

# MISSISSIPPI STATE UNIVERSITY

## ANIMAL & DAIRY SCIENCES



### IN THIS ISSUE:

- Congratulations, Dr. Memili
- Horseman's Association at the MSU Carnival
- ADS 3221 Students Wrap Up their Semester Touring a Local Farm
- Research Grant Brings New Equipment to be Utilized by the ADS 3233 Students
- Food Pantries of Mississippi Success
- Animal Ag in China
- Upcoming Extension Events
- Publications

## CONGRATULATIONS, DR. ERDOGAN MEMILI

Dr. Erdogan Memili has been selected to serve on the Faculty Research Advisory Committee (FRAC). Led by the Office of Research and Economic Development (ORED), the FRAC aims at working with the administration to provide an environment that strengthens the University's research and creative endeavors and promotes their use for the betterment of society.

The ORED seeks the input of research-active faculty who can provide feedback and input on the implementation of research policies, practices, programs and awards and advise the Vice President for Research on matters related to scholarly and creative activities.



# HORSEMAN'S ASSOCIATION HORSE'N AROUND AT THE MSU COSTUME CARNIVAL

Horseman's Association members gave back to the community by participating in the MSU Costume Carnival that took place at the end of October. Members set up a booth at the event sponsored by the MSU Student Association at the Junction. Starkville youths dressed up and toured the different booths set up at the carnival by various student organizations.

As for the HA booth, members dressed up in attire representing various horse activities and decorated their booth with different types of tack including saddles that were set up for visitors to sit on. Even Bully stopped by the booth to test out a saddle.

The club plans to wrap up the fall semester with Mississippi State Equine Association President James Rasberry speaking at their last fall meeting on November 13th at 6 pm in room 4036 of the Wise Center along with hosting a Christmas potluck on December 4th at 6 pm in the Wise Center Pegasus Cafeteria foyer.

For further information about the club, individuals can contact HA faculty advisor Dr. Molly Nicodemus at [mnicodemus@ads.msstate.edu](mailto:mnicodemus@ads.msstate.edu).



## ADS 3221 STUDENTS WRAP UP THEIR SEMESTER TOURING A LOCAL FARM

As the semester comes to a close, ADS 3221 Practices in Horse Care & Management students had the opportunity to tour Seven Oakes Stables located in Starkville, MS. This tour was valuable to the students in that a part of their classwork students had a project where they had to design an equine facility. Seven Oakes Stables is a unique facility as it has a very competitive Spotted Saddle

Horse breeding, training, and showing program along with offering boarding, lessons, clinics, and trail rides for students. This tour gave students an up close look at various aspects of a horse facility that is not often seen at other local facilities. In fact, the stables have recently expanded to offer 6 internship opportunities for students in areas of training, farm management, public relations, and foal delivery and care.

The stable tour set up by graduate teaching assistant Alicia Gilmore allowed her students an opportunity to learn more about such a successful equine program and the potential for these students to be a part of the internship program. To learn more about the Seven Oakes Stables internships, students can go to the stable's website at <https://www.sevenoaksfarms.com/>. For further information about ADS 3221, individuals can contact course instructor Dr. Molly Nicodemus at [mnicodemus@ads.msstate.edu](mailto:mnicodemus@ads.msstate.edu)



MSU Students enjoying horse activities at Seven Oakes Stables

## RESEARCH GRANT BRINGS NEW EQUIPMENT TO BY UTILIZED BY THE ADS 3233 STUDENTS

Thanks to the Schillig Special Teaching Projects research program funding was available for new equipment for ADS 3233 Equine Assisted Therapy for this fall semester. This course has both a lab and lecture component in which the lab is spent working directly with MSU Extension Equine Assisted Therapy Programs located in West Point, MS. ADS 3233 students get an opportunity to work one on one with the disable youth signed up for the therapeutic riding sessions at West Point, MS. Students during their lab activities are supervised by therapeutic riding instructors,

Cassie Brunson and Lori Irvin. During their lab activities, students are able to learn what it takes to safely and successfully put on such a program including tack selection, fitting, storage and maintenance. In recent years, both the therapeutic riding program and the ADS 3233 instructor, Dr. Molly Nicodemus, have been wanting to expand the therapy program to allow for more students to have more hands on. This dream came true with the grant given to the course by the Schillig Special Teaching Projects as a big limitation to their growth was limited tack.

In preparation for using this grant, students were assigned to assess equipment for safety, fit, and durability making records of what equipment was needed to be replaced and special sizes that might be needed for replaced tack. In lecture students reviewed over the various options of tack and considerations before purchasing. Students went on to shop for these items and work to ensure items were the best price fitting into the budget. Once items started to arrive students learned how to organize the tack room and proper storage methods. All of these activities are essential for students wanting to go on for their own instructor certification and without this grant student would have not had the opportunity to experience these practices and procedures.



ADS 3233 Students hard at work during their equine assisted therapy laboratory



# FOOD PANTRIES OF MISSISSIPPI SUCCESS

## DAIRY

Feeling pretty excited to see you all making an impact with food pantries in MS. Through sales of our Hail State and Drink Milk t-shirts, we've been able to donate all this - and are working on even more. Not only are dairy products getting into the hands of families who need it, we are also getting some dairy products off the shelves to help with oversupply.

I know this is a small way to help, but if we all do some small things to help dairy producers, it can become huge! If you bought a shirt, thank you! If not, there are still some left (but not all sizes and colors). If you want to help producers beyond getting a shirt, consider donating milk to a local pantry!



# ANIMAL AGRICULTURE IN CHINA

## A Study Abroad Course:

- GA 4710/6710 Study Tour - Animal Agriculture in China (3 credit hours)
- Stationed at Anhui Agricultural University in Hefei, Anhui, China, the world's 2nd-largest economy, for 3 weeks, students will learn a great deal of China's animal agricultural practices, animal product consumption patterns, and its veterinary service
- To experience Chinese culture, cuisine, language, and its several very attractive sights



## Application Deadline

March 8, 2019

## Program Dates

**May 8 – 29, 2019**

## Eligibility/Prerequisites

All undergraduate and graduate students with at least a 2.5 GPA are encouraged to participate

## Contact:

Dr. Liao: [s.liao@msstate.edu](mailto:s.liao@msstate.edu)

**Price:** \$2,290

March 8, 2019 – Application fee: \$150

March 22, 2019 – Program fee: \$2,140



# UPCOMING EXTENSION EVENTS

## **Beef Extension - Dr. Brandi Karisch & Cobie Rutherford**

Phone: (662) 325-7465 or brandi.karisch@msstate.edu (662) 325-4344 or cobie.rutherford@msstate.edu

Beef Calendar: <http://extension.msstate.edu/livestock/beef/beef-calendar>

## **Dairy Events - Dr. Amanda Stone**

Phone: (662) 325-8773 or Email: amanda.stone@msstate.edu Website: <http://extension.msstate.edu/dairy>

## **4-H Events - Dr. Dean Jousan**

Phone: (662) 325-2424

Email: dj230@msstate.edu [www.http://extension.msstate.edu/4-h](http://extension.msstate.edu/4-h)

## **Equine Events - Dr. Clay Cavinder**

Contact Dr. Cavinder for information about programs and events. Phone: (662) 325-7566 or clay.cavinder@msstate.edu Website

<http://extension.msstate.edu/agriculture/livestock/equine/upcomingprograms>

## 2018 Refereed Publications

- Holtcamp, Alexander J., Anuraj T. Sukumaran, Abigail E. Schnedler, Brandon J. McClenton, Emery Kunze, Chris R. Calkins, **Brandi B. Karisch**, **Derris D. Burnett**, **Thu T.N. Dinh**. Effects of feeding endophyte-infected tall fescue seeds to stocker Angus steers on retail quality attributes of beef strip steaks. *Meat Science* 149 (2019) 31-39. <https://doi.org/10.1016/j.meatsci.2018.11.007>
- KAYA, Abdullah, Erdoğan GÜNEŞ, **Erdoğan MEMİLİ**. Application of reproductive biotechnologies for sustainable production of livestock in Turkey. *Turkish Journal of Veterinary and Animal Sciences*. (2018) 42: doi:10.3906/vet-1706-66/
- Moura. Arlindo Alencar, Ana Luiza Cazaux Velho, **Erdogan Memili**, Antônia Moemia Rodrigues Portela, Arabela Guedes Viana, Maria Júlia Barbosa Bezerra, Fábio Róger Vasconcelos. Seminal plasma proteins and metabolites: effects on sperm function and potential as fertility markers. *Proceedings of the 10th International Ruminant Reproduction Symposium (IRRS 2018)*; Foz do Iguaçu, PR, Brazil, September 16th to 20th, 2018.
- Viana. A. G. A. , A. M. A. Martins, A. H. Pontes, W. Fontes, M. S. Castro, C. A. O. Ricart, M. V. Sousa, A. Kaya, E. Topper, **E. Memili** & A. A. Moura. Proteomic landscape of seminal plasma associated with dairy bull fertility. *Scientific Reports*. (2018) 8:16323 | DOI:10.1038/s41598-018-34152-w
- Park, Seong B., **Shecoya B. White**, Christy S. Steadman, **Clay A. Cavinder**, **Scott T. Willard**, **Peter L. Ryan**, and **Jean M. Feugang**. Real-Time Bioluminescence Analysis of Escherichia coli O157:H7 Survival on Livestock Meats Stored Fresh, Cold, or Frozen. *Journal of Food Protection*, Vol. 81, No. 11, 2018, Pages 1906–1912. doi:10.4315/0362-028X.JFP-18-207.
- Dinh. T.T.N.**, J.F. Legako, M.F. Miller, J.C. Brooks. Effects of USDA quality grade and cooking on water-soluble precursors of beef flavor. *Meat Science*. 146 (2018) 122-130. <https://doi.org/10.1016/j.meatsci.2018.08.008>.
- Littlejohn, Brittni P., David G. Riley, Thomas H. Welsh, Jr, Ronald D. Randel, **Scott T. Willard**, and **Rhonda C. Vann**. Use of random regression to estimate genetic parameters of temperament across an age continuum in a crossbred cattle population. *Journal of Animal Science*. 2018. 96:2607–2621. doi: 10.1093/jas/sky180.
- Vu, P. T. T., A. J. Holtcamp, A. T. Sukumaran, M. V. V. Le, D. H. Nguyen, & **T. T. N. Dinh**. (2018). Effects of market type and time of purchase on oxidative status and descriptive off-odors and off-flavors of beef in Vietnam. *Meat science*, 145, 399-406. <https://doi.org/10.1016/j.meatsci.2018.07.018>.
- Ishak, G. M. , S. T. Bashir, G. A. Dutra, G. D. A. Gastal, M. O. Gastal, **C. A. Cavinder**, **J. M. Feugang**, and E. L. Gastal. In vivo antral follicle wall biopsy: a new research technique to study ovarian function at the cellular and molecular levels. *Reproductive Biology and Endocrinology* (2018) 16:71. <https://doi.org/10.1186/s12958-018-0380-8>.
- Humphrey, R. M., Z. Yang, M. S. Hasan, **M. A. Crenshaw**, **D. D. Burnett**, J. K. Htoo and **S. F. Liao**. The compensatorily -gained pigs resulted from feeding a methionine-deficient diet had more fat and less lean body mass. *Journal of Applied Animal Nutrition*, Vol. 6; e6; page 1 of 7. <https://doi.org/10.1017/JAN.2018.5>.
- Griffin, Courtney M. , BS; Jenna A. Scott, BS; **Brandi B. Karisch, MS, PhD**; Amelia R. Woolums, DVM, MVSc, PhD, DACVIM, DACVM; **John R. Blanton, MS, PhD**; Ray M. Kaplan, DVM, PhD, DEVPC, DACVM; William B. Epperson, DVM, MS, DACVPM (Epidemiology); David R. Smith, DVM, PhD, DACVPM (Epidemiology). A randomized controlled trial to test the effect of on-arrival vaccination and deworming on stocker cattle health and growth performance. *The Bovine Practitioner*, Vol. 52, No. 1.

## 2018 Refereed Publications

- Sun, Yuhang , Jin Liu, Gengping Ye, Fang Gan, Mohammed Hamid, **Shengfa Liao**, Kehe Huang. Protective effects of zymosan on heat stress-induced immunosuppression and apoptosis in dairy cows and peripheral blood mononuclear cells. *Cell Stress and Chaperones*. <https://doi.org/10.1007/s12192-018-0916-z>.
- Woolums, Amelia R., **Brandi B. Karisch**, Jonathan G. Frye, William Epperson, David R. Smith, **John Blanton Jr.**, Frank Austin, Ray Kaplan, Lari Hiott, Tiffanie Woodley, Sushim K. Gupta, Charlene R. Jackson, Michael McClelland. Multidrug-resistant Mannheimia haemolytica isolated from high-risk beef stocker cattle after antimicrobial metaphylaxis and treatment of bovine respiratory disease. *Veterinary Microbiology* 221 (2018) 143-152. <https://doi.org/10.1016/j.vetmic.2018.06.005>.
- Sukumaran, Anuraj T., Alexander J. Holtcamp, Yan L. Campbell, **Derris Burnett**, Mark W. Schilling, **Thu T.N. Dinh**. Technological characteristics of pre- and post-rigor deboned beef mixtures from Holstein steers and quality attributes of cooked beef sausage. *Meat Science*. 145 (2018) 71–78. <https://doi.org/10.1016/j.meatsci.2018.06.001>.
- Hart, CG, BE Voelz, KE Brockus, **CO Lemley**. Hepatic steroid inactivating enzymes, hepatic portal blood flow and corpus luteum blood perfusion in cattle. *Reproduction in Domestic Animals*. 2018;53:751–758.
- Camacho, L.E., **C.O. Lemley**, S.T. Dorsam, K.C. Swanson, K.A. Vonnahme. Effects of maternal nutrient restriction followed by realimentation during early and mid-gestation in beef cows. II. Placental development, umbilical blood flow, and uterine blood flow responses to diet alterations. *Theriogenology*. <https://doi.org/10.1016/j.theriogenology.2018.04.013>.
- Lemley, C.O.**, L.E. Camacho, D.M. Hallford, K.A. Vonnahme. Uteroplacental secretion of progesterone and estradiol 17beta in an ovine model of intrauterine growth restriction. *Animal Reproduction Science*. 193 (2018) 68-78. <https://doi.org/10.1016/j.anireprosci.2018.04.001>.
- T. Williams, **B. Rude**, **S. Liao**, C. Mochal-King, **M. Nicodemus**. Effects of fat supplementation on plasma glucose, insulin and fatty acid analysis in ponies maintained on a forage- based diet. *Journal of Animal Physiology and Animal Nutrition*. 2018;1–8. DOI: 10.1111/jpn.12905.
- Gastal, G.D.A., **J.M. Feugang**, F.L.N. Aguiar, A.P.R. Rodrigues, J.M. Scimeca, G.A. Apgar, W.J. Banz, E.L. Gastal. Cryopreservation and in vitro culture of white-tailed deer ovarian tissue. *Theriogenology*. 113 (2018) 253-260.
- Velho, Ana Luiza Cazaux, Einko Topper, Erika Menezes, **Thu Dinh**, Abdullah Kaya, Arlindo Alencar Moura, **Erdogan Memili**. Metabolomic markers of fertility in bull seminal plasma. *PLOS ONE*. <https://doi.org/10.1371/journal.pone.0195279>.
- Owen, MPT , EN Ferjak, **CA Cavinder**, KJ McCarty, KC Yankey, CG Hart, **DD Burnett**, **TTN Dinh**, **CO Lemley**. Effects of body condition score (BCS) on steroid- and eicosanoid- metabolizing enzyme activity in various mare tissues during winter anoestrus. *Reproduction in Domestic Animals*. 2018;53:296–303. <https://doi.org/10.1111/rda.13104>.
- Park, Seong B., **Scott T. Willard**, Christy S. Steadman, Atul A. Chaudhari, Shreekumar R. Pillai, Shree R. Singh, **Peter L. Ryan** and **Jean M. Feugang**. Proteomic analysis of antimicrobial effects of pegylated silver coated carbon nanotubes in Salmonella enterica serovar Typhimurium. *Journal of Nanobiotechnology*. (2018) 16:31 <https://doi.org/10.1186/s12951-018-0355-0>.

## 2018 Refereed Publications

- Cavinder, C. A., PAS, E. N. Ferjak, C. A. Phillips, D. D. Burnett, and T. T. N. Dinh.** REVIEW: The importance of overall body fat content in horses. *The Professional Animal Scientist* 34:125–132. <https://doi.org/10.15232/pas.2017-01708>.
- Sukumaran, Anuraj T. , Alexander J. Holtcamp, April K. Englishbey, Yan L. Campbell, Taejo Kim, Mark W. Schilling, **Thu T.N. Dinh.** Effect of deboning time on the growth of Salmonella, E. coli, aerobic, and lactic acid bacteria during beef sausage processing and storage. *Meat Science* 139 (2018) 49–55.
- Wang, T., **M. A. Crenshaw**, N. Regmi, **B. J. Rude**, M. S. Hasan, A. T. Sukumaran, **T. Dinh**, and **S. F. Liao**. 2018. Effects of dietary lysine level on the content and fatty acid composition of the intramuscular fat in late-stage finishing pigs. *Canadian Journal of Animal Science*. 98: 241-249. DOI: [dx.doi.org/10.1139/cjas-2017-0083](https://doi.org/10.1139/cjas-2017-0083).
- Owen, M.P.T., K.J. McCarty, C.G. Hart, C.S. Steadman, **C.O. Lemley**. Endometrial blood perfusion as assessed using a novel laser Doppler technique in Angus cows. *Animal Reproduction Science*. 190 (2018) 119-126. <https://doi.org/10.1016/j.anireprosci.2018.01.015>.
- Feugang, Jean M. , Shengfa F. Liao, Scott T. Willard, and Peter L. Ryan.** In-depth proteomic analysis of boar spermatozoa through shotgun and gel-based methods. *BMC Genomics*. (2018) 19:62 DOI 10.1186/s12864-018-4442-2.
- Liao, Shengfa F.**, Naresh Regmi, Guoyao Wu. Homeostatic Regulation of Plasma Amino Acid Concentrations. *Frontiers in Bioscience, Landmark*. 23, 640-655, January 1, 2018.
- Feugang, Jean M. , Shengfa F. Liao, Scott T. Willard, and Peter L. Ryan.** In-depth proteomic analysis of boar spermatozoa through shotgun and gel-based methods. *BMC Genomics*. (2018) 19:62 DOI 10.1186/s12864-018-4442-2.
- Liao, Shengfa F.**, Naresh Regmi, Guoyao Wu. Homeostatic Regulation of Plasma Amino Acid Concentrations. *Frontiers in Bioscience, Landmark*. 23, 640-655, January 1, 2018.

## 2018 Book Chapters:

Jain, Sapna, Seong B. Park, Shreekmar R. Pillai, **Peter L. Ryan**, **Scott T. Willard** and **Jean M. Feugang**. Applications of Fluorescent Quantum Dots for Reproductive Medicine and Disease Detection. In *Unraveling the Safety Profile of Nanoscale Particles and Materials—From Biomedical to Environmental Applications*, Chapter 6, pp. 133-148, <http://dx.doi.org/10.5772/intechopen.72978>.