different away from the session.”

“Everywhere you travel in our rural farming communities, falling commodity prices and a struggling agricultural economy are at the forefront of producers’ concerns,” said Anthony Ruiz, Central Kansas District agent. “At the tire shop, in line at the grocery store, and sitting in the sale barn, people are talking about current scenarios and future expectations.”

Programs like the “Top 10” bring industry experts and knowledge to local agricultural producers, Ruiz said, adding that modern agriculture involves making

wise decisions today about the next planting season or calf crop and beyond.

“I find the information K-State puts out is a good resource, both on the production and economic side,” Brenneman said. “We’re very fortunate to have K-State and the extension people we have. They’re really good people to interact with, and they’re passionate about helping you.”

Featherstone said the department tried to anticipate the agricultural downturn and help producers evaluate options while there is time to make adjustments.

Other workshops and resources offered by the department and related programs include the [Kansas Farm Management Association](#), Farm Analyst Program, and [Kansas Agricultural Mediation Service](#).

Fellowships Help Fund Relevant Research



Two agriculture researchers at Kansas State University have received two-year federal fellowships totaling \$246,660 to study issues that affect local and worldwide food systems.

Kevin Dorn, associate scientist in plant pathology, was awarded a \$151,660 postdoctoral fellowship to uncover key genes that underlie the difference between annual and perennial plants — a finding that could lead to the development of new perennial grain crops while improving the environment.

Caroline Ylioja, doctoral student in animal science, Canada, received a \$95,000 predoctoral fellowship to study strategies that could improve the health of replacement dairy animals and their lifetime milk production.

“K-State’s global reputation for leadership in plant and animal science is a direct result of our ability to attract bright people like Kevin and Caroline,” said John Floros, dean of the College of Agriculture and director of K-State Research and Extension. “It’s pleasing to see them learning and doing meaningful

research that affects not only the Kansas economy but also has worldwide impact.”

Dorn’s research project aims to shed light on the mechanisms underlying some crops’ perennial growth cycles and inform long-standing efforts to perennialize major annual crops like wheat. This project builds upon Dorn’s ongoing research of intermediate wheatgrass genomics, which he and his advisor, Jesse Poland, associate professor of plant pathology, are exploring in collaboration with The Land Institute and several other academic partners.

“By keeping living roots in the ground year-round, perennials help restore soil health and protect our waterways from pollution,” added Dorn.

Ylioja’s research project concerns colostrum, which is the first milk a cow produces for its calf after giving birth. Typically, the quality of colostrum is measured by its antibody levels, but Ylioja proposes additional strategies, such as assessing the presence of molecules that carry messages between



cells, organs, and tissue to boost immunity.

“Any way we can help make calves healthier and prevent disease will be beneficial both for the health of the cattle and for our milk supply,” Ylioja said. “Ideas that may benefit our food production systems or the sustainability of our agriculture systems are worth pursuing.”

She works closely with her advisor Professor Barry Bradford and mentor Research Assistant Professor Laman Mamedova.

“Caroline’s innovative research takes a different approach to improving the resilience of [dairy cattle](#) to disease, which could aid in both increasing milk production and enhancing animal health,” Bradford said.

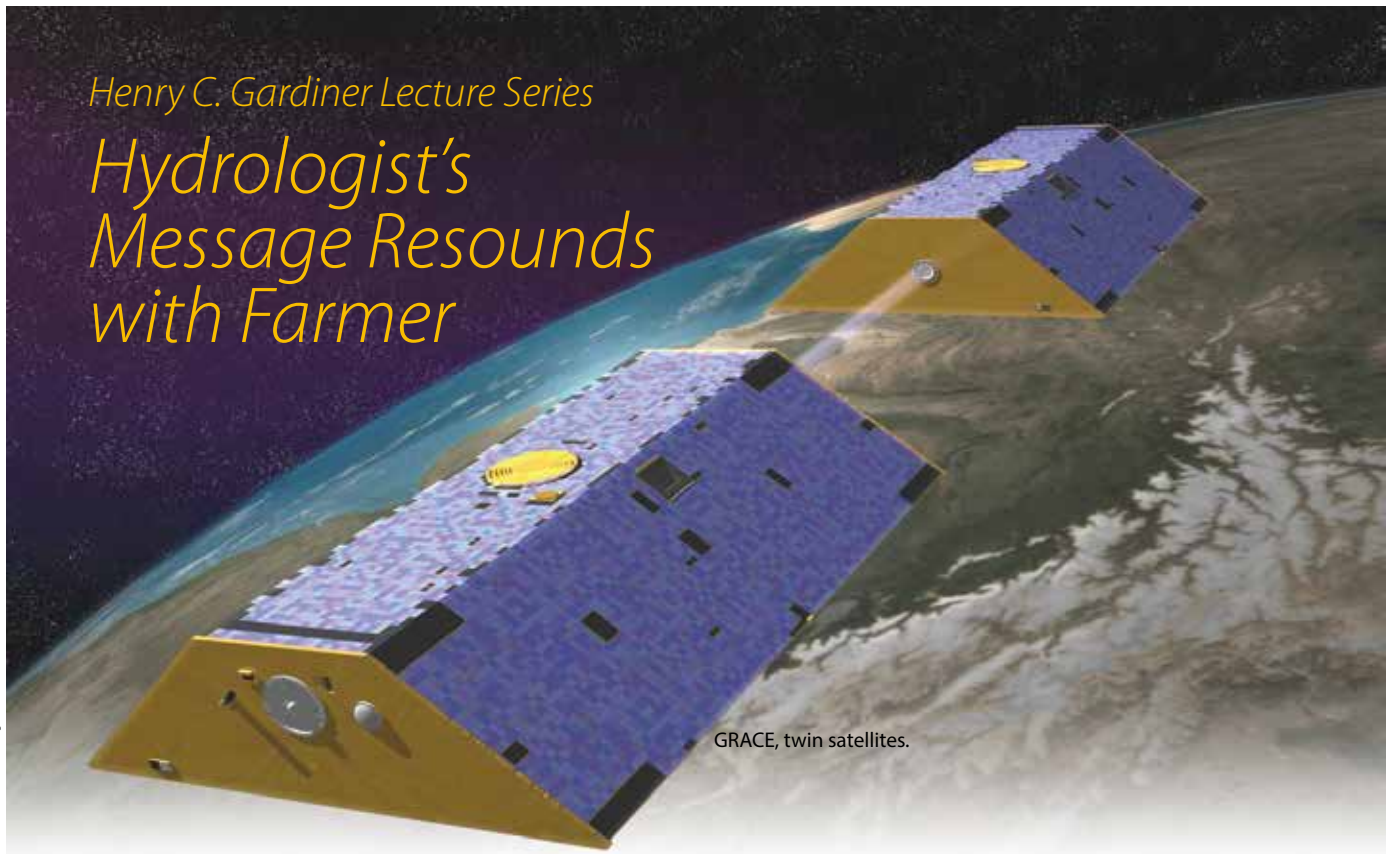
The Agriculture and Food Research Initiative fellowships were awarded through the Food, Agriculture, Natural Resources and Human Sciences Education and Literacy Initiative of the U.S. Department of Agriculture/National Institute of Food and Agriculture.

Division of Communications and Marketing

Henry C. Gardiner Lecture Series

Hydrologist's Message Resounds with Farmer

Image credit: NASA/JPL-Caltech



GRACE, twin satellites.

Dwane Roth, who farms near Holcomb, figured the five-hour drive to hear hydrologist Jay Famiglietti speak at Kansas State University last fall was well worth the road time.

After all, Famiglietti has spent nearly three decades studying water sustainability and security, including the past 14 years monitoring the Earth's water supply with NASA satellites.

"I wanted to find answers to questions about water issues in western Kansas," said Roth, owner of Big D Farms, one of three water technology farms in Kansas. "What I realized is that it comes back to us farmers. I'm the one with the ability to make changes."

Famiglietti was the third speaker in the [Henry C. Gardiner Global Food Systems lecture series](#), cosponsored by Kansas State University and the Gardiner Angus Ranch of Ashland. The series was initiated in 2015 to provide science-based education about the global food system.

Famiglietti, also a senior scientist at NASA's Jet Propulsion Laboratory in Pasadena, California, was part of a team that launched two satellites — each roughly the size of a minivan — that hover over the Earth and take measurements of water mass.

He told the audience of 1,100 that data from the project, called Gravity Recovery and Climate Experiment (GRACE), indicates that 20 of the world's 37 major aquifers are being depleted, including the Ogallala Aquifer in western Kansas.

"I think we're in rough shape, that's the implication for water sustainability and security," Famiglietti said. "We have a crisis. And I think that the groundwater depletion part that has been revealed by the GRACE data poses a far greater risk to global water security — and therefore food security — than we really acknowledge. We need to work on this together; this is a big, big problem."

Roth said he took Famiglietti's message to heart. Since the October lecture, he has hosted meetings of water rights owners in his area, gathered data from the Kansas Water Office and Kansas Geological Survey, and presented to government officials about his goals for water conservation.

As a water technology farm, Big D Farms showcases the latest technologies in irrigation infrastructure and water management, soil moisture measurement, conservation tillage, automation, telemetry, crop selection, and other agronomic practices to reduce water use.

"I've been spending my time educating and giving people information," Roth said, "and so far it seems to be working."

A video with highlights of Famiglietti's lecture is available at www.k-state.edu/globalfood/lecture-series/archive.html.

Building Better Wheat One Gene at a Time

Plant pathologist Eduard Akhunov joined the Kansas State University faculty in 2007. Since that time, he has made an indelible mark on K-State, Kansas, the U.S., and the world.

During his tenure, Akhunov has worked on at least 20 grants bringing more than \$10.7 million to K-State from local, state, federal, and private donors such as the Bill & Melinda Gates Foundation.

As major professor or committee member for 15 graduate students, he is nurturing scientists to continue these projects.

His research team was part of the Borlaug Global Rust Initiative that helped reduce the threat of wheat stem rust to global wheat production. They are currently developing their expertise in gene editing, a process by which they can fix wheat genes to create varieties with larger-sized grain and increased number of kernels per spike.

“Dr. Akhunov’s program has done some amazing things in identifying specific genes for various purposes,” said Martin Draper, head of the [Department of Plant Pathology](#). “His work with the *Fusarium* head blight resistance gene (FHB1) and wheat stem rust (Sr35) disease systems have been particularly noteworthy.”

Akhunov’s research team has been involved with the Triticeae Coordinated Agricultural Project, or TCAP, in which they developed the genetic resources and genomic tools necessary for studying the genetic basis of yield-related traits in wheat. That project wrapped up in November 2016 but has been rolled into the Wheat Coordinated Agricultural Project, or Wheat CAP, funded by the National Institute for Food and Agriculture.

The University of California, Davis manages the Wheat CAP funding and coordinates work among 19 U.S. breeding programs. Akhunov serves as co-director.

“Our group will be developing genomic resources for wheat geneticists



and breeders to move ahead with their individual projects,” Akhunov said. “The Kansas wheat breeding programs will not only benefit from identifying the gene that we have in our wheat breeding lines, but we can also get genetic material from other partners and use them in developing improved varieties in Kansas.”

The genes identified for impacting wheat yield will be deposited into public databases and used in breeding

programs nationwide.

Katherine Jordan, postdoctoral research associate, coordinates field and greenhouse projects for Akhunov’s research team.

“Dr. Akhunov is tackling big problems such as increasing yield and disease resistance from multiple directions to help feed a growing population,” said Jordan. “His end goal is to improve wheat.”

LMIC Honors Certified Angus Beef LLC



Pictured during the award presentation (l to r): Department Head Ken Odde, Jim Riemann, Larry Corah, Steve Suther, Mike May, Jerry Lipsey, Mary Ferguson, John Stika, and Craig Good, LMIC president.

The 2016 Don L. Good Impact Award was presented to Certified Angus Beef LLC (CAB) at the second annual Department of Animal Sciences and Industry [Family & Friends Reunion](#) on October 7, 2016.

The reunion was well attended and was a big success in giving folks a chance to visit the university that they love and support.

For the 10th year in a row, CAB LLC reported record sales of its [Certified Angus Beef®](#) brand. Founded in 1978, the brand is world renowned for its quality, flavor, tenderness and juiciness

and is offered by the finest restaurants and retailers around the globe.

The award, presented by the Livestock and Meat Industry Council Inc. (LMIC), honors former department head Don Good and recognizes positive impact on the livestock and meat industry or agriculture.

"The Livestock and Meat Industry Council was excited to provide an opportunity for animal science alumni and friends to reconnect as well as celebrate the presentation of the Don L. Good Impact Award to Certified Angus Beef," said Craig Good, LMIC president.

"The reunion was well attended and was a big success in giving folks a chance to visit the university that they love and support. The LMIC was proud to recognize Certified Angus Beef and the Kansas State alumni who have had a significant part in the development and success of the program."

Individuals recognized during the presentation included: Jerry Lipsey

('77 Ph.D. animal science), Mike May (Ph.D. '75 food science), Mary Ferguson (B.S. '83, M.S. '85 animal science), Jim Riemann (B.S. '66 agricultural education, M.S. '73, animal science, Ph.D. '74 food science), Steve Suther (B.S. '76 agricultural journalism, M.S. journalism and mass communication), John Stika (B.S. '93, M.S. '98 animal science) and Bryce Schumann (B.S. '83 animal science).

Professor Emeritus Larry Corah was a K-State extension feedlot specialist for 25 years. Dozens more K-State graduates have worked for CAB as employees and interns.

Another highlight of the Family & Friends reunion was the performance by the K-State Marching Band. Following the performance, the band formed an aisle and played for the Wildcat Walk as Willie Wildcat and the kids led the other attendees into the Stanley Stout Center.

It was a family affair with something for everyone, including the Junior Wildcat Barnyard, state fair qualifying pedal tractor pull, and toy giveaway.

For more highlights,
visit the event's
Facebook page @
KStateFamilyandFriends.
Mark your calendar
for the third annual
Friends & Family Reunion on
October 13, 2017.

Sharing Experiences

Distinguished Young Alumnus Talks About Life After K-State



Former student body president Dalton Henry was named a 2017 [Distinguished Young Alumnus](#) by the K-State Alumni Association's Student Alumni Board and board of directors.

Henry (B.S.'10 agricultural communications and journalism) serves as the legislative director for U.S. Rep. Roger Marshall. Prior to that role, he was the director of policy with U.S. Wheat Associates.

"I loved my time at U.S. Wheat, but the opportunity to work for my home district congressman and to broaden the portfolio of issues that I work on was too good to pass up," Henry said. "My role is focused on the legislative

side of the office, covering a half dozen issues including ag and energy for the congressman and coordinating coverage of other issues within our office."

In addition to serving as student body president in 2009–2010, Henry was a member of Alpha Gamma Rho fraternity, Blue Key Honor Society, College of Agriculture Ambassadors, Agricultural Communicators of Tomorrow, and the Agricultural Economics Club.

"I was really fortunate to work in Manhattan for five years right after I graduated," he said. "I had built such a personal connection to campus and the

people there that staying connected was really rewarding.

"Now that I've been in D.C. for a couple of years, I always look forward to having K-State groups come through the office and of course football season, when D.C. area alumni gather for watch parties."

"As any graduate of the college knows, it really is a special place," he said. "I think one of the most remarkable things is that it has kept all of the things that make it great despite the world changing around it and the college growing by 50 percent since my time as a student.

"When I've had a chance to be back on campus or connect with current students interning in D.C., it is clear that the college continues to prioritize a world-class student experience, along with family atmosphere and research that matters to Kansans."

As part of the award process, Henry gave a keynote address and visited student groups and classes.

"Dalton's message resonated with me because he had similar interests when he was at K-State that I do currently," said Jamie Morrissey, senior in [agricultural communications and journalism](#) with a minor in political science.

"Listening to someone who is successful in my chosen career field and who also comes from the same educational background was relatable and enlightening.

"I enjoyed listening to him speak on current issues that are important to agriculture coming from the practitioner's perspective. We can talk about issues in class, but it is very different when you are actively working to make those changes in policy on a daily basis."

Two awards are presented annually. Henry is the fourth College of Agriculture alumnus to receive the award since it was established in 2013.

Donations and Scholarships



Courtesy of Prime Photos

Pet Food Program Professorship Established

Bill Barr (B.S. '67 feed science and management) and Kim Rock are working to sustain the growth of the \$70 billion U.S. pet food industry through a professorship.

"There has not been a dominant university catering to the needs of the pet food industry," said Barr, president of Bill Barr & Company. "Kansas State University is uniquely qualified to provide the education and training necessary through the [Department of Grain Science and Industry](#). This process begins with hiring the best faculty available, and that is why Kim and I want to establish a professorship in the pet food program."

Barr and Rock hope this professorship will increase the number of students interested in this segment of the industry, as well as reinforce the value of education to the pet food industry.

"The pet food industry and animal feed industry have grown largely over the years, and to sustain this growth we need a talented, well-trained and educated work force," added Barr.

Foundation Awards \$200,000 for Greenhouse Expansion

The Dane G. Hansen Foundation, a charitable organization that focuses on community development in northwest Kansas, awarded a \$200,000 grant to the Kansas Wheat Commission Research Foundation to expand greenhouse space at the [Kansas Wheat Innovation Center](#) in Manhattan.

DANE G. HANSEN FOUNDATION

An additional 12,750 square-foot greenhouse will benefit public-private collaborative research and commercialization in wheat biotechnology. The new space will include separate rooms for potting, seed processing, soil preparation, and a soil room to receive and handle bulk potting.

Other funding partners include the U.S. Economic Development Administration, the Kansas Wheat Commission, and the College of Agriculture.



Courtesy of KSU Foundation

Scholarship Honors Mr. Ice Cream

Harold Roberts (B.S. '59, M.S. '68 dairy production), often called "Mr. Ice Cream," was passionate about teaching dairy processing and directing the operations of K-State's dairy processing plant.

"The 'Purple Pride' ice cream flavor was started by Harold back when the football field was purple and Vince Gibson was the coach," said Kevin Grow (B.S. '87, M.S. '90 food science).

The Kansas Dairy Technology Society and the Missouri Dairy Products Association created a scholarship in memory of Roberts and his family to provide financial assistance to students in the [animal sciences and industry department](#) or the [food science and industry](#) program.

At left, Harold Roberts hands a double-dip cone of Purple Pride ice cream to Lynn Dickey, K-State quarterback.



Jason Clay

Senior Vice President, Food and Markets
World Wildlife Federation

Monday, September 11, 2017, at 7 p.m.
Kansas State University
McCain Auditorium

Lecture Title:
Sustainably Nourishing the World

www.k-state.edu/globalfood/lecture-series

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Wild for Ag Weekend April 28-29, 2017

Ag Alumni Scholarship Golf Tournament, Friday, April 28, 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 to 11:45 a.m. Shotgun Start — Noon

Awards Reception, Saturday, April 29

2017 Award Winners

4 p.m. — K-State Alumni Center

Distinguished Alumnus: **Rich Felts**, B.S. '70 animal sciences and industry

Outstanding Young Alumnus: **Mike Seyfert**, B.S. '96 agricultural economics

David J. Mugler Outstanding Teaching Award: **Jeff Williams**, Professor, Department of Agricultural Economics

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 Alyson Lister at 785-532-5121 or alister@ksu.edu

Golf Tournament Sponsors

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