

# ANIMAL & DAIRY SCIENCES



**MISSISSIPPI  
STATE  
UNIVERSITY**

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# CALF COLLEGE

## Calf College 2018

### GUEST SPEAKERS

#### Calf Health

- Dr. Brett and Dr. Tamor

#### Calf Housing and Behavior

- Dr. Krawczel, University of Tennessee

#### Calf Nutrition

- To Be Determined



### Thursday | 9.20.18

Room 201 of Lincoln County  
Extension Office  
301 S. 1st Street  
Brookhaven, MS 39601  
10 AM to 2 PM

### Friday | 9.21.18

Room 4044 of Wise Center  
240 Wise Center Drive  
Mississippi State, MS 39762  
10 AM-2 PM

\*Lunch will be provided for both  
workshops\*



MISSISSIPPI STATE  
UNIVERSITY

EXTENSION

FOR MORE INFORMATION,  
CONTACT AMANDA STONE AT  
AMANDA.STONE@MSSTATE.EDU

# CONGRATS HOLLY!

Submitted by Drs. Molly Nicodemus and Erdogan Memili

Holly Evans, a Masters student in the ADS Department, was awarded a \$500 scholarship from the Mississippi State University Women's Club on April 6th, 2018. The award was presented to four female graduate students at Mississippi State University.

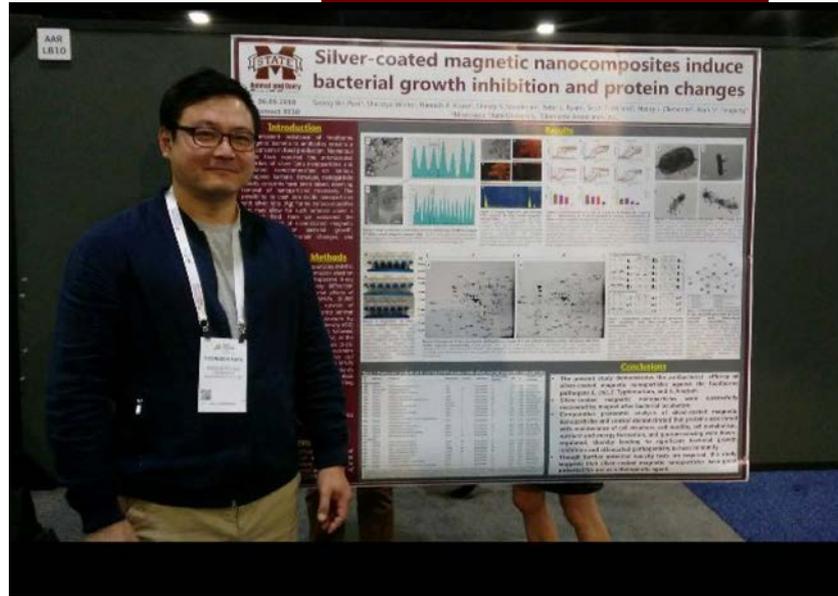
The application required Holly to provide a narrative of her current activities and her future aspirations post-graduation. It was Holly's outstanding performance in her academics, volunteer activities, and research that made her application stand out.

Holly is grateful to the MSU Women's Club for their support of her academic endeavors, and to ADS faculty, staff and students for the quality ecosystem for research and education. More information about the MSU Women's Club is available at <https://www.facebook.com/MSU-Womens-Club-325900204244431/>.



# RESEARCH SPOTLIGHT

Dr. Seong Bin Park, recently attended the ASM (American Society for Microbiology) MICROBE 2018 in Atlanta, Georgia. This meeting is held every year across the United States, with over 12,000 people in attendance. At the meeting, Dr. Park presented his abstract, "Silver-coated magnetic nanocomposite induces bacterial growth inhibition and protein changes".



The study investigated the inhibitory effect of silver-coated magnetic nanocomposites (Ag-MN) on bacterial growth and induced protein changes by proteomics. As the results, bacteria showed dose-dependent growth inhibition in the presence of Ag-MN ( $P < 0.05$ ). The presence of Ag-MN was detected inside the bacteria, causing membrane degeneration and vacuole formation. The proteomic analysis indicated 15 up- and 10 down-regulated proteins after Ag-MN exposure ( $P < 0.05$ ). Our study suggests the silver-magnetic nanocomposites inhibit the bacterial growth by dysfunction of expression of proteins that are crucial for bacterial survival and pathogenicity.

Dr. Park is from Busan, South Korea. He completed his PhD at the Gyeongsang National University in South Korea, where he studied the effects of *Edwardsiella tarda* on the Olive Flounder.

# COW CAMP 2018



BEARDEN DAIRY RESEARCH CENTER  
2128 TURKEY CREEK RD, STARKVILLE, MS 39759

## COW CAMP 2018

| JULY 16, 2018 AT 1 PM TO JULY 18, 2018 AT 12 PM |



*Don't miss out  
on the fun!*

Registration and a registration fee are **required.**

Both must be received by **June 30th.**

A room block is available at \$99 per night. **Room blocks will be released June 30th.** Breakfast is provided by the hotel.

Registration is **\$100 per attendee.**

This includes dinner on 7/16 and lunch and dinner on 7/17.

### LEARN HOW TO:

- Properly groom and fit
- Provide calves and cows with proper nutrition
- Prevent and detect common diseases

If students would like to bring his/her show animal for the hands-on grooming and fitting activities, please contact Dr. Amanda Stone.

# COW CAMP 2018 SCHEDULE



## 2018 Cow Camp Schedule

Date	Time	Activity	Presenter
Monday July 16	11:00 AM – 12:30 PM	Registration; lunch on own	
	1:00 PM	“Fun with milk” (making liquid nitrogen ice cream and cheese)	Dr. Bob Horton (4H Extension Specialist, Ohio State University)
	3:00 PM	MSU dairy tour	Kenneth Graves (MSU Dairy Manager)
	6:00 PM	Dinner	
Tuesday July 17	6:30 – 8:00 AM	Breakfast	
	8:30 AM	MAFES cheese plant tour	Eric Goan (MSU Cheese Plant Manager)
	10:30 AM	Fitting demo, showmanship and grooming discussion	Wesley Blankenship (Blankenship Jerseys, Jackson, TN)
	12:00 PM	Lunch	
	1:00 PM	Hands-on cow clipping and grooming	Wesley Blankenship (Blankenship Jerseys, Jackson, TN)
	4:00 PM	Quiz Bowl and games Tentative: Charlie Crave speaking	Tentative: Charlie Crave (Owner, Crave Brothers Farmstead Cheese, Waterloo, WI)
	6:00 PM	Dinner	
Wednesday July 18	6:30 – 8:00 AM	Breakfast	
	8:30 AM	Ensuring healthy cattle	Dr. Darren McGee (veterinarian, Elanco Animal Health)
	10:30 AM	Feeding cattle	Scott Hardin (nutritionist, dairy nutrition consultant)
	12:00 PM	End of program; lunch on own	



# #DIDYOUKNOW



## AN AMPLE DIET

Pork, the most consumed meat in the world, is one of the most economical sources of animal protein for human consumption. Dr. Shengfa Liao, assistant professor in the Department of Animal and Dairy Sciences, grew up in a remote village in China when and where pork was a rare treat. As an Experiment Station researcher, he focuses on finding ways to enhance pork production by increasing feed efficiency for producers and improving animal welfare at the same time.

# #DIDYOUKNOW



## FEEDING PIGS MORE WITH LESS

Feed eats up two thirds of the total operation costs for pork producers. While measures like using feed additives and alternative feedstuffs and refining facility management may slightly reduce those costs, MAFES scientists search for ways to dramatically improve feed efficiency. MSU researcher, Shengfa Liao, is assessing the fundamental molecular and cellular mechanisms by which nutrients regulate swine muscle development and growth. Liao studies how dietary nutrients, such as amino acids and minerals, impact the expression of genes related to the muscle growth of pigs. After determining the gene regulatory network that controls muscle protein biosynthesis and degradation, new nutritional strategies could be developed to activate the pertinent gene network to enhance the pig's ability to convert feed to muscle more efficiently, significantly reducing feed costs for pork producers.

# ASK THE MEATMAN

Where your everyday meat questions are answered.



Dr. Thu Dinh started the bi-weekly “Ask the Meatman” program on June 9, 2018 at Vowel marketplace, where he cooked and served a variety of meat products and educated consumers on the topics of meat nutrition, selection, safety, and cookery. This event also serves as a service and educational tool for meatheads and students who are interested in meat science. Students who are interested in learning more about meat in a retail setting and serving local community can contact Dr. Dinh at 662-325-7554 or [thu.dinh@msstate.edu](mailto:thu.dinh@msstate.edu)

**BEEF EXTENSION - Dr. Brandi Karisch and  
Cobie Rutherford**



**June 20-23: Beef Improvement Federation Meetings,  
Loveland, CO**

**July 13: Deep South Stocker Conference  
Greenboro, AL**

**EQUINE EVENTS - Dr. Clay Cavinder**



For info on Events, call (662) 325-7466 or email  
[clay.cavinder@msstate.edu](mailto:clay.cavinder@msstate.edu)

**4-H EVENTS - Dr. Dean Jousan**



**June 19-23: Mississippi State 4-H Horse Show  
Championship in Jackson, MS**

**DAIRY EXTENSION - Dr. Amanda Stone**



**July 16-July 18: Cow Camp 2018**

**September 20: Calf College 2018- in Brookhaven &  
September 21 in Starkville**

**October 27-28: Breakfast on the Farm, Bearden  
Dairy, Starkville**



## 2018 Refereed Publications

- 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>.
- 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, Einka 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>.

## 2018 Refereed Publications

**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>.