

# MISSISSIPPI LANDMARKS

VOLUME 15, NUMBER 1



**MISSISSIPPI STATE**  
UNIVERSITY™

DIVISION OF AGRICULTURE,  
FORESTRY, & VETERINARY MEDICINE

**RESEARCH, EDUCATION, AND EXTENSION**

# MISSISSIPPI LANDMARKS

Mississippi LandMarks is published by the  
Division of Agriculture, Forestry, and Veterinary Medicine  
at Mississippi State University.

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## VICE PRESIDENT'S LETTER

In the spring of this year, Dr. Greg Bohach, vice president for the MSU Division of Agriculture, Forestry, and Veterinary Medicine, began an extended medical leave of absence. I know you join me in wishing him a speedy recovery.

President Mark Keenum has appointed me the interim vice president, after serving as the division's interim associate vice president for nearly 2 years. I am honored to serve our clients in this role as a continuation of my work as a DAFVM administrator for almost 20 years.

Our goals and mission have not changed, and I look forward to working with the many talented people in the division to serve Mississippi's diverse communities. I value our unique contributions to my home state in the vital areas of research, teaching, and Extension outreach, and I anticipate participating in numerous events as the spring and summer unfold.

Mississippi agricultural producers are part of an international network that works to feed the world. As markets fluctuate due to decisions far beyond the borders of our state, DAFVM experts strive to stay informed of the latest prices, tariffs, and trends, as well as what they mean to our hardworking farmers.

The global market's volatility in 2018 influenced the annual year-end estimates of each crop's production value. The year ended with an estimated value of \$7.7 billion, thanks to a strong poultry sector, which is the state's top crop at nearly \$3 billion.

Mississippi State's reputation for high-quality educational opportunities continues to grow. A record number of attendees—more than 850—preregistered for the annual Row Crop Short Course; 772 actually attended, representing 16 states. Our colleges continue to increase in applications, enrollment, and degrees awarded. We are especially proud of DAFVM involvement in community-engaged learning, particularly the Sweet Potato Innovation Challenge, which received an inaugural Excellence in Community Engagement Award in the community-engaged teaching and learning category. We believe our students, faculty, and staff have the power to positively impact communities around the state and around the world with their dedication to leading, working, and serving.

I appreciate your continued support of the division and our Extension, research, and teaching programs.

REUBEN MOORE

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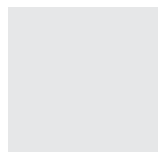
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The Division of Agriculture, Forestry, and Veterinary Medicine is committed to maintaining water quality through its many research, outreach, and educational programs. (Photo by Kevin Hudson)



# SPARKING CHANGE

Anti-Bullying Training Benefits 4-H'ers

A photograph of four women standing outdoors around a bronze bulldog statue on a concrete pedestal. The women are dressed in professional attire, including blazers and dresses. The background shows a grassy area with trees and a parking lot.

“We want students to be able to safely step in when they see bullying, whether it’s someone being bullied or someone who is bullying. Our goal is for students to realize that their voices matter and their actions matter.”

ANN SANSING

Ann Sansing (left), Jasmine Harris-Speight, Reagan Moak, and Je’Kyllynn Steen

**B**ullying is personal to Je'Kyllynn Steen, whose experiences as a victim and witness helped give her insight into a project that can help others who may face the same challenges.

As a community-health intern with the Junior Master Wellness Volunteer (JMWW) Program, she served as the primary author of a new bullying module to help young people recognize this pervasive problem and learn strategies to stop it.

"Unfortunately, the real conversations about bullying often don't happen until after tragedy strikes," said Steen, who is majoring in human development and family science in the MSU School of Human Sciences, a unit of the College of Agriculture and Life Sciences (CALS). "I believe we need to have these conversations before people take extreme measures."

JMWW coordinators intend to help young people start those conversations.

"I framed this module for teenagers to ignite change amongst themselves, while involving the adults in their lives," added Steen, whose goal is to serve in public health. "My aim for this curriculum and moving into my career is to make sure that teens are not only able to spot bullying, but also able to intervene safely when they see someone in need."

Delivered through the MSU Extension Service 4-H Youth Development Program, JMWW trains 14- to 18-year-olds to help improve health literacy and healthy lifestyle choices.

The new module teaches students what bullying looks like in all its forms—physical, verbal, social, and cyber—and gives them the tools to help themselves or someone else.

"We want students to be able to safely step in when they see bullying, whether it's someone being bullied or someone who is bullying," explained Ann Sansing, Extension instructor and JMWW program coordinator. "Our goal is for students to realize that their voices matter and their actions matter."

Exercises in the module encourage students to employ 4-H-learned skills, including empathy, leadership, teamwork, critical thinking, problem-solving, social skills, personal safety, and self-responsibility. Activities include acting out forms of bullying, creating intervention action plans, and developing a social-media campaign.



Internships not only help students earn required credits for their course work, but also give them hands-on experience in fields of career interest. Reagan Moak, a community-health intern who has worked with the program 3 years and served as a peer editor during module creation, intends to become a doctor and work with those affected by sexual violence.

"The verbal, mental, and physical abuse associated with sexual violence has the same implications of violence perpetrated through bullying," Moak explained. "This internship allowed me to pursue my passions while also working with real individuals in Mississippi. The mentorship I have gotten during these 3 years has helped launch my journey to becoming a servant to my state and will continue to push me to strive to be a public-health advocate."

The five-member module development team consisted of Steen, Moak, and Sansing, along with Jasmine Harris-Speight, Extension associate, and Dr. David Buys, Extension state health specialist and assistant professor in the CALS Department of Food Science, Nutrition, and Health Promotion. Team members represent all three elements of MSU's land-grant mission: research, education, and Extension outreach. Steen, Moak, and the other team members have presented their work at multiple conferences and plan to continue sharing the new module.

Four other new modules were added to the 5-year-old program, including asthma awareness, healthy homes, heat and sun safety awareness, and opioid misuse and prevention.

"This program is unique because it not only educates our future generation of public-health advocates, but it also equips volunteers with the knowledge to help their neighbors, friends, and families," said Moak, a junior biochemistry major in the CALS Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology.

For more information about JMWW, visit the Extension website at <http://extension.msstate.edu/jmww>. Follow the JMWW program on Instagram at [@jmww\\_ms](https://www.instagram.com/jmww_ms).

BY SUSAN COLLINS-SMITH • PHOTOS BY JONAH HOLLAND



Photo submitted by Kara Roberts

## Undergrad Publishes Study of **ALLIGATOR PARASITOLOGY**

A freshman student worker job is often a mundane position accepted simply because it helps pay the bills, but Ethan Woodyard's lab job led to significant awards and travel for him, and it outlined a career.

Woodyard, now a senior in the College of Forest Resources Department of Wildlife, Fisheries, and Aquaculture, got a position in the MSU College of Veterinary Medicine (CVM) aquatic parasitology lab, which was operated at that time by the late Dr. Linda Pote.

"At first, I was washing dishes for research animals and running errands, but, a couple of years into it, her health began to decline and she was less able to be in the lab," said Woodyard, a native of Tupelo, Mississippi. "Her most senior graduate students stepped up, and, since I was the only student worker there, I had to step up, too."

Dr. Graham Rosser, an assistant research professor in the CVM Department of Basic Sciences, was Pote's graduate student at the time and is now in charge of the lab.

"Ethan was essential in keeping the lab afloat," Rosser said. "He was really the biggest asset to our lab, and after Dr. Pote's passing,

he got more involved in the research with us because we needed the assistance to finish our graduate projects."

Woodyard first worked on a project involving an owl parasite that was part of an understudied genus of trematodes found worldwide. His work as an undergraduate was published, and that work led next to alligators.

"A guest speaker in one of my wildlife classes talked about alligator hunting season and how these animals are processed for hunters," Woodyard said. "I realized the part that is discarded is where all the parasites are, so I managed to meet one of the alligator processors, and they ended up giving us 12 carcasses, each weighing up to 500 pounds."

Woodyard has been collecting the parasites found in the alligator carcasses, and then, one at a time, identifying the species and sequencing their DNA. The lab submits these data to a worldwide DNA database.

"This work is important because it helps link together the life cycles of these parasites," Rosser said. "Parasites are found worldwide, and it is important to know what their hosts are at their different development stages. Many of the intermediate



Ethan Woodyard identifies the species and sequences the DNA of parasites found in alligators, helping to define the life cycles of these organisms and allow researchers to learn about their hosts at different developmental stages. (Photo by Megan Bean)

“This work is important because it helps link together the life cycles of these parasites. Parasites are found worldwide, and it is important to know what their hosts are at their different development stages.”

DR. GRAHAM ROSSER

stages are difficult to identify, and this can only be done through experimental infection, which is difficult, or by tying them back with molecular data.

“Ethan’s work in molecularly identifying these parasites that affect amphibians and reptiles contributes to the worldwide knowledge of these organisms,” he said.

In addition to having his work as an undergraduate published twice in scholarly journals, Woodyard has already received significant awards. He received the 2018 Snieszko Student

Travel Award, the 2018 American Society of Parasitologists’ Willis A. Reid Jr. Student Research Grant, and a grant from the International Union for Conservation of Nature’s Crocodile Specialist Group to continue his work with alligator parasites.

Woodyard will graduate in May and plans to pursue a doctorate at CVM in veterinary medical sciences with a concentration in infectious diseases.

BY BONNIE COBLENTZ



“My favorite part of my job is seeing producers make something I suggest work to help improve their farm. Whether it was large or small, it is very fulfilling to see that.”

DR. AMANDA STONE



# DAIRY GOOD

## Extension Specialist Strives to Make an Impact

**D**airy specialist Dr. Amanda Stone did not expect to have her life changed by working with Extension, but dealing directly with farmers guided her career decisions in ways she could never have predicted.

While pursuing her doctorate at the University of Kentucky, the southwestern Pennsylvania native worked with the U.S. Department of Agriculture Southeast Quality Milk Initiative, which focuses on preventing mastitis, improving milk quality, increasing milk production, and boosting profits.

“I didn’t know that it would be so helpful,” Stone said. “Being on the farm and seeing the progress made really opened my eyes to what Extension does for producers.”

This experience led her to MSU to pursue her dream of working in Extension. As an assistant Extension professor in the MSU Department of Animal and Dairy Sciences since 2016, she has worked with dairy producers throughout Mississippi.

Stone teaches classes that are cross-listed as undergraduate and graduate level in the College of Agriculture and Life Sciences, including lactation physiology and livestock disease and immunology. She also conducts research on precision technologies, milk quality, and heat stress. But her true passion is helping Mississippi dairy producers.

“I do a lot of on-farm visits,” Stone said. “If farmers are having problems, they will call me or their Extension agent, and I will go to their farms and try to help solve the problems.”

Stone explained the feeling of accomplishment when an operation begins to improve or implements techniques that she has suggested.

“My favorite part of my job is seeing producers make something I suggest work to help improve their farm,” Stone said. “Whether it was large or small, it is very fulfilling to see that.”



Bradley and Carla Taylor own and operate Taylor Jersey Farm Inc. in Prentiss County, Mississippi, a family operation that has been in the business for more than 40 years. They frequently call on Stone’s expertise.

“Her role as an Extension dairy specialist is to assist the dairy farmers in Mississippi at no cost to us,” Carla Taylor said. “We can call her with questions or problems, and she helps us find answers or solutions.”

Carla Taylor said she is grateful for the positive impact Stone has had on dairy operations in Mississippi.

“Dr. Stone has provided information and feedback in any way we have asked,” she

shared. “She helps in areas we as dairy farmers may need more guidance about and has even provided additional educational and informational workshops for us. Part of what makes her so valuable is her personality and approachability. Her genuine concern for the dairy industry in Mississippi is evident. She is great to work with.”

Every year, Stone helps host a field day at the MAFES Bearden Dairy Research Center that allows local students, young children, and families to participate in hands-on activities, such as milking cows, dissecting cattle organs, and learning about basic dairy management.

A mother of three, Taylor said she fully supports Stone’s determination to inform the public about the dairy industry.

“The workshops and field days she plans have helped to disprove common myths the public has read or heard about dairy farms and dairy farmers,” she said. “She is truly making a difference.”

BY JESSICA JUNKIN • PHOTOS BY JONAH HOLLAND



## Mississippi Magnifies Commitment to **WATER QUALITY**

**M**ore than three decades after establishing the Mississippi Water Resources Research Institute (MWRRI) at the state's land-grant university, administrators are expanding their efforts to support and coordinate water and associated land-use issues in the state.

In 2017, Dr. Jason Krutz became the first full-time director of the institute, established by the Water Resources Research Act of 1984. MWRRI serves as a storehouse of knowledge for use in education, research, planning, and community service.

"In the past, other directors have served with multiple responsibilities dividing their attention," said Krutz, who previously served as an irrigation specialist at the MSU Delta Research and Extension Center. "As concerns for water issues grew and the needs increased, the time had come when the state needed to provide additional funding to support a full-time director."

Each state has a similar institute located at its 1862 land-grant university. Additional institutes are located in the District of Columbia, Guam, Puerto Rico, and the U.S. Virgin Islands. The institutes operate similarly to the Extension Service with a significant exception. Instead of extending information and service from the university to the public, they help the U.S. Geological Survey serve each state.

"The institutes serve four primary roles: to help solve state and regional water problems, to train the next generation of water researchers and engineers, to direct and screen recipients of research grants, and to share research through publications and educational programs," Krutz said.

Institute researchers address a wide range of concerns, including economic development, drinking water quality, groundwater sources, effects of invasive species on waterways, and aquifer and watershed management.

Dr. James Cizdziel, associate professor of chemistry and biochemistry at the University of Mississippi, said the institute's support of junior faculty has helped advance research efforts.



Dr. Beth Baker, an assistant Extension professor in the Department of Wildlife, Fisheries, and Aquaculture, collects water to analyze for nutrient content. Baker directs Research and Education to Advance Conservation and Habitat, a program that demonstrates the benefits of conservation on agricultural land. (Photo by Michaela Parker)

“The institute fosters collaboration to address the state’s water-related issues from water quality to water quantity, and from agricultural and industrial water needs to drinking water issues.”

#### DR. MARY LOVE TAGERT

“In my second year as an assistant professor, I received a grant from the institute for developing rapid methods for dating sediments,” he said. “This facilitated new and fruitful collaborations with other researchers here in Mississippi and beyond.”

Dr. Mary Love Tagert, an assistant Extension professor in agricultural and biological engineering at MSU, said MWRRRI is a state agency that serves the entire state.

“The institute fosters collaboration to address the state’s water-related issues from water quality to water quantity, and from agricultural and industrial water needs to drinking water issues,” she said. “It also connects the public with specialists who can help with concerns and connects researchers with other researchers or specialists looking into specific issues.”

Even graduate students become involved in water issues and are drawn to a variety of research projects, Tagert said.

“The MWRRRI helps connect me to potential collaborators on our campus and also throughout the state and the region,” she said. “They also provide funding to collect preliminary data that can be used as a foundation to apply for larger grants, and the institute helps provide funding to support and train graduate students, equipping them to address our state’s water problems in the near future.”

Tagert said the institute acts as a hub to bring together all stakeholders, including federal, state, private, and academic representatives, to address the state’s water-related issues.

BY LINDA BREAZEALE

# MSU LIVESTOCK JUDGING TEAM:

## Big Commitment Leads to Lifelong Lessons



The MSU Livestock Judging Team and Animal and Dairy Science students practice sheep judging at the MAFES H. H. Leveck Animal Research Center, also known as South Farm.

**T**ime management, effective communication, and follow-through are just a few of the skills students say they've honed by participating on the competitive MSU Livestock Judging Team.

Being on the team is a big commitment, as members spend 36 out of 52 weekends, from January to November, traveling the

U.S. to study at different farms and compete in approximately 12 competitions judging cattle, hogs, goats, and sheep. They also help with high-school and middle-school livestock-judging camps during the summer. Competition culminates at the National Championship in Louisville, Kentucky, in November each year.

“The team attracts students from all walks of life. Some students raise livestock growing up, and others are introduced to the livestock industry through 4-H or through a number of other avenues.”

BRETT CROW



Team coach Brett Crow (left) stands with Livestock Judging Team members Cody Maddox, Abigail Jenkins, Logan Strock, Mikaila Walker, and Gresham Stephens.

Abigail Jenkins, a junior in the College of Agriculture and Life Sciences Department of Animal and Dairy Sciences, said she has learned about the industry and judging livestock, a skill that will assist her in selecting the best animals in production systems. Most importantly, she has developed lifelong friendships with others pursuing a common passion.

“The most challenging part of being on the team is balancing school work with competition,” said Jenkins, a native of Bush, Louisiana. “We only have 1 year to compete, so it’s important to make that year count. This experience has taught me about time management and follow-through and how to better take other

perspectives into consideration. It’s also given me confidence in my decision-making process.”

The team includes five out-of-state students who came to MSU, in part, to participate on the team. In addition to Jenkins, team members include Gresham Stephens of Plant City, Florida; Mikaila Walker of Royse City, Texas; Logan Strock of Marbury, Alabama; and Cody Maddox of Collinsville, Alabama.

Brett Crow, team coach and animal and dairy sciences instructor, came to MSU in 2013 to reinvigorate the judging team, which has been a fixture at the university since at least the 1920s.

“The team attracts students from all walks of life,” Crow explained. “Some students raise livestock growing up, and others are introduced to the livestock industry through 4-H or through a number of other avenues.”

Crow emphasized that the team is open to anyone regardless of academic major or past experience, adding that judging helps team members develop essential life skills.

“Livestock judging teaches students to be quick on their feet,” Crow said. “They must think critically and make fast, informed decisions in a high-pressure environment, while the oral presentation aspect helps strengthen their communication skills. These skills are valuable in any major or future career.”

Jenkins plans to judge open shows in the future. Open shows are livestock shows that anyone can enter, regardless of age or membership in a particular organization.

“A goal for myself and my teammates is to judge a national show,” Jenkins said. “We have what it takes to get there because of our training at MSU.”

BY ALAINA DISMUKES • PHOTOS SUBMITTED

MSU Hosts

# MID-SOUTH FORESTRY Equipment Show



“The family-friendly venue is a great value for foresters and loggers since there is something for everyone, from presentations offered by the MSU Extension Service to activities in the children’s area.”

DR. GEORGE HOPPER



For the past 34 years, the Mid-South Forestry Equipment Show has helped the forest industry keep abreast of the latest technological advances.

The biennial, in-woods showcase of forestry equipment—the nation’s longest-running event of this kind—is sponsored by the MSU Forest and Wildlife Research Center and College of Forest Resources, along with the Mississippi Loggers Association, the Mississippi Forestry Association, and Hatton-Brown Publishers Inc.

Timber equipment manufacturers recognize the show as an arena for demonstrating their products; 91 exhibitors attended the 2018 event. Loggers and foresters see it as a one-stop shop for continuing education credits; 1,110 professionals earned 4,191 credit hours at the latest show.

“While the event is open to the public, it is particularly popular with industry professionals and landowners,” said CFR Dean George Hopper. “The family-friendly venue is a great value for foresters and loggers since there is something for everyone, from presentations offered by the MSU Extension Service to activities in the children’s area.”

Vendors also collected more than \$26,000 for the Log-A-Load for Kids program in Mississippi, which is coordinated by Mississippi Loggers Association and benefits the Blair E. Batson Hospital for Children in Jackson. Show organizers also made a \$6,000 contribution in memory of W. J. Bates, cofounder of B&G Equipment and former member of the Mid-South Forestry Equipment Show Inc. Board of Directors.

Cash prizes were awarded to winners of the show’s skidder contest, guess-the-weight contest, and door-prize drawings. Two-day attendance for the event was 7,048 in 2018.

BY NATHAN GREGORY •  
PHOTOS BY DAVID AMMON





# PLAYING DEFENSE

Animal Repellent Could Help Block Soybean Pests

“I think this is a great example of the power of interdisciplinary research. It also is an example of how nature finds ways to solve problems, and we can use nature to solve ours.”

DR. MARCUS LASHLEY

Photo by Sarah Buckleitner





Photo by Michaela Parker

A practical defense against hungry herbivores is something row-crop producers have struggled to find for their soybean fields, but interdisciplinary researchers at Mississippi State may have a solution.

Dr. Marcus Lashley, a wildlife ecologist in the Forest and Wildlife Research Center and assistant professor in the College of Forest Resources Department of Wildlife, Fisheries, and Aquaculture; and Dr. Te-Ming Paul Tseng, a weed physiologist in the Mississippi Agricultural and Forestry Experiment Station and assistant professor in the College of Agriculture and Life Sciences Department of Plant and Soil Sciences, are collaborating to patent a spray that repels mammals and insects from soybean plants. The primary focus of their study is on fending off white-tailed deer, which cause more than \$4 billion each year in crop damage nationally.

“Most of the available options are specific,” Lashley said. “You have pesticides for insects, but they may not repel deer, and you have fencing to keep deer out, but that’s not cost-effective. One of the advantages we think we have over other products with this spray is that it will be more generic and deter anything that eats leaves.”

Dr. Te-Ming Paul Tseng (left) and Dr. Marcus Lashley are collaborating to develop a spray that repels mammals and insects.

The spray contains extracts of sicklepod, which is a weed that has developed defenses against herbivores over time. Sicklepod contains an organic compound known as anthraquinone, which induces the side effect of “negative post-ingestive feedback”—commonly called diarrhea. Research suggested that the compound repelled birds, but not much was known about whether it worked on deer.

Over two summers at the MSU Deer Lab, Lashley and Tseng planted soybeans in a containment area to test the spray against other commercial treatments. They observed which plants the deer ate and which ones they avoided. One treatment is currently the only spray for soybeans approved by the Environmental Protection Agency, while another is not approved for row crops and repels only birds and rabbits.

In many cases, deer avoided plants that had been sprayed with the sicklepod extract after the first time they ingested them. They often avoided the plants altogether because of the spray’s pungent odor.

“We observed that all the plants sprayed with water were completely browsed, while the EPA-approved repellent provided 70 to 80 percent protection,” Tseng said. “When some of the deer smelled the sicklepod-sprayed soybeans, they would start kicking the pots down, possibly hinting at their dislike for the extract.”

Tseng employed numerous extraction techniques to identify the parts of a sicklepod plant that have the highest concentrations of anthraquinone. He used a High-Performance Liquid Chromatography (HPLC) system to find out what else is in the extracts.

“We found that the pods have the highest concentration in a sicklepod plant, so we’re growing more plants in a greenhouse, harvesting the pods, and grinding them into very fine powder,” Tseng said. “We mix that powder with various solvents, filter, and analyze it in the HPLC machine, which then tells you what all is present in the extract.”

After the product is fully developed, future research may concentrate on incorporating this self-defense trait into the soybean plants themselves, Lashley said.

“I think this is a great example of the power of interdisciplinary research,” he said. “It also is an example of how nature finds ways to solve problems, and we can use nature to solve ours.”

STORY BY NATHAN GREGORY



Dr. Lanny Pace (left) and laboratory technologist Rosvita Todd work in the Mississippi Veterinary Research and Diagnostic Laboratory.

# STANDING GUARD

## CVM Labs Protect Animals, People, Economy

**V**eterinarians, technicians, and support staff members who work at the MSU College of Veterinary Medicine’s diagnostic laboratories in Pearl have one mission: to protect the health of animals, humans, and the state’s bustling agricultural economy.

“Our people aren’t just here for a job,” said Dr. Lanny Pace, executive director of the Pearl facility that houses the Mississippi Veterinary Research and Diagnostic Laboratory (MVRDL) and the Poultry Research and Diagnostic

Laboratory (PRDL). “They love what they do, and they are here to help somebody.”

The Pearl facility contains two of the college’s four diagnostic laboratories, which are all administratively based in the CVM Department of Pathobiology and Population Medicine. The Pearl labs share a building, equipment, and personnel to provide surveillance and diagnostic testing for practicing veterinarians, individual producers, pet owners, and the livestock industry.

“Our labs are positioned to provide the best level of protection to animals, people, and the agricultural economy in the state.”

DR. LANNY PACE



Laboratory coordinator Scott Baughman (left) and Dr. Danny Magee collaborate in the Mississippi Poultry Research and Diagnostic Laboratory.

The MVRDL focuses on all species except birds, which are handled by the PRDL. In addition to examining biological samples for viruses, bacteria, parasites, fungi, cancers, and other diseases, lab employees also perform necropsies.

The MVRDL is the state's only lab approved to run government-required surveillance and regulatory tests for domestic, wild, and food animals, including tests that must be done before the harvest, sale, and shipping of food-animal products.

“We do a high volume of regulatory tests, but the diagnostic tests we do help producers, veterinarians, and industry make decisions about treatment, medications, and vaccine programs,” Pace said. “Veterinarians do many routine tests in their clinics that historically were only available in reference labs such as MVRDL, and we are often asked to confirm their test results using different procedures, like confirming a positive result for canine heartworms.”

The MVRDL recently added equipment for screening white-tailed deer samples for chronic wasting disease (CWD), a contagious neurological illness that is fatal to deer. First confirmed in Mississippi in early 2018, the disease could significantly impact the deer herd and hunting-related commerce. All samples collected in the state are tested first at MVRDL. Samples suspected to be positive for CWD are sent to the National Veterinary Services Laboratory in Iowa. Funds for the special testing equipment were provided by the Mississippi Legislature to help state officials and wildlife biologists track and manage CWD.

The PRDL works mainly with the commercial poultry industry, providing routine surveillance tests required by state and federal regulations, as well as diagnostic tests for sick birds.

“The majority of what we do is for the commercial poultry industry,” said Dr. Danny Magee, PRDL director and CVM clinical professor. “But we’ll look at anything that has feathers. We have done tests on zoo animals, wildlife, and backyard chickens.”

Most of the samples are submitted to the lab, but the four poultry veterinarians also make farm visits to collect samples or observe certain issues at commercial sites. Applied research projects by poultry veterinarian Dr. Alejandro Banda help the industry solve on-farm issues.

As part of the National Animal Health Laboratory Network (NAHLN), the labs routinely test for endemic and foreign diseases, including CWD, exotic Newcastle disease, classical swine fever, foot and mouth disease, and high- and low-pathogenic avian influenza. The network is a partnership of federal and state laboratories governed by the U.S. Department of Agriculture. The lab is accredited by the American Association of Veterinary Laboratory Diagnosticians, which satisfies NAHLN's standardized quality-control-system requirements.

“Our labs are positioned to provide the best level of protection to animals, people, and the agricultural economy in the state,” Pace said. “The NAHLN enhances early detection, but it also increases our ability to respond and recover quickly if there is an outbreak of a high-consequence disease.”

In 2018, the MVRDL received 30,868 cases and performed 43,095 tests. The PRDL received 5,116 cases and performed 309,436 tests. The lab's team of personnel includes four poultry veterinarians, three pathologists, one molecular biologist, two graduate students, 18 technical staff, and seven support staff members.

BY SUSAN COLLINS-SMITH •  
PHOTOS BY TOM THOMPSON

# SUSTAINABLE MANAGEMENT

Keeps Farm in the Family



“Doing it the right way can be expensive, and it can be difficult at times. There’s an easy way, and there’s a right way, and we try to do things the right way here.”

JEREMY JACK

**S**ilent Shade Planting Company partner Jeremy Jack describes sustainability on his farm as a long-term strategy, not a short-term tactic.

“My parents taught us how to take care of the land and allowed us to start farming at a young age because they knew it would be better for us to start early and continue the process of building the farm for future generations,” Jack said. “We were always taught, whether you rent or own the land, to treat it like it’s yours so it will be there for the next generation.”

Silent Shade, headquartered in Belzoni, Mississippi, is a row-crop farm established in 1979 by his parents, Willard and Laura Lee Jack. The 11,500-acre farm grows cotton, corn, soybeans, and rice in Humphreys and Holmes Counties. Along with Jack and his parents, other partners include his wife, Elizabeth Jack, and his sister Stacie Koger.

Silent Shade participates in the MSU Research and Education to Advance Conservation and Habitat (REACH) program. REACH works to impact land-management and water-conservation practices on land enrolled in the program.

“Doing it the right way can be expensive, and it can be difficult at times,” Jack said. “There’s an easy way, and there’s a right way, and we try to do things the right way here.”

Silent Shade is a model of sustainability in the Delta. The farm continually adopts appropriate new technology and practices, and Jack meets with a peer advisory group twice a year to explore new ideas.

“We do our research, see what the others in the group are doing, and bounce ideas off each other, but we’re very quick to try something,” he said.

A recent example was the farm’s adoption of high-speed planters.



“We had three planters for our crop, and we bought one high-speed, smaller planter to try,” Jack explained. “That year, we planted our crops with four planters, and the small, high-speed planter did best. When we saw that, we sold all four planters and got two big, high-speed planters.”

Jack said this approach is the key to sustainability: using technology that allows the farm to do the same jobs with less equipment, less time, and fewer resources.

“I had two planters get 900 acres of soybeans planted in 1 day,” he said. “That was a good day.”

Jack said the farm is investigating the use of cover crops and is taking several steps to

reduce the amount of water it uses. Silent Shade has reservoirs for tailwater recovery, uses rainwater and surface water for irrigation, and has invested extensively in land improvements to improve water retention when needed and drainage when appropriate.

“We’re definitely pumping less water than we used to,” Jack said.

Extension specialists are among the professionals Jack calls on for advice.

“We know them all, and they’re not afraid to answer when we call,” he said. “When we have an issue, they’re always quick to come over and give advice.”

The farm’s sustainable business model is what will make it possible for Silent Shade to be passed on to the next generation one day.

“There’s nothing I enjoy more than getting to farm with my family,” he said. “I hope our kids will choose to start working here one day. By operating in a sustainable manner, we give them the option to do that.”

BY BONNIE COBLENTZ • PHOTOS BY KEVIN HUDSON

# IMAGINE THE POSSIBILITIES:

## DAFVM Connects Students with Ag and Natural Resource Careers

A baby chick drowsing in MSU Extension agent Gina Will's hands was not bothered by the helicopter landing outside, just yards away, nor the excited chatter of 8th-graders moving through exhibits at Imagine the Possibilities. This annual event at the Bancorp South Arena in Tupelo brings together professionals from every type of career to help teens from 17 northeast Mississippi counties explore future educational and job opportunities.

For the past 4 years, Dr. Bill Burdine, a regional Extension agronomy specialist based in Union County, has coordinated the Agriculture, Food, and Natural Resources Pathway, one of 17 pathways available for students to study. The MSU Division of Agriculture, Forestry, and Veterinary Medicine is a key supporter of the "ag pathway."

MSU exhibits showcased Extension, the College of Veterinary Medicine (CVM), and the Geosystems Research Institute. Several departments in the College of Forest Resources and College of Agriculture and Life Sciences also participated.

Hands-on activities and displays, including live insects, hides, pelts, fossils, and seeds, invited students to take a closer look at various ag and natural-resource professions.

"We aren't here to try to convince young people to choose a particular career," Burdine explained. "Our goal is to help them see the world of possibilities available to them. Many students don't understand the technology that is involved in agriculture, and, by showing them our precision-ag technology, including our drones and mobile poultry house, we can get kids who are interested in science to consider ag."



Event organizers are following participants through a longevity survey, and the first participants are high-school seniors this year.

"We will track how career choices were modified by our event," Burdine said. "We are on the brink of seeing recruitment changes. I heard from one of our participants, Dr. Brittany Moore-Henderson from the MSU-CVM, that two students attended a CVM open house and told her they were there because they had met her at Imagine the Possibilities."

At the CVM station, students wore lab coats, donned stethoscopes, and took photos with signs reading "Future Veterinarian."

"This is my future!" one student commented confidently.

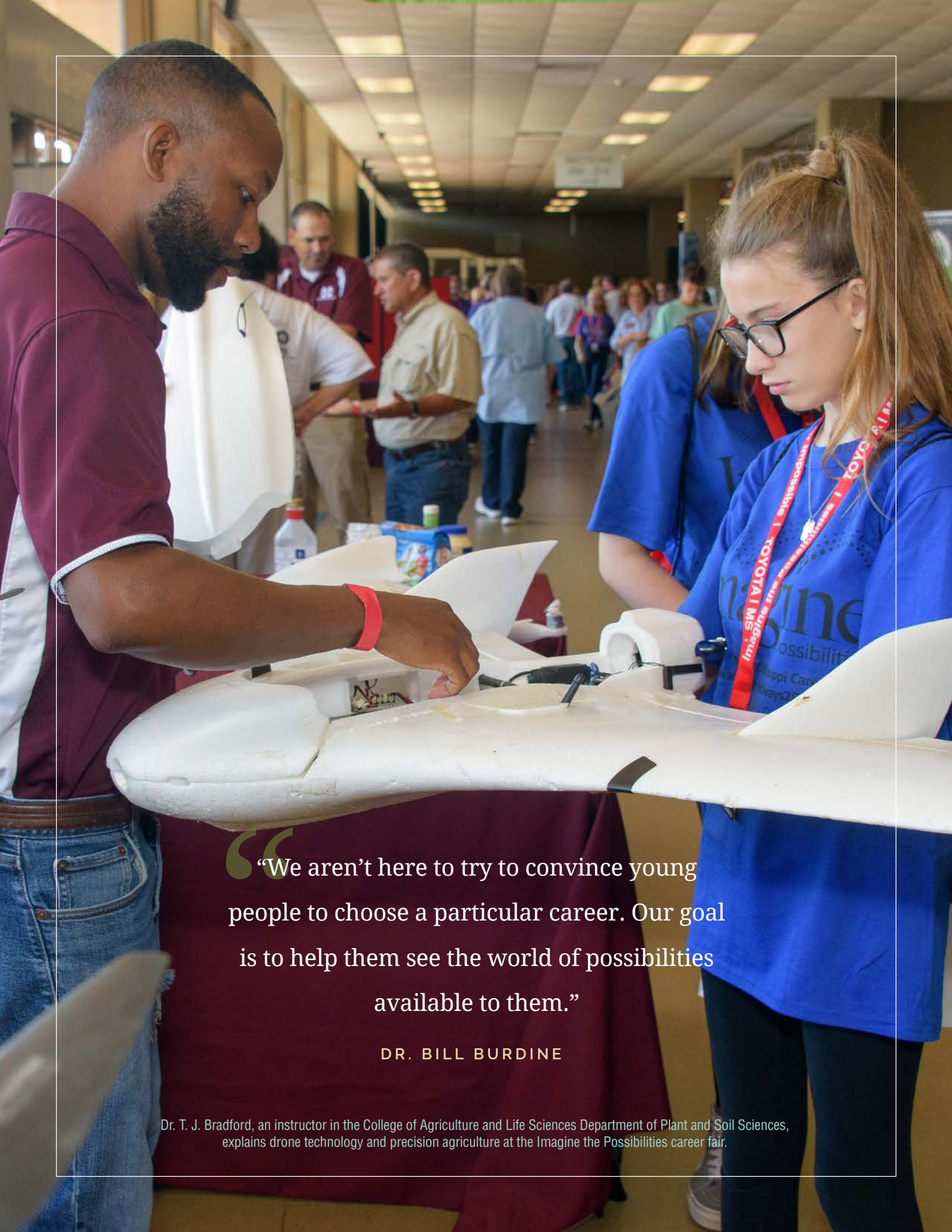
Third-year veterinary student Sadie Krauch of Memphis said many students have direct, specific questions for CVM representatives to answer.

"What is the difference between a veterinarian and vet tech? How many years will it take me to get a degree? It's fun to talk to them about all the different options within veterinary medicine—options I didn't even know about when I first chose this career," Krauch said. "I wish I'd had something like this when I was in 8th grade!"

Kim Murphree, a guidance counselor at Houlika Attendance Center in Chickasaw County, said she appreciated the wide range of career clusters students could explore.

"They can talk to people who have those jobs and learn what education is required, how much the job pays, and what the benefits are," she observed. "This event opens up a whole new world for them."

BY KERI COLLINS LEWIS • PHOTOS BY KEVIN HUDSON



“We aren’t here to try to convince young people to choose a particular career. Our goal is to help them see the world of possibilities available to them.”

DR. BILL BURDINE

Dr. T. J. Bradford, an instructor in the College of Agriculture and Life Sciences Department of Plant and Soil Sciences, explains drone technology and precision agriculture at the Imagine the Possibilities career fair.

# ACTIVITY TRACKERS

## on Cattle Yield Key Energy Insights



**Dr. Brandi Karisch**

Unlike fitness-conscious people, cattle will never know they are wearing activity trackers that assess grazing habits and energy use on a daily basis.

Livestock producers have long recognized the value of activity monitors in maintaining animal health. Now, Mississippi State researchers are using them to describe the complete daily activities and behaviors of pasture-foraging cattle.

Dr. Garrett Street, movement ecologist in the Forest and Wildlife Research Center and an assistant professor in the College of Forest Resources Department of Wildlife, Fisheries, and Aquaculture, said sustainability issues are the bottom line of this research project.

“We will hit all three of the U.S. Department of Agriculture’s sustainability points: economic, environmental, and cultural,” Street said. “There have been general theories or rules of thumb for an appropriate number of cattle per acre. This should take the guesswork out of the stocking density equations.”

In addition to the financial benefits of providing ideal amounts of forage or supplements, Street said proper cattle numbers protect the land from overuse.

“Social sustainability addresses producers’ tradition or history of cattle and forage management,” Street said. “They can determine if supplementation is needed and, if so, how much.”

Researchers attached accelerometers around the necks of cattle to reveal how much time they spend grazing and where.

The data they gather also will provide insight into how much time the animals spend resting or walking. MSU is partnering with the Noble Research Institute for the 5-year project, which will involve cattle in Mississippi and Oklahoma.

One goal of the study is to determine whether the model developed in Mississippi works in Oklahoma, said Dr. Brandi Karisch, Extension Service beef cattle specialist and Mississippi Agricultural and Forestry Experiment Station scientist.

“We are applying the ecological theory from wildlife to cattle production,” Karisch said. “Deer and cattle are both ruminants; they eat grass and plants. In the past, we haven’t done a great job of communicating across disciplines. This will combine what we have learned in wildlife and cattle production.”

Karisch said cattle producers have not had a good way to measure how much forage livestock were eating.

“Bits and pieces of the research have been done in past projects, such as studies of forage samples, body condition scores, body temperature changes, and animal movements,” she said. “We are creating a model that will predict how long cattle can use a pasture, which, in turn, protects the environment. It applies ecological theory from wildlife to cattle production and how plant consumption impacts the long-term growth of the plant.”

Karisch said producers must establish a balance.





Dr. Garrett Street (right) and wildlife science PhD candidate Ira Parsons set up a collar with an accelerometer used in a study of the daily movements of cattle.

“We are creating a model that will predict how long cattle can use a pasture, which, in turn, protects the environment. It applies ecological theory from wildlife to cattle production and how plant consumption impacts the long-term growth of the plant.”

DR. BRANDI KARISCH

“If we overgraze a pasture, the grass won’t come back as well,” she said. “Traditionally, we have eyeballed the pasture and moved cattle when they started running out of grass. This will fine-tune the decision process.”

Karisch said the economic sustainability aspect will have long-term impacts on the future of cattle production.

“If we can’t manage the cost of production and make raising cattle work as a business, producers won’t stay in the business, and the cost of the product will increase for consumers,” she said. “This is a very theoretical study, but it has long-term potential for the cattle industry.”

BY LINDA BREAZEALE • PHOTOS BY KEVIN HUDSON





# Why I Volunteer

*It's for the love of  
fellow man,*

*It's just to lend  
a helping hand.*

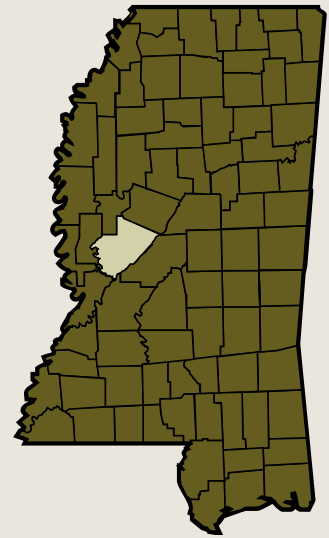
*Helping others  
far and near*

*Makes me a volunteer.*

Anonymous



The B. S. Ricks Library in Yazoo City is on the National Register of Historic Places. (Photo by Kevin Hudson)



# 1/82: Yazoo County

## MSU in Yazoo County:

MSU Extension Office  
212 East Broadway, 3rd Floor  
P.O. Box 1068  
Yazoo City, MS 39194

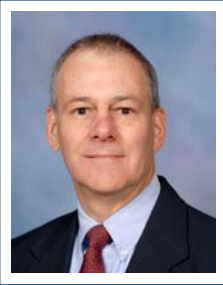
“Yazoo County is Mississippi’s largest county in terms of land area, and it is the gateway to the Delta with part Delta and part hills. It has diverse crop, pasture, and timberlands, which also provide great wildlife opportunities.”

PHILLIP M. VANDEVERE JR., MSU Extension County Coordinator

- County seat:** Yazoo City
- Population:** 27,057
- Municipalities:** Yazoo City, Bentonia, Satartia, Eden
- Communities:** Benton, Phoenix, Midway, Holly Bluff, Carter, Anding, Little Yazoo, Oil City, Scotland, Tinsley, Vaughan, Linwood
- Commodities:** cotton, fertilizer, soybean, corn, catfish
- Industries:** CF Industries Inc., Yazoo Planters Gin, Linwood Gin, Silver Creek Gin, Walmart, Mississippi Cheese Straw Factory, Federal Prison Complex, Simmons Catfish Plant
- Natural resources:** timber, wildlife, fisheries, rivers, streams, ponds, farmland
- History Notes:** In 1824, Yazoo was founded under the name “Hannan’s Bluff.” It was later renamed Manchester and then changed to Yazoo City in 1841. Significant events in the county included Casey Jones’s massive 1900 train wreck in Vaughan, the Great Yazoo Flood of 1927, and the 2010 EF-4 tornado.
- Attractions:** Grave of the Famous Witch of Yazoo in Glenwood Cemetery (made famous in Willie Morris’s “Good Ole Boy” in 1971), Casey Jones Museum in Vaughan, Triangle Cultural Center.
- Did you know?** In July 1977, President Jimmy Carter came to Yazoo City to dedicate the new Yazoo City High School.

*Editor’s note: 1/82 is a regular feature highlighting one of Mississippi’s 82 counties.*

# NewsNotes



**Demarais**

**Dr. Steve Demarais** has been named the Taylor Chair in Applied Big Game Research and Instruction in the MSU College of Forest Resources (CFR). This endowment was born out of a friendship between Patrick F. Taylor, founder and owner of Taylor Land and Cattle Company, and Harry Jacobson, professor emeritus in CFR. Demarais, a Dale H. Arner Professor of Wildlife Ecology and Management in the Department of

Wildlife, Fisheries, and Aquaculture, is a leading white-tailed deer researcher who has been with the university for more than 20 years. In that time, Demarais has published more than 130 peer-reviewed publications and led numerous master's and doctoral students in applied research programs. In 2018, Demarais received the prestigious Deer Management Career Achievement Award from the Southeastern Deer Study Group for his outstanding contributions to white-tailed deer ecology and management. He also holds a research appointment in the MSU Forest and Wildlife Research Center (FWRC) and codirects the Deer Ecology and Management Laboratory, one of the country's leading deer research units. Demarais earned his bachelor's in wildlife biology at the University of Massachusetts. He earned a master's in wildlife ecology and a doctoral degree in forest resources, both from MSU.



**Grala**

**Dr. Robert Grala** has been named the CFR Department of Forestry's first James R. Moreton Endowed Fellow. This fellowship was established in 2012 through a gift from James Reginald Moreton, a 1956 mechanical engineering alumnus. A Brookhaven resident, Moreton was founder and president of First Federal Savings and Loan before starting an industrial access mat company. Grala, as a

leading forest economist, is part of a nationally recognized research program in the FWRC. As a faculty member for 14 years, he has been an active student mentor, serving for more than a decade as faculty adviser of the top-ranked MSU Society of American Foresters Student Chapter. Grala teaches core courses in the forestry program and directs graduate students in research-driven master's and doctoral programs. He earned a master's degree in forestry from the Warsaw University of Life Sciences, a master's in environmental sciences and policy from Central European University, and a PhD in forestry from Iowa State University.



**North**

**Elizabeth Gregory North**, director of the MSU Extension Service Office of Agricultural Communications, was inducted into the Southern Public Relations Hall of Fame, which was established to recognize the distinguished accomplishments, commitment, and leadership of public-relations practitioners and educators in the Southeast. North has worked for more than 25 years as an Extension and land-grant communications and

marketing professional. A recognized leader in her field, she has earned many state and national awards. She began leading strategy, branding, marketing, and communications for the MSU Extension Service in 2013. In this role, North created the *Extension Matters* magazine, developed The Food Factor video series, and spearheaded a campaign with quarterback Dak Prescott to promote colorectal cancer screening. North, who is active in many professional associations, was named national president of the Association for Communications Excellence in 2018. Before joining MSU, North served with the Texas A&M University System and the Alabama Cooperative Extension Service at Auburn University. North earned a bachelor's degree from Auburn and a master's degree from University of Rochester in New York.



**McNair**

**Taylor McNair**, a 2017 College of Agriculture and Life Sciences (CALs) agribusiness graduate, has been named 2019 Miss Rodeo America. The Learned, Mississippi, native earned the title at the conclusion of a week-long pageant consisting of a horsemanship competition, extensive interviews, extemporaneous speaking, a fashion show, and a written test on equine science and rodeo knowledge. The award

comes with more than \$20,000 in educational scholarships and additional prizes. McNair, who is the third Mississippian to claim this national title, also won appearance, personality, and written test awards, among other honors. McNair earned her bachelor's degree in agribusiness with concentrations in policy and law. While at MSU, she competed with the university's equestrian and rodeo teams and received a Mississippi Women for Agriculture-Dianne Evans Memorial Scholarship. McNair is a former 4-H'er who attributes much of her success to the youth development program. She is planning to pursue a Doctor of Jurisprudence degree with a Master of Law in Agricultural and Food Law. McNair will travel extensively over the next year as the official representative for the Professional Rodeo Cowboys Association, in addition to making appearances at schools, civic groups, and other special events to educate the public and raise awareness about the sport of rodeo.

**Wijewardana**

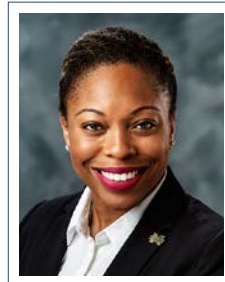
**Dr. Chaturika Wijewardana**, who recently completed a PhD in agronomy from the MSU College of Agriculture and Life Sciences, has earned a prestigious scholarship from the American Society of Agronomy. Wijewardana, a native of Sri Lanka, is the first MSU student to receive the \$5,000 Nelson Yield-Limiting Factors Graduate Student Scholarship, which encourages students to pursue leadership and research

accomplishments and focuses on long-term improvements in diagnostic techniques and solutions to combat yield-limiting factors in agronomy. Wijewardana's studies focus on identifying and quantifying the effects of yield-limiting factors including drought, heat, and cold on the growth, developmental, and reproductive performance of agricultural commodities such as soybean, corn, cotton, and rice. She also is an author or coauthor of 12 publications and has presented more than 45 abstracts, some of which have received awards at national and regional conferences. After graduating from the University of Kelaniya, Wijewardana earned a master's degree in agronomy from MSU in 2015. Dr. Raja Reddy, a research professor in the Department of Plant and Soil Sciences and director of the MAFES Soil-Plant-Atmosphere Research Unit, was Wijewardana's major professor.

**Henn**

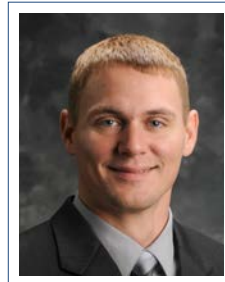
**Katrina Henn**, a senior forestry major in CFR, has received the competitive Robert Felix Memorial Scholarship from an international nonprofit focused on advancing research and education in arboriculture and urban forestry. The scholarship was awarded by the Tree Research and Education Endowment Fund, a charitable trust affiliated with the International Society of Arboriculture and the Tree

Care Industry Association. Henn is the daughter of Alan and Linda Henn of Starkville, Mississippi. She is pursuing an urban forestry concentration, along with minors in computer science and geospatial and remote sensing. Henn also received CFR's J. S. Therrell Scholarship, the Arboriculture/Urban Forestry Memorial Scholarship from the Professional Arborist Association of Mississippi, and a scholarship from the Deep South Garden Club. Henn spent time last summer in the MSU Extension Undergraduate Apprenticeship program under the direction of Dr. Jason Gordon, associate Extension forestry professor and researcher in the FWRC.

**Stallworth**

**Shandrea Stallworth**, a doctoral student in the CALS Department of Plant and Soil Sciences, has earned a prestigious NASA/ Mississippi Space Grant Consortium Graduate Research Fellowship. This \$20,000 award is designed to help produce the engineers and scientists of the future. It will provide support for Stallworth's research and academics, as well as a K-12 outreach project. Stallworth's research involves gene discovery

using weeds as a resource for finding stress-tolerant traits to benefit rice. As part of the K-12 outreach, she hopes to share her research with local fifth-graders. The Biloxi, Mississippi, native has also received the American Society of Plant Biology (ASPB) Graduate Travel Award. She serves as an early-career representative for the ASPB Science Policy Committee. She placed first in the PhD Graduate Research Poster Competition at a national Minorities in Agriculture, Natural Resources, and Related Sciences conference. Bayer Crop Science sponsored Stallworth to attend a National Association for the State Departments of Agriculture policy meeting. Stallworth also attended a Plant Science Research Network workshop. Dr. Paul Tseng, an assistant professor in plant and soil sciences, serves as Stallworth's major professor.

**Zurweller**

Mississippi State recently hired a peanut specialist to serve the state's agricultural producers. **Dr. Brendan Zurweller**, a Missouri native, began his work in the peanut industry while completing a doctoral degree in agronomy at the University of Florida. During his time there, he focused on a wide range of physiological and agronomic research under the direction of peanut scientists Barry Tillman and Diane

Rowland. Zurweller studied the impacts of agronomic practices on many crops, including peanut, cotton, corn, and soybean. He worked as a postdoctoral research associate at the Center for Stress Resilient Agriculture at the University of Florida. As a peanut specialist with the MSU Extension Service and an assistant professor in the Mississippi Agricultural and Forestry Experiment Station, Zurweller will deliver educational programs and conduct research designed to improve peanut production systems in the state. Zurweller earned his bachelor's degree in environmental science and his master's degree in soil science from the University of Missouri-Columbia.

# DevelopmentCorner



Junior forestry major Samantha Seamon of Prattville, Alabama, is the inaugural recipient of a \$10,000 Resource Management Service LLC scholarship at MSU. (Photo by Beth Wynn)

## Seamon Selected First RMS Forestry Scholar at MSU

**R**esource Management Service LLC, one of the world’s leading managers of forest investments for institutional investors, is promoting both the forestry profession and the South’s forestry industry through the creation of the RMS Forestry Scholarship at Mississippi State. Samantha Seamon, a junior forestry major in the College of Forest Resources from Prattville, Alabama, is the inaugural recipient of the \$10,000 RMS award.

“Forestry is an important profession, one that can have a very positive impact on the world, and we are pleased Samantha Seamon is the first recipient of our scholarship at Mississippi State and one of eight RMS recipients studying forestry at land-grant universities in the southern United States,” said Craig Blair, RMS president and CEO.

Blair, who holds a 1982 MSU Master of Forest Resources degree, continued, “Foresters help society meet its needs through the sustainable management of one of our most important renewable resources: our forests. This scholarship program is an effort to promote forestry as a career and to provide a pathway to the profession for deserving students like Samantha.”

In particular, Seamon is majoring in forestry with a concentration in forest management and a minor in economics. She is the daughter of Shaun and Wanda Seamon. As the first RMS scholar at MSU, she said she feels honored to pursue her dream of forestry with financial assistance.

“My brother and I are both in college, and the expense that comes along with that adds up for our family,” said Seamon. “Gaining support from RMS is a big deal to me. By taking away the financial burden of school, the company has encouraged and enabled me to completely focus on excelling in forestry.”

Through her time at MSU, Seamon has been involved with the MSU student chapter of the Society of American Foresters—serving initially as a freshman representative, then secretary, and president of one of the nation’s most outstanding chapters. Seamon is also a College of Forest Resources Ambassador, representing the academic unit by promoting forestry studies and assisting in recruitment of students.

In addition to the scholarship, Seamon is eligible for an accompanying full-time, paid summer internship with RMS, which would occur between her junior and senior years of study.

MSU is among eight land-grant universities in the South benefitting from the RMS scholarship program and internship opportunity. By achieving and maintaining established criteria, RMS recipients each are awarded \$10,000 annually for both their junior and senior years of study.

Future MSU recipients of the scholarship must be full-time, rising juniors who have a 3.0 GPA or higher enrolled in the College of Forest Resources with a major in forestry. Preference in the selection process is given to forestry students from populations that are underrepresented in the MSU student body and who have financial need.

RMS, which manages forest investments and maintains a regional office in Prattville, was founded in 1950 by John M. Bradley, a young Yale University forestry graduate, and Harry E. Murphy, a graduate of Pennsylvania State University's School of Forestry. From its beginning as a forestry consulting firm to private landowners, RMS capitalized on changing forest industry dynamics to grow and become one of the nation's leading providers of timberland investment management services. By

consistently advancing the art and science of forestry, RMS has become recognized today as an accomplished global forest investment firm, one that manages millions of acres of forest assets in North America, South America, Asia, and Oceania. As a private, employee-owned company, its investors are primarily large institutions that invest in timberland and other sectors to fund retiree pensions, capitalize university endowment programs, and provide financial resources for charitable endeavors.

For more information about Resource Management Service LLC, visit [www.resourcemgt.com](http://www.resourcemgt.com) or contact Mary Kay Greer, senior vice president, corporate communications, at (205) 980-7304 or [mgreer@resourcemgt.com](mailto:mgreer@resourcemgt.com).

To establish a scholarship in the College of Forest Resources at Mississippi State, contact Jeff Little, the college's director of development, at (662) 325-8151 or [jlittle@foundation.msstate.edu](mailto:jlittle@foundation.msstate.edu).

BY AMY CAGLE

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The university's Guide to Giving and Real Estate  
Guide to Giving are available at  
<http://www.msufoundation.com>.



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MSU President Mark E. Keenum congratulates members of the MSU student chapter of the Society of American Foresters for 20 years of ranking in the top three student chapters in the nation. Pictured are College of Forest Resources Associate Dean Ian Munn (front row, left); senior Marshall A. Callicott of Bryant, Arkansas; senior Darcey A. Collins of Bauxite, Arkansas; junior Rachel E. Nation of Milton, Florida; Keenum; junior Samantha Seamon of Prattville, Alabama; doctoral student Thu Ya Kyaw of Starkville, Mississippi; master's student William Griffin of Philadelphia, Mississippi; sophomore Adam W. Lindsey (back row, left) of Purvis, Mississippi; senior Jordan L. Childs of Grenada, Mississippi; senior Matthew S. Harrison of Cherokee, Alabama; junior Adam C. McKnight of Milton, Florida; and Dr. Robert Grala, faculty adviser of the chapter. (Photo by David Ammon)

