AI in Kansas Ag Conference

July 22 | 1:00-5:30 p.m. | Lyndon, Kansas

Welcome to AI in Kansas Ag

Dear Friends of Kansas Agriculture,

We're thrilled you've joined us today for an afternoon of inspiration, innovation and connection. Expect a dynamic lineup — starting with thought-provoking opening remarks and moving into engaging panel discussions with university partners, industry leaders and producers. You'll explore the evolution of ag technology, delve into AI's trustworthiness and economics, hear about virtual fencing in livestock management and witness a live spray-drone demo, capped off by a networking dinner and additional hands-on showcases.

We encourage you to take full advantage of the opportunities here — ask questions, swap ideas with fellow attendees and forge new connections. Your insights and experiences are vital as we build a collaborative community advancing digital agriculture. Please stay in touch throughout the year — whether to explore partnerships, join future events or connect with resources through K-State.

Thank you for being part of this journey toward smarter, more sustainable agriculture in Kansas and beyond. Let's innovate, connect and grow together!

Warm regards,

The Conference Planning Committee

Rebecca Dale	Ajay Sharda
Deepak Joshi	Rod Schaub
Brian McCornack	Ryan Schaub
Susan Metzger	Cailin Wycoff

WIFI INFO
Network: The_Ranch_House_Guest
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Today's Agenda

12:30-1:15 p.m.
Registration

1:15-1:30 p.m.
Opening Remarks

1:30-2:15 p.m.
Historical Account of Ag Technology in Last 10 Years to Modern Robotics

2:15-3:00 p.m.
AI and Its Trustability

3:00-3:45 p.m.
Cost-Benefit Analysis of Precision Ag Tools: Are They Worth the Investment?

3:45-4:00 p.m.
Break

4:00-4:45 p.m.
Revolutionizing Livestock Farming with Virtual Fencing Using Advanced Technology

4:45-5:30 p.m.
Spray Drone in Pasture Management Outside Session Demonstration

5:30-7:30 p.m.
Networking Dinner and Live Demonstrations

Historical Account of Ag Technology in Last 10 Years to Modern Robotics

Ajay Sharda, Chase Milem, Ron Ohlde
Moderator: Brian McCornack

This panel explores the most transformative innovations in agriculture over the past decade, from the rise of connectivity and data-driven tools to the quiet emergence of AI before it had a name. Panelists will reflect on lessons learned, challenges in adoption and the evolving collaboration between researchers, industry and producers.

AI and Its Trustability

Jacqueline Aenlle, LeAnna Guerin, Bart Peintner, Tim Brhel
Moderator: Ajay Sharda

This panel dives into what it means to trust artificial intelligence in agriculture and why that trust is critical for adoption. Experts will share real-world experiences, strategies for building transparency and how outreach and education can bridge the gap between innovation and everyday use.

Cost-Benefit Analysis of Precision Ag Tools: Are They Worth the Investment?

Brady Brewer, Bret Henderson, Chase Larson, Lance Rezac
Moderator: Micah Cameron-Harp

Precision ag technologies promise improved efficiency and sustainability, but how do producers determine whether they're truly worth the cost? This panel explores return on investment from multiple angles — financial, labor and risk — and offers practical advice for navigating the decision-making process.

Revolutionizing Livestock Farming with Virtual Fencing Using Advanced Technology

Jaymelynn Farney, Daniel Mushrush, Yijie Xiong, Margaret Chamas
Moderator: Susan Metzger

From virtual fencing to real-time health monitoring, this panel examines how advanced technologies are reshaping livestock management. Hear about the challenges, benefits and ethical considerations, along with insights on data use and ROI in real-world ranching environments.

Spray Drone in Pasture Management Outside Session Demonstration

Deepak Joshi, Wade Newland, Lukas Koch

Drones are becoming essential tools on the farm — from crop scouting to targeted spraying — but what factors make them effective and safe? Panelists will compare drone types, discuss AI integration and safety features and weigh the costs and benefits versus traditional application methods.

Opening Remarks

Rod Schaub

Kansas State Research and Extension Frontier District agent

Rod Schaub is a Kansas State Research and Extension Frontier District agriculture and natural resources agent specializing in livestock. Schaub has worked for Extension since 1989 and is based in Lydon. He graduated with a bachelor's degree in animal science in 1980 from K-State, following two years at Allen County Community College. He and his family currently run a family farm near Princeton.

Susan Metzger

Director of strategic interdisciplinary program development, Kansas State University

Susan Metzger is director of strategic interdisciplinary program development at Kansas State University and leads the Kansas Water Institute, as well as the Kansas Center for Agricultural Resources and the Environment. She also serves as a co-director for the Institute for Digital Agriculture and Advanced Analytics. With extensive experience in natural resources policy, she previously served as deputy secretary of the Kansas Department of Agriculture and chief of planning for the Kansas Water Office. Her work advances K-State's land-grant mission by uniting disciplines to address water and agriculture sustainability. Passionate about innovation, she champions the use of technology, such as sensors and drones, to improve efficiency in agriculture. Susan holds degrees in biology and leadership communication from Mary Washington, Old Dominion and K-State.

Opening Remarks

Marshall Stewart

Executive Vice President for External Engagement and Chief of Staff, Kansas State University

With a passion for supporting and strengthening the people of land-grant institutions, Marshall Stewart is a nationally recognized leader in higher education and university stakeholder engagement. As Kansas State University's first executive vice president for external engagement and chief of staff, he acts as the president's principal liaison with university, government and community leadership.

Reporting directly to the president and serving as a member of the president's cabinet, Stewart facilitates strategic initiatives and partnerships that have local, state, national and international impact. He leads and directs university-wide engagement efforts to strengthen the institution, enhance economic impact and deliver on the promise as a next-generation land-grant university. Stewart oversees administrative staff from the Offices of the President, Corporate Engagement, Division of Communications and Marketing, Engagement, Government Relations, Interdisciplinary Programs, Extension, Marianna Kistler Beach Museum of Art, McCain Auditorium and Military and Veterans Affairs. He provides leadership for the prestigious Landon Lecture Series and manages special projects in collaboration with the president, provost and other senior university leaders. Additionally, he partners strategically with the KSU Foundation, K-State Alumni Association and K-State Athletics to advance the university's Next-Gen K-State strategic plan.

Stewart earned his bachelor's degree in agricultural education, master's in agricultural education and doctorate in education with an emphasis in agricultural and extension education, all from North Carolina State University.

Historical Account of Ag Technology in Last 10 Years to Modern Robotics

Ajay Sharda

Professor of biological and agricultural engineering

Ajay Sharda is a professor of biological and agricultural engineering at K-State and serves as co-director of research for K-State's Institute for Digital Agriculture and Advanced Analytics. He received his Ph.D. in biosystems engineering from Auburn University. His research focuses on the development, analysis and experimental validation of control systems for agricultural machinery systems with a variety of emphases, including automation, sensor testing/development, mechatronic systems, computer vision, artificial intelligence, developing automated test setups for hardware-in-the-loop simulations, unmanned vehicles and thermal infrared imaging.

Chase Milem

Product innovation manager, AgriVision Equipment Group & PrairieLand Partners

Chase Milem is a product innovation manager at AgriVision Equipment Group & PrairieLand Partners with seventeen years of experience in agriculture equipment and technology. Before becoming a product innovation manager, Chase spent several years at John Deere in their sales and marketing division, with his last position being the go-to-market manager for hay and forage products in the U.S. and Canada. Chase holds a degree in Ag Business from Western Illinois University and an MBA in executive leadership from Baker University. Recognized for his ability to motivate and rally people around common goals and initiatives, he consistently drives technology adoption. Chase is driven by advocating and delivering real value to customers.

Historical Account of Ag Technology in Last 10 Years to Modern Robotics

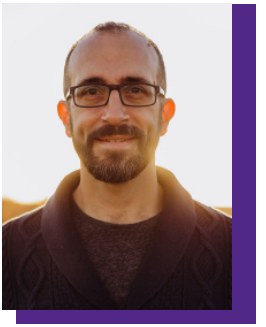
Ron Ohlde

Ohlde Farms Inc.

Ron Ohlde of Palmer, Kansas, joined the family farm in 1972 and is the current owner of Ohlde Farms Inc. He farms with his wife, Anita, and their two sons, Shane and Shaun. His background in production agriculture includes grain and livestock, with soybean, corn, wheat, milo, forage, canola, alfalfa and cow/calf operations. He has served on various board roles and committees for the Kansas Seed Industry Association, Kansas Farm Bureau, Kansas Department of Agriculture and North Central Soybean Research Program. He served on the U.S. Soybean Board for nine years and is currently a commissioner for Kansas Soybean Commission.

Moderator
Brian McCornack

Professor and department head of entomology



Brian McCornack is a professor and department head in the department of entomology at Kansas State University's College of Agriculture and a co-director of the Institute for Digital Agriculture and Advanced Analytics (ID3A). His research and extension programs focus on insect ecology, ecosystem services and integrated pest management, with emphasis on native pollinators, natural enemies and invasive species. He integrates remote sensing and unmanned aerial systems (UAS) to improve pest monitoring and management. Brian also develops web-based decision support tools and digital delivery methods. He holds degrees from Luther College, Michigan State University and the University of Minnesota.

AI and Its Trustability

Jacqueline Aenlle

Assistant professor of agricultural and natural resources communications

Jacqueline Aenlle is an assistant professor of agricultural and natural resources communication at K-State. Her research focuses on the science of science communication, with recent work examining scientists' experiences in digital outreach and the role of trust in science communication. Aenlle leads the Kansas Science Communication Initiative and is committed to advancing interdisciplinary, collaborative science communication efforts and programming.

LeAnna Guerin

Director, Data Science Hub at Bayer Crop Science

LeAnna Guerin is the director of Data Science Hub within digital farming solutions at Bayer Crop Science. Her passion to help solve the most challenging problems in agriculture by helping farmers meet the demands of the growing population without bringing new land into cultivation has fueled Guerin's nearly twenty-year career applying data-driven solutions at Bayer Crop Science. She earned a doctorate in biostatistics and has been a leader at Bayer Crop Science in the regulatory sciences team, global commercial organization and now digital farming where she leads the development of statistical and AI-driven predictive analytics for precision agriculture tools. These tools provide farmers with an entirely new kind of product experience which can help them increase yield and improve profitability, farm more efficiently and manage risk. Guerin's leadership philosophy centers around empowering individuals to own customer-oriented outcomes, cultivating a culture of continuous improvement and maintaining a focus on delivery metrics.

AI and Its Trustability

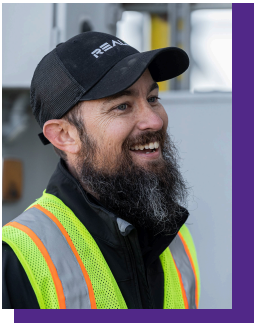
Bart Peintner

CEO of Elemental Agronomy Robotics

Bart Peintner is founder and CEO of Elemental Agronomy Robotics, which creates small autonomous robots that dramatically reduce herbicide and fertilizer costs for row-crop farmers. The first product, a continuous and autonomous robotic weeder, kills weeds before they produce seed and continuously samples the soil. The data collected enables farmers to optimally produce large-scale crops using per-plant reasoning. Bart grew up on a wheat and sorghum farm in western Kansas and has over two decades of experience building artificial intelligence solutions for different industries.

Tim Brhel

Business development specialist, RealmFive



Tim Brhel was raised on a farm near Denton, NE, sparking his desire to help farmers through ag business and ag economics degrees at University Nebraska-Lincoln. For more than two decades, he was a trusted advisor to large farm operations in 13 states, using data to guide decision-making conversations. At RealmFive, Tim helps businesses understand ROI and efficiency gains through remote technology, managing deployments to ensure customer success. He helps customers leverage AI through RealmFive's Flow Grade product for automating grain grading and improved decision-making.

Cost-Benefit Analysis of Precision Ag Tools: Are They Worth the Investment?

Brady Brewer

Associate professor of agricultural economics

Brady Brewer is an associate professor in the department of agricultural economics at K-State. Brady's teaching responsibilities include the undergraduate agribusiness management course as well as a graduate course on micro-economics and strategy. His research agenda includes the broader topics of agribusiness and profitability, agricultural finance and production/supply chain issues. His extension program includes education on credit and lending to both farmers and bankers as well as working with agribusinesses on a variety of financial management topics. The primary goal of Brady's research, extension and teaching is to create and disseminate knowledge that will impact and improve the functioning of the food and agribusiness value chain.

Bret Henderson

Financial Officer at Frontier Farm Credit

Bret Henderson is a financial officer with Frontier Farm Credit where he helps provide farmers and ranchers with the products and tools necessary to be successful in a rapidly changing and capital-intensive business. Prior to Frontier, he worked for Farm Credit Services Southwest in Tempe, AZ for eleven years after graduating from K-State. Outside of work you'll find him coaching youth teams, attending K-State events, fly fishing, traveling and helping on the small family ranch.

Cost-Benefit Analysis of Precision Ag Tools: Are They Worth the Investment?

Chase Larson

CEO of Vandwater

Chase Larson was born and raised in Belleville, Kansas, and attended Garden City Community College from 2003–2004. In 2005, Chase enrolled at K-State, graduating in 2008 with a degree in Agribusiness. After graduating from K-State, Chase was promoted to general manager of Bestifor Farms. In 2023, Chase developed VandWater software to address water management issues within the agriculture industry. It has grown to be trusted by producers across the nation as a tool to safeguard their water resources. In January 2024, Chase was promoted to CEO of Bestifor.

Lance Rezac

Rezac Farms

Lance Rezac of Onaga, Kansas, graduated from K-State in 1983 with a bachelor's degree in agricultural engineering and a minor in agronomy. He and his wife Deb, a nurse practitioner, farm with their children and extended family, launching the sixth generation on their diversified row-crop and livestock operation (corn, soybeans, wheat, alfalfa, hay, native-grass grazing, farrow-to-finish swine and cow-calf through finish cattle). Lance has held many leadership roles on various boards. He is a director for the United Soybean Board and the Kansas Soybean Commission and recently completed six years on the U.S. Soybean Export Council, serving as chair his final year. A former Kansas Young Farmers president, he was named a K-State Distinguished Ag Alumnus.

Cost-Benefit Analysis of Precision Ag Tools: Are They Worth the Investment?

Moderator

Micah Cameron-Harp

Assistant professor in the department of agricultural economics, Kansas State University

Micah Cameron-Harp is an assistant professor in the department of agricultural economics at Kansas State University. He received his master's degree in sustainability from Arizona State University and his bachelor's degree in natural resources from Cornell University. Micah's research focuses on coupled agricultural and natural resource systems, with a particular focus on relationships between agricultural profitability and water resource sustainability. His recent work investigates the impact of changes in irrigation technology, the value of groundwater resources for agricultural production and the design of cost-effective conservation policies.

Revolutionizing Livestock Farming with Virtual Fencing Using Advanced Technology

Jaymelynn Farney

Associate professor and extension specialist in animal sciences and industry

Jaymelynn Farney grew up in Fort Sumner, New Mexico, on her family's cow-calf operation. After competing in livestock judging at Butler Community College, she earned a bachelor's and doctoral degree from Kansas State University, as well as a master's degree from Oklahoma State University, specializing in ruminant nutrition. Her research focuses on practical solutions for cattle producers, including forage management, heifer development, stocker systems, and nutrition. Through her extension work, she helps producers adopt new technologies, feeds, and strategies to improve beef production efficiency. Jaymelynn lives in southeast Kansas with her husband, Garet, and works at the Southeast Agricultural Research Center in Parsons.

Daniel Mushrush

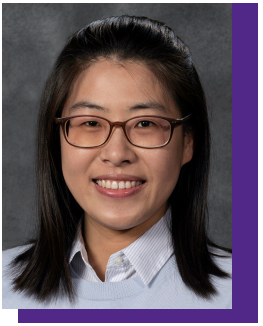
Mushrush Ranches, LLC

Daniel Mushrush is a fifth-generation rancher and managing partner of Mushrush Ranches, a Red Angus seedstock operation based in the Flint Hills of Kansas. Known for combining tradition with innovation, Daniel focuses on breeding reliable, functional cattle backed by rigorous data and real-world performance. His work emphasizes sustainability, genetic progress and serving commercial ranchers with integrity. A leader in both ranch management and advocacy, Daniel is dedicated to building a legacy rooted in stewardship, systems thinking and a deep respect for the land and livestock.

Revolutionizing Livestock Farming with Virtual Fencing Using Advanced Technology

Yijie Xiong

Assistant professor and precision livestock management extension specialist, University of Nebraska-Lincoln



Yijie Xiong joined the department of animal science at the University of Nebraska-Lincoln in 2020 as an assistant professor and extension precision livestock management specialist. She has a split appointment between animal science and the department of biological systems engineering. Xiong is a member of Honor Society of Agriculture Gamma Sigma Delta, the American Society of Animal Science, the American Society of Heating, Refrigeration, and Air Conditioning, the Poultry Sciences Association and the American Society of Agricultural and Biological Engineers. She was also a guest editor for Animals (MDPI journals) special issue: *Automated Monitoring of Livestock and Poultry with Machine Learning Technology* in 2022-23.

Margaret Chamas

Livestock viability manager for Practical Farmers of Iowa

Margaret Chamas is a first-generation farmer who started with 4-H dairy goats, then followed with a bachelor's degree and a master's degree in animal science with a focus on grazing and ruminant nutrition. She serves as the livestock viability manager for Practical Farmers of Iowa, as well as affiliate setwork Support for Goats On The Go. She owns Storm Dancer Farm near Kansas City, raising meat and dairy goats, sheep, beef cattle, miscellaneous poultry and equines, as well as offering targeted grazing and agritourism services.

Spray Drone in Pasture Management Outside Session Demonstration

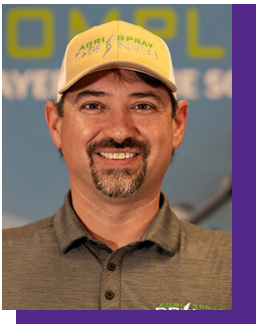
Deepak Joshi

Assistant professor and extension specialist in precision agriculture

Deepak Joshi is an assistant professor and extension specialist in precision agriculture in the department of agronomy at K-State. His extension and applied research program focuses on applied precision agriculture and on-farm decision-making, leveraging multiple sensor-based technologies including drones, satellites, ground-based sensors and open-access data. By integrating these technologies with advanced data science models, such as machine learning and artificial intelligence, his work aims to enhance farm-level decision-making and optimize agricultural practices.

Wade Newland

Owner of Newland Ag Drones



Wade Newland owns Newland Ag Drones, LLC, an authorized dealer for Agri Spray Drones, and DJI Warranty and Repair Center in southeast Kansas. Founded with his wife Kristy in June 2023, the company offers spray drone sales, support, training, repairs and parts. Wade brings 11 years of John Deere sales experience and a strong ag background. He farms with his dad and brother, raising corn, wheat, soybeans and cattle, and holds a custom applicator license. His early use of drone technology on their farm sparked a passion for helping other producers improve efficiency and reduce costs through precision drone spraying.

Spray Drone in Pasture Management Outside Session Demonstration

Lukas Koch

CEO of Kelly Hills Unmanned Systems

Lukas Koch is the CTO at Heinen Brothers Agra Services & the CEO of one of their subsidiaries, Kelly Hills Unmanned Systems. He operates the largest contiguous FAA Test Range in the U.S. and is deeply focused on commercializing large drones and supporting technology.

Notes

Notes

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