BEEF CATTLE INSTITUTE
KANSAS STATE UNIVERSITY

THE GRAZIER

Brought to you by the Beef Cattle Institute at Kansas State University.

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CALENDAR of EVENTS

Sept. 15 - Nov. 13: BQA Free Certification Promotion - visit bqa.org

Feb. 1-3: Cattl Industry Annual Convention and NCBA Trade Show, Nashville, Tennessee

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BCI Launches Pregnancy Analytics Mobile App

A new mobile app developed by the BCI allows producers and veterinarians to manage pregnancy diagnosis information on cattle herds.

By Audrey Hambright

The Beef Cattle Institute at Kansas State University is making it easier for producers and veterinarians to manage pregnancy diagnosis information with a new mobile app called Pregnancy Analytics.

Designed to serve as an instant data collection and analysis tool, the app will facilitate the transformation of data into actionable information for individual herds.

Garrett Preedy inputs data chute-side into the Pregnancy Analytics mobile app available for download on the App Store and Google Play.

Not only will the app allow cattlemen to input records chute-side with ease, but it will evaluate the success of the breeding program at the time that a herd is palpated and provide a benchmark for comparison against other herds in the region.

The app will accept the following information:

- Pasture ID/herd name.
- Breed — up to three breeds, or other cow description.
- Cow ID.
- Age.
- Body condition score.
- Number of days bred.

From this, projected calving dates are generated and graphs are created to display the distribution of the producer's future calving season.

"The Pregnancy Analytics app offers easier data entry than using a pen and paper while providing the immediate data assessment and visualization of a chute-side computer," said Bob Larson, the Edgar E. and M. Elizabeth Coleman chair in food animal production medicine at Kansas State University's College of Veterinary Medicine. "Additionally, the data and report can be emailed to the client or stored on the device, and the data can be converted to a spreadsheet for further appraisal."

According to Brad White, interim director of the Beef Cattle Institute, and professor of production medicine, this is the first of several interactive decision-making tools that will be designed for industry use.

"Veterinarians can use this app to convert pregnancy-check data to actionable information for their clients," he said. "This is the first of several apps that BCI will be releasing to enhance decision-making by veterinarians and their beef clients."

The Pregnancy Analytics app is available for download for Apple or Android markets. More information can be found at beefcattleinstitute.org, or contact 785-564-7459 for assistance.

Inaugural Summer Scholars Program Inspires Collaboration

By Kristin Loving

The first edition of the BCI's, Summer Scholars program officially wrapped up on Friday, August 12th, with presentations by eight students. Each student received a $3,500 stipend to conduct a research project related to the program's theme "Antimicrobial Use in Cattle."

The program, designed to inspire collaboration brought together students and mentors from four colleges and six departments including animal sciences and industry, pathobiology, food science and industry, veterinary medicine, computer science and computer engineering.

Each student presented their findings at a concluding session held at the Kansas Department of Agriculture.

• **Allison McKiearnan**, doctoral student in pathobiology, Manhattan, introduced her findings of "Foodborne pathogens in cattle" with mentor Dr. Natalia Cernicchiaro. Allison's objective was to determine the effects of injectable antimicrobial use, on the emergence and spread of antimicrobial resistance in gut commensals and foodborne pathogens. The minimum inhibitory concentrations (MICs) of 10-15 antimicrobials will be determined for each bacterial species using CLSI guidelines. At this time, only the MICs of azithromycin of E. coli isolated on day 0 and d 28 from cattle diagnosed with BRD have been determined; all of the isolates were classified as susceptible to azithromycin and there was a very low correlation (r = 0.01) between the d 0 and d 28 MIC values.

• **Amanda Kathrens**, senior in animal sciences and industry, Manhattan, completed her project "Bacterial aspects in probiotics" with mentor Dr. T.G. Nagaraja. Her findings suggested bacterial strains present in commercial probiotic products do exhibit resistance to a wide variety of antimicrobials. Monitoring antimicrobial resistance among bacteria contained in probiotics is important. She encouraged further research including genetic characterization of antimicrobial resistance present in these bacterial species to enhance our understanding of resistance selection and maintenance in feedlot cattle.

• **Sarah Jones**, senior in food science and industry, Riverton, conducted a thorough investigation into historical events in "Regulatory and historical perspectives: Antimicrobial resistance" with mentor Dr. Justin Kastner. Sarah presented research regarding Dr. John Shaw Billings and the One Health concept by looking back to the late-1800s. Billings, a medical doctor and veterinary researcher, proposed to the National Board of Health that animal and human health were inextricably linked; his effort to marry the two sciences was declined. Looking at the present day, where the U.S. Food and Drug Administration antimicrobial resistance regulatory and industry-targeted documents are in the forefront of many doctor's, veterinarian's and researcher's minds, the philosophical commitment of Billings is finally being expressed in the current regulatory documents where the One Health philosophy appears to be embedded.

• **Carlee Wollard**, third-year veterinary medicine student, Winfield, studied the effect of vaccinations during gestation in beef cows in her project "Colostrum transfer of antibody titers" with mentor Dr. Manuel Chamorro. She tested blood samples before vaccination and after calving to determine levels of antibodies to common problematic diseases. Based on results from this preliminary trial, the administration of a booster multivalent KV BVDV and MLV BHV-1 vaccine to pregnant beef cows of unknown vaccination history at the end of gestation has questionable benefit as these cows might already have moderate to high levels of serum BVDV and BHV-1 antibodies at time of vaccination. However, a booster vaccination in late gestation of cows with moderate to low serum BHV 1 specific AB titers is safe and results in seroconversion prior to calving. Furthermore, a telephone survey of Kansas cow/calf producers confirmed that calf diarrhea and respiratory disease are still the most common causes of morbidity in pre-weaned beef calves. It was also determined that the use of oral or injectable antibiotics in pre-weaned beef calves is common among cow/calf producers as more than 90% of producers reported antibiotic use.

Summer Scholars pictured with their mentors following their final presentations in August.

• **Jose Soto**, doctoral student in animal science, San Antonio, Texas, presented "Alternatives to antibiotics used in livestock," a literature review that summarized 75 papers and 12 alternatives to antibiotics for poultry, swine and cattle with mentor Dr. Mike Tokach. For classification purposes, the different alternatives were organized into three different classes: 1) alternatives with reported effective results (e.g. zinc, cooper), 2) alternatives with reported inconsistent results (e.g. phytogenics, probiotics) and 3) promising technologies (antimicrobial peptides, quorum sensing inhibitors). There are several available antimicrobial alternatives and it is critical to understand their applicability, limitations and precautions in order to obtain more predictable outcomes.

• **Paula Mendez**, junior in computer science, Paraguay, interpreted and functionalized 170 million rows of data that represented positions of cattle with location monitoring tags collected every second of a 28-day period in her project "Bovine infectious disease analytics" with mentor Dr. Bill Hsu. This model allowed her to find animals that became ill and their relation to other animals in which they could have passed a disease.

• **Allan Jay Canatuan**, senior in computer science, Williamsburg, Virginia and Kevin Manase, senior in computer engineering, Madagascar, created a mobile app for feedlot managers in their project "iOS and Android/Java mobile apps" with mentor Dr. Venkatesh-Prasad Ranganath. The pair built the app that can be used across multiple devices, which is used to compare drug costs and provide a simple calculator to evaluate potential drug choices.

"This was a successful first year of scholars program research and we observed the benefits of the multidisciplinary approach to generating research solutions. We plan to continue this program next year and bring new information to the beef value chain," said Dr. Brad White, interim director of BCI.

PRODUCER spotlight

Paige Pratt

JOHNSON FARMS, LLC

Dwight, Kansas

Johnson Farms LLC – Jason, Paige, Elizabeth and Garrett Pratt (left); Gary and Jody Johnson (middle); Jace, Amy, Atley and Jhet Johnson (right)

By Audrey Hambright

For Paige Pratt, the opportunity to work together as a family and share the ranch lifestyle with her kids in the hopes they develop the same love for it as she and her husband have, leaves her feeling pretty fortunate.

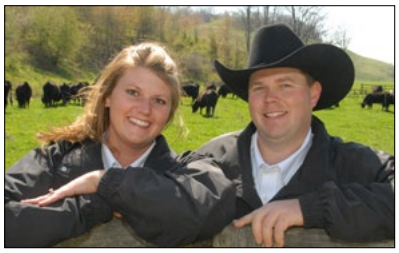
Pratt, of Johnson Farms, LLC, near Dwight, Kansas, was lucky enough to experience growing up on a commercial cow/calf operation, which has led her to maintaining agriculture as both a professional career and personal interest. She holds a bachelor's degree in animal science and a masters in educational leadership, both from Kansas State University. She also received a PhD in beef cattle genetics from Texas Tech University before accepting a job at Virginia Tech in 2011.

2011 proved to be an extremely eventful and memorable year for Pratt. She married her husband, Jason, whose family owned a purebred Angus operation. The couple purchased both the herd and equipment from Jason's parents and marketed the cattle through buying stations in Southwest Virginia. In that same year, they decided to host their own bull sale, which required building a new facility which was completed in time for their first sale in November 2011.

After a few years, they began to run into some challenges finding good labor and needing to develop a bull development facility. At about this same time, her dad called from Kansas to discuss a possible transition of their operation to work alongside him and her brother.

So in 2014, Paige and Jason shipped their cattle and equipment to Kansas and formed the LLC. Truly a family operation, the managing partners are her dad, brother and husband. Paige, her mom and sister-in-law, plus kids, are all an active part of the operation.

Off the ranch, Paige serves as field staff for the Kansas Farm Bureau (KFB). In this role, she helps producers advocate for the industry and leads education efforts to bring information to all parts of the state. Right now, she is helping to provide recommendations for KFB endorsements for legislative candidates seeking election. Among many industry activities and leadership positions, Pratt is an alum of the KLA Young Stockmen's Academy and was selected as the first graduate scholar to receive the Roy A. Wallace Memorial Scholarship at the Beef Improvement Federation in 2010. She returned as a speaker this year to the BIF Young Producer's Symposium with "Family Farm Transitions: The Good, The Bad and the In-Laws." Jason and Paige also won the Virginia Farm Bureau of Excellence in Agriculture competition and were named a National Runner-Up for the American Farm Bureau Federation Excellence in Agriculture competition in 2012. To top it all off, Paige is an active member of the newly formed BCI advisory team.



Paige and Jason Pratt with replacement heifers.

Pratt attributes success on their family's operation to focusing on input costs and an understanding of the economic side of the operation. In addition to this, she named communication as an added factor, especially as they make the transition between generations.

"Having everyone in tune and on the same page is critical and we would not be successful without it," she said. "As we watch operations change hands, it's vital to have good communication for the younger generation to be successful."

Paige and Jason (right) are congratulated next to their new Case IH tractor after being recognized as the AFBF National Runner-Up in the Excellence in Agriculture competition in Hawaii.

And to provide for the next generation is something she is truly passionate about and hopes that their two young kids – one and three – will want to be part of some day.

"We enjoy working together, watching the cattle grow and develop and seeing if what you hoped would transpire actually does," she said. "The outcome is something really exciting when it is something others can utilize in their herd."

With communication, profitability and genetic longevity in the herd, Pratt and her family have laid a foundation for future generations in the industry.

RURAL practitioner

Drs. Craig & Jessica Iwanski

CENTRAL VETERINARY SERVICES

Stockton, Kansas

by Audrey Hambright

Balancing a flourishing veterinary practice plus an active family takes a lot of teamwork, something Drs. Craig and Jessica Iwanski know a thing or two about.

Owners of Central Veterinary Services in Stockton, Kansas, the Iwanski duo met in their freshman anatomy lab at the Kansas State University College of Veterinary Medicine.

Jessica, originally from Omaha, Nebraska, began learning the ropes of veterinary medicine at a young age. Her father was a small animal practitioner and owned his own clinic where she naturally spent much of her time.

"Whether it was intentional or not, he taught me about the practice, the business side and being immersed in it," she said. "He was absolutely my mentor from day one."

Craig became interested in working with animals from the time he spent on his brother-in-law's farm and ranch near Stockton, Kansas. Without much opportunity to return to the operation, Craig decided a career as a veterinarian would allow him to remain involved with ranching.

The couple graduated with their veterinary degrees in 1996, were married shortly after and spent time at separate mixed animal practices in Nebraska and Iowa before starting the practice in Stockton in 1998. They have since added a satellite location in Hill City. The practice is made up of 65 percent large animal and 35 percent small animal clientele.

Hands-down, the couple enjoys being rural practitioners for the lifestyle and community in addition to having the opportunity to practice high quality medicine.

"Being in a smaller community, everyone knows everyone and knows my kids are playing ball and running barrels," Jessica said. "They respect our time and we get that because they [the community] know us personally."

Location also provides access to the things they love.

"We're in the heart of cow/calf country, so there's endless opportunity to help ranchers," Craig said.

They agree one of the biggest changes in veterinary practice is the increase in preventative medicine as opposed to single animal care. According to Craig, more producers are evaluating herd health programs with more tools at their disposal such as genomics and EPDs. This has allowed their clients to significantly improve the product with little additional physical input.

"As the younger generation takes over, they are embracing preventative medicine more," Jessica said. "The client scope has gone from a small to large vision and created a huge change in the industry."

Even though today's veterinary students are facing an increasing amount of debt upon graduation, the Iwanksi's feel this is causing individuals to take a serious look at the profession. According to them, opportunities are endless for those who want to do the work. And their advice for anyone considering working in the field, is straightforward.

"I tell students who come through here the same thing. They have to love animals of course, but you also have to love people," Jessica said. "If you like people, solving problems, are goal oriented and like to see change happen, this is definitely the field for you."

Craig added, "what we do every day as far as private practice is just one small area of veterinary medicine. You can specialize in about anything."

Unique is just one word they use to describe balancing the practice, an active family life plus managing 150 cows. Working as a couple, they both claim it is the very best and the very worst part of the day, but it is without question fulfilli and definitely worth it.

WHAT YOU NEED TO KNOW

Animal health experts Dr. Mike Apley and Dr. Brian Lubbers address your questions about upcoming changes to the Veterinary Feed Directive:

Watch the VFD modules at www.beefcattleinstitute.org

NEWS BRIEFS

BCI Hosts International Agribusiness Program

The Beef Cattle Institute was host to a special group of guests at the Kansas Department of Agriculture in late August. The Special American Business Internship Training (SABIT) Agribusiness program, consisting of a delegation of 22 industry specialists from Eurasia, made a stop on their tour across the United States to hear from top beef industry experts.

The following presentations were made which led to active discussion:

- Dr. Bob Larson: Description of the U.S. Cattle Herd
- Dr. Brad White: Overview of the Beef Cattle Institute including strategic focus areas, production decision tools, big data analytics and overall objectives
- Dr. Bob Weaber, department of animal science: U.S. Beef Value Chain

Participants of SABIT's Agribusiness program aim to gain a comprehensive understanding of the agribusiness industry in the United States. From the program, participants will be better equipped to improve the agribusiness industry in their home countries.

Justyna Swica, international trade specialist for the U.S. Department of Commerce, who was on tour with the group, said the BCI was one of the main draws to Manhattan, Kansas.

"The Beef Cattle Institute was one of the main draws in bringing this Eurasian agribusiness delegation to Manhattan, Kansas as a number of the delegates were specifically interested in improving their cattle operations," she said. "This was a very productive meeting during which the delegates received practical information on cattle herd management, breeding and nutrition, which they could potentially apply in their own countries. They also remarked at the high level of productivity and sophistication of American beef cattle operations."

The BCI hosted a group of 22 international industry professionals on August 28th.

The program began August 13, 2016 in Washington D.C. and continued across to the country to meet with leading U.S. firms, manufacturers, local government, academia and other industry representatives.

GETTING FAMILIAR WITH BIG DATA

BCI recently hosted 32 individuals for a demo on IBM Watson Analytics. Twelve faculty members, 16 university staff and four students were in attendance representing the following areas: College of Business, College of Engineering and Adv. Manufacturing Institute, College of Veterinary Medicine, Kansas Department of Agriculture – Animal Health, College of Biology: K-INBRE, College of Agriculture, National Agriculture Biosecurity Center, University Support Systems: (ITAC, ISO), Education and Personal Development.

RESEARCH Update

The BCI Research Updates are designed to bring you relevant information impacting the beef industry. We review current cattle health, production and economic research and BCI will send a periodic summary of information that may be relevant to your operation.

Get updates!