

ANIMAL & DAIRY SCIENCES



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MISSISSIPPI STATE UNIVERSITY

LIVESTOCK JUDGING TEAM

The livestock judging team just returned from a successful trip to Harrisburg, PA for the Keystone International Livestock Exposition! We are honored to have had the high individual in cattle and the 2nd high individual in sheep! Full results are as follows:

Team:

3rd high team in oral reasons
4th high team in hogs
6th high team overall

Individual Results:

Cody Maddox-1st in cattle, 2nd Angus division, 5th hogs, 8th reasons

Logan Stroock-2nd in sheep

Gresham Stephens-9th in Angus division



LIVESTOCK JUDGING TEAM

Congrats to the Livestock judging team at Peach State Livestock Judging Contest hosted at the Georgia National Fair in Perry, GA! Detailed results are listed below:

Champion Team-Cattle
Champion Team-Swine
Champion Team-Sheep/Goats
Champion Team-Oral Reasons
Champion Team Overall

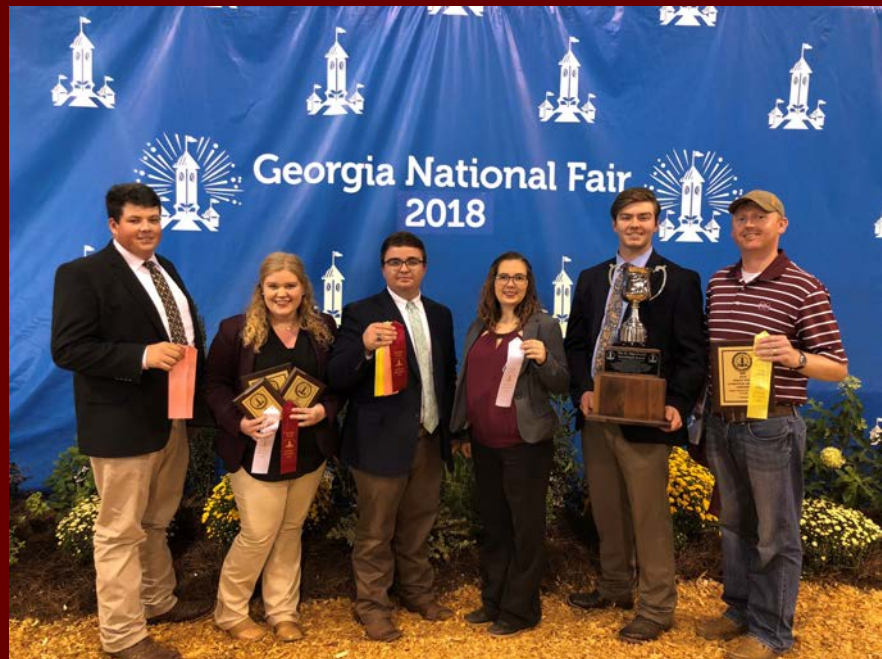
Abigail Jenkins- 1st High Individual Overall, 1st in Cattle, 1st in Oral Reasons, 2nd in Swine, 3rd in Sheep/Goats

Logan Strock-4th High Individual Overall, 2nd in Cattle, 5th in Sheep/Goats, 5th in Oral Reasons

Mikaila Walker-6th High Individual Overall, 3rd in Cattle

Gresham Stephens-8th High Individual Overall, 5th in Cattle

Cody Maddox-9th High Individual Overall, 4th in Sheep/Goats, 4th in Oral Reasons



2017-2018 4-H/FFA REPLACEMENT BEEF HEIFER DEVELOPMENT CONTEST WINNERS

Nine youth completed the 4-H/FFA Replacement Beef Heifer Development Contest and were awarded prizes at the 2018 Mississippi State Fair. The contest involved daily management of three beef heifers over 10 months. At the end of the contest, youth submitted a record book (30% of score) and had their heifers evaluated (20% of score) by a panel of beef producers. The final phase of the contest consisted of a presentation given to the judges (50% of score) defending their management decisions.

Sponsors for this contest included: B&B Cattle Co.; Bouie River Beefmasters; Campo Farms; Carcass Performance Partners Bull Sale (Rocky Hill Farms); Herrington Brothers; McDaniel Farms; Mississippi Ag; Mississippi Simmental & Simbrah Association; Mississippi State University Extension; Mississippi Cattlemen's Association; American Livestock Insurance; PMCC, LLC; Red Fox Farm; Southeast Mississippi Livestock; Southern Producers Heifer Sale Group; and T. Smith C Company.

Youth ages 14-18 as of January 1, 2018, are eligible to compete in the 2018-2018 Contest. The entry deadline is November 1, 2018, so contact your local Extension office or FFA advisor to get an application to be a part of this unique contest.



L-R: Ronnie Herrington, Herrington Brothers (trailer sponsor); 1st place: Rylie Melancon (Lincoln County); 2nd place: Mary Beth Ainsworth (Lawrence County); 3rd place: Olivia Branum (Pearl River County); 4th place: Marlee Turner (Alcorn County, not pictured); 5th place: Laney Anderson (Lincoln County); finalist: Jenna Fullington (Hinds County); finalist: Jace Welborn (Jasper County); finalist: Brandt Sowell (Madison County); and finalist: Anna Vowell (Leake County)

WELCOME, DR. BRITTONI LITTLEJOHN

Dr. Brittoni Littlejohn is a Postdoctoral Associate at Mississippi State University working with Dr. Scott Willard and Dr. Caleb Lemley. Dr. Littlejohn earned a Ph.D. in Physiology of Reproduction from Texas A&M University in May of 2018.

Her graduate work focused on the influence of prenatal transportation stress on postnatal temperament, stress response, immune response, metabolism, and reproductive endocrinology. She evaluated differential methylation of DNA as a mechanism of phenotypic differences observed in prenatally stressed calves. Dr. Littlejohn is stationed off-campus at the USDA-ARS Livestock Issues Research Unit in Lubbock, Texas.

Her postdoctoral research will primarily focus on generating a noninvasive model to induce liver abscesses in cattle to evaluate antibiotic alternative treatments for liver abscesses and utilizing biophotonic methods to track the colonization of liver abscess-causing bacteria.

Dr. Littlejohn is fundamentally interested in how the prenatal environment shapes postnatal outcomes and in improving livestock health and productivity. She will be visiting campus during October and November.



HAIL STATE AND DRINK MILK

Hail State and Drink Milk! Please consider buying a t-shirt from the website below. ONE HUNDRED PERCENT of proceeds will be used to donate dairy products to Mississippi food pantries. This not only will help some people get some milk on their tables, but will also help move some product off the shelves for our dairy producers. We sold so many shirts at State Fair this weekend so we don't have all the colors/sizes left, but I'll be putting another order in soon to make sure we can meet everyone's orders that hopefully will start coming in via the website today! Please make sure the address you put on the form is correct so your shirt doesn't get lost in the mail. THANK YOU for supporting the dairy industry!

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One
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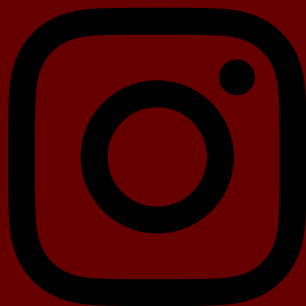
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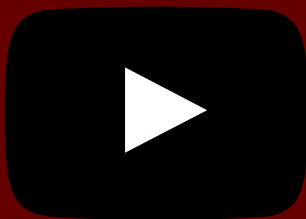
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For more information, contact Dr. Amanda Stone at amanda.stone@msstate.edu.

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NEW COURSE OFFERING FOR ANYONE INTERESTED IN VET SCHOOL OR PURSUING A CAREER WITH LIVESTOCK



THE DETAILS

Immunology and Disease in Large Livestock Species

Spring 2019 - ADS4633/6633 - MWF 10 to 10:50 - Dr. Stone

Also being offered online (Campus V) for schedule flexibility

TOPICS WILL INCLUDE

- **The function and dynamics of the cattle and equine immune systems and what mechanisms aid in detection and defense within the body**
- **How vaccines work, how they differ, and when they are appropriate to use**
- **Differences in antibiotics, appropriate uses, and the importance of withholding**
- **Various diseases and health issues within equine and beef and dairy cattle, including why, when, and how these problems occur and their impact**
- **Why disease is an animal welfare issue.**
- **What are practical methods of disease control and their importance**

MISSISSIPPI STATE ANIMAL & DAIRY SCIENCES

CONTACT DR. STONE AT AES784@MSSTATE.EDU FOR MORE INFORMATION

UPCOMING EXTENSION EVENTS

Beef Extension - Dr. Brandi Karisch & Cobie Rutherford

November 8: Beef Cattle Improvement Association Bull Sale, Raymond

November 12-13: Cattlemen's College, West Point and Hattiesburg

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

November 2-5: National 4-H Dairy Quiz Bowl & Dairy Judging Contest, Louisville, KY

November 12-14: National 4-H Skill-a-thon Contest, Louisville, KY

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/upcoming-programs>

2018 Refereed Publications

- 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.
- 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.

2018 Refereed Publications

- 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>.
- 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.

2018 Refereed Publications

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>.