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2017 Louis & Doris Wise Support Staff Award

Congratulations to this year's winner, our very own Meat Lab Manager, **Tim Armstrong**. **Dr. Derris Burnett** nominated Tim for his excellent service to the department and the university. Tim has worked for Mississippi State University for 35 years.

He began working in the Meat Grading School, the Nutrition Lab, then conducted feed research in the Metabolism Barn with 250 head of cattle, then finally became supervisor over the Meat Lab.



Dr. Gregory Bohach, Tim Armstrong and
MSU President Mark Keenum

New Faces in Animal & Dairy Sciences



Please welcome Dr. Shecoya White to the ADS family; she has recently joined our department as a Postdoctoral Associate in the Biophotonics Group. Her objective will be to utilize bioluminescent imaging to understand the pathogenesis of disease mediated by *Mycobacterium avium* subsp. *paratuberculosis* (MAP).

She earned her Bachelor's and Master's degrees in Animal and Poultry Sciences from Tuskegee University. She then went on to complete her doctorate in Toxicology with an emphasis on microbial food safety from Iowa State University. She is trained as both an animal scientist and microbiologist. She most recently left an industry position as a Quality Assurance Microbiologist at Evonik, a specialty chemical and feed ingredient company located in Blair, NE. Before that, she worked as a Microbiologist at ConAgra Foods (Omaha, NE).

Her experiences at both ConAgra and Evonik have been very valuable in terms of professional development, learning the current technologies, and industrial practices. She has returned to academia, however, in hopes of expanding her role as a scientific contributor to the overall knowledge base and increasing her exposure to different food/feed products and projects.

Meet Maurício Xavier. He is a first year Masters student in the Animal and Dairy Sciences department here at MSU.

He will be working with **Dr. Amanda Stone** on a commercial MS dairy herd to evaluate the effects of a protein (pegbovigrastim) on the health and performance of fresh cows (cows that recently had a calf).

In the future, Mauricio "wants to become a professor and a scientific contributor, providing answers for the daily questions of students and dairy farmers as well as helping them to raise cattle in a more sustainable way."



RESEARCH UPDATES

By Dr. Erdogan Memili



Dr. Erdogan Memili disseminated research at the USDA NIFA Principle Investigator meeting in Washington DC between July 11 and 13, 2017. The projects presented are in collaboration with Dr. Thu Dinh in our Department, and are aimed at ascertaining functional genome of sperm that are associated with bull fertility.

In addition, Dr. Memili presented a poster “Sperm Nuclear Proteins are Associated with Bull Fertility” at the international conference of the Society for the Study of Reproduction (SSR) in Washington DC between July 13 and 16, 2017.

The research presented has been led by Naseer Kutchy, a Ph.D. candidate in our Department, and is a collaboration between Alta Genetics, Inc., and Dr. Arlindo Moura of the Federal University of Ceara in Brazil. At the time, Naseer was presenting another research at the GRC on Fertilization and Activation of Development in New Hampshire, Dr. Memili presented his poster with Dr. Abdullah Kaya, one of the research collaborators.



The SSR is a prominent scientific society whose mission is “to advance scientific knowledge by promoting outstanding research and training in reproductive sciences and to protect and preserve human and animal reproductive health” (<https://www.ssr.org/>).

More information about the society (including its journal-Biology of Reproduction, annual international conference, newsletters, documentary, and videos of some of the key presentations) is available through this link: <http://www.ssr.org/Publications>.

Dairy Representation at the 2017 Mississippi Academy of Sciences Poster Symposium



by Dr. Amanda Stone

On Wednesday, July 26th, 2017, three undergraduates and one graduate student from Mississippi State University's Animal and Dairy Sciences Department, presented their dairy-focused research at the Mississippi Academy of Sciences poster symposium in Stoneville, MS. One-hundred attendees were present and 52 posters were presented during the event.

Alyssa Rulewicz, undergraduate research assistant under Dr. Amanda Stone and ADS senior, presented a project that is currently being performed at the Bearden Dairy Research Center, evaluating a feed supplement for its effects on feed efficiency during periods of heat stress. The presentation was titled: "Evaluating the effect of Vista Pre-T on feed efficiency in heat-stressed dairy cattle." Alyssa placed second in the undergraduate division.

Brittany Bowman, recent Virginia Tech University graduate and Extension Apprentice under Dr. Amanda Stone, presented a project involving nine dairy producers around the state. In collaboration with Dr. Marina Denny (Human Sciences) and Dr. Stone, Brittany is attempting to evaluate perceived barriers and producer perception related to on-farm culturing. The title of her presentation was: "Adoption of on-farm bacteriological milk culturing: Evaluating producer perception and impact on management decisions." Brittany received fourth place in the undergraduate division.



Alyssa Rulewicz, Rebecca Keefer, Dr. Amanda Stone and Brittany Bowman

Undergraduate research assistant and Ag Economics senior, Rebecca Keefer, presented an abstract under the guidance of Dr. Amanda Stone and Dr. Josh Maples (Ag Economics) evaluating what circumstances would need to occur on-farm in order to make a center pivot profitable on a dairy farm. Her presentation was titled: "The economic feasibility of implementing center pivots on Mississippi dairy farms."

Master's student under Dr. Jamie Larson, Melissa Steichen, presented research that she assisted with at the Bearden Dairy Research Center, where the reproductive effects of additional exercise on dairy cows was evaluated. Her presentation was titled: "Additional exercise among grazing dairy cows and effects on uterine artery blood flow, milk production, and milk quality parameters." Melissa was awarded third place in the graduate student division.

These students worked on these projects for months and put many hours into collecting and analyzing the data then creating their posters. Unlike most scientific meetings where the focus of the attendees is similar, these students had to be able to explain their projects and findings to people involved in all different areas (most of which were not Dairy Science). Certainly, all of their hard work and preparation was evident to the judges because of the placings and positive feedback they received.

2017 Junior and Senior 4-H State Livestock Judging Contests



By **Dr. Dean Jousan**

On Saturday, May 20, the junior and senior 4-H State Livestock Judging Contests were held at the MSU South Farm. Mississippi FFA also had their state Livestock Judging Contests in conjunction with the 4-H contests. Over 100 youth competed in the combined event. There were 8 junior 4-H teams (33 juniors) and 8 senior 4-H teams (33 seniors) who competed.

Youth judged 8 classes of livestock (two classes each of beef cattle, sheep, hogs, and goats) and gave oral reasons to defend their class placings. Senior 4-H'ers gave 4 sets of reasons, one on each species, while juniors were allowed to give reasons on any of the species.

Teams from Lincoln 4-H and Pontotoc 4-H tied for 1st place in the Junior Team Division and Rankin 4-H was the High Point Team in the Senior Division. The winning senior team will represent Mississippi 4-H at the 2018 Western National 4-H Roundup in Denver, CO.

Thanks to Mr. Brett Crow and his former/current collegiate livestock judging team members for officiating the contest and listening to reasons. Also, thanks to Dr. John Blanton and the Department of Animal and Dairy Sciences for sponsoring a pizza lunch and water for all contestants and contest workers.



1st Place Senior 4-H Livestock Judging Team (Rankin 4-H) 1st Place Senior 4-H Livestock Judging Team (Rankin 4-H) 1st Place Senior 4-H Livestock Judging Team (Rankin 4-H)

Animal Agriculture in China: Rabbit Industry

— A Study Abroad Course (ADS 4990) Report

by Kristen Corey and Shengfa Liao



During the 2017 Maymester while studying abroad for 3 weeks in China, we learned about Chinese agricultural practices that are similar to those of the United States in some ways, but they are mainly different in other aspects. For example, the rabbit production is not very common in the US, but that is not the case in China. On May 23, 2017, we, as the students of ADS 4990 2017 class, visited a rabbit production farm that belongs to Qingdao Kangda Foreign Trade Group, a comprehensive and export-oriented enterprise that mainly covers rabbit, chicken, and seafood products.



This Kangda rabbit farm is a pretty large-scale rabbit breeding and production

farm that functions in all aspects of rabbit production that includes breeding, nutrition, and meat processing. The farm has 40 employees and a total of 30 barns where the Hyla breed rabbits are housed in stainless steel cages. The barns are equipped with automatic feed supply, water supply, ventilation, and feces removal. One cage houses 8 to 9 rabbits that remain in the cage until reaching market weight of 2 to 5 kg for meat. The breeding rabbits are moved to individual cages

before farrowing. The farm uses all-in-all-out system for disease control. With all these procedures, the farm can produce over 40,000 commercial rabbits per year. The dressing percentage of rabbits is about 50%, and the Kangda Group ships rabbit meat to over 200 regions (mainly, the European Union and the US). The farm is very strict in biosecurity, so we all had to put on lab coats, hair nets, masks, and shoe covers before entering a rabbit barn for a visit. Kangda Group also has a very unique rabbit museum that contains all kinds of information related to rabbits, including rabbit history and folklores.



On May 25, 2017, Professor Yinghe Qin gave us a very informative lecture at China Agricultural University about the Chinese rabbit industry. China is the Number 1 country in rabbit production in the world, followed by Italy, North Korea, Egypt, and Spain. In 2012, rabbit production in China had an economic value of 36 billion Yuans (the Chinese currency) and it is stably increasing every year. There are five types of rabbits in China. The 1st one is the meat type (for production of meat and skin) which makes up 63% of the rabbit population. The 2nd type is Rex (for

production of skin and meat). Rex was imported from the US and now makes up 28% of the rabbit population. The 3rd type is the Angora breed (for production of wool) which makes up 9% of the rabbit population. The 4th type is laboratory rabbit mainly used for medical research, and the 5th type is pet rabbit. The 4th and 5th types are not calculated into the population because they are not in production scale.

Rabbit meat is high in protein and phospholipids, and low in fat, calories, and cholesterol. Rabbit meat is highly digestible by humans; however, it is popular form human consumption only in some parts of China such as Chongqing and Sichuan provinces, although it is getting more popular in other places each year. China exports a decent amount of rabbit products to the US each year. In 2016, they exported 616,950 kg of meat, 1,251 kg of skin, and 1,300 kg of wool to the States.

Farming for rabbit meat is being encouraged by Chinese government not just because the meat is healthier than other meat but because of then 5 advantages associated with rabbit production, as Dr. Qin said. The 1st one is that raising rabbits does not compete against humans and other animals for grain consumption. Rabbits eats mostly grass and they are fed whatever is left after grass had been fed to cattle. For example, the stalks from various plants produced for cattle. The 2nd advantage is



that it provides employment opportunities, as it is easy to start up a rabbit farm. The 3rd advantage is that rabbits have a short production cycle, so it can feed more people faster. The 4th advantage is that it has a high economic return. The 5th advantage is that with the fast production and improved employment rates the rural poverty can be alleviated quickly.

China is still trying to improve the rabbit production efficiency. Compared to Europe, China is lower in female reproduction performance, AI conception rate, and feed conversion ratio. Kanga Group is granted 21 million Yuans per year to conduct further research in the field. Their goal is to achieve equal or better results than their competitors. At the end, Professor Qin stated that the future challenges they are going to face include investment competition, labor cost, working conditions for young people, and environment protection pressure. Also, the land for rabbit farming is also limited due to the land use policy in China.

Upcoming Extension 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



- **Retinal Image/Classify** for 2017 Mississippi State Fair and 2018 District Dixie National Junior Round-up, **September 12-15**, Various Locations
- **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

2017 Refereed Publications:

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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. PHYSIOIOGY 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.
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2017 Book Chapters:

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- 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.