

# K News from KSU Animal Sciences

- ✦ The **Sheep & Goat Management Series** will continue with a meeting scheduled for 5 pm on April 20, 2021 at the Norton County 4-H Building, Norton, Kansas. Topics include sheep and goat nutrition, health, kidding and lambing, and more. Attend in-person or via Zoom. Please register by April 16th by calling the Twin Creeks Extension District at 785-475-8121; Phillips-Rooks Extension District at 785-425-6851; or register online at <https://forms.gle/p4rYM2CHjPPC2BrY8>.  
The final meeting of the Sheep & Goat Management Series will be held 6-8 pm on April 27, 2021 at the Dole Specter Conference Center, Fossil Creek Hotel, Russell, KS. Topics include "Health, Nutrition, and Management Considerations for a Sheep and Meat Goat Enterprise" along with "Forage Sampling Considerations and Sampling Technique." Registration cost is \$5.00 per person and is due by April 26. RSVP to Clint Laflin at [cflaflin@ksu.edu](mailto:cflaflin@ksu.edu) or 785-483-3157. Meal and drinks will be provided. For more information, contact Alison Crane at [arcrane@ksu.edu](mailto:arcrane@ksu.edu) or 785-532-1672.
- ✦ **Market Beef Nominations Due May 1** - The 2021 state livestock nomination season has arrived! Market beef nominations are due by May 1, 2021. This includes market steers and market heifers. The deadline is a postmark deadline, but families are encouraged to submit their nominations as early as possible. Nomination information for all species may be found on the KSU Youth Livestock Program website (<http://bit.ly/ksunominations>). The updated 2021 forms must be used. Previous versions of the forms will not be accepted. The current year's forms have "February 2021" in the footer. In order to make sure nominations are complete upon initial submission, double check that all fields of the declaration form and nomination form(s) are complete, as well as the forms and DNA envelopes being signed by all parties. Please also cross-reference the tag numbers between the DNA envelopes and the specie nomination forms. All checks should be made payable to KJLS. There is a checklist for each species attached as a second page to the 2021 forms; the checklist does not need to be submitted, as it is only a reference tool for families. This is also a reminder that a YQCA certificate for each child needs to be attached to the Declaration Form, as that requirement will continue for both shows into the foreseeable future. For more information, contact Lexie Hayes via email at [adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264.
- ✦ **Implementing Your Company's HACCP Plan** will be hosted June 9-11, 2021, in Manhattan, KS. This workshop uses curriculum recognized by the International HACCP Alliance for meat and poultry processors. The registration fee is \$450 per person and is available online at <http://bit.ly/HACCPCourse>. For more information, contact Dr. Liz Boyle ([lboyle@ksu.edu](mailto:lboyle@ksu.edu); 785-532-1247).
- ✦ **K-State Animal Science Leadership Academy (KASLA) 2021 Hybrid Program** - Applications are now available for the 2021 K-State Animal Science Leadership Academy, June 15-18. Applications must be postmarked by April 15, 2021. This year's program will offer a hybrid format of virtual instruction, followed by a closing, one-day, in-person experience on the Kansas State University campus. The goal of this academy will be to further develop young leaders within the livestock industry and prepare them for a successful future in this field. Participant safety is of the utmost importance. Local and university safety protocol will guide our interaction. Additional information regarding COVID-19 related requirements will be provided as we approach the event. For questions about the academy, visit [www.asi.ksu.edu/KASLA](http://www.asi.ksu.edu/KASLA) or contact Sharon Breiner, Director, at [sbreiner@ksu.edu](mailto:sbreiner@ksu.edu) or 785-532-1267.

Department of Animal Sciences and Industry

Kansas State University  
218 Weber Hall, 1424 Claflin Road  
Manhattan, KS 66506  
785-532-6533  
[www.asi.ksu.edu](http://www.asi.ksu.edu)

- Facebook.com/KSUASI

April 2021 issue



# UPCOMING EVENTS...

- ↵ The **2021 Dr. Bob Hines Kansas Swine Classic** is scheduled for July 9-10, at the Riley County Fairgrounds in CiCo Park in Manhattan. This two-day event includes an educational swine skillathon, photography contest, showmanship, and a prospect and market hog show. It is open to all Kansas youth ages 7-18 as of January 1, 2021. Entries must be submitted online by 5:00 pm on June 15, with payment postmarked the same day. More information and the entry link will be available soon. Watch the youth livestock program website, as well as the KSU Swine website and Facebook, for details! For more information, contact Joel DeRouchey (785-532-2280; [jderouch@ksu.edu](mailto:jderouch@ksu.edu)) or Lexie Hayes (785-532-1264; [adhayes@ksu.edu](mailto:adhayes@ksu.edu)).
- ↵ **YQCA Requirement for 2021 State Shows** - Youth for the Quality Care of Animals (YQCA) is a national, multi-species youth livestock quality assurance program that focuses on food safety, animal well-being, and life skill development, through age-appropriate educational curriculum for youth 7-21 years of age. This program is an annual certification that grows with a young person, so the learning modules are different every year. ALL exhibitors are required to be YQCA certified in order to participate in the 2021 Kansas State Fair Grand Drive and/or Kansas Junior Livestock Show (KJLS). This includes youth who will be showing market animals, commercial breeding females, and/or registered purebred breeding females. Given the COVID-19 situation, families should contact their local extension office to see what options are available in their local area. There is also a new option for 7-year-old members to obtain certification. They must participate in an instructor-led class with a parent or guardian. Those who need a web-based option for a 7-year-old exhibitor should contact their local extension office. The YQCA requirement for 7-year-old KJLS exhibitors will go into effect for this year's show (2021). Families need to attach copies of each child's YQCA certificate to their Declaration Form at the time of nomination. More information may be found on the K-State Youth Livestock website ([www.YouthLivestock.ksu.edu](http://www.YouthLivestock.ksu.edu)) under Youth Livestock Quality Assurance, by contacting the local extension office, or via Lexie Hayes at [adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532-1264.
- ↵ **Educational Resources** - There are several livestock project resources available on the KSU YLP website ([www.YouthLivestock.ksu.edu](http://www.YouthLivestock.ksu.edu)), including digital versions of the show guides, videos, and graphics. They may be found under the "Educational Resources" tab. The 2020 junior sheep day videos, as well as the content from the 2021 junior swine and meat goat producer weeks, are available to those who may find them useful. Families, project leaders, or agents may request direct links to these resources by contacting Lexie Hayes ([adhayes@ksu.edu](mailto:adhayes@ksu.edu) or 785-532 1264). Additionally, shows and activities that are open to participation from outside the local unit are being updated under the "Spring Shows" tab. If you have an opportunity to share, please email it to Lexie to be added. Information needs to be submitted directly from the local extension unit to be included on the page.
- ↵ Watch the **KSU ASI Headlines** for March 2021 and find out the latest happenings in the department. Follow the link at <https://youtu.be/SI--s4YY6Q>. For questions about the department, contact Dr. Mike Day, ASI Department Head, at 785-532-1259; [mlday@k-state.edu](mailto:mlday@k-state.edu).

| CALENDAR OF UPCOMING EVENTS |   |           |
|-----------------------------|---|-----------|
| Date                        | Event   | Location  |
| April 15, 2021              | KASLA Registration deadline                         |           |
| April 20, 2021              | Sheep and Goat Management Series                    | Norton    |
| April 27, 2021              | Sheep and Goat Management Series                    | Russell   |
| May 1, 2021                 | Market Beef Nominations Due                         |           |
| June 9-11, 2021             | Implementing Your Company's HACCP Plan              | Manhattan |
| June 15-18, 2021            | K-State Animal Science Leadership Academy-Hybrid    |           |
| June 15, 2021               | Small Livestock & Commercial Heifer Nominations Due |           |
| July 9-10, 2021             | Dr. Bob Hines Kansas Swine Classic                  | Manhattan |

# WHAT'S NEW...

↵ **Management Minute** – Justin Waggoner, Ph.D., Beef Systems Specialist

## *“Finding the Best Person for Your Position”*

Whether you are a small business with just a few employees or a large enterprise with several employees, hiring the right person for a position is essential. Making a good hiring decision can inspire others and improve the operations productivity. The unfortunate truth is that the number of qualified applicants for most skilled positions isn't large. “Good people are truly hard to find.” So, what can you, as a potential employer, do to attract and hire the best person for a position? There are many thoughts on this topic. However, most experts agree that knowing what you are looking for and clearly stating the roles and responsibilities of the position is a great place to start. Applicants want/need to know what the expectations of the position are. Another point of consensus on the topic is to involve others in the hiring process. Allowing the candidates to interact with others in the organization through tours, or an informal dinner, can be great ways to know whether a person is a good fit. An informal setting often allows an employer to gather more information about the applicant than the traditional interview questions can allow. People spend a great deal of time at work, thus co-workers, colleagues, and the culture of the organization are important to both parties. Additionally, different people have different perspectives on the applicants, and usually there is some degree of consensus. Lastly, be prepared to move quickly with a competitive offer. The best people will usually have multiple opportunities.

For more information, contact Justin Waggoner at [jwaggon@ksu.edu](mailto:jwaggon@ksu.edu).

↵ **Feedlot Facts** – Justin Waggoner, Ph.D., Beef Systems Specialist

## *“Mineral Supplement Selection Tips”*

One of the challenges cattle producers face is determining which mineral supplement they will use during the upcoming grazing season. Often this decision is based on the information provided on the mineral tag and price sheet. Although price is an important consideration, other factors such as the concentrations of the minerals in the mix relative to the animals' requirements and sources of minerals used should be considered.

The first step in selecting a mineral supplement is to know what you are shopping for. Mineral mixes are often categorized based on the concentration of phosphorous in the mineral mix. Phosphorous is often deficient in cattle consuming forage-based diets and is our first priority in developing mineral supplements for grazing cattle. The amount of phosphorous required in a mineral mix to meet the requirements of a cowherd is a function of forage phosphorous content (determined via forage mineral analysis) and animal requirements, which are driven by mature body weight and production stage. A mineral mix that contains 6 to 10% Phosphorous would be adequate in many situations.

The next step is to spend some time reading the mineral tag. The guaranteed analysis section of the tag guarantees the concentration of the minerals listed. In general, the more guarantees the better, and if a mineral is not listed then it is not guaranteed to be in the mineral. The sources of the minerals used in the mix also warrant consideration as mineral sources differ in bioavailability (Table 1). For example, copper sulfate is 100% available to the animal, whereas copper oxide is 0% available.

**Relative bioavailability of trace mineral sources (adapted from Green et al., 1998)**

| Mineral   | Sulfate | Oxide | Carbonate | Chloride |
|-----------|---------|-------|-----------|----------|
| Cobalt    | 100     | 31    | 110       | ---      |
| Copper    | 100     | 0     | 60        | 105      |
| Iron      | 100     | 0     | 0-75      | ---      |
| Manganese | 100     | 58    | 28        | ---      |
| Zinc      | 100     | 60-80 | 60        | 40       |

For more information about mineral supplementation, see “Questions and Answers on Beef Cattle Nutrition” (<https://bookstore.ksre.ksu.edu/pubs/C733.pdf>).

For more information, contact Justin Waggoner at [jwaggon@ksu.edu](mailto:jwaggon@ksu.edu).

# WHAT'S NEW...

- ☞ **Fellow Post Doc position** - This position of a fellow post doc is to enhance the capabilities in bioinformatics analysis. Whole Genome Sequencing is increasingly used by food regulators and public health agencies to support food safety. This position will assist in building unique capabilities to stay up with the trends in the food safety industry. This is a full-time, unclassified professional staff, term contract position (Job #510481). To apply, go to <https://careers.pageuppeople.com/742/cw/en-us/job/510481/fellow-post-doc>. For more information, contact Dr. Valentina Trinetta, Search Committee Chair, at 785-532-1667 or [vttrinetta@ksu.edu](mailto:vttrinetta@ksu.edu).
- ☞ **Effects of Late Summer Prescribed Fire on Botanical Composition, Soil Cover, and Forage Production in Caucasian Bluestem-Infested Rangeland in the Kansas Smoky Hills: Year 2 of 4** - The objective of this study was to document the effects late-summer prescribed fire on soil cover, botanical composition, and forage production in the Kansas Smoky Hills and the associated effects on dense Caucasian bluestem (*Bothriochloa bladhii*) stands therein. The study took place on a private ranch in Ellsworth County, in the Kansas Smoky Hills. Eighteen one-acre plots were assigned randomly to one of three prescribed-fire treatments: no burn, single burn (i.e., one burn treatment only in 2019), or biennial burn (i.e., two burn treatments in 2019 and 2021). Soil cover, plant composition, and forage production were evaluated annually. These data represent plant community effects one year following prescribed fire.
- The Bottom Line...** The data were interpreted to indicate that one year of late-summer prescribed fire was associated with decreased presence of Caucasian bluestem and increased native plant richness, a component of biological diversity, but was not associated with clear trends for change in forage production. A second fire treatment is planned for 2021. More information is available on this experiment and others in the KSU Cattlemen's Day report at [www.KSUbeef.org](http://www.KSUbeef.org). (This study conducted by *M.P. Ramirez, A.J. Tajchman, Z.M. Duncan, J. Lemmon, and K.C. Olson.*)
- ☞ **Yearling Cattle Grazing Pastures Burned During Summer Perform Similarly to Cattle Grazing Pastures Burned in Early Spring: Year 2 of 6** - The objective of this study was to evaluate the impact of prescribed fire timing on grazing performance of yearling beef cattle in the Kansas Flint Hills. This study was conducted at the Kansas State University Beef Stocker Unit. Yearling stocker cattle were assigned randomly to one of three prescribed-burn treatments: spring (April 7 ± 2.1 days), summer (August 21 ± 5.7 days), or fall (October 2 ± 9.9 days) and grazed from May to August of 2019 and 2020. Individual body weights were recorded at the beginning and end of the grazing season to determine total body weight gain and average daily gain.
- The Bottom Line...** The first two years of data from a six-year study were interpreted to indicate that yearling cattle grazing pastures burned in summer performed similarly to those grazing pastures burned in spring. More information is available on this experiment and others in the KSU Cattlemen's Day report at [www.KSUbeef.org](http://www.KSUbeef.org). (This study conducted by *Z.M. Duncan, A.J. Tajchman, M.P. Ramirez, J. Lemmon, W.R. Hollenbeck, D.A. Blasi, and K.C. Olson.*)
- ☞ **Influence of Particle Size of Enogen® Feed High Amylase and Conventional Yellow Dent Corn on Finishing Pig Performance, Carcass Characteristics, and Stomach Ulceration** - A total of 323 pigs were used in an 83-d growth trial to evaluate the influence of particle size of Enogen Feed corn and conventional yellow dent corn on finishing pig performance. Pigs were randomly assigned to pens (9 pigs per pen) and pens were allotted by weight to 1 of 6 dietary treatments in a randomized complete block design with 6 pens per treatment. Treatments were arranged in a 2 × 3 factorial with main effects of corn source (Enogen Feed corn or conventional yellow dent) and 3 ground corn particle sizes (300, 600, or 900 microns). Overall, from d 0 to 83, there were no differences among corn sources observed for average daily gain, average daily feed intake and feed efficiency. As particle size of the diet decreased from 900 to 300 microns, ADG increased. Overall F/G improved as corn particle size was decreased.
- In conclusion...** Reducing the particle size of the diet improves feed efficiency with no major differences between corn sources for overall pig performance. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by *H.R. Williams, M.D. Tokach, J.C. Woodworth, R.D. Goodband, J.M. DeRouchey, S.S. Dritz, V. Shivanna, C.B. Paulk and H.I. Calderón.*)

# WHAT'S NEW...

☞ **Effect of Added Water, Holding Time, or Phytase Analysis Method on Phytase Stability and Pellet Quality** - The addition of water to the mixer prior to pelleting is sometimes necessary to reach the target moisture content at the end of the conditioning process. However, there is limited data to demonstrate the impact of water addition in the mixer on phytase stability during the pelleting process. In addition, the variation of phytase analysis method may lead to incorrect or biased conclusions for research and industrial phytase stability. Therefore, the objective of this experiment was to determine the effect of water added in the mixer, feed holding time and phytase analysis method on phytase stability and pellet quality. Treatments were arranged in  $2 \times 2 \times 2$  factorial with main effects of added water (0% or 1%), holding time (0 or 2 h), and phytase analysis method (ELISA or EN ISO), respectively. For the 0% added water treatment, a 210-lb basal feed and 0.03-lb phytase were mixed for 5 min. For the 1% added water treatments, a 208-lb basal feed and 0.03-lb phytase were mixed for 120 sec followed by the addition of 2-lb water and then the mixture was mixed for 180 sec wet mix time. The water was applied to dry feed in the mixer using a hand-held sprayer with a flat spray tip nozzle. After the diets were mixed, treatments were immediately pelleted or held in a closed container for 2 h before pelleting. Treatments were steam conditioned at 185°F for approximately 30 sec and pelleted using a pellet mill. The pellet mill was equipped with a 0.16 × 0.87 in die. Samples were collected during discharge of the mixer, after conditioning and after pelleting. The conditioned mash and pelleted samples were cooled for 10 min using an experimental counter flow cooler. There were three replicates per treatment. Data were analyzed using the GLIMMIX procedure of SAS. The results demonstrated that there was no evidence of three-way or two-way interactions among added water, holding time and analysis method on phytase stability for mash samples, conditioned mash samples, and pellets.

**In conclusion...**The added water and holding time did not impact phytase stability for mash samples, conditioned mash samples, and pellets. The ELISA method had greater phytase activity than the EN ISO method for the pellet samples. The phytase activity was similar between the two analytical methods for mash samples and conditioned mash samples. For pellet quality, there was no evidence of interaction between added water and holding time. Added water and holding time did not impact pellet durability index. Therefore, the stability of phytase produced by a strain of *Trichoderma reesei* was not affected when feed was stored in a bin up to 2 h prior to pelleting. The added water in mash feed did not affect the degradation of *Trichoderma reesei* phytase when the feed moisture did not exceed 13%. Additionally, the ELISA or EN ISO method could be used in the laboratory to determine *Trichoderma reesei* phytase stability. Increasing moisture content of mash feed by 0.6% did not improve pellet quality. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by M. Saensukjaroenphon, C.E. Evans, C.R Stark, and C.B. Paulk.)

☞ **Moisture Content Throughout the Pelleting Process and Subsequent Effects on Pellet Quality** - This experiment was designed to evaluate the effects of steam addition to the conditioner on moisture content throughout the pelleting process and subsequent effects on pellet quality. Treatments consisted of diets pelleted with no steam and steam added to achieve conditioning temperatures of 145 and 190°F. Conditioner retention time was set at 30 sec and diets were pelleted with a  $\frac{1}{4} \times 2 \frac{1}{2}$ " pellet die. Pellet samples were collected and immediately placed in an experimental counter-flow cooler for 15 min. All treatments were replicated at three separate time points to provide three replicates per treatment. Mash, conditioned mash, hot pellets, and cooled pellet samples were collected for moisture content analysis and cooled pellets for pellet durability index (PDI). Data were analyzed with pelleting run as the experimental unit and time period as the blocking factor. Moisture samples were analyzed as a 3×4 factorial of steam-conditioning and sample location. There was a steam-conditioning × sample interaction for moisture. Moisture in mash samples was similar for all treatments. For the no steam treatment, there was no difference in moisture content between the mash, conditioned mash, and hot pellets; however, moisture decreased in cooled pellets. For the 145°F treatment, there was an increase in moisture from mash to conditioned mash, followed by a decrease in both hot pellets and cooled pellets. For the 190°F treatment, moisture increased from mash to conditioned mash, and decreased in hot pellets and cooled pellets. Increasing conditioning temperature from no steam to 190°F increased PDI from 3.3, 59.1, to 91.1%, respectively.

**In conclusion...**Increasing feed temperature from 97.2 to 190°F via steam addition increased condition mash moisture content by 4.2% resulting in improved pellet quality. More information is available on this experiment and others in the KSU Swine Day report at [www.KSUswine.org](http://www.KSUswine.org). (This study conducted by H.K. Wecker, R.N. Kort, C.J. Fiehler, A.M. Ogles, J.R. Froetschner, C.R. Stark, and C.B. Paulk.)

# ASI FACULTY SPOTLIGHT...



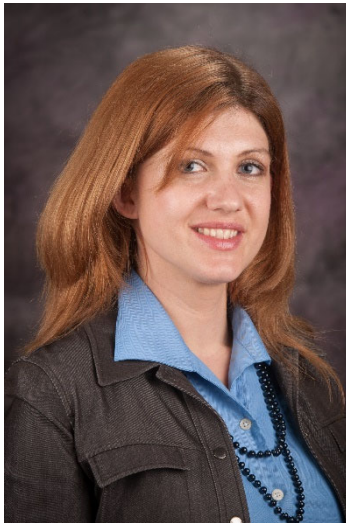
**Deanna Retzlaff ([retzlaff@k-state.edu](mailto:retzlaff@k-state.edu); 785-532-2202)**

## **Teaching Associate Professor**

Deanna Retzlaff earned her B.S. degree in Animal Sciences from the University of Tennessee (Martin, TN). She then continued her education at Kansas State University, earning a Ph.D. in Food Science, with a focus on food safety. Deanna left the university to manage a commercial analytical laboratory before returning to K-State in 2002.

Deanna's position provides support for the online programs in both Animal Science and Food Science, including program coordination, student services, and academic advising. She also teaches FDSCI 307 Applied Meat and Poultry Microbiology.

Deanna is a member of the National Academic Advising Association, the University Continuing Education Association, the American Society for Microbiology, the International Association for Food Protection, and the Institute of Food Technologists.



**Lindsey Hulbert ([lhulbert@k-state.edu](mailto:lhulbert@k-state.edu); 785-532-0938)**

## **Associate Professor, Animal Behavior**

Dr. Lindsey Hulbert grew up in the southwest (AZ, NM) then began her career in animal physiology and behavior in Lubbock, Texas, through an undergraduate research program at Texas Tech University. Her first research projects involved understanding how housing and management conditions affect the behavior and stress responses in swine. Her research evolved into how stress affects the health and immune systems in other species, including laboratory rodents, beef and dairy calves, and poultry. She also worked for the USDA-Agriculture Research Services, Livestock Issues Research Unit in Lubbock, Texas. Dr. Hulbert was a post-doctoral at the University of California, Davis before moving to KSU in January of 2013. Dr. Hulbert has a passion for animals, science, and training students. In addition, she enjoys spending time with her family and her hobbies include Zumba and Salsa.

# WHAT PRODUCERS SHOULD BE THINKING ABOUT

## WHAT PRODUCERS SHOULD BE THINKING ABOUT IN JUNE...

**BEEF** -- *Tips by Dale Blasi, Extension Beef Specialist*

June is a month to let Mother Nature take her course. **Assuming timely precipitation**, native grasses are usually at peak production; therefore, little supplementation is needed, except for some minerals.

### *Cow-Herd Nutrition*

- Provide plenty of clean, fresh water.
- Provide free-choice minerals to correct any mineral deficiencies or imbalances.
- Monitor grazing conditions and rotate pastures if possible and practical.
- Consider creep-feeding if it's cost-effective.

### *Herd Health*

- Monitor and treat pinkeye cases.
- Provide fly control. Consider all options; price and efficiency will dictate the best options to use.
- Monitor and treat for foot rot.
- To reduce heat stress, avoid handling and transporting cattle during the hottest times of the day.

### *Forage and Pasture Management*

- Check and maintain summer water supplies.
- Place mineral feeders strategically to enhance grazing distribution.
- Check water gaps after possible washouts.
- Harvest hay in a timely manner; think quality and quantity.

### *Reproductive Management*

- If using AI, do not expect all females to conceive. A common practice is to breed once or twice with AI, then turn out cleanup bulls for the balance of a 65-day breeding season. A 42-day AI season with estrus synchronization at the front end gives most females three chances to conceive by AI.
- Watch bulls for libido, mounting and breeding function.
- Record breeding dates to determine calving dates.
- By imposing reproductive pressure (45-day breeding season) on yearling heifers, no late-calving 2-year-olds will result. This will increase lifetime productivity and profits.

### *Genetic Management*

- Monitor herd performance. Then identify candidates to cull because of poor performance.

### *General Management*

- Check equipment (sprayers, dust bags, oilers, haying equipment, etc.), and repair or replace as needed. Have spare parts on hand because downtime can make a big difference in hay quality.

*We need your input! If you have any suggestions or comments on **News from KSU Animal Sciences**, please let us know by e-mail to [lschrein@ksu.edu](mailto:lschrein@ksu.edu) or phone 785-532-1267.*