

ANIMAL & DAIRY SCIENCES



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MISSISSIPPI STATE UNIVERSITY

MEAT SCIENCE AND MUSCLE BIOLOGY LABORATORY



The Meat Science and Muscle Biology Laboratory is officially open for Teaching, Research, and Meat Processing. The 15,000 ft² facility includes a 1500 ft² abattoir, over 2000 ft² of cooler and freezer space, along with fresh meat and value added processing capabilities.

In addition, the facility has a 420 ft² smokehouse room with two state of the art smoking chambers capable of environmentally controlled liquid and dry smoking. Three research labs housed in the building will be dedicated to meat processing and livestock muscle biology research. One of the buildings main attractions is the 320 ft² glass viewing wall that allows onlookers an unfettered view of the art and science of meat processing. The facility processed its first two steers for the public belonging to **Mr. Milton Sunbeck and Joy Reznicek** at Town Creek Brangus, earlier this month. We are truly grateful to the MSU administrators and the taxpayers of Mississippi for such a wonderful facility that will increase our teaching and research capabilities tremendously and will be a flagship building in the Department of Animal and Dairy Sciences for years to come.

MAFES RESEARCH

MAFES researchers recently conducted a study to gauge the public's willingness to pay extra for thicker, heartier steaks.

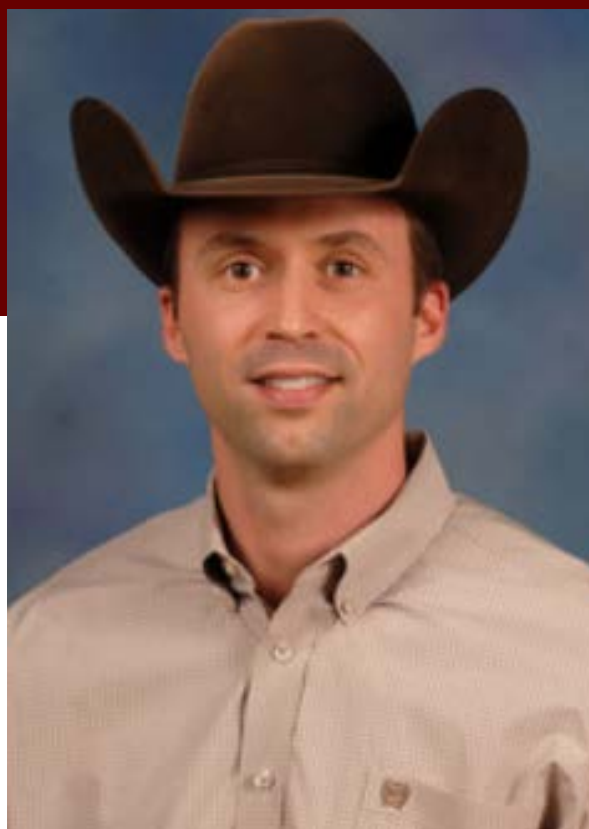
The study found that most consumers did not highly value thickness. Only 23 percent of consumers listed thickness as the most important factor of a rib eye, making it only the third most important attribute. Thirty percent cited marbling as the most important attribute of rib eye, making it the most important factor tested. Thickness only defeated marbling for first place with the sirloin steaks.

The study found that even if consumers are not willing to pay more for thickness, most of them are willing to pay more for characteristics such as color and marbling.



CONGRATULATIONS DR. CLAY CAVINDER

Congratulations, Dr. Clay Cavinder on winning the William M. White Special Project Awards. The William M. White Special Projects program provides financial support for agricultural research, the extension service, and educational enhancement to the Division. It is used to support worthy projects and further the development of agriculture and agribusiness in Mississippi. The Mississippi State University Extension Service, the Mississippi Agricultural and Forestry Experiment Station, and the College of Agriculture and Life Sciences will be the recipients. Dr. Cavinder received the award for the commercially available TheraPlate which is a whole-body vibration (WBV) product that is utilized in the performance horse industry throughout Mississippi.



CONGRATULATIONS DR. BRIAN RUDE

Please join us in congratulating Dr. Brian Rude on being elected as the Animal and Dairy Sciences faculty member to serve a 3-year term on the College Promotion and Tenure Committee.



CONGRATULATIONS DR. THU DINH

Please join us in congratulating Dr. Thu Dinh. He is one of the recipients of the 2018-2019 SEC Visiting Faculty Travel Grants.



MSU FOOTBALL TEAM ENJOYS THE ANNUAL CATTLEMAN'S ASSOCIATION DINNER



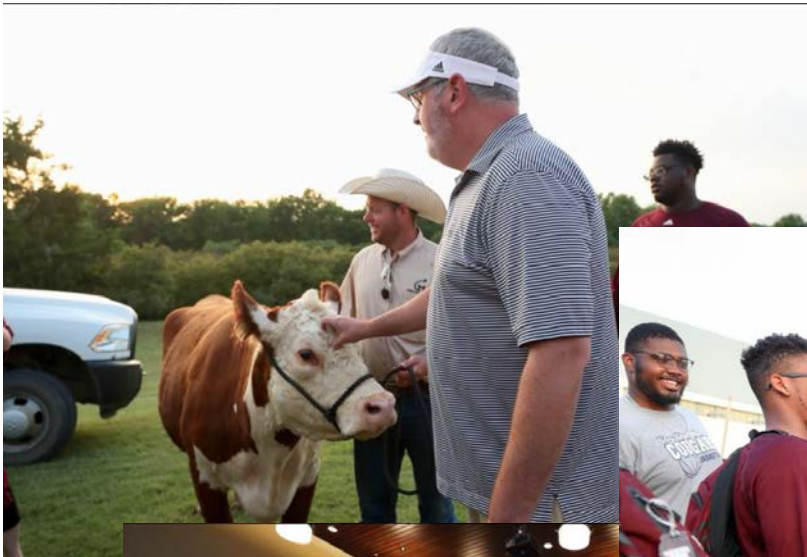
Mississippi State Football

August 15 at 8:23 PM · 🌐



We have the BEEF. Great meal and fun tonight at the annual Cattleman's Association Dinner.

#HailState 🐾





MISSISSIPPI STATE UNIVERSITY™
EXTENSION

BREAKFAST

on the

FARM!

Register online at
<http://extension.msstate.edu/breakfast>

Registration is **REQUIRED** by
September 1*

Bearden Dairy Research Center | 2128 Turkey Creek Rd, Starkville, MS 39759



- September 27 & 28 -

9 a.m. to noon

open to school groups and field trips

Admission is only \$5!!

- free for teachers & children under 2 -

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

Dairy tour

Dissections

Milk a cow

Games

Hands-on activities

- September 29 -

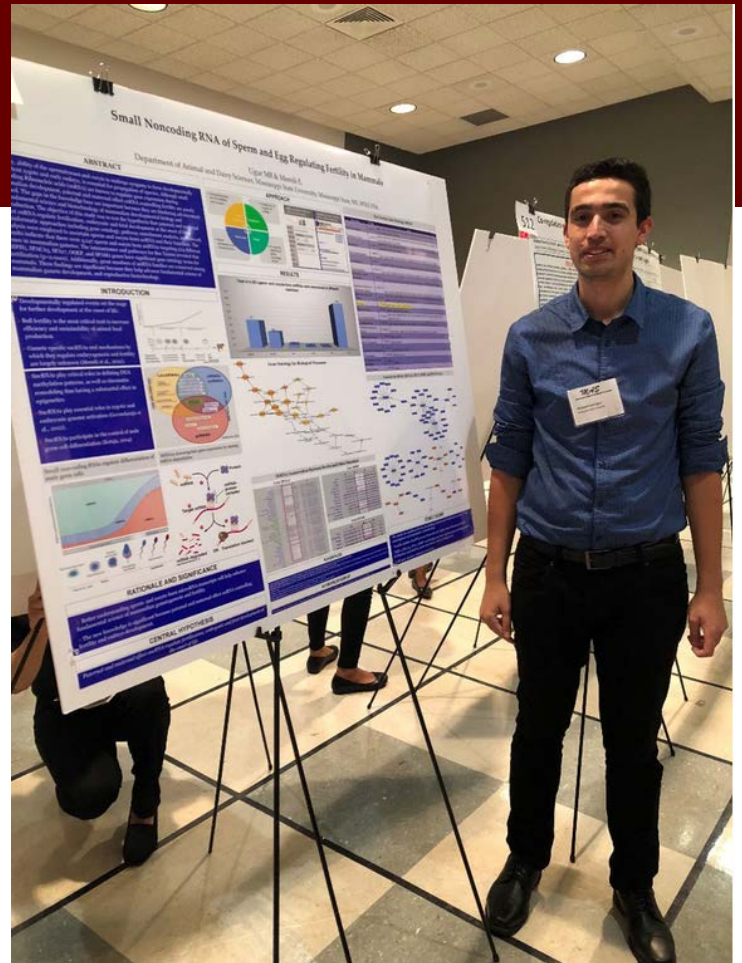
9 a.m. to noon

open to families



MUHAMMET RASIT RESEARCH PRESENTATION

Muhammet Rasit Ugur presented his research “Small Noncoding RNA of Sperm and Egg Regulating Fertility in Mammals” at the Mississippi Academy of Science’s Summer Student Science Symposium at Mississippi State on July 26, 2018.



UPCOMING EXTENSION EVENTS

Beef Extension - Dr. Brandi Karisch & Cobie Rutherford

Oct. 20-21, 2018 MSU Artificial Insemination Insemination School, MSU Campus

Oct. 26, 2018 North MS Beef Expo, Batesville, MS

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

Sept. 20-21, 2018 Cow Calf College 2018, Starkville (20th), Brookhaven (21st)

Sept. 27-29, 2018 Breakfast on the Farm, Bearden Dairy, Starkville, MS

Phone: (662) 325-8773 or amanda.stone@msstate.edu

Website: <http://extension.msstate.edu/dairy>

4-H Events - Dr. Dean Jousan

August 2018 Animal Lines Newsletter that focuses on the District, State, and Regional 4-H Horse Shows held from June to last week is online:

<https://extension.msstate.edu/newsletters/4h-animal-lines-newsletters/2018/august-2018-4-h-animal-lines>

(662) 325-2424 or 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

- 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.
- 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>.

2018 Refereed Publications

- 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.
- Liao, Shengfa F.**, Naresh Regmi, Guoyao Wu. Homeostatic Regulation of Plasma Amino Acid Concentrations. *Frontiers in Bioscience, Landmark*. 23, 640-655, January 1, 2018.

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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>.