



MISSISSIPPI STATE
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Animal and Dairy
SCIENCES



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Mississippi Farm Bureau Federation Ambassador



Mississippi State University Animal & Dairy Sciences ...

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Congrats to Rachel Peeler, 2018 Mississippi Farm Bureau Federation Ambassador.

Collegiate Cattleman's Christmas Party



Collegiate Cattleman's is ready
for a very merry Christmas!

Christmas Dinner



The Department of Animal and Dairy Sciences
Cordially Invites You to Our

ANNUAL CHRISTMAS DINNER

December 14 at
6:00 p.m.

MAFES Conference Center (Bull Barn)
601 Hwy 182 East, Starkville, MS 39759

Please R.S.V.P. by December 4, 2017 to
Mari Quinn at
m.quinn@msstate.edu or
call (662) 325-3516.



Putting Classroom Knowledge to Work in the Show Arena

Learning became a reality this semester for the students enrolled in ADS 4333/6333 Equine Exercise Physiology. Students had the opportunity to participate in two breed recognized horse shows during the semester working side by side with nationally recognized show officials and trainers including breed association Past Presidents. This opportunity gave students a chance to see, in person, what they had been studying all semester, the influence of training and conditioning on the performance horse.

Students studied the impact of different conditioning and training methods on the physiology of the horse, but to participate in an event where they could actually see in person what they were learning about was priceless. Students had the opportunity to volunteer at two horse shows located in Meridian, MS; one in October that was a Palomino Horse Breeders of America (PHBA)

and Open Horse Show and another show in December that was a PHBA, Open, and Pinto Horse Association of America (PtHA) Show.

At the show, students watched the performances of the Top Palomino Horse for 2016, How D My Valentine, and the current leading Top Palomino Horse for 2017, SCR Plenty of Trouble. The students met and worked with the trainer that rides both of these horses Shawn Budke from Shawn Kristin Budke Show Horses of Ohio.

A total of 6 to 10 students volunteered for each shift of each day for both shows with a total of 4 shifts for each show. Students participated in all aspects of the show. Most all of the students participated in at least one show with almost half of the class coming to both shows. From their experience at the shows, students put together presentations discussing training regimens in

the show industry and applied their knowledge from these shows to evaluate the effectiveness of these regimens.



Equestrian Team Service Project



Mississippi State University Equestrian Team

December 1 at 10:39am · 🌐

This past week, the Equestrian Team got together for a service project and helped adopt a family in need. The team bought presents that the family asked for and wrapped them. Hail State and Merry Christmas from the team!



Upcoming Extension Events

BEEF EXTENSION - DR. BRANDI KARISCH & COBIE RUTHERFORD

- February 28— MBCIA Annual Membership Meeting Ext. Beef
- March 1— Hinds/MBCIA Spring Bull Sale, Raymond Ext. Beef
- March 15-17— Mississippi State University Spring Artificial Insemination School Ext. Beef



EQUINE EVENTS - DR. CLAY CAVINDER

- March 24 Hands on Horses
- March 27 - May 1 Horse Management 101
- June 1-3 MSU Horse Judging Camp
- Upcoming programs and publications are online at <http://extension.msstate.edu/agriculture/livestock/equine/upcoming-programs>
- For more info, contact Dr. Cavinder at clay.cavinder@msstate.edu



4-H EVENTS - DR. DEAN JOUSAN

- February 1-8 — Dixie Nationals, Jackson 4-H
- February 9-10 — Dixie National Judging Contest 4-H
- For publications and upcoming events go to: <http://extension.msstate.edu/4-h>
- Or contact Dr. Dean Jousan at dj230@msstate.edu



DAIRY EVENTS - DR. AMANDA STONE

- Upcoming programs and publications are online at <http://extension.msstate.edu/dairy>
- For more info, contact Dr. Stone at amanda.stone@msstate.edu



2017 Refereed Publications

- Capik, Sarah F., Brad J. White, Robert L. Larson, Nicholas Van Engen, Natalia Cernicchiaro, Terry J. Engelken, Jeffrey Lakritz, Michael A. Ballou, Lindsey E. Hulbert, **Rhonda C. Vann**, Jeff L. Caswell, Gabriella Jacob, Jeffery A. Carroll, Johann F. Coetzee. Effect of oral administration of meloxicam prior to transport on inflammatory mediators and leukocyte function of cattle at feedlot arrival. *American Journal of Veterinary Research*. December 2017. Vol 78, No. 12.
- Phillips, C. A., PAS, **C. A. Cavinder**, PAS, D. H. Sigler, and J. D. Fluckey. Effect of Various Levels of Dietary Starch on Glycogen Replenishment in the Light Working Horse. *The Professional Animal Scientist*. 33:729–738. <https://doi.org/10.15232/pas.2017-01651>.
- Kaya, Abdullah, Hakan Sagirkaya, Müge Misirlioglu, Ahmet Gümen, John J. Parrish, **Erdogan Memili**. Leptin and IGF-I improve bovine embryo quality in vitro. *Animal Reproduction*. Oct./Dec. 2017, v.14, n.4, p.1151-1160.
- Ferjak, E. N., **C. A. Cavinder**, **D. D. Burnett**, C. Mc. Argo, and **T. T. N. Dinh**. Body fat of stock-type horses predicted by rump fat thickness and deuterium oxide dilution and validated by near-infrared spectroscopy of dissected tissues. *Journal of Animal Science*. 2017.95:4344–4351. doi:10.2527/jas2017.1676
- Hergenreder, J. E., J. F. Legako, **T. T. N. Dinh**, P. R. Broadway, K. S. Spivey, J. O. Baggerman, J. P. Hutcheson, M. E. Corrigan, and B. J. Johnson. Zilpaterol Hydrochloride affects Cellular Muscle Metabolism and Lipid Components of 10 Different Muscle in Feedlot Heifers. *Meat Science and Muscle Biology*. 1:192–206 (2017) doi:10.22175/mmb2017.02.0013.
- Kutchy, N.A., E. S. B. Menezes, A. Chiappetta, W. Tan, R. W. Wills, A. Kaya, E. Topper, A. A. Moura, A. D. Perkins, **E. Memili**. Acetylation and methylation of sperm histone 3 lysine 27 (H3K27ac and H3K27me3) are associated with bull fertility. *Andrologia*. 2017;e12915. <https://doi.org/10.1111/and.12915>.
- Durfey, Casey L., **Derris D. Burnett**, **Shengfa F. Liao**, **Christy S. Steadman**, **Mark A. Crenshaw**, Henry J. Clemente, **Scott T. Willard**, **Peter L. Ryan**, **Jean M. Feugang**. Nanotechnology-based selection of boar spermatozoa: growth development and health assessments of produced offspring. *Livestock Science*. 205 (2017) 137-142. <http://dx.doi.org/10.1016/j.livsci.2017.09.024>
- Liao, Shengfa F.**, Martin Nyachoti. Using probiotics to improve swine gut health and nutrient utilization. *Animal Nutrition*. (2017) 1-13. <http://dx.doi.org/10.1016/j.aninu.2017.06.007>.
- Kutchy, Naseer A., Ana Velho, Erika S. B. Menezes, Marie Jacobsen, Giselle Thibaudeau, Arlindo Moura, Abdullah Kaya, Andy Perkins, and **Erdogan Memili**, Robert W. Wills. Testis specific histone 2B is associated with sperm chromatin dynamics and bull fertility-a pilot study. *Journal of Reproductive Biology and Endocrinology*. (2017) 15:59. DOI 10.1186/s12958-017-0274-1.
- Lemley, Caleb O.** Investigating reproductive organ blood flow and blood perfusion to ensure healthy offspring. *Animal Frontiers*. doi:10.2527/af.2017-0124.
- Keomanivong, F. E., L. E. Camacho, **C. O. Lemley**, E. A. Kuemper, R. D. Yunusova, P. P. Borowicz, J. D. Kirsch, K. A. Vonnahme, J. S. Caton and K. C. Swanson. Effects of realimentation after nutrient restriction during mid- to late gestation on pancreatic digestive enzymes, serum insulin and glucose levels, and insulin-containing cell cluster morphology. *Journal of Animal Physiology and Animal Nutrition*. 101 (2017) 589–604. DOI: 10.1111/jpn.12480.

2017 Refereed Publications:

- Menezes, E.B., R.V. de Oliveira, M.F. van Tilburg, E.A. Barbosa, N.V. Nascimento, A.L.M.C.S. Velho, F.B. Moreno, R.A. Moreira, A.C.O. Monteiro-Moreira, G.M.C. Carvalho, A.F. Ramos, **E. Memili**, A.A. Moura. Proteomic analysis of seminal plasma from locally-adapted “Curraleiro Pé-Duro bulls” (*Bos taurus*): identifying biomarkers involved in sperm physiology in endangered animals for conservation of biodiversity. *Animal Reproduction Science*. <http://dx.doi.org/10.1016/j.anireprosci.2017.05.014>.
- Cavinder, C. A.**, A. Sear, R. Valdez, L. White. Utilization of Social Media as a Marketing Tool for Equine Businesses: An Exploratory Study. *North American Colleges and Teachers of Agriculture Journal*. June 2017, Vol 61(2).
- Gastal, G. D. A., A. Hamilton, B. G. Alves, S. G. S. de Tarso, **J. M. Feugang**, G. A. Apgar, C. K. Nielsen, E. L. Gastal, W. J. Banz. Ovarian features in white-tailed deer (*Odocoileus virginianus*) fawns and does. *PLOS ONE*. 12(5):30177357. <https://doi.org/10.1371/journal.pone.0177357>.
- Aguiar, F.L.N., G.D.A. Gastal, G.M. Ishak, M.O. Gastal, D.I.A. Teixeira, J.R. Figueiredo, E.L. Gastal, **J.M. Feugang**. Effects of FSH addition to an enriched medium containing insulin and EGF after long-term culture on functionality of equine ovarian biopsy tissue. *Theriogenology* 99 (2017) 124-133.
- Feugang, Jean M.** Novel agents for sperm purification, sorting and imaging. *Molecular Reproduction Development*. 2017. 9999:1-10. DOI: 10.1002/mrd.22831.
- Borchers, M. R., Y. M. Chang, K. L. Proudfoot, B. A. Wadsworth, **A. E. Stone**, and J. M. Bewley. Machine-learning-based calving prediction from activity, lying, and ruminating behaviors in dairy cattle. *Journal of Dairy Sciences*, Vol.100:1-11. 2017. <https://doi.org/10.3168/jds.2016-11526>.
- Lemley, C. O.** and K. A. Vonnahme. PHYSIOLOGY AND ENDOCRINOLOGY SYMPOSIUM: Alterations in uteroplacental hemodynamics during melatonin supplementation in sheep and cattle. *Journal of Animal Science* 2017.95:2211-2221. doi:10.2527/jas2016.1151.
- Gastal, G.D.A., F.L.N. Aguiar, B.G. Alves, K.A. Alves, S.G.S. de Tarso, G.M. Ishak, **C.A. Cavinder**, **J.M. Feugang**, E.L. Gastal. Equine ovarian tissue viability after cryopreservation and in vitro Culture. *Theriogenology* 97 (2017) 139-147.
- Maki, C R, S Allen, M Wang, SH Ward, **BJ Rude**, HR Bailey, RB Harvey and TD Phillips. Calcium Montmorillonite Clay for the Reduction of Aflatoxin Residues in Milk and Dairy Products. *Journal of Dairy and Veterinary Sciences*. 2017; 2*3): 555587.
- Regmi, N., T. Wang, **M. A. Crenshaw**, **B. J. Rude**, **S. F. Liao**. Effects of dietary lysine levels on the concentrations of selected nutrient metabolites in blood plasma of late-stage finishing pigs. *Journal of Animal Physiology and Animal Nutrition*. 2017; 1-7. DOI: 10.1111/jpn.12714.
- Wang, Taiji, **Jean M. Feugang**, **Mark A. Crenshaw**, Naresh Regmi, **John R. Blanton Jr.** and **Shengfa F. Liao**. A Systems Biology Approach Using Transcriptomic Data Reveals Genes and Pathways in Porcine Skeletal Muscle Affected by Dietary Lysine. *International Journal of Molecular Sciences* (2017) 18, 885.
- Cain, Amanda J., **Caleb O. Lemley**, F. Kevin Walters, David L. Christiansen, E. Heath King, Richard M. Hopper. Pre-breeding beef heifer management and season affect mid to late gestation uterine artery hemodynamics. *Theriogenology* 87 (2017) 9–15.

2017 Refereed Publications:

Jones, Barbara W., **Amanda E. Stone**, Connie L. Wood, Kristen J. McQuerry, Joey D. Clark, Denise L. Ray, and Jeffrey M. Bewley, PAS. Case Study: Characterization of milk yield, lying and rumination behavior, gait, cleanliness, and lesions between 2 different freestall bases. *The Professional Animal Scientist* 33:140–149. <https://doi.org/10.15232/pas.2016-01548>.

Stone, A. E., B. W. Jones, C. A. Becker, and J. M. Bewley. 2017. Influence of breed, milk yield, and temperature-humidity index on dairy cow lying time, neck activity, reticulorumen temperature, and rumination behavior. *Journal of Dairy Sciences* 100:1–9. <https://doi.org/10.3168/jds.2016-11607>.

Hodge, Lauren B., **Brian J. Rude**, **Thu N. Dinh**, **Caleb O. Lemley**. Effect of u-3 Fatty Acid Supplementation to Gestating and Lactating Mares: On Milk IgG, Mare and Foal Blood Concentrations of IgG, Insulin and Glucose, Placental Efficiency, and Fatty Acid Composition of Milk and Serum From Mares and Foals. *Journal of Equine Veterinary Science* 51 (2017) 70–78.

Littlejohn, B. P., M. C. Roberts, M. N. Bedenbaugh, A. W. Lewis, D. A. Neuendorff, D. G. Riley, J. A. Carroll, **R. C. Vann**, M. Amstalden, R. D. Randel, T. H. Welsh, Jr. (2017). Evaluation of the influence of prenatal transportation stress on GnRH-stimulated luteinizing hormone and testosterone secretion in sexually mature Brahman Bulls. *Journal of Animal Science* 95, 129-138. www.animalsciencepublications.org/publications/jas.

Gastal, G D A , B G Alves, K A Alves, M E M Souza, A D Vieira, A S Varela Jr, J R Figueiredo, **J M Feugang**, T Lucia Jr and E L Gastal. Ovarian fragment sizes affect viability and morphology of preantral follicles during storage at 4°C. *Reproduction*, (2017) 153, 577-587.

2017 Book Chapters:

Greene, Jonathan M. and **Peter L. Ryan**. L-Arginine in the Uterus and Placenta and During Gestation in Mammals. In *L-Arginine in Clinical Nutrition*, Nutrition and Health, Chapter 22. 2017. V.B. Patel et al. (eds.). DOI 10.1007/978-3-319-26009-9_22.

Stone, A. E. Precision dairy monitoring technology implementation opportunities and challenges. In *Large Dairy Herd Management*, 3rd Edition. (Edited by David K. Beede).

Wang, Taiji, **M. A. Crenshaw**, M. S. Hasan, G. Wu and **S. F. Liao**. 2017. Effects of dietary lysine levels on the plasma concentrations of growth-related hormones in late-stage finishing pigs. In T. Asao and M. Asaduzzaman. eds. *Amino Acid - New Insights and Roles in Plant and Animal*. Chapter 13. pp. 259-271. InTech, Rijeka, Croatia. DOI: 10.5772/intechopen.68545.