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Welcome to Kelsey Schubach as she leads the beef cattle research and teaching program at the Prairie Research Unit in Prairie, Mississippi.



MISSISSIPPI STATE UNIVERSITY™
DEPARTMENT OF ANIMAL
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WELCOME KELSEY SCHUBACH TO PRAIRIE

On August 17, Kelsey Schubach was welcomed to the North Mississippi Research and Extension Center (NMREC) faculty at the Prairie Research Unit where she will develop a beef cattle research and teaching program. The Department of Animal and Dairy Sciences (ADS) is her academic home.

Kelsey received a B.Sc. in Animal Science from Oregon State University in 2014. She also received a M.Sc. degree in Animal Science from Oregon State University in 2016, where her thesis focused on stress and reproductive physiology of beef heifers. Kelsey then started her Ph.D. program at Oregon State University and transferred to Texas A&M University in 2018, where she investigated the impacts of nutritional management during gestation and early life on permanent alterations in physiological and productive responses in beef cattle.

During her graduate career, Kelsey published 24 journal articles, 12 peer-reviewed

proceedings, and 17 research abstracts. Kelsey also played a significant role in securing extramural funding (>\$500k) and contributed to several teaching and outreach efforts related to beef cattle physiology while at Texas A&M University.

Kelsey received numerous recognitions during her graduate career, including the WSASAS – Young Scholar Award (M.Sc. category) in 2017; placing first in the 2018 SSASAS Graduate Competition and third in the 2020 WSASAS Graduate Competition (Ph.D. category); and receiving the ASAS Wettemann Graduate Scholar in Physiology Award. The NMREC and ADS Dept. are proud to have Kelsey at Prairie.

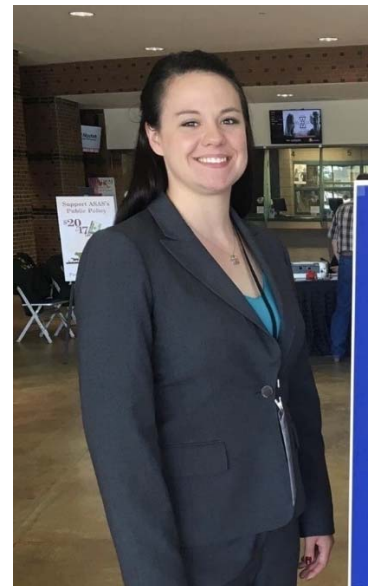


PHOTO CONTRIBUTION FROM SAMMY BLOSSOM



Sammy Blossom is an alumnus of ADS and captured many photos during his 16-year career with the Mississippi Cattlemen's Association. Enjoy the photo.

Photo courtesy of Sammy Blossom Photography: <https://www.sammyblossomphotography.com/>.

WILLIAM WHITE AWARD RECIPIENTS IN ADS

Two faculty members in the Department of Animal and Dairy Sciences recently received recognition as recipients of William White Awards given through the Division of Agriculture, Forestry, & Veterinary Medicine at MSU.

Congratulations to Mrs. Jessica M. Graves and Dr. Derris Devost-Burnett for receiving

\$2,500 toward the arcM Rabbitry, Research and Training Center: Engaging students, researchers, and MSU community.

Congratulations to Dr. Amanda Stone for receiving \$2,500 toward research on cow preference of misters and portable shade for heat abatement on a pasture-based dairy.



Mrs. Jessica Graves



Dr. Amanda Stone

DR. SHENGFA LIAO: INVITED SPEAKER AT IAIEH

Dr. Shengfa Liao in the Department of Animal and Dairy Sciences has been invited by the Organization Committee of the “International Animal Intestinal Ecology and Health (IAIEH) Summit Forum” as a keynote speaker for the Sixth Summit Forum that will be held at Zhengzhou, Henan, China on November 6-8, 2020. For this forum, Dr. Liao will deliver an oral presentation which will be entitled “Maintain or Improve Swine Gut Health: The Fundamental Effects of Amino Acids.” Due to the COVID-19 pandemic, Liao has decided to present his talk via Zoom Video Communications, which was agreed to by the organization committee.

Adhering to the core theme, “Back to the

principle of nutrient absorption via promotion of gut health in animals,” the IAIEH forums, held annually, serve as an unique platform to facilitate the knowledge exchange among international expert scientists and industry professionals, and to accelerate science and technology transfer, especially in the fields of animal digestive physiology, nutrition, and production.

Submitted by Dr. Shengfa Liao



Dr. Shengfa Liao

EXPANSION OF ADS DAIRY CATTLE HERD

The Department of Animal and Dairy Sciences purchased 47 dairy heifers over the past two weeks and are working on getting 12 more heifers delivered next week. This is part of a process to expand our dairy cattle herd to have the sample sizes needed to do more research.

There are several people who have worked on this plan to make it a reality. Special thanks go to Drs. Reuben Moore and John Blanton for supporting these efforts. Many university dairy herds are being

reduced in size or dispersed altogether, yet leaders at MSU see the importance of the dairy industry and support our research efforts. In addition, thanks to Kenneth Graves, Colby Hardin, Malik Travis, Dr. Jim Brett, and the CVM veterinary students for working with the dairy heifers upon arrival to get them settled and incorporated processed on the farm. This is an exciting time in dairy research at MSU.

Submitted by Dr. Amanda Stone and written by Dr. Dean Jousan

PHOTOS OF ADS DAIRY HERD EXPANSION



Photos are of Kenneth, Dr. Brett, and CVM veterinary students vaccinating and pregnancy checking the heifers upon their arrival to MSU and of a Holstein heifer walking through the footbath.

2020 MISSISSIPPI STATE FAIR BEGINS

2020 has been a challenge on many levels. Most of the 4-H activities and events have been canceled dating back to mid-March. Being a product of the 4-H program, I realize the importance of the livestock project area and wanted to offer a way for youth to be able to participate at the 2020 Mississippi State Fair.

A team of faculty in ADS Extension worked with the 14 livestock show superintendents composed of Extension Agents across the state to develop a plan to conduct the livestock shows at the State Fair in a safe and efficient manner while keeping physical distancing in mind. The pandemic caused us to review normal operations in managing our state livestock shows and we rose to the challenge of modifying certain aspects of the shows while keeping the integrity of the livestock shows at a high level.

One new development was the creation of a web-based app that exhibitors can use to

check-in their livestock for all our shows. Youth have a secure passcode and can use their phone, tablet, or similar device to check-in the animals they will be showing at the State Fair without having to stand in line as they have in the past. Thanks to Dr. Randy Loper, Bobby Goff, and India Crews for making the web app a reality and composing a guide and instructional video to describe this process.

So, while we have tackled the pandemic and now Hurricane Delta expecting to impact the State Fair over the weekend, we will continue to overcome these challenges to give Mississippi youth an opportunity to exhibit their livestock projects in a fun and safe setting.

Go to the MSU Extension website to read a Feature Story about the plans being undertaken at the State Fair this year – [4-H Livestock Show modified for safety](#).

Submitted by Dr. Dean Jousan

2020 REFEREED PUBLICATIONS (31 total)

- Yan, C., W. Shao, **T. Dinh**, K. To, W. Rogers, X. Zhang, T. Phillips, and W. Schilling. 2020. Use of nets treated with food grade coatings on controlling mold growth and mite infestation in dry-cured ham aging facilities. *Journal of Stored Products Research*. 89:101716. <https://doi.org/10.1016/j.jspr.2020.101716>.
- Messman, R.D., Z.E. Contreras-Correa, H.A. Paz, G. Perry, and **C.O. Lemley**. 2020. Vaginal bacterial community composition and concentrations of estradiol at the time of artificial insemination in Brangus heifers. *Journal of Animal Science*. Vol. 98(6): 1–9. <https://doi:10.1093/jas/skaa178>.
- Contreras-Correa, Z.E., R.L. Lemire, **D.D. Burnett**, and **C.O. Lemley**. 2020. Temporal transcript abundance of clock genes, angiogenic factors and nutrient sensing genes in bovine placental explants. *Theriogenology*. 151:74-80. <https://doi.org/10.1016/j.theriogenology.2020.04.002>.
- Gomes, F.P., R. Park, A.G. Viana, C. Fernandez-Costa, E. Topper, A. Kaya, **E. Memili**, J.R. Yates III, and A.A. Moura. 2020. Protein signatures of seminal plasma from bulls with contrasting frozen-thawed sperm viability. *Nature Research Journal*. 10:14661. <https://doi.org/10.1038/s41598-020-71015-9>.
- Memili, E.**, A.A. Moura, and A. Kaya. 2020. Metabolomes of sperm and seminal plasma associated with bull fertility. *Animal Reproduction Science*. Article in Press: <https://doi.org/10.1016/j.anireprosci.2020.106355>.
- Becker, C.A. and **A.E. Stone**. 2020. Graduate Student Literature Review: Heat abatement strategies used to reduce negative effects of heat stress in dairy cows. *Journal of Dairy Science*. 103:article in press. <https://doi.org/10.3168/jds.2020-18536>.
- Yang, Z., J.K. Htoo, and **S.F. Liao**. 2020. Methionine nutrition in swine and related monogastric animals: Beyond protein biosynthesis. *Animal Feed Science and Technology*. 268:114608. <https://doi.org/10.1016/j.anifeedsci.2020.114608>.
- Messman, R.D., Z.E. Contreras-Correa, H. Paz, G.A. Perry, and **C.O. Lemley**. 2020. Vaginal bacterial community composition and concentrations of estradiol at time of artificial insemination in Brangus heifers. *Journal of Animal Science*. 98:6. <https://doi.org/10.1093/jas/skaa178>.
- Contreras-Correa, Z.E., R.L. Lemire, **D.D. Burnett**, and **C.O. Lemley**. 2020. Temporal transcript abundance of clock genes, angiogenic factors, and nutrient sensing genes in bovine placental explants. *Theriogenology*. 151:74-80. <https://doi.org/10.1016/j.theriogenology.2020.04.002>.
- Lemley, C.O.**, K.J. Bowers, K.C. Yankey, M.L. Tu, C.G. Hart, C.S. Steadman, K.J. McCarty, and M.P.T. Owen. 2020. Investigating ovine placentome blood perfusion using power flow Doppler ultrasonography. *Small Ruminant Research*. 184:106051. <https://doi.org/10.1016/j.smallrumres.2020.106051>.

2020 REFEREED PUBLICATIONS (31 total)

- Owen, M.P.T., E.J. Northrop, J.J.J. Rich, G.A. Perry, R.D. Messman, **T.T.N. Dinh**, K.J. McCarty, J. Yang, D. Wan, and **C.O. Lemley**. 2020. Oxylin concentrations in bovine corpora lutea during maternal recognition of pregnancy. *Theriogenology*. 142:384-389. <https://doi.org/10.1016/j.theriogenology.2019.10.003>.
- Paes, V.M., L.F. Lima, A.C.A. Ferreira, C.H. Lobo, B.G. Alves, A.P.R. Rodrigues, A.C. Oliveira, J.R. Figueiredo, and **J.M. Feugang**. 2020. The subtle balance of insulin and thyroxine on survival and development of in vitro cultured caprine preantral follicles enclosed in ovarian tissue. *Theriogenology* 147:Pages 10-17. <https://doi.org/10.1016/j.theriogenology.2020.01.013>.
- Lindsay, K.E., D. Vanover, M. Thoresen, H. King, P. Xiao, P. Badial, M. Araínga, S.B. Park, P.M. Tiwari, H.E. Peck, E.L. Blanchard, **J.M. Feugang**, A.K. Olivier, C. Zurla, F. Villinger, A.R. Woolums, and P.J. Santangelo. 2020. Aerosol delivery of synthetic mRNA to vaginal mucosa leads to durable expression of broadly neutralizing antibodies against HIV. *Molecular Therapy*. <https://doi.org/10.1016/j.ymthe.2020.01.002>.
- Dhahir, N., J.M. Feugang, K. Witrick, S. Park, and A. AbuGhazaleh. 2020. Impact of ultrasound processing on some milk-borne microorganisms and the components of camel milk. *Emirates Journal of Food and Agriculture*. Pages 245-254. <https://doi.org/10.9755/ejfa.2020.v32.i4.2088>.
- Dhahir, N., **J.M. Feugang**, K. Witrick, S. Park, S. White, and A. AbuGhazaleh. 2020. The effect of different ultraviolet-C light doses on microbial reduction and the components of camel milk. *Food Science and Technology International*. 1082013220935230. <https://doi.org/10.1177/1082013220935230>.
- Ishak, G.M., G.A. Dutra, G.D.A. Gastal, M.E. Elcombe, M.O. Gastal, S.B. Park, **J.M. Feugang**, and E.L. Gastal. 2020. Deficiency in proliferative, angiogenic, and LH receptors in the follicle wall: implications of season toward the anovulatory condition. *Domestic Animal Endocrinology*. Vol. 70:106382. <https://doi.org/10.1016/j.domaniend.2019.07.010>.
- Naseer, A.K., S. Dogan, X. Wang, E. Topper, A. K, and **E. Memili**. 2020. Application of Proteomics to Identify Fertility Markers in Angus Bull Sperm. *HAYATI Journal of Biosciences*. Vol. 27(No. 2):116-135. <https://journal.ipb.ac.id/index.php/hayati>.
- Tran, T.T.T., N.M.N. Ton, T.T. Nguyen, D. Sajeev, M.W. Schilling, and **T.T. Dinh**. 2020. Application of natural antioxidant extract from guava leaves (*Psidium guajava* L.) in fresh pork sausage. *Meat Science*. Vol. 165:article 108106. <https://doi.org/10.1016/j.meatsci.2020.108106>.
- Sharma, M.K., **T.T. Dinh**, and P.A. Adhikari. 2020. Production performance, egg quality, and small intestine histomorphology of the laying hens supplemented with phytogenic feed additive. *Journal of Applied Poultry Research*. Vol. 29(Issue 2): 362-371. <https://doi.org/10.1016/j.japr.2019.12.001>.

2020 REFEREED PUBLICATIONS (31 total)

- Rubessaa, M., **J.M. Feugang**, M.E. Kandel, S. Schreiber, J. Hesse, F. Salerno, S. Meyers, I. Chu, G. Popescu, and M.B. Wheeler. 2020. High-throughput sperm assay using label-free microscopy: morphometric comparison between different sperm structures of boar and stallion spermatozoa. *Animal Reproduction Science*. 219: Article 106509. <https://www.sciencedirect.com/journal/animal-reproduction-science/vol/219/suppl/C>.
- Mazinani, M., A.A. Naserian, **B.J. Rude**, A.M. Tahmasbi, and R. Valizadeh. 2020. Effects of feeding rumen-protected amino acids on the performance of feedlot calves. *Journal of Advanced Veterinary and Animal Research*. Vol. 7(No. 2): 229–233. <http://doi.org/10.5455/javar.2020.g414>.
- Mazinani, M., A.A. Naserian, **B.J. Rude**, R. Valizadeh, and A. Tahmasbi. 2019. Production of Rumen-Protected Essential Amino Acids with Chemical Technique. *Biosciences Biotechnology Research Asia*. Vol. 16(4), p. 789-795. <http://dx.doi.org/10.13005/bbra/2795>.
- Paes, V.M., J.R. de Figueiredo, **P.L. Ryan**, **S.T. Willard**, and **J.M. Feugang**. 2020. Comparative Analysis of Porcine Follicular Fluid Proteomes of Small and Large Ovarian Follicles. *Biology*. 9(5), 101: <https://doi.org/10.3390/biology9050101>.
- Becker, C.A., R.J. Collier, and **A.E. Stone**. 2020. Invited review: Physiological and behavioral effects of heat stress in dairy cows. *Journal of Dairy Science*. 103(8). <https://doi.org/10.3168/jds.2019-17929>.
- Stone, A.E.** 2020. Symposium review: The most important factors affecting adoption of precision dairy monitoring technologies. *Journal of Dairy Science*. 103(6). <https://doi.org/10.3168/jds.2019-17148>.
- To, K.V., X. Zhang, W. Shao, J.D. Hendrix, M.D. Byron, Y.L. Campbell, T.W. Phillips, **T. Dinh**, and M.W. Schilling. 2020. The effects of dry-cured ham initial water activity on *Tyrophagus putrescentiae* infestations. *Journal of Stored Products Research*. 87:101069. <https://www.sciencedirect.com/science/article/abs/pii/S0022474X20300540?via%3Dihub>
- Bowman, B.A., M.D. Denny, and **A.E. Stone**. 2020. Exploring Producer Innovation Adoption Using an Extension-Led Trialing Program. *Journal of Extension*. 58(1): v58-1rb2. <https://joe.org/joe/2020february/rb2.php>.
- Özbek, M., M. Hitit, E. Ergün, L. Ergün, F. Beyaz, F. Erhan, N. Yildirim, B. Kandil, O. Özgenç, and **E. Memili**. 2020. Expression profile of Toll-like receptor 4 in rat testis and epididymis throughout postnatal development. *First International Journal of Andrologia*. 00:e13518. <https://doi.org/10.1111/and.13518>.
- Gomes, F. P., J. K. Diedrich, A. J. Saviola, **E. Memili**, A. Moura, and J. R. Yates III. 2020. EThcD and 213 nm for top-down analysis of bovine seminal plasma proteoforms on electrophoretic and chromatographic time frames. *Analytical Chemistry*. 92(4): 2979-2987. <https://pubs.acs.org/doi/10.1021/acs.analchem.9b03856>.

2020 REFEREED PUBLICATIONS (31 total)

- Ugur, M. R., **T. Dinh**, M. Hitit, A. Kaya, E. Topper, B. Didion, and **E. Memili**. 2020. Amino acids of seminal plasma associated with freezability of bull sperm. *Frontiers in Cell and Developmental Biology*. 7(347). <https://www.frontiersin.org/articles/10.3389/fcell.2019.00347/full>.
- Hasan, M.S., **M.A. Crenshaw**, and **S.F. Liao**. 2020. Dietary lysine affects amino acid metabolism and growth performance, which may not involve the GH/IGF- axis, in young growing pigs. *Journal of Animal Science*. 98(1): 1-7. <https://academic.oup.com/jas/article/98/1/skaa004/5700336>.

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