

## SMALL FARM RESEARCH AGRI-NEWS

### Agricultural Research Service

#### Dale Bumpers Small Farms Research Center Newsletter

##### Greetings from the Research Leader,

##### Dr. Phillip Owens



The DBSFRC is bustling with summer activities! We have added 12 summer employees to help with research projects, maintenance, and upkeep of our 2,200 acre facility. I have met many people within the community that share their experience of working at the Center as a young adult. These summer employment

opportunities are great experiences for learning about research and opportunities for careers in the field of agriculture. Of all industries, agriculture is a growing area for employment due to technological advancements made by research investments. Technology-driven advancements in seed development, fertilizer, and chemical treatments, holistic management and computer-based tools are making US farmers the most efficient producers in the world. At DBSFRC, we are focused on technology because more efficient agriculture drives the local economy in every community. In future newsletters you will see more research focused on efficient management and increased technology implementation.

##### Welcome, Dr. Jose Franco,

##### Research Agronomist/Ecologist



Dr. Jose G. Franco, Jr. is a cropping systems research ecologist who applies integrated approaches across farm types to address critical and multifaceted issues in agriculture. The underlying theme of his research is diversifying cropping systems that are beneficial to producers' needs and reduces input costs. Much of his work has been on alterna-

tive systems and on low-input and organic production. Jose's doctoral research evaluated the benefits of intercropping, more specifically, on how interactions between crops can reduce plant stress and enhance yields. His work with ARS in Mandan, North Dakota, as a post-doctoral researcher focused on crop diversification strategies including the integration of perennial forages, livestock, and cover crops as ways to provide multiple benefits to agricultural landscapes such as weed suppression, pollinator resources, and soil building enhancement. He is also working on ways to integrate emerging technologies into his research.

Jose received his B.S. in Biological Sciences from the University of Texas at El Paso, his M.S. in Range Management from New Mexico State University, and his Ph.D. in Ecosystem Science and Management from Texas A&M University.

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## Welcome to Travis Williams



Travis Williams graduated high school at Magazine in 2011. In 2010, he joined the Arkansas Army National Guard as a Field Artillery Automated Tactical Data System Specialist (13D). In 2015, he graduated from University of Arkansas at Fort Smith with a B.S. in Criminal Justice while simultaneously acquiring his commission as an officer in the Army National Guard as a quartermaster officer. After he graduated college, he was involved in a serious car accident that required a lot of personal sacrifice to address his medical care, physical recovery, and the needs of his newborn daughter. Despite these challenges he plans to obtain a Master's in Operations Management and two graduate level certificates in project management and lean six sigma, sometime in the future. Travis was offered an internship with Operation Warfighter and was placed at the DBSFRFC.

Operation Warfighter (OWF) is a non-funded federal internship program supported by the Department of Defense that provides recovering service members of the armed forces an opportunity to gain valuable work experience outside of the military sector. Internships are selected based on service members' interests and competencies. This process is vital in a soldier's transition to civilian employment or reintegration to duty. Federal employers also gain insight and familiarization with common transitional challenges that recovering service members face. Feedback is gathered from all parties upon completion of the program to provide applicable changes that will benefit OWF, federal agencies, and service members in the future.

*"Operation Warfighter has placed more than 2,500 recovering Service members in internships with more than 90 different Federal agencies and sub-components. Currently, there are 525 OWF placements across 25 different Military Treatment Facilities and Wounded Warrior Programs"*

## Welcome to the Summer Employees



From left to right: Jessie Tanner, Joie Bogart, Michelle Armstrong, Kolten Wright, Wyatt Rongey, Tyler Staggs, Ben Holleman, Ethan Fairbanks, (not pictured Joseph Peichel, Olivia Jones)

### Staff Spotlight

Jackie Cherry, Biological Technician



Jackie Cherry is a biological science technician working with the livestock research team at the DBSFRC since 1992. She has a B.S. degree in animal science from Cameron University in Lawton, OK and a M.S. in animal science from the University of Arkansas at Fayetteville.

Jackie works with Dr. Joan Burke to help find solutions for parasite management in sheep. Over the years she has worked with cattle, goats, and sheep. Currently, Jackie performs lab research and helps maintain safety programs. She also performs outreach to the community and has been an active member of the board for Arkansas Women in Agriculture.

### Cattle Spotlight

#### New Blood Comes to the Cattle Operation

Recently, the DBSFRC has been evaluating cattle breeds that could potentially help small farmers and ranchers increase their profitability and quality of their cattle herds. We focused on cattle breeds similar to current cattle produced in the area and beef industry trends. The search for cattle breeds led us

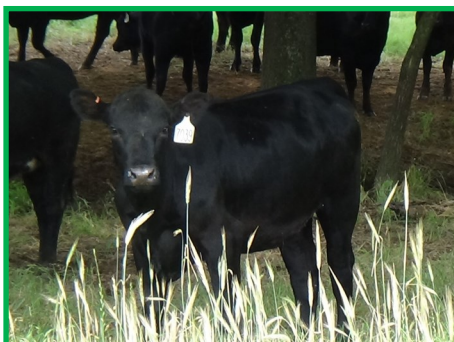


to research previously conducted at other ARS facilities. The Marc II composite breed developed in the 1970's by the USDA-ARS U.S. Meat Animal Research Center in Clay Center, NE appear to have traits necessary for improved cattle production in Arkansas. The composite for the Marc II cattle is  $\frac{1}{4}$  Red Angus,  $\frac{1}{4}$  Hereford,  $\frac{1}{4}$  Simmental and  $\frac{1}{4}$  Gelbvieh. This cross breeding is known today as the Stabilizer composite.



According to previous studies, the Stabilizer composite retains 75% of the heterosis in the calves. This means a producer can breed Stabilizer to Stabilizer and lose very little heterosis. Heterosis is the tendency of a crossbred animal to show qualities superior to those of both parents. By retaining the breed-

ing qualities, the producer does not necessarily need to change breeds of bulls to increase heterosis in the herd. Reports indicate that the breed has continued to improve over the years with lower birth weights, increased post weaning gain, improved disposition, and udder quality. We will evaluate the Stabilizer breed through a solid foundation herd for the Center's future cattle research. Additionally, we started a new vaccination program that should limit the need for antibiotics or hormones. We will continue to evaluate this breed and look for management approaches that will be beneficial to producers in Arkansas and the Southeast US.



## Sheep Spotlight

### Sheep Sale in April



In April, a sealed bid sale on breeding sheep occurred and eight rams and 20 ewes were sold. Several sheep were purchased by fellow Arkansans, and others went to West Virginia, North Carolina, and Indiana. We have received favorable comments from previous buyers that the sheep have acclimated and thrived in their new homes. There will be a larger sheep sale with quality replacement ewes and lambs

for sale on August 1st. Information and the sale catalog will be available on July 22nd, on our website [www.ars.usda.gov/southeast-area/booneville-ar/dale-bumpers-small-farms-research-center/](http://www.ars.usda.gov/southeast-area/booneville-ar/dale-bumpers-small-farms-research-center/)

Spring breeding has begun, which is part of Dr. Joan Burke's out-of-season breeding research. The American Sheep Industry reported that reproductive efficiency is a research priority, including out-of-season breeding, of which 45% of farmers use. Out-of-season breeding can increase flock income and overcome a seasonal lamb supply, as well as expose vulnerable lambs to fewer internal parasites. Lambs can be successfully finished on high quality cool season grasses alone. However, not all sheep can breed out-of-season. Sheep naturally breed during the shorter days of fall, but some particular breeds or individuals within a breed are capable of breeding during the longer days of spring. As day length increases, hormonal changes occur which often halt ewes from cycling or breeding. As the research program selects for ewes capable of breeding out-of-season, those that cannot (but are fully capable of fall breeding) or do not become pregnant may be found in the August sale (just in time to enter the breeding season in their new flock).



We have been examining factors that diminish the success of out-of-season breeding, which may include tall fescue toxicosis, genetics, or nutritional deficiencies due particularly to a lack of trace minerals. This is the final year of this aspect of the research and results will be forthcoming.

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## Employee Training Activities

### IACUC Conference at Seattle, WA in April

Erin Wood travelled in April, to an Institutional Animal Care and Use Committee (IACUC) Conference in Seattle, WA. The annual IACUC Conference, hosted by Public Responsibility in Medicine and Research, brought together over 600 professionals from state and federal government, industry, and academia. The three-day conference included keynote addresses, panels, and breakout sessions designed to build and strengthen effective animal care and use programs, and provided a forum for professionals to exchange ideas about their work and programs, discuss best practices, and work through the challenging issues that can arise.

### Artificial Insemination Training on April 25-26, 2019



Tiffany Herman attended an artificial insemination training course in Hope. The training was given by the University of Arkansas Southwest Research and Extension Center and by Select Sires. The course covered reproductive health in addition to providing hands on AI training. Tiffany is now certified for AI and will be using those skills at the DBSFRC.

### Sheep Scanning Certification School in Pennsylvania in April

At the end of April, Erin Wood travelled to Pennsylvania where Penn State hosted a Sheep Scanning Certification School. This training included methods for collecting loin-eye area, loin-eye depth, back fat, body wall thickness, and how to submit data to the National Sheep Improvement Program. This training gave Erin the opportunity to work with the latest ultrasound technology and interact with sheep producers interested in utilizing this data for genetic progress. At the end of the course, attendees scanned and measured 20 lambs twice and data was compared against a professional reference scanner. Attendees scans had to measure accurately to receive certification.



### Employee Outreach Activities

#### 2019 FFA Field Day on March 07, 2019

DBSFRC annually assists future agriculturalist by co-hosting a FFA Field Day. The 2019 FFA Field Day had over 1700 participants. The event is set up to mimic the FFA Regional and State Competitions for the FFA programs around the state. Dr. Owens and Dr. Mercy Ngunjiri helped set up and score the soil judging competition. They served as official judges by setting the standards for soil morphology and interpretations. Dr. Christine Nieman and Jennifer Keatts assisted in the equine competition by setting up the judging event.



#### Arkansas Women in Ag conference on March 13-14, 2019

The Annual Arkansas Women in Ag Conference was held in Little Rock and over 150 people attended from the state. Karen Chapman, Jackie Cherry, and Jennifer Keatts spoke with attendees about the center's mission and research being performed. By sharing flyers and relaying staff contacts, attendees gained awareness of science opportunities for women and small farmers within the federal government.

#### Forest Service Regional Meeting on March 28, 2019

A regional USDA, Forest Service meeting was held at the DBSFRC to describe the ongoing activities conducted within the region focused on tree production and management. A field tour was led by Dr. Phillip Owens and Larry Huddleston to highlight the USDA, ARS agroforestry research and water quality management activities.

## Mushroom Workshop – Growing Edible Mushrooms on April 02, 2019

At the Mt. Sequoyah Center in Fayetteville, Dr. Phillip Owens, Dr. Christine Niemen and Michael Schmidt co-hosted this workshop with the University of Missouri Agroforestry Center and National Center for Appropriate Technology. In the morning, 30 participants learned the basics of mushroom cultivation and steps needed to be a successful mushroom farmer. In the afternoon, participants seeded their own logs to have a hands-on experience with growing edible mushrooms. This activity provides small farmers an alternative for generating revenue and the potential to further diversity one's farming operation.



### Natural Resources and Conservation Service

USDA, NRCS has a Plant Material Center co-located with the USDA ARS Dale Bumpers Small Farms Research Center.

#### Plant Materials Center (NRCS) Announces New Manager



Aaron Pettit was selected to be the new Plant Material Center Manager at Booneville. Previously, he worked in Virginia for the Arlington National Cemetery (Department of the Army), where he served as the Agronomist / Integrated Pest Management Specialist for the past 4 years.

Aaron obtained his M.S in Soil Science and B.S in Horticulture (minors in Soil Science and Plant Science) from NC State University. While in college, he worked full time for NC State University as a Horticulture Specialist and later transferred to the North Carolina Department of Agriculture where he served as an Agronomist within an Agronomic Test Lab.

Aaron grew up in North Carolina where his interest in agriculture goes back over 20 years, to when he was enrolled in high school ag classes and as he worked part-time on a 10-acre vegetable farm. He also enjoys fishing, hunting, hiking, landscaping, and working on cars (he learned to be an auto mechanic at his dad's auto shop).

#### Eddie Pratt's (NRCS) Retirement on February 25, 2019

After over 20 years of service to the USDA, NRCS, Eddie retired from the Plant Materials Center in February. Eddie's retirement consisted of 45 people sharing a lot of great memories and stories. Randy King (former PMC Director) and Helen Denniston (NRCS State Office) presented retirement plaques and awards. We wish Eddie the best during his retirement.



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