MISSISSIPPI LANDMARKS

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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

For some of us, the end of the year signals a time of reflection. 2018 brought many changes, and our blessings are numerous. *Mississippi LandMarks* readers know I often write about the many partners we have in the land-grant university's work of teaching, research, and service. These relationships are as vitally important now as they always have been. We could not be part of Mississippi State's impact at the local, state, national, and international levels without the individuals and groups who support and advocate for us. We appreciate you!

Extramural grants are the foundation of sustained research productivity. Success in competitive grants requires great science, excellent presentation, and considerable hard work. This past year, faculty in the Division of Agriculture, Forestry, and Veterinary Medicine secured nearly $85 million in extramural grants and contracts, accounting for 43 percent of total university research.

Over the past 8 years, the division's units systematically increased effort and success in securing extramural research funding. These units include the College of Veterinary Medicine, Forest and Wildlife Research Center, Mississippi Agricultural and Forestry Experiment Station, and MSU Extension Service. The 70 percent increase in FY2018 awards is a testimony to the quality of our faculty and the relevance of our research programs.

Before the fall semester began, we honored several outstanding faculty members with the Regions Bank DAFVM Superior Faculty Awards (see page 29). Congratulations to all of our award winners!

This fall, we celebrated yet another year of increased enrollment figures. Our overall enrollment in the division increased by 131 students for a total of 3,596. The College of Agriculture and Life Sciences welcomed 2,512 students; College of Forest Resources, 601; and College of Veterinary Medicine, 483.

Our investments in infrastructure continue, with the Department of Poultry Science building construction underway. This department is one of the top programs in the nation, and it boasts a 100 percent postgraduation placement rate. This valued program will benefit from its new location.

It's an exciting time to be part of Mississippi State University. We appreciate your continued interest in our work and wish you a joyous holiday season.

Gregory A. Bohach

GREGORY A. BOHACH

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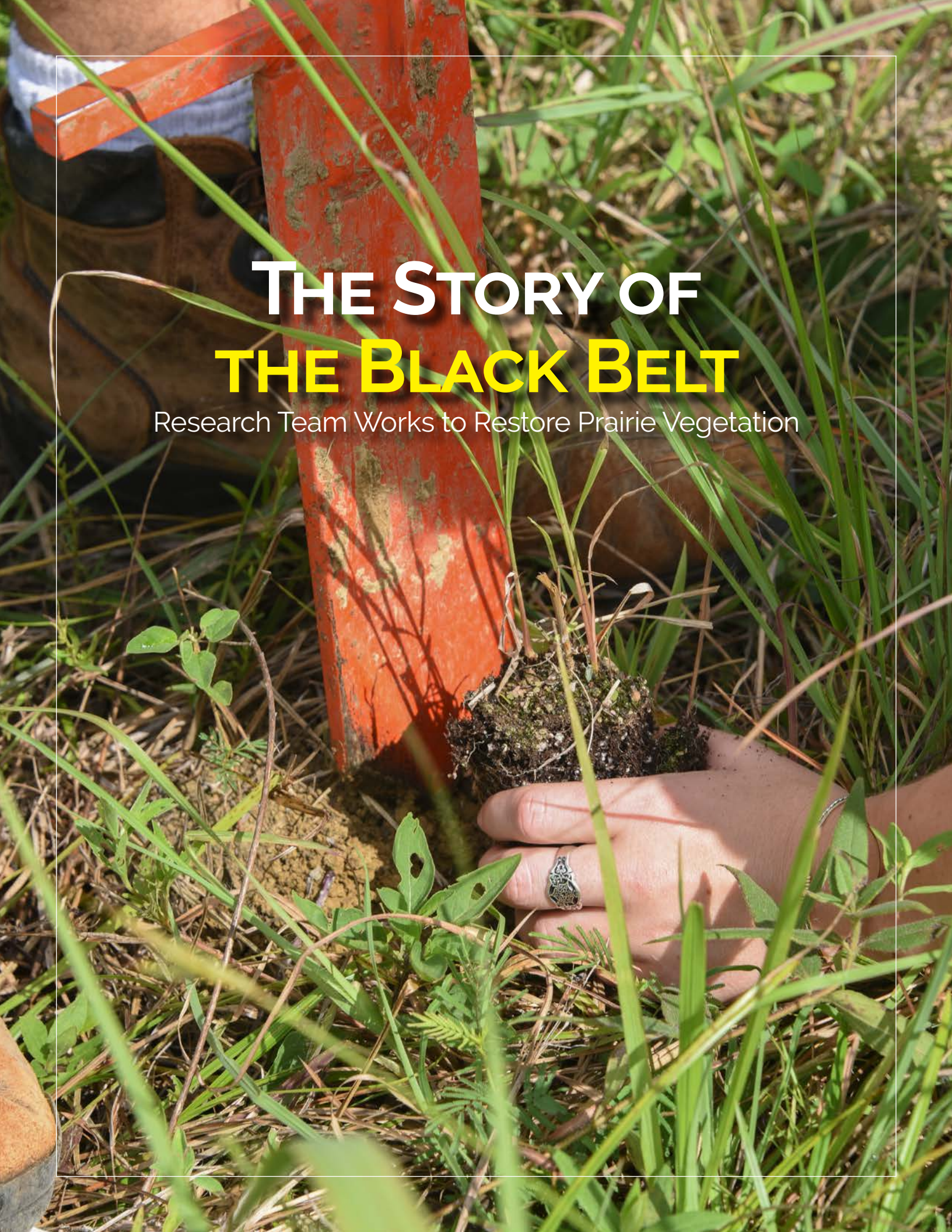
ON THE COVER

A new Veterinary Feed Directive regulates medications given to food-producing animals, requiring veterinarians and producers to make substantial changes. (Photo by Kevin Hudson)



The Story of the Black Belt

Research Team Works to Restore Prairie Vegetation

Dr. JoVonn Hill (left) and students Alex Hendon and Jordan Gesell work to reestablish native vegetation in a Black Belt prairie.

A view of the Black Belt Overlook on the Natchez Trace Parkway reveals row-crop fields in the distance, but directly in front of the viewer is a patch of land that tells the history of two competing land uses.

As with many other prairies in the Black Belt region, the native vegetation of this 8-acre grassland near Tupelo, Mississippi, includes Indiangrass, little bluestem, grayheaded coneflower, and milkweed. However, this land has been converted to agricultural production.

The transition from native prairie to hay field introduced Johnsongrass and fescue, which compromised the land's biological diversity and usefulness as wildlife habitat. Of the more than 140,000 acres in the Mississippi Black Belt, about 1 percent still exist as prairies.

Dr. JoVonn Hill works with representatives of the Natchez Trace to restore the prairie below the Black Belt Overlook while conducting fire-ant research for the U.S. Department of Agriculture.

An assistant research professor of entomology in the Mississippi Agricultural and Forestry Experiment Station, Hill is reintroducing native vegetation back to the former hay field to see if it helps control the fire ants infesting the land. College of Agriculture and Life Sciences graduate student Jordan Gesell assists in the replanting.

This effort began in 2016 as a spinoff from another site-restoration project on the Natchez Trace. Resources available at the overlook site prompted Hill to move forward with the new project. A neighboring hillside near the site still had much of its native vegetation.

"If you buy seeds from somewhere else, they're not the local genotype," Hill said. "They might be the same species, but they are not adapted to our local conditions, so we have problems establishing them here. In this case, all the seeds are coming from right across the road, which is about as local as you can get."

Nearby signage provides information about the Black Belt, its agricultural heritage, and the importance of prairies.

"If you're standing close to the sign, the hay field is right there," Hill said. "I wanted a prairie there so you could see that dichotomy between it and the crop fields. That tells the story of the Black Belt."

Gesell harvests the native seeds and grows them in greenhouses behind the Clay Lyle Entomology Lab on the MSU campus until they are large enough for transplanting.

"Some of the seeds required special preparation procedures before they could germinate, like cold stratification in a freezer for a couple of months, or physically scarifying them where they are abraded with sandpaper to remove their protective coating," Gesell said. "We would grow them in the greenhouse for a few months to a year for most of them to get to a reasonable size."

Alex Hendon, a senior English major minoring in agricultural information science, also assists in the project.

"If you're somebody who doesn't know a lot about plants, and you're not aware of what it means for a plant to be native, this looks like a natural area," she said. "Gaining that knowledge allowed me to look at a landscape and think, 'Maybe this plant isn't supposed to be here. What did this place that I'm seeing now look like then?'"

Hill said the newly planted native grasses will take 2–3 more years to establish in the field.

"My experience with these types of projects is that it usually takes a good 5 years before you start getting a good foothold," he said. "There are no overnight results."

BY NATHAN GREGORY • PHOTOS BY KEVIN HUDSON

High-School Students

Address World Hunger

Jonah Holland, Sarina Dale, and Sherquesha Stewart participate in the World Food Prize Mississippi Youth Institute. (Photo by David Ammon)

The mission of a land-grant university includes constantly working to improve food crops and to increase the food supply, goals that complement the World Food Prize.

2018 marks the second year of the World Food Prize Mississippi Youth Institute, coordinated by the MSU College of Agriculture and Life Sciences (CALS).

Dr. Norman Borlaug, an agronomist known as "the father of the Green Revolution," started the World Food Prize after he received the Nobel Peace Prize for his contributions to the world food supply in 1970. He recognized the need for an annual award to honor those who work to end hunger and improve the food supply. This prize awards $250,000 each year to highlight and inspire breakthrough achievements in improving the quality, quantity, and availability of food.

Dr. Scott Willard, CALS associate dean, worked to establish the Mississippi Youth Institute to create opportunities for young people to consider careers in agriculture and join the fight against global hunger and poverty.

"The World-Food-Prize-affiliated Mississippi Youth Institute is a conduit for us to talk with high-school students and their teachers about global food-security issues," Willard said. "It helps us bring the many facets of agriculture into the spotlight for young people to consider as future careers with a purposeful mission to feed the world."

In 2018, 14 young people participated in the research and essay portion of the event, and eight attended a daylong World Food Prize event at MSU. In addition to presenting and defending their research findings to a panel of agricultural professionals, they attended a food-security lecture by Dr. Charles H. Beady Jr., CEO of the Mississippi Food Network.

Beady called Mississippi the hungriest state in the nation. More than 20 percent of the state's households are at risk for

World Food Prize Mississippi Youth Institute participants included Shelby Wheat (front left), Sarina Dale, Abigail Shaw, Sherquesha Stewart, Ayden Richardson, Tomyah Smith, Tera Dora, and Jilkiah Bryant; Mary Driskill (back left), Quentin Jamison, Jarius Hudgins, Kaleb Kellum, Dominique Key, and Jonah Holland. (Photo by Dominique Belcher)

> "As a 4-H member, I knew about agriculture but wasn't really involved in it. I came to learn how I can help better the world. A panelist helped me see I can combine biochemistry and agriculture and use it to benefit other countries."
>
> JILKIAH BRYANT

hunger, compared with the national average of 12.7 percent. Almost 24 percent of the state lives below the poverty line, and more than half of these people are the most vulnerable: children and senior adults.

MSU President Mark Keenum launched the day by casting a vision for the young people.

"I don't know what the world has in store for all of us, but I can tell you this: It's going to be a lot different than it is today in many ways," Keenum said.

Almost 1 billion of the 7 billion people in the world are malnourished, he observed. By 2050, in the prime of current high-school students' careers, the world will have more than 9.8 billion people.

"We have to find a way to feed another 3 billion people who will be at our global dinner table in your early lifetime," he said. "We can't feed everyone today, so that is a pretty daunting challenge. That's why we need young, bright, talented scholars like yourselves who take an interest in their world and future to try to make a difference and serve humanity."

Jilkiah Bryant, a Mississippi 4-H member and junior from Macon, Mississippi, who attends the Mississippi School for Mathematics and Science, is interested in biochemistry.

"As a 4-H member, I knew about agriculture but wasn't really involved in it," Bryant said. "I came to learn how I can help better the world. A panelist helped me see I can combine biochemistry and agriculture and use it to benefit other countries."

Jonah Holland, a home-schooled senior from Belmont, Mississippi, said the experience expanded his understanding of the state's food insecurity problem.

"I wasn't aware of the strong need in the state," Holland said. "It's been eye-opening to see how many organizations work to address this problem."

BY BONNIE COBLENTZ

Dr. Tom Tabler uses thermal-imaging technology to help producers regulate heat inside poultry houses.

Thermal Imaging

Used to Control Poultry House Heat

In a state where temperatures exceed 90 degrees more than 100 days a year, heat control in poultry houses is a very important consideration for Mississippi's biggest agricultural industry.

"Feed conversion in chickens is determined in large part by how well you regulate the temperature inside the poultry house," said Dr. Tom Tabler, poultry specialist with the MSU Extension Service.

In the winter, poultry houses have to be kept warm enough to ensure that growing chickens efficiently use their feed energy for growth, not to maintain body temperature. In the summer, chickens that are too warm eat less and grow slowly.

"Feed energy used for anything other than growth is detrimental to feed efficiency and flock performance," he said.

Many growers ask Tabler to visit their poultry houses to help address a variety of environmental and management issues. Among the most important is house temperature control. He uses a thermal-imaging camera to look for hot or cold spots that indicate problem areas in temperature management.

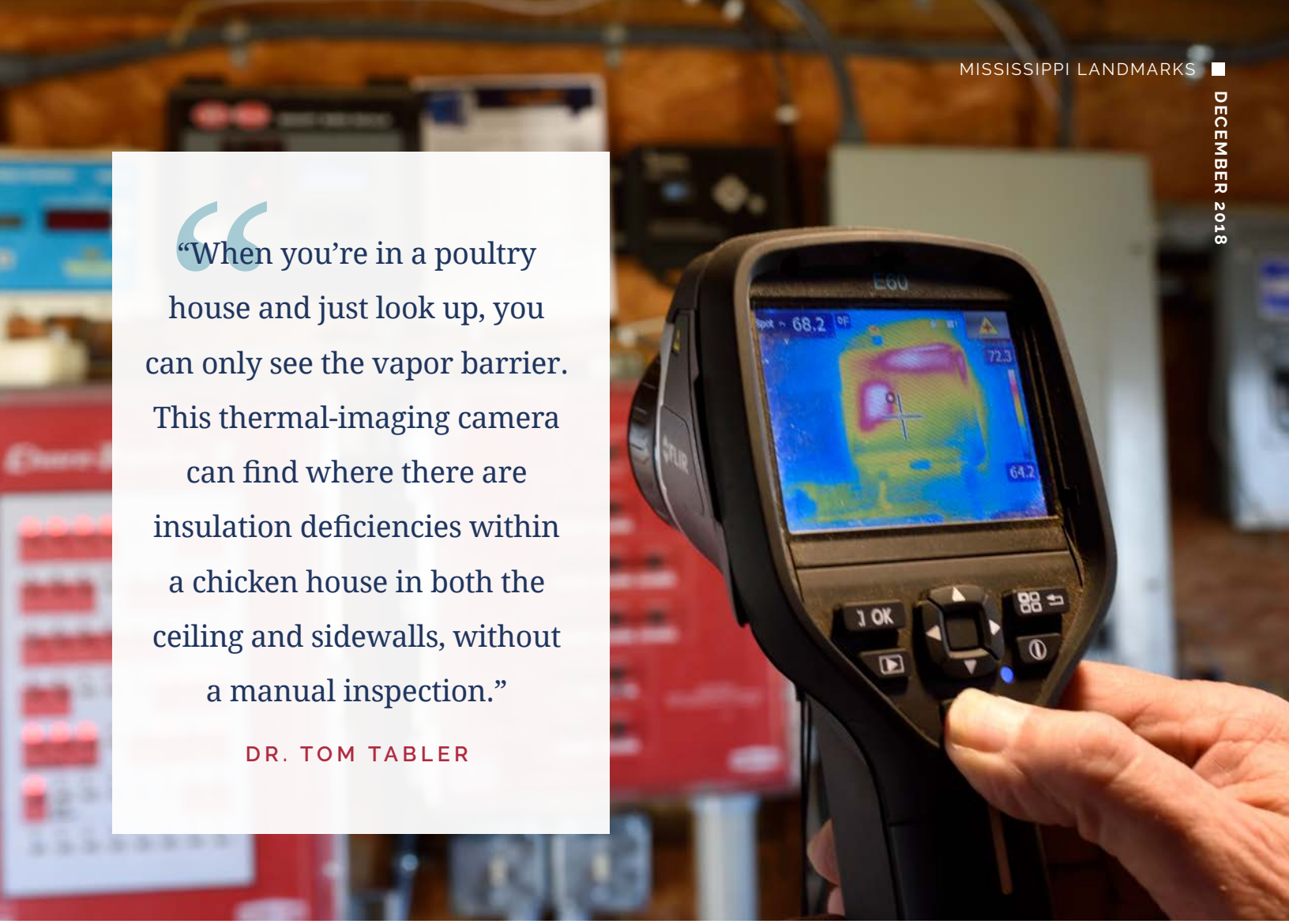
"A thermal camera's image indicates clearly where there is a difference in temperature," Tabler said. "In the summer, we look for leaks where heat is coming into the poultry houses. In the winter, we look for areas where heated air may be lost to the outside and driving up fuel costs."

Thermal images indicate where insulation is needed. When a poultry house is properly insulated and sealed, growers can precisely and efficiently manage inside temperature and fresh air intake.

"When you're in a poultry house and just look up, you can only see the vapor barrier," he said. "This thermal-imaging camera can find where there are insulation deficiencies within a chicken house in both the ceiling and sidewalls, without a manual inspection."

"Broiler farmers get chickens the day they hatch out," Tabler explained. "One-day-old chickens need to be kept at 90 to 92 degrees, because that's the temperature the mother hen would have kept them at. As they get older, they need less heat."

Poultry houses use computerized temperature control to specifically meet each flock's daily needs. When temperature in a



> "When you're in a poultry house and just look up, you can only see the vapor barrier. This thermal-imaging camera can find where there are insulation deficiencies within a chicken house in both the ceiling and sidewalls, without a manual inspection."
>
> DR. TOM TABLER

house is managed correctly, producers can efficiently grow a flock to the right size in an exact timeframe.

The poultry industry contracts with broiler growers to produce certain-sized chickens to meet their market needs for a specific cut of meat.

"It is costly to both the grower and the poultry company if it takes extra time to reach the intended target weight," he said. "Ideally, when the proper temperature profile is maintained, a flock reaches the intended target weight on the intended market day."

Dr. Mary Beck, head of the MSU Department of Poultry Science, said Mississippi State offers this thermal-imaging service at no charge as part of its support of the state's poultry industry.

"When poultry growers in Mississippi have questions or concerns about the operation of the farm, chick health, or management decisions, Dr. Tabler can provide expertise and assistance—but always within the constraints of the management guidelines of the respective integrator company," Beck said.

BY BONNIE COBLENTZ • PHOTOS BY KEVIN HUDSON

Feeding the World

Student Researcher Studies Yield Improvement in Soybeans

Plant science doctoral student Chathurika Wijewardana studies drought conditions in soybeans.

Chathurika Wijewardana's love of plants started when she was a young child. Now, that passion is helping to improve one of the world's most important food crops: soybeans.

"I watched my grandfather farm several acres of rice," said Wijewardana, a native of Kiribathgoda, a large suburb of Sri Lanka's capital. "My dad had a home garden where I worked as his little helper—watering, sowing seeds, and picking ripe fruit. I enjoyed the dirt, the sunshine, and watching the plants grow."

As she got older, Wijewardana began to understand the importance of plants in the overall ecosystem and became even more fascinated by them. Although she always wanted to study medicine, she was not among the very few admitted to medical school in Sri Lanka.

So, she decided to concentrate on her affinity for plants. After earning a bachelor's degree in microbiology from University of Kelaniya Sri Lanka, she got a master's in agronomy with a concentration in plant physiology in the MSU College of Agriculture and Life Sciences. She is now pursuing a doctorate in plant science, continuing her research on the effects of environmental stressors, including drought, temperature, ultraviolet radiation, and elevated carbon-dioxide levels, on corn, cotton, soybeans, sweet potatoes, and rice.

Her research on drought and soybeans earned her the prestigious Nelson Yield-Limiting Factor Graduate Student Award from the Society of Agronomy. She is the first MSU student to receive this recognition.

"Soybeans are one of the major export commodities and produce more oil and protein per unit of land than any other crop," Wijewardana said. "These products are used widely for both human and animal food. But drought is the most serious threat to crop production worldwide and can cause U.S. producers to suffer major yield losses."

Through her research, she wants to help farmers optimize production by identifying the best plant varieties to grow with various methods of irrigation. In the Midsouth, more than 60 percent of soybean fields rely on rain alone. But the timing and amounts of summertime precipitation can be highly erratic, especially in June and July when soybeans are in their most critical stage of development.

"Relatively little is known about the impact of different water stress levels on significant plant processes at whole-plant levels and yield-distribution patterns," Wijewardana said. "There is also a knowledge gap about which genetic traits help determine drought tolerance."

Soybeans are most vulnerable to damage from drought during germination, which can affect not only the current crop, but also future crops. Wijewardana wants to understand how drought damage impacts seed quality—and ultimately, yield—in future generations of crops.

She and her colleagues exposed growth-chamber-grown soybeans to drought conditions. They measured yield indicators, including seed, flower, and pod numbers, on these plants. The researchers planted seed from the growth-chamber plants in a field setting. Results show that a drought that occurred two seasons ago can affect the ability of seeds from the grandparent plants to germinate and produce high-yielding plants.

What she learns should help growers adjust management practices and schedule irrigation to get the highest yield from their crops, as well as help other researchers develop drought-tolerant cultivars.

Wijewardana's adviser, Dr. Raja Reddy, a research professor in the MSU Department of Plant and Soil Sciences and a researcher in the Mississippi Agricultural and Forestry Experiment Station, said her work is incredibly important.

"The world today is facing the challenge of feeding a population that is expected to swell to more than 9 billion people by 2050," he said. "Drought is one of the major stressors that limit crop production."

BY SUSAN COLLINS-SMITH •
PHOTOS BY JONAH HOLLAND

Master Naturalists

Take the Classroom Outdoors

> "Each program is designed on the same foundation. We teach from the ground up—from paleontology and soils to ecology—diversifying into the regions we live in."
>
> DR. ADAM ROHNKE

There they are: a group of adults, aged 20 to 70, playing in the pouring rain. Or maybe they are stationed along the Pearl River, studying marshes, netting birds in the forest, or removing 36,000 pounds of trash. While some call them adventurous, in Mississippi, they are known as Master Naturalist volunteers.

Part of the MSU Extension Service, the Master Naturalist Program helps community members protect and conserve Mississippi's natural resources through education and community service. Two volunteer groups are now in operation: one on the Gulf Coast and one in Jackson. The program's curriculum reflects regional geography and combines classroom and hands-on learning.

"Each program is designed on the same foundation," said Dr. Adam Rohnke, Central Mississippi Master Naturalist Program co-coordinator. "We teach from the ground up—from paleontology and soils to ecology—diversifying into the regions we live in. The diversity is represented in our field trips, too, whether they involve coastal or upland ecology. We try and make it as hands-on, interactive, and fun as we can."

Rohnke said excursions complement classroom and lab time. For example, after completing classroom research, students might use binoculars to observe birds and learn how wildlife research is conducted in the field. One of Rohnke's favorite interactive experiences was a rainy trip to Pearl River.

"We go down a muddy trail toward the river, and we could barely hear each other because the rain is so loud," he said. "People from 20 to 70 years old had water up to their waists. Someone even yelled, 'I haven't played in the rain like this since I was a kid.' Everyone was falling and slipping, so we all became buddies after that."

Dr. Eric Sparks, co-coordinator of the Coastal Master Naturalist Program, has similarly developed community relationships through class trips. One connection led to a better school curriculum on the coast.

Central Mississippi Master Naturalists prepare to collect fish samples in the Pearl River (photo on page 12): Matt Wagner (left), Laura Lillard, Douglas Watson, Foch Dickens, Jennifer Sigrest, Jason Douglass, Abby Braman, Leah Heath, Billy Mitchell, Beverly Keaton, Bettye May, Katey Carter, Deloris Stringer, and Dr. Adam Rohnke. Wagner (top left photo, kneeling), a conservation resource biologist with the Mississippi Department of Wildlife, Fisheries, and Parks puts collected fish into a tank. Rohnke (top right photo) displays fish caught in a seine.

"The high-school curriculum coordinator for our school district was in our 2015 class," Sparks said. "Working with her has helped us team up on broader issues within high schools, like what education programs they need and finding funding for that."

Other learning opportunities on the coast have included looking at marshes, sea grass, wetlands, and offshore fishing to observe aquatic communities. Coastal Master Naturalist volunteers even measure water salinity to look at variables in fish populations.

Rohnke is a senior Extension associate at the Central Mississippi Research and Extension Center, and Sparks is an assistant Extension professor at the Coastal Research and Extension Center. They agree that teaching others about the environment and building relationships make the program worthwhile.

Claire Graves, a Central Mississippi Master Naturalist volunteer, is one such connection. In 2017, she brainstormed an idea to plant magnolias to celebrate the state's bicentennial anniversary, and the project was quickly implemented.

"I joined because I wanted to meet people with similar interests," Graves said. "My class was a really diverse group of people from teachers, to judges, to preachers and moms. Our different histories led us together."

Graves said she is grateful for the many partnerships within Extension that support the Master Naturalist Program.

There are a lot of partnerships between Extension and other groups, like Mississippi Wildlife, Fisheries, and Parks; the Mississippi Wildlife Federation; and the Mississippi Museum of Natural Science," Graves said. "Extension is really well-suited to make these connections and have us benefit from them."

Graves said the program's creative and complex curriculum helps participants become better stewards of their environment.

"The knowledge you gain is really empowering, and it enhances your ability to appreciate the natural world and teach others about it," she said.

BY LINDSAY PACE • PHOTOS BY KEVIN HUDSON

New Rules, Same Mission

Updated Feed Rules Protect Animals and Humans

To ensure the proper use of antibiotics in food-producing animals, the U.S. Food and Drug Administration instituted new regulations in 2017 that prevented many medically important antimicrobials used in feed or water from being sold over-the-counter.

Governed by the FDA Center for Veterinary Medicine, the Veterinary Feed Directive (VFD) regulates medications given to food-producing animals, including cattle, chickens, honeybees, and fish. The changes help ensure the careful use of seven classes of antimicrobial drugs used to treat illness in humans and animals.

Mississippi veterinarians and livestock producers faced substantial changes under the VFD, but they have received invaluable guidance and support from Dr. Carla Huston, an associate professor in the MSU College of Veterinary Medicine (CVM) Department of Pathobiology and Population Medicine.

Dr. Jim Brett works with producers to help reinforce existing on-farm strategies to reduce the need for antibiotics.

"The process is going well," said Huston, who is also the MSU Extension Service state veterinary specialist. "We want to reduce the unnecessary use of medicated feed and maintain veterinary oversight of the use of these drugs. These revisions will help preserve the availability of antibiotics for animal health and protect the quality and wholesomeness of the food supply."

Veterinarians, producers, feed mills, and other distributors all bear the responsibility of following the regulations. The directive requires producers to obtain a written VFD from a licensed veterinarian with whom they have an established relationship before feeding products medicated with antimicrobials that FDA defines as medically important. Feed mills may sell medicated feed only to individuals who provide them with a VFD. In the past, just four drugs fell under the directive, and only one of those was commonly used in Mississippi aquaculture operations.

"Everyone—veterinarians, producers, and distributors—has had a huge learning curve with the new regulations," Huston said. "There are lots of details, and everyone has to make sure they are following the process properly. Veterinarians have to make sure they are calculating the medications correctly to be sure the animals get the right doses. Producers have to make sure they are following the labeled feeding directions. For example, most medicated feeds for cattle should be hand-fed daily to animals."

Although the rule change is a point of contention for some, Huston said she's generally seen compliance from all parties.

"There will always be people who skirt the system," she said. "But most people understand it's the cost of doing business, and, in the long run, the regulations are a good thing. They help us protect the food supply and ensure that we will have the tools we need to keep our livestock healthy in the future. And, given the increased scrutiny food production is under from the public and the government, this can only help us."

Based on his work with cattle producers, Dr. Jim Brett, an associate clinical professor and member of the ambulatory service at CVM, said he believes the rules are achieving their intended purpose. After a year under the new regulations, Brett said Mississippi producers had not reported any negative health impacts to their cattle. In fact, he expects that producers will save money.

Dr. Carla Huston helps guide veterinarians and livestock producers through new Veterinary Feed Directive regulations.

"If we focus on a good vaccination program, proper nutrition, and healthy animal environments, we reduce our need for antibiotics," he said. "That's a win-win for producers. They may spend money on services on the front end, but, in the long run, I think they will find that it's less expensive to focus mostly on sound management practices. Antibiotics can get expensive. They might not cost much looking at it yearly. But those costs add up over years."

The feed industry has taken steps to make following the rules easier on veterinarians and producers, Huston said.

"The industry has really stepped up," she said. "They created precalculated forms that are already made up and have been individually approved by the FDA for specific species and ailments. That has helped. Multiple electronic VFD forms and delivery systems are also available."

BY SUSAN COLLINS-SMITH • PHOTOS BY KEVIN HUDSON

Insect Team

Battles State's Crop Threats

Dr. Fred Musser uses a drop cloth to collect insect specimens in the field.

A team of experts with different areas of emphasis is bringing a unified approach to insect management in Mississippi's row crops.

Dr. Jeff Gore and Dr. Don Cook are Mississippi Agricultural and Forestry Experiment Station research entomologists working out of the MSU Delta Research and Extension Center in Stoneville. Dr. Angus Catchot and Dr. Fred Musser are based in the MSU Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology on the main campus in Starkville.

When a Mississippi row-crop producer has a problem with insects, a call, text, or tweet to one of these experts rallies the whole team to find solutions. Catchot, a specialist with the MSU Extension Service, said constant communication is key to their teamwork.

"We have group texts with each other and with entomologists in neighboring states," Catchot said. "When a grower calls needing advice for a problem, they need an answer quickly. If they can't reach me, they will call someone else. But they will get the same answer because we're all on the same page. The last thing you want is mixed signals. Because we're always communicating, we can make the same recommendations."

Each entomologist has a different focus area within the team. Cook takes the lead on corn and soybeans, while Gore works primarily with cotton, peanuts, and rice. Catchot takes on applied research projects, and Musser handles the lab work.

Although they each have areas of primary responsibility, all are willing and available to step in and help each other when needed, Gore said.

Musser (left), Dr. Jeff Gore, Dr. Don Cook, and Dr. Angus Catchot offer research and Extension programs to improve insect management in Mississippi row crops.

> "We realize we're working for the people of Mississippi. If we can leave our egos at the door and have the common goal of solving problems for our growers, then it will make them more profitable and will help the people of Mississippi grow crops in an environmentally friendly way."
>
> DR. JEFF GORE

"Many times, PhD scientists at universities have big egos and get very defensive about their areas of research or Extension," Gore said. "I think one of our greatest strengths is we are not like that. We realize we're working for the people of Mississippi. If we can leave our egos at the door and have the common goal of solving problems for our growers, then it will make them more profitable and will help the people of Mississippi grow crops in an environmentally friendly way."

Gore is primarily a researcher, but he does do a lot of Extension work through field days, grower meetings, troubleshooting in the field, and answering questions. His research projects are based on the issues facing today's growers.

His current projects include the survival rate of bollworms on Bt cotton, early stinkbug infestation in corn, validating soybean looper thresholds, management of rice water weevils, and defoliation thresholds in peanuts.

"The land-grant mission is to improve the lives of the people of the state of Mississippi," Cook said. "Growers are part of that group of citizens. We're trying to make them more profitable and their business sustainable."

When questions arise that cannot be tested in the field, they typically go to Musser in the lab. He does extensive work tracking and screening increasing insect resistance to certain pesticides.

"Insect rearing is a major thrust of my program, and I do a lot of bioassay work," Musser said. "The other three are more field-oriented, and my program has evolved into being more lab-based, and it complements the work they're doing."

BY BONNIE COBLENTZ • PHOTOS BY KEVIN HUDSON

Dr. Beth Stokes (third from right) is the faculty adviser for an all-female group of sustainable bioproduct researchers.

"It's About What You Know"

Diverse Research Team Demonstrates Strength

Everything about them seems unconventional: They are a group of women conducting research in a male-dominated field, they come from different countries, and they attend one of the top three schools for their field of study.

Julianna Stratton, Maryam Mohammadi-Aragh, Gabrielly Bobadilha, Dr. Lakshmi Narayanan, and Dr. Tamara Franca are members of an all-female cohort researching sustainable bioproducts at Mississippi State.

They focus on renewable-resource research in the MSU Forest and Wildlife Research Center. Together, they study some of the most important and innovative products on the market, from plywood adhesives to cross-laminated timber. While vastly different, all of their work contributes to the use of wood over unsustainable alternatives.

Dr. Beth Stokes, their faculty adviser and an assistant professor in the College of Forest Resources, says the group's research is groundbreaking.

"We're involved in so many different levels of research—from metagenomics, to new products and protection, to environmental safety, to industry applications—and it's been really interesting to watch that develop within our group," Stokes said.

"It's a great source of pride that our college and center have been successful at diversifying our research teams and that more and more women and minorities are choosing our program for their education, training, or career," said Dr. Rubin Shmulsky, head of the Department of Sustainable Bioproducts. "The best ideas and the most meaningful results come only when we have the top talent, and a great effort goes into becoming a professional destination of choice. This team typifies that commitment. In order to retain and grow our competitive edge, I look for us to continue and enhance our commitment to gender, minority, and the many other forms of diversity while still competitively selecting the best possible individuals."

The group did not intentionally band together. They all agree that it actually happened by chance. Either administrative staff members notified Stokes that the women shared a common interest within her specialization, or they joined a preexisting project that she facilitated.

"I didn't start out trying to build an all-female lab," Stokes said, laughing. "But it really works for us."

The labmates work well together largely because their research is complementary. Bobadilha, for example, studies

Members of the research team include Dr. Tamara Suely Filgueira Amorim Franca (left), Maryam Mohammadi-Aragh, Julianna Stratton, Dr. Lakshmi Narayanan, and Gabrielly Dos Santos Bobadilha. Franca and Narayanan are postdoctoral researchers, while Mohammadi-Aragh, Stratton, and Bobadilha are PhD students.

"We're involved in so many different levels of research—from metagenomics, to new products and protection, to environmental safety, to industry applications—and it's been really interesting to watch that develop within our group."

DR. BETH STOKES

cross-laminated timber—timber structured crossways to form a resistant base. Stratton researches plywood adhesives. Narayanan and Franca study the durability of wood against bacteria and termites. Mohammadi-Aragh is creating a compost with wood waste. These combined efforts impact ongoing global projects, such as an effort to design minimal-waste buildings out of cross-laminated and treated wood.

"Everybody uses wood," Stratton said. "It's in food, paper, and furniture. If everyone needs it, then you try to find ways to get into that industry."

Because of this reality, sustainable bioproducts is a multidisciplinary program, Narayanan said.

"We have students from biology, chemistry, marketing, social sciences, architecture, and forestry," she said.

Though the students garner attention for their diverse studies, they are also unique in that they are a multicultural female collective. Their department has accepted women from 11 different countries, including China, Brazil, Korea, India, Iran, and Turkey. Many faculty members also come from across the globe, and the department itself holds international connections important to the sustainable-bioproducts industry.

"I love the diversity," Bobadilha said. "I never had these kinds of relationships with people in Brazil."

Stratton said she enjoys the opportunity to go to international conferences.

"We get to have outside influences in addition to the wide range of resources we already get in our department," she said.

Their eclectic group of studies provides them each with infinite possibilities, from teaching future students to designing game boards or procuring guitars.

"Almost everything can be traced back to wood," Stokes said. "It makes our graduates very broad of scope, so, whatever they want to do, they can fit in."

Ultimately, each woman looks forward to a different career. Some want to continue research, while others want to teach or work in the wood industry. Noting that their paths will eventually diverge, they reflected on the empowerment not only within their all-female community, but also in their entire department.

"It's never been about your gender, but about what you know," Stratton said.

BY LINDSAY PACE • PHOTOS BY KEVIN HUDSON

Congress Establishes Water Research Center

in the Delta

"In a time of great budget cuts, this shows how important water quality and availability is to the Mississippi Delta. Research at the Mississippi River Valley Alluvial Aquifer Water Research Center will gain synergy by having MSU and ARS personnel working together in one place."

DR. JEFF JOHNSON

Dr. Martin Locke (left), director of the ARS National Sedimentation Laboratory; Dr. Jeff Johnson, head of the MSU Delta Research and Extension Center; and Dr. Greg Bohach, vice president for the MSU Division of Agriculture, Forestry, and Veterinary Medicine, stand at the site of the newly created research center.

A new research center in the Mississippi Delta is tasked with studying agricultural water management to protect this critical natural resource.

Dr. Jeff Johnson, head of the MSU Delta Research and Extension Center, said the center primarily focuses on waters in Mississippi, Louisiana, Arkansas, and Missouri. Plans for establishing the facility began in 2014 after several meetings with researchers, regional farmers, and stakeholders to discuss water-related research in the Lower Mississippi River region.

A cooperative venture between the Mississippi Agricultural and Forestry Experiment Station (MAFES) and the U.S. Department of Agriculture Agricultural Research Service (USDA-ARS), the center will be located at the MAFES West Farm, a former Monsanto facility, on the Stoneville campus.

Johnson and Dr. Martin Locke, director of the ARS National Sedimentation Laboratory in Oxford, Mississippi, coauthored a paper detailing current research and future needs based on information gathered in the preplanning meetings. They asserted that easily available water at relatively low costs in the Mississippi River Valley Alluvial Aquifer has encouraged an overreliance on the underground source for irrigation. Their paper provided the basis for regional customers and stakeholders to request an appropriation from USDA-ARS, which was approved in the 2017 federal budget.

"In a time of great budget cuts, this shows how important water quality and availability is to the Mississippi Delta," Johnson said. "Research at the Mississippi River Valley Alluvial Aquifer Water Research Center will gain synergy by having MAFES and ARS personnel working together in one place."

Collaborations in the Lower Mississippi River Basin will include researchers from MAFES, several USDA-ARS research units, the University of Mississippi, the University of Arkansas, Arkansas State University, Louisiana State University, and the University of Missouri.

Locke said scientists and stakeholders identified several issues and needs related to water management, including management practices, irrigation technologies, agronomic practices, simulation models, economic analysis, hydrology, and climate.

"As we worked through these issues, we identified areas of expertise and types of scientists we needed, and then prioritized them," he said.

The $3 million annual budget will be divided evenly between MAFES and ARS. In addition to purchasing equipment and redesigning the building, the budget includes funds for new personnel. MAFES will add three new positions: an agricultural engineer, an agronomist, and a natural-resource economist. ARS will hire an agricultural engineer, a plant physiologist, and a soil scientist.

"We want to develop integrated methods to conserve dwindling water resources; i.e., reduce water usage through management," Locke said. "Secondly, we seek to improve on what we have through irrigation and crop-management systems that enhance soil health, water availability and quality, and crop productivity."

Locke said the center will assess the profitability and risks associated with agriculture and conservation systems in the region.

"We also want to assess surface and subsurface water, surface runoff, and contaminant movement in conservation crop-production systems at plot and field levels," he said.

Johnson said support from Senator Thad Cochran, the Delta Council, and the Mississippi Farm Bureau Federation was essential in pushing this project forward.

"Customers and stakeholders requested a coordinated effort for new technologies to address water balances, increase state and federal personnel to conduct research, and establish a water-resource research center to lead the effort," he said. "The proposed multistate, multi-institution, and multidisciplinary consortium should improve collaboration among scientists, better coordinate research and resource priorities, and enhance technology transfer from the research institutions to the public."

BY LINDA BREAZEALE • PHOTOS BY KEVIN HUDSON

Dr. Sharon Grace (right) and Leslie Payne work to provide care for women and pets escaping domestic violence.

Answering a Calling

Veterinarian Provides Safe Haven for Animals

Leslie Payne knows women often delay leaving an abusive partner if they can't secure safe havens for their pets. Dr. Sharon Grace has seen firsthand why women won't leave these family members behind.

Together, Payne and Grace work to provide a short-term boarding and medical-care program for the benefit of such women and their pets. Payne is executive director of Care Lodge Domestic Violence Shelter, and Grace is a clinical professor in the MSU College of Veterinary Medicine (CVM).

Grace explained the project's beginning. In the mid-1990s, a compassionate neighbor brought an abused kitten to Grace's clinic in Franklin, Tennessee. Cleopatra, as she became known, had been tortured and set on fire by her owner after she missed the litter box. Despite intensive care and a 4-month fight, Cleopatra died.

"What happened to Cleopatra was the most difficult thing I've encountered in 31 years as a veterinarian," said Grace, an MSU alumna who joined the CVM Department of Clinical Sciences in 1999. "As I was grieving for her, a very wise person offered this advice: To move forward, you must rewrite the end of her story."

To accomplish this goal, Grace began providing free medical care and housing to animals in crisis at her Tennessee clinic. Now, she works with the MSU-based Safe Haven for Pets program.

Launched in 2008 after a chance meeting with Payne, the program provides free, temporary boarding and care for pets of women and children entering Care Lodge in Meridian, Mississippi.

"I brought the idea for the program with me but couldn't get past the logistics of getting started," Grace said. "I had all the excuses in the book: There is no money, no one to help. Then I happened to sit by Leslie at a domestic violence conference I went to, and she asked for my help. Afterward, I just said to myself, 'I have to help.'"

Grant funds helped start the program, and it now runs entirely on donations. The funds provide vaccines, flea and tick control, spay or neuter surgeries, heartworm and parasite testing and treatment, and any other medically necessary treatment. Transportation to and from MSU is also provided, and pet food is often donated by companies.

> "It is heartwarming to see these animals that are pretty timid and untrusting of humans when they come in transform by the time they are ready to leave. It's really an eye-opening experience for our students, which can help them later when they may deal with clients who are in crisis situations or when they want to pursue this type of service work."
>
> DR. CHRISTINE BRYAN

Dr. Christine Bryan and veterinary technology student Caleigh Greene examine a canine patient.

Sixty-seven animals have spent a total of 2,000 days in the program since it began. Pets stay until their owners can return for them, from days to months. Third-year veterinary students deliver hands-on care under the supervision of Dr. Christine Bryan, who volunteered to take on the day-to-day medical care of these patients 5 years ago.

"It is heartwarming to see these animals that are pretty timid and untrusting of humans when they come in transform by the time they are ready to leave," said Bryan, an associate clinical professor in the Department of Clinical Sciences. "It's really an eye-opening experience for our students, which can help them later when they may deal with clients who are in crisis situations or when they want to pursue this type of service work."

Payne said the thriving partnership has been a godsend to Care Lodge clients.

"Pets are part of our families," she said. "They are really like our children in a way. Many times, victims are very reluctant to leave an abusive relationship because they don't want to leave their pets behind to be subjected to abuse. With this program in place, we can help more women seek safe shelter because they know their pets will be safe."

To donate to the Safe Haven Fund, contact Jimmy Kight at (662) 325-5893 or jkight@foundation.msstate.edu.

BY SUSAN COLLINS-SMITH • PHOTOS BY TOM THOMPSON

Organic Certification and Cover Crops

Benefit Fruit and Vegetable Growers

Organic produce sales in the U.S. reached $16 billion last year, and demand is projected to continue.

Dr. Casey Barickman, MSU Extension Service vegetable specialist and Mississippi Agricultural and Forestry Experiment Station researcher, wants to see Mississippi become more involved in that growing market. One of his major goals is to help growers see the value in earning official accreditation known as "certified organic."

"Some other Southeastern states have led the way, and I think we are doing a little catch-up," Barickman said. "A lot of it has to do with market and consumer demands. A lot of times our growers are small enough that they might be doing direct-to-consumer marketing at farmers' markets, so they haven't deemed it necessary to become certified."

Based at the North Mississippi Research and Extension Center in Verona, Barickman is involved in several grant-funded projects related to various aspects of organic and sustainable production. One project is a multi-university, USDA-sponsored effort known as the Southeastern Organic Partnership. A collaboration with the Mississippi Department of Agriculture and Commerce (MDAC) involves promoting the use of cover crops in fruit and vegetable gardens.

The Southeastern Organic Partnership enlists growers in various Southeastern states to conduct variety trials. Each grower tests two crops, one picked from a list and another of his or her own choosing. They evaluate germination rates, vigor, development, and yield to determine which specific varieties performed best. University officials collect the data and share it with other organic growers.

Tuskegee University is the lead institution on this USDA project, with MSU and North Carolina State University assisting in plant production and Auburn University contributing economic and marketing research.

"Some of the growers I'm working with are transitioning, meaning they are working toward getting certified," Barickman said. "We are advocating for more growers to expand their operations and think about a portion of their operations being certified organic so they can get into commercial markets like grocery stores. This project has allowed us to have a good conversation about organic production in Mississippi."

Barickman's collaboration with MDAC involves studying the benefits of winter cover crops and examining which varieties best protect certain fruits and vegetables from pests and disease. Some Mississippi producers are already using trial varieties he

Dr. Casey Barickman (left) and Dr. Jeff Wilson study the benefits of using winter cover crops to protect fruits and vegetables from insects and diseases.

> "We are advocating for more growers to expand their operations and think about a portion of their operations being certified organic so they can get into commercial markets like grocery stores."
>
> DR. CASEY BARICKMAN

is testing, including winter cereal rye, vetch, and winter wheat. Barickman evaluates the effectiveness of cover crops on tomato and squash yield and quality.

"Growing cover crops reduces erosion, allows for better soil structure, increases beneficial microbial populations within the soil, and chokes out weeds," he said. "These crops also increase water infiltration rates and help beneficial insects come in and control the pests and diseases that might be harmful to vegetable crops."

Barickman advocates the benefits of cover crops at field days and the annual North Mississippi Fruit and Vegetable Growers Conference in Verona. Extension horticulture specialist Dr. Jeff Wilson assists Barickman with planting, harvesting, and writing Extension publications to complement his research.

"With most research, the question from growers is, 'How does this benefit me?' or 'What are the real-world applications of this?'" Wilson said. "The primary objective each time is to decrease inputs for the grower. All the things cover crops do allow plants to grow in a more efficient manner and be healthier. This means less watering, less weeding, less fertilizing, less spraying, and hopefully more profit for the producer."

BY NATHAN GREGORY • PHOTOS BY KEVIN HUDSON

Poultry Science Celebrates Milestone:

70th Anniversary of First Bachelor's Degree

Seven decades after E. W. "Ed" Garrison earned the state's first bachelor's degree in poultry science, Mississippi State students and faculty continue their strong academic traditions.

Garrison received his undergraduate degree in May 1948 from the Department of Poultry Science, which had been created during the 1946–47 school year. The Starkville, Mississippi, native later returned as a poultry specialist with the Mississippi Cooperative Extension Service.

Dr. Wallace Morgan joined the faculty in 1980 and retired as poultry science department head in 2007. However, his roots in the department date back to the mid-1940s when the college hired his father to be the poultry farm foreman.

"Teaching was the cornerstone for the founding of the department, and the faculty members have continued to work hard to produce outstanding students who are practical thinkers," Morgan said. "They have great reasoning skills and are problem solvers for Mississippi's poultry industry."

The history of poultry efforts at MSU date back to 1904, when R. N. Crane became the first poultry staff member hired by the Mississippi Agricultural Experiment Station. In 1914, E. P. Clayton became the first poultry service unit head and is described by many as the father of the Mississippi poultry industry.

"My dad used to talk about Mr. Clayton and how respected he was," Morgan recalled. "This was during a time when the college's small poultry houses for a variety of breeds were located on campus near Garner Hall, just southeast of today's coliseum. Chickens from the 1940s were very different from the birds today."

In 1920, only one poultry course was available. By 1940, eight courses were offered, and the department expanded its research efforts throughout the decade.

"We had many outstanding professors, but one who probably should have won a Nobel Prize was Dr. Bruce Glick, who was at Mississippi State from 1955 until 1986," Morgan said. "His research on antibody production taught us a lot about human health, as well as poultry."

The Hill Poultry Science Building, which has housed the department since 1967, is named for Dr. James E. "Red" Hill, who served as department head from 1950–86. It is the only campus building funded by National Science Foundation matching funds, and that accomplishment is a credit to Glick's outstanding research efforts.

In addition to his exemplary academic and scientific skills, Glick had a special ability to encourage and motivate students, according to Dr. Reagan Sadler, a 1959 (BS) and 1960 (MS) graduate.

"I worked with Dr. Glick early in his antibody research involving the bursa of Fabricius in chickens," Sadler said. "He helped encourage me to pursue and earn my doctorate at Auburn."

The Newton County, Mississippi, native remembers his first campus visit and meeting department head Hill. As a student, he lived on the college's poultry farm, which was located near today's sorority houses on Greek Row.

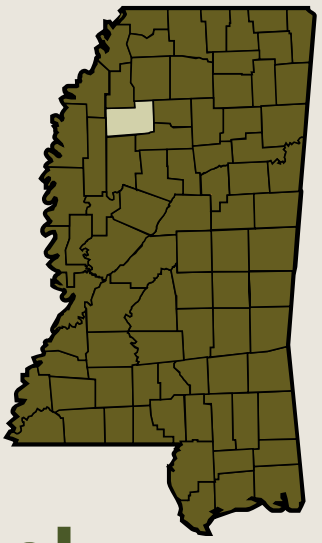
Sadler eventually ran a privately owned poultry laboratory in Forest, Mississippi, as a service to the industry. He retired after 33 years, and MSU assumed responsibility for the lab's services. In 2003, MSU opened the new Poultry Diagnostic Lab in Pearl, Mississippi.

Dr. Mary Beck, who has served as poultry science department head since 2012, said expanding her faculty base and increasing student numbers are high priorities.

"We are one of only six departments dedicated to poultry science in the country," Beck said. "Our goal is to have 80–100 undergraduate students and around 20 graduate students enrolled annually, knowing we will have a 100 percent job placement when they graduate."

BY LINDA BREAZEALE

The Bank of Charleston offers an homage to three famous Tallahatchie County natives: actor Morgan Freeman, jazz and blues legend Mose Allison, and beloved bluesman Sonny Boy Williamson. (Photo by Kevin Hudson)



1/82: Tallahatchie County

MSU in Tallahatchie County:
P.O. Box 308, 202 S. Market Street
Charleston, MS 38921-0308
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"Tallahatchie County has the best of both worlds—both hills and Delta. The hills support the cattle and timber industries, while the Delta supports the row-crop industry with rice, cotton, soybeans, corn, grain sorghum, peanuts, and sweet potatoes."

JIMBO BURKHALTER, MSU Extension County Coordinator

County seats: Charleston and Sumner
Population: 14,959
Municipalities: Charleston, Glendora, Sumner, Tutwiler, Webb
Communities: Black Bayou, Brazil, Cascilla, Cowart, Effie, Enid, Leverett, Macel, Minter City (partly in Leflore County), Paynes, Phillip, Swan Lake, Teasdale, Tippo, Vance (partly in Quitman County), Whitehead
Commodities: cotton, soybean, corn, rice, grain sorghum, wheat, turf (sod), kenaf, sweet potatoes, peanuts
Industries: Charleston Industries, Kenaf Processing Plant
Natural resources: Mississippi Delta soil; Tallahatchie River; oxbow lakes; fertile upland timberland; deer, turkeys, rabbits, squirrels, and other wildlife
Attractions: James C. Kennedy Wellness Center in Charleston is a 20,000-square-foot facility that incorporates many sustainable building elements. It will house outpatient physical and occupational therapy, as well as a behavioral health program for seniors. The Path to Wellness trail features educational signage on preventive health care and energy conservation.
Did you know? Morgan Freeman's home away from home is behind his mother's house just outside of Charleston. Tallahatchie County is also the home of the late Mose Allison, famous American jazz and blues pianist, singer, and songwriter. The late, great hog Scissors was a 1-ton Duroc-Jersey that was world champion at the 1917 and 1918 Omaha Livestock Shows. His owner, Col. Thomas Griffin James, built a special house for Scissors on Pine Crest Farm near Charleston. A statue of Scissors now stands outside that house.

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

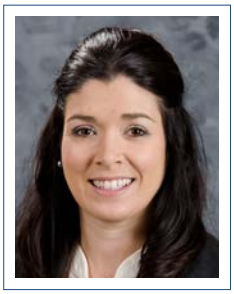
NewsNotes

Coble

Dr. Keith Coble, head of the MSU Department of Agricultural Economics, was recently named president-elect of the Agricultural and Applied Economics Association (AAEA) executive board. Coble, a William L. Giles Distinguished Professor who has been with the university more than 20 years, holds a teaching appointment in the College of Agriculture and Life Sciences (CALS), a research appointment in the Mississippi Agricultural and Forestry Experiment Station (MAFES), and an outreach appointment in the MSU Extension Service. He also served as chief economist for former U.S. Sen. Thad Cochran and the minority leadership on the Senate Agriculture, Nutrition, and Forestry Committee during the 2014 farm bill legislation. Coble has been an active member of the AAEA since he was a graduate student in the early 1990s. Since then, he has served in various sections of the association, most recently on the government relations committee. He was also on the AAEA Board of Directors from 2012 to 2015. AAEA, which has 2,500 members in more than 60 countries, addresses several aspects of agricultural economics, including agribusiness, rural development, and environmental issues.

Newman

Dr. Michael Newman, director of the MSU School of Human Sciences, serves as president-elect of the American Association of Agricultural Education (AAAE) and will begin his term in spring 2019 as president of this national society that focuses on social-science scholarship in food, agriculture, and natural resources. Newman also was one of two senior fellows honored recently by the AAAE Academy of Fellows at the organization's annual conference in Charleston, South Carolina. A professor and graduate coordinator of agricultural education, leadership, and communications in the School of Human Sciences, Newman was a 1996 recipient of the John Grisham Master Teacher Award, a tribute to classroom and instruction excellence that is named for the MSU alumnus and internationally recognized author who provided funds to endow the award. Newman joined the AAAE as a student and was recognized as an outstanding young member in the 1990s. In 2016, he served as distinguished lecturer, keynoting the organization's national conference.

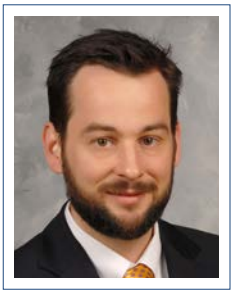


Karisch

Dr. Brandi Karisch, an associate Extension and research professor in the Department of Animal and Dairy Sciences, is the inaugural Milton Sundbeck Endowed Associate Professor in Southeastern Cattle Management, a position focused on advancing beef-cattle production in the region. Milton Sundbeck, founder and owner of Southern Ionics Incorporated based in West Point, Mississippi, established the new endowment in CALS to improve the flow of science-based information to producers. Sundbeck owns Town Creek Farm, which produces registered Brangus and Ultrablack cattle. Karisch, a MAFES scientist and Extension beef specialist, researches techniques that producers can apply on their farms and disseminates the latest science through seminars and short courses. During her programs, Karisch listens to producers' concerns to identify challenges that are the focus of future research and outreach efforts. Karisch earned a bachelor's degree from Louisiana State University and master's and doctoral degrees from Texas A&M University.

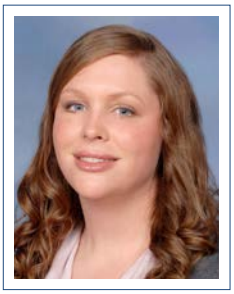
Lawrence

A $15 million initiative funded by the U.S. Agency for International Development (USAID) will create the Feed the Future Innovation Lab on Fish, which MSU will lead through its Global Center for Aquatic Food Security under the direction of **Dr. Mark Lawrence**, associate dean of the College of Veterinary Medicine. This interdisciplinary program is aimed at reducing poverty and improving nutrition, food security, and livelihoods among stakeholders in targeted regions. The Innovation Lab on Fish will conduct research focused on improving production, improving human outcomes, and reducing and mitigating risk to fish-production systems. Initial projects will focus on regions deemed priority areas for aquaculture and fisheries development: West Africa, East Africa, and South Asia. As a platform for innovation, the project will connect the expertise and capacity of a consortium of government research agencies, nongovernmental organizations, small farm associations, public and private organizations, and domestic and international universities in target countries.



Buys

The Centers for Disease Control and Prevention has awarded a $5.5 million grant to MSU Extension to help Mississippians fight obesity and associated diseases such as diabetes and hypertension. **Dr. David Buys**, state health specialist and assistant professor in the Department of Food Science, Nutrition, and Health Promotion, is the principal investigator for the 5-year initiative called Advancing, Inspiring, Motivating for Community Health Through Extension (AIM for CHangE). Extension will work extensively with the Mississippi Public Health Institute and University of Mississippi Medical Center (UMMC) to reduce obesity rates through a comprehensive approach that not only addresses issues within food systems, such as access to healthy foods, but also takes environmental and policy-level approaches to helping communities address issues such as outdoor recreation, community walkability, and educational programming. Phase one will target Holmes, Humphreys, Issaquena, and Sharkey Counties, where UMMC already provides clinical health-care services.

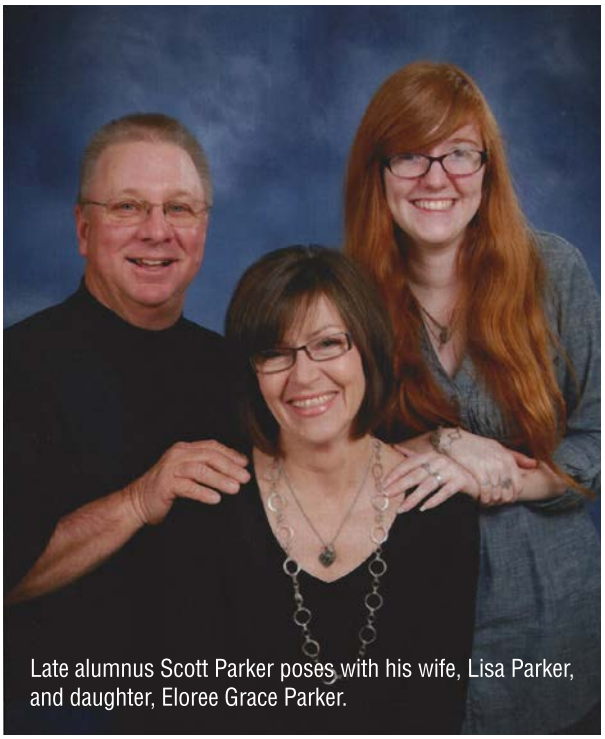


Wamsley

Dr. Kelley Wamsley, an assistant professor in the CALS Department of Poultry Science, received the Poultry Science Association Early Career Teaching Award, which recognizes the achievements of poultry science faculty members in the first 6 years of their careers. Wamsley, a MAFES researcher, directs two doctoral students, one master's student, and 10 undergraduate researchers. Since joining MSU in 2012, she has taught four upper-level or split-level courses and two upper-level, lab-based courses. She also is coadviser on a departmental study-abroad program, in which students travel to New Zealand to learn about that country's culture, agriculture, and poultry industry. In her feed-manufacturing course, students design and build three-dimensional models of feed mills, ensuring that students not only memorize facts to pass tests, but also rationally analyze information and formulate new solutions.

During a recent university ceremony sponsored by Regions Bank, several faculty members received Regions-DAFVM Superior Faculty Awards for their outstanding service and achievements. Winners included Dr. Courtney Siegert (not pictured), an assistant professor in the Department of Forestry, who won the teaching award (Dr. Andy Ezell, front left, head of the forestry department, accepted the award on her behalf); Dr. Larry Falconer, Extension professor, Delta Research and Extension Center, Extension/outreach award; Dr. Raja Reddy, research professor, MAFES and Department of Plant and Soil Sciences (PSS), research award; Dr. Dan Reynolds, professor, MAFES and PSS, international award; and Dr. Richard Harkess, professor, MAFES and PSS, service award. Pictured with the award winners are DAFVM Vice President Greg Bohach (back left), Walt Stevens, Alan Sims, Drew Hull, MSU President Mark Keenum, Sammy Slaughter, Keith Mitchell, and John Harmon. Stevens, Sims, Hull, Slaughter, Mitchell, and Harmon represented Regions Bank. (Photo by Kevin Hudson)

DevelopmentCorner



Late alumnus Scott Parker poses with his wife, Lisa Parker, and daughter, Eloree Grace Parker.

Endowed Scholarship

Memorializes Alumnus Parker

Scott Parker took great pride in Mississippi State as a graduate and great pride in his vocation as a certified golf-course superintendent. Friends and family of the late alumnus are honoring his legacy with the establishment of the Scott E. Parker Memorial Endowed Scholarship in the College of Agriculture and Life Sciences.

Parker, who earned a 1981 degree in agronomy and turf-grass management, died in 2017. A Jackson, Tennessee, native, Parker was married to his wife, Lisa, for 30 years. Together, they parented their daughter, Eloree Grace Parker, in Kerrville, Texas.

Over his career, Parker was known as one of the top golf-course superintendents in Texas. For 18 years, he was the superintendent for Kerrville golf community Comanche Trace, which hosted a memorial golf tournament in appreciation of his devoted service. Proceeds from the event, combined with other contributions from family and friends, make the scholarship endowment possible.

At Mississippi State, the scholarship will benefit junior- and senior-level agronomy majors in the Department of Plant and Soil Sciences who meet established criteria. The inaugural Parker scholar will receive $1,000 for the 2018–19 academic year.

"Scott was one of those individuals you yearn to employ, and everyone wanted to show their respect by participating in the effort," said Trevor Hyde, president of Comanche Trace. "I think this is a testament not only to Scott but to the business itself. I hope this sets a new trend with the Golf Course Superintendents Association to give back to future agronomists, the turf-grass management program, and superintendents.

"I am sure Scott is smiling and ringing his cowbell, knowing his name is now further connected to MSU, especially in his field of work," Hyde continued.

Parker's longtime friend and MSU classmate, T. D. Farris, was also instrumental in the establishment of the endowment. For the past 14 years, Farris has been the golf committee chairman of the MSU Alumni Chapter in Birmingham, Alabama. He and Parker attended MSU together from 1977 to 1981 and shared a love of golf and Bulldog football.

"Scott and I met in 1977 in Garner Hall on campus, where we served as resident assistants, and we shared a great friendship for over 40 years," said Farris, a 1981 computer-science graduate and Birmingham resident employed at DXC Technology.

"Scott would be so excited about the establishment of this scholarship," Farris added. "Everybody loved him, and the scholarship is just another way for us to honor his passion for his career and for MSU."

BY AMY CAGLE • PHOTO SUBMITTED

Giving for MSU Scholarships

The College of Agriculture and Life Sciences (CALS) is committed to providing more assistance to talented students across its disciplines. Privately funded scholarships have a powerful impact on MSU students, offsetting financial burdens and eventually allowing them to begin their careers with little debt.

Any amount designated for scholarships can be given annually to Mississippi State. Gifts of at least $25,000 can establish individual endowments for scholarships that can grow over time. Gifts through the ongoing *Infinite Impact* campaign can help CALS attract and educate students who will become graduates and future leaders.

Alumni and friends who wish to create scholarships in CALS may contact Will Staggers, the college's assistant director of development, at (662) 325-2837 or wstaggers@foundation.msstate.edu. Many scholarships, including the Scott E. Parker Memorial Scholarship, remain open for additional contributions. Gifts may be made online any time at ***www.msufoundation.com***.

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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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DIVISION OF AGRICULTURE, FORESTRY, & VETERINARY MEDICINE

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Mississippi Commissioner of Higher Education Dr. Alfred Rankins Jr. (center) visited Mississippi State University as part of a statewide listening tour. Rankins, the former president of Alcorn State University who earned master's and doctoral degrees in weed science at MSU, met with MSU administrators, students, alumni, and faculty and staff members. He is pictured with Dr. George Hopper (left), dean of the College of Agriculture and Life Sciences and College of Forest Resources and director of the Mississippi Agricultural and Forestry Experiment Station and the Forest and Wildlife Research Center; Dr. Gary Jackson, director of the MSU Extension Service; Dr. Kent Hoblet, dean of the College of Veterinary Medicine; and Dr. Greg Bohach, vice president for the Division of Agriculture, Forestry, and Veterinary Medicine. (Photo by Kevin Hudson)