

Animal and Dairy



SCIENCES

News & Current Events

• Teaching • Research • Extension • Departmental Activities

MISSISSIPPI STATE UNIVERSITY EXTENSION SERVICE



Small Ruminant Management &

Famacha Training

This program will train
small ruminant producers
on:

- What is FAMACHA?
- Strategies
- Parasite Control
- Pasture Management
- Herd Management

WHEN:
Monday
November 6, 2017

TIME:
6:00 – 9:00 PM

LOCATION:
Lincoln County Civic Center Barn
1096 Belt Line Dr NE
Brookhaven, MS 39601

COST: \$15 per participant, meal included

Contact the Lincoln County Extension Office for more information:

601-835-3460

Participants must RSVP by October 30, 2017



Programs of Mississippi State University Extension Service are open to all people without regard to race, color, religion, sex, national origin, age, disability, veteran status, sexual orientation, or group affiliation.

MSU Extension will provide reasonable accommodations to persons with disabilities or special needs.

Please contact our office (601-835-3460) prior to a program or event to request reasonable accommodation.

A Course for Just Horsin' Around

By Dr. Molly Nicodemus



The Introduction to Horsemanship course, ADS 1132, is well underway for the Fall 2017 semester. This course is taught in a laboratory and lecture setting. Both components give students the opportunity to learn how to ride horses, while learning more about equitation, horse care, and general training practices.

This is the second semester where the laboratory component of the course has been held at the Horse Unit on the South Farm instead of the Mississippi State Horse Park. This location change has allowed students to have more time in the saddle and

has made the



laboratories more convenient for scheduling drive time to other courses taught across campus.

The Horse Unit's new arena is a large open arena making it easy for students to practice maneuvers taught in the laboratory. In addition to the new location, students have enjoyed a new laboratory-teaching assistant,



Ms. Holly Evans, ADS Graduate Student. When not teaching the riding laboratories, Ms. Evans is assisting with the coaching of the English equestrian team. Students attribute the success of the riding laboratories to Ms. Evans's light-hearted nature as it makes the learning environment calming to both timid students and horses.

Kutchy Defends Dissertation and Advances to Conduct Postdoctoral Research at Yale University

Naseer A. Kutchy presented his dissertation research seminar “Sperm genetic and epigenetic mechanisms regulating male fertility” and passed the defense exam in the Department on Wednesday October 4, 2017.

Dr. Erdogan Memili, Dr. Donna Gordon of Department of Biological Sciences, **Dr. Caleb Lemley** of Animal and Dairy Sciences, and Dr. Any Perkins of Computer Science and Engineering served as his graduate research committee members and mentors.

Reflecting his journey in our department, Naseer expressed the deepest appreciation to his graduate advisor and the committee members and mentors for their guidance in his research and development. He also acknowledged the departmental faculty, graduate students and staff members as well as Giles Distinguished Professor Lori Bruce who is the Associate Vice President for Academic Affairs and Dean of the Graduate School at Mississippi State University.

Naseer plans to pursue his postdoctoral research at Yale University in New Haven, Connecticut.



IN THE NEWS



WCBI reporter, Parker King, interviewed Dr. Clay Cavinder about his Horse Management Class. The report focused on the skills that both students and horses learn. With his knowledge and expertise, Cavinder has expanded the number of equine classes and student club opportunities. Ashley Shiffler donates her horsemanship knowledge and time to coaching the MSU Equestrian Team. See the interview at: https://youtu.be/4_snfVyEUns

RESEARCH SPOTLIGHT

Lauren Hodge

Lauren Hodge grew up on a row crop farm in the delta of Arkansas. Lauren loved horses from a very early age and has been riding since she was three years old. Lauren competed in upper level barrel racing competitions through middle school and high school. She obtained two bachelor degrees from the University of Arkansas at Monticello in Animal Science and Agriculture Business. She competed on the collegiate rodeo team during her four years at University of Arkansas at Monticello. After visiting a couple of universities with Equine Nutrition master's positions, she chose to attend Mississippi State University and work under Dr. Rude. When visiting Mississippi State, she felt at home and that it was the right choice. She completed her master's degree in August of 2015.

Lauren enjoyed her time at Mississippi State so much she decided to continue her education and obtain her PhD under Dr. Rude. She successfully



passed her preliminary exams in December of 2016. Her research project is titled "Effects of dietary L-arginine on reproductive parameters in gestating mares". This research is focused on potentially increasing blood flow to the uterus as well as placenta of gestating mares to ensure a healthy pregnancy, enhancing uterine involution after parturition, and further knowledge on potential ways to mitigate early embryonic loss in mares.

Lauren hopes to finish her studies at Mississippi State within a year.

She can now tell when Dr. Rude has walked into the office apart from anyone else by the way he opens the door as well as the way he walks, and can proficiently locate him by the sound of his laughter. This must be a sure sign that she is close to ready to graduate. In the four years of her time in this department she has come to feel that the professors and fellow graduate students are family and will truly miss everyone when it is time to leave.



Breakfast on the Farm



MISSISSIPPI STATE UNIVERSITY
DEPARTMENT OF ANIMAL
AND DAIRY SCIENCES

BOO!

FRIDAY, OCTOBER 27 | 9 A.M.-NOON

open to school groups & field trips

SATURDAY, OCTOBER 28 | 9 A.M.-NOON

open to the public & families

BEARDEN DAIRY RESEARCH CENTER | STARKVILLE

2128 Turkey Creek Road

\$5 per person

Breakfast, milk, and ice cream included

DAIRY TOUR

TRICK-OR-"TEAT"

COW COSTUME CONTEST (11 a.m. daily)

HALLOWEEN ACTIVITY

HAUNTED PARLOR

AND MORE!

Registration required by OCTOBER 20

extension.msstate.edu/breakfast



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EXTENSION

For more information, contact Amanda Stone
at 662-769-9941 or amanda.stone@msstate.edu.





Mississippi State University Horse Judging Team



added a new photo to the album: [2017 Judging Team](#) — with [Rachel Mcdaniel](#).

September 5 at 1:00pm · 🌐

Meet the 2017 MSU Horse Judging Team!

Introducing Rachel McDaniel from Brookhaven, MS.

"I am a sophomore studying Animal and Dairy Science with a Pre-veterinary concentration. It is honestly difficult to summarize the overall benefits and growth that I have experienced in the past months of being on the judging team. Once a reserved, uncertain individual, I'm slowly beginning to see more confidence and organizational thought in not only viewing the classes and in the reasons room, but also throughout my daily life as a student and employee. Coming together with a group of individuals who have similar passions and challenge your skills is both invigorating and encouraging. It is a true honor to play a role in such an elite group of people who hold themselves to high standards in all that they encounter."



Congratulations Equestrian Team!



Mississippi State University Equestrian Team

October 2 at 12:46pm · 🌐



Congrats to our English riders on their performance this past weekend.

Madi Robbins- 5th Int Flat

Betsey Munday- 5th Nov Flences

MaeLena Apperson- 2nd Nov Flat

Alexis Williams- 4th AWTC

Alyson Addy- 4th AWTC

Juliann Scott- 5th BWTC

Cecilia Collins- 4th BTWC

Emili McClure- 1st BWTC

Savanna Blackburn- 4th WT

Brantley McGee-3rd WT

Upcoming Events!

Beef Extension - Dr. Brandi Karisch & Cobie Rutherford

- **Mississippi State University Artificial Insemination School, October 26 - 28, Animal and Dairy Sciences Department, Mississippi State, MS**



Equine Events - Dr. Clay Cavinder

- **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

- **Mississippi State Fair, October 4-15, Jackson, Ms**
- **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

- **Breakfast on the Farm, Dairy tours with a cow Costume Contest, a "Haunted Parlor, Breakfast with Milk & Ice Cream. October 27-29, MSU Bearden Dairy Research Center. \$5 pp; Register by Oct. 20 at extension.msstate.edu/breakfast**



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MEAT SALE

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2017 Refereed Publications:

- 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.
- 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.

2017 Refereed Publications:

- 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.
- 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.