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DIVISION OF AGRICULTURE, FORESTRY,
AND VETERINARY MEDICINE

RESEARCH, EDUCATION, AND EXTENSION

MISSISSIPPI LANDMARKS

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VICE PRESIDENT'S LETTER



Summer signals a time for vacation and relaxation, but for some, summer can be one of the busiest seasons. That's certainly true for us here on campus. In June, we are launching a new project, Vision 2030,

working with various groups and clients to chart a course to strengthen Mississippi's position as a national leader in agriculture, forestry, and veterinary medicine.

A recent study shows that 18.6 percent of the state's economic activity is based on the \$9.7 billion agricultural and forestry industry. The economies of most communities in our state depend on these industries. Ultimately, we hope Vision 2030 will identify policy recommendations and strategies for agricultural and forestry innovation, rural job creation, and economic growth in Mississippi. Stay tuned for more information about this exciting project.

USDA released the 2022 Census of Agriculture this year. The results show the number of Mississippi farms is declining, but production is up. We are proud to play a part in helping producers leverage the latest scientific discoveries to help them remain efficient, sustainable, and profitable. Part of that includes identifying where to invest the dollars we are entrusted with by the state and federal government. That also means we must be entrepreneurial—about 45 percent of our funding is self-generated. In FY 2023, our faculty secured \$143 million in grants and contracts, a record number for our Division. Behind that number is a group of individuals who work tirelessly to make a positive impact in our state.

In this edition of *LandMarks*, you'll read about how our work touches the lives of every Mississippian and reaches across the nation and around the globe. Discover how our collaboration with private industries drives relevant research and prepares students for the workforce. Learn about how the Master Gardener program has branched out into other areas to multiply resources.

Our collaboration across colleges and research units is helping find solutions to antimicrobial resistance, a potential global health crisis. Right here at home, we are continuing to bring national attention to farm stress by sharing the stories of producers who work to provide food and fiber for the world.

On a personal note, my family and I will have a milestone moment in July with the baby of the family getting married. We are looking forward to this special occasion. I hope you, too, will have the opportunity this summer to take a break and enjoy time with friends and family.

We are grateful for your friendship and hope to see you on campus this fall.

KEITH H. COBLE
Vice President

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ON THE COVER

A honey bee gathers pollen from a blueberry flower. Blueberries are Mississippi's state fruit, but producers face challenges. Read more on page 12. (Photo by Kevin Hudson)



MSU Helps Lead

Global Investigation of Antimicrobial Resistance

Bacteria, viruses, fungi, and parasites—microbes—are becoming more and more resistant to chemicals and treatments that are meant to eliminate them. This phenomenon is not new. Antimicrobials, including antibiotics, were first introduced in 1937, and resistance developed shortly thereafter. Some germs, termed “superbugs,” have extreme levels of resistance from years of mutation and the ability to survive.

Mississippi State University scientists are developing new treatments to combat resistant microbes while also working

to better understand how germs become resistant to treatment and how this resistance is spread across the globe.

MSU is home to a U.N. Food and Agriculture Organization (FAO) Reference Center on Antimicrobial Resistance and Aquaculture Biosecurity. The center is managed through the MSU Global Center for Aquatic Health and Food Security, which is affiliated with the College of Veterinary Medicine (CVM). MSU scientists are investigating antimicrobial resistance (AMR) across the U.S. and around the globe to find solutions to this health crisis.



Dr. Hossam Abdelhamed (left) and Seto Ogunleye are developing new treatments to combat resistant microbes.

Dr. Hossam Abdelhamed, assistant professor in CVM's Department of Comparative Biomedical Sciences, is currently serving as principal investigator of a USDA National Institute of Food and Agriculture project on AMR. He said AMR is an important issue in many sectors of animal production, including aquaculture.

Aquaculture producers, like catfish farmers, face diseases within their fish stock that reduce productivity. One element of the project is focused on testing the viability of new antimicrobials within aquaculture, to provide producers with more treatment options in the face of antimicrobial-resistant diseases.

"Appropriate stewardship is critical to sustain efficacy of antimicrobial agents and ensure aquaculture producers have adequate treatment options for maximum production efficiency, profitability, and sustainability," Abdelhamed said.

Abdelhamed's team isolated an antimicrobial-resistant bacterium and is investigating one factor that could contribute to AMR—plasmids. Plasmids, genetic material within a bacterium, play a role in the growth and spread of AMR and can be transferred between bacteria. Abdelhamed's team is researching possible mitigation strategies to prevent the transmission and prevalence of these resistant plasmids in bacterial populations to slow the spread of AMR.

Seto Ogunleye, an MSU doctoral candidate in veterinary medical science with a concentration in infectious diseases and immunology, is a member of Abdelhamed's team. Ogunleye brought the team's research before policymakers in Washington, D.C., last fall as a participant in the American Society for Microbiology Hill Day on AMR.

"We want people to understand that there are multiple factors contributing to developing resistance and ways to mitigate it," Ogunleye said. "That includes looking at the possible causes of resistance; presenting risks and pathogens; and developing new antimicrobial agents, vaccines, and increased funding for AMR research."

Ogunleye said the center is performing research activities in different developing nations such as Nigeria, Bangladesh,

and Malaysia, which are examples of the international cooperation necessary for effective research on AMR.

"It is important that we fight together against resistant pathogens," Ogunleye said. "This is a worldwide issue, which is why it is so important to have the support of policymakers, taking a One Health approach to enhance antimicrobial resistance-related research nationally and globally."

Understanding the prevalence and transmission of AMR is a critical facet of One Health, a research approach that recognizes that human health is closely connected to animal health and our shared environment. Wildlife can serve as

AMR reservoirs in the environment, but their role in AMR distribution and spread is poorly understood.

Dr. Dana Morin, a wildlife assistant professor in the Forest and Wildlife Research Center (FWRC), strives to fill this knowledge gap.

"Black bears move a ton and are very tolerant of human interactions. Deer come into people's yards and have interactions, and ducks have huge migratory patterns," Morin said. "We're evaluating multiple species to identify important factors that indicate whether they're going to be an AMR spreader."

By collecting DNA from animal fecal matter, Morin and collaborators from the USDA Agricultural Research Service can identify individual animals, eventually

creating a model of where these animals move across the landscape. Depending on these animals' loads of AMR, the model could predict which areas are at greater risk of AMR spreading through wildlife.

"That's the main pathway we're interested in right now—how do wildlife interactions with humans then start to allow the spread of antimicrobial resistance from non-natural, human-created sources?" Morin said.

As an FAO-designated Reference Center on Antimicrobial Resistance and Aquaculture Biosecurity, MSU will continue to investigate AMR through the One Health approach, leveraging the combined expertise of researchers across disciplines and across the globe.

"It is
important
that we fight
together
against
resistant
pathogens."

SETO
OGUNLEYE

BY SAMUEL HUGHES • PHOTO BY TOM THOMPSON

New AI Catfish Processing

Could be a Boost for Industry

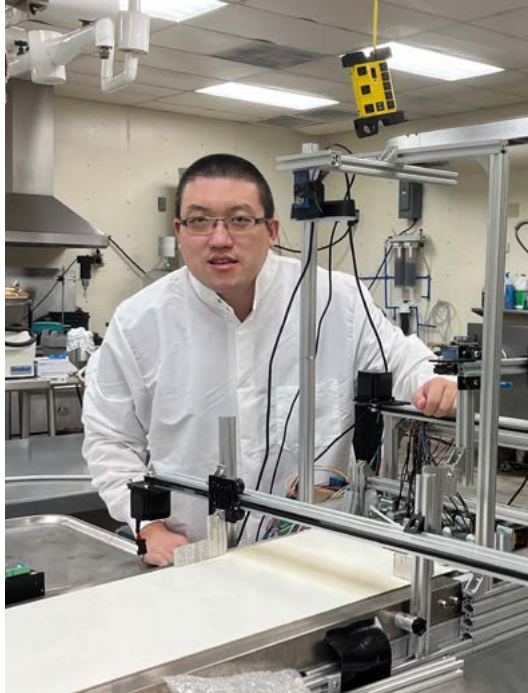
For the last four decades, Mississippi has led the country in the multibillion-dollar catfish industry, with production driving economic activity and employment in several Mississippi counties. However, labor shortages and rising labor costs—along with international market competition and pandemic-related supply chain disruptions—have slowed U.S. catfish production in recent years.

With artificial intelligence (AI) making recent advances in many other areas of agriculture, it may also provide solutions to some of the challenges unique to aquaculture. Today, a Mississippi Agricultural and Forestry Experiment Station (MAFES) scientist is seeking to apply robotic and machine vision learning technology to catfish processing.

Dr. Wenbo Liu, principal investigator and assistant professor in the MSU Department of Agricultural and Biological Engineering, is conducting this research at the MAFES Experimental Seafood Processing Laboratory in Pascagoula. Liu has teamed with co-principal investigator Dr. Yuzhen Lu, assistant professor in the Department of Biosystems and Agricultural Engineering at Michigan State University and machine/computer vision specialist, to create an exciting new prototype.

One of the most critical steps in processing catfish fillets is called singulation—where frozen trimmed fillets are separated and flattened before they are sent off for breaching or quick freezing. This process has always been done by hand due to the delicate consistency and tendency of catfish to stick together when frozen.

“We’re seeing computer vision technology increasingly used in the food industry for tasks like fish species recognition and



Dr. Wenbo Liu is using artificial intelligence to improve one of the most critical steps in processing catfish fillets.

yield production, but research on orientation and singulation of fish fillets is limited,” Liu said.

He and his team designed and built a novel robotic singulation machine that works by moving a batch of fillets down a conveyor belt and dropping them into a tank, where a wavemaker begins to separate them. To begin the singulation process, a central water jet sprays the fillets in a circular motion, then sidewall jets blast the fillets to further separate, flatten, and correctly orient them. Finally, a vacuum gripper picks up individual fillets, which are then ready for the final processing steps. Throughout this process, the computer vision system keeps an “eye” on the fillets, helping guide them to their final destination.

Liu and his team have applied for funding from the Strengthening Mississippi Academic Research Through (SMART) Business Act and submitted a seed proposal to the USDA National Institute of Food and Agriculture, both of which are under review. The recently established SMART Business Act is an MSU-driven initiative supporting university research to develop state-owned intellectual property into commercially viable products and services.

“We’ve applied for a patent but still have work to do before we have a system ready for commercial use,” Liu said. “To operate in a commercial setting, we need to work on increasing the processing speed of our prototype, and we also want to integrate the singulation process with other manufacturing steps.”

STORY AND PHOTO BY MEG HENDERSON

MSU Shoreline Activity Studies

Make Waves

“Wave energy is a major driver for many coastal processes that directly influence shoreline vegetation and stability.”

**MATTHEW
VIRDEN**

MISSISSIPPI STATE
UNIVERSITY
COASTAL RESEARCH &
EXTENSION CENTER



Commercial wave gauges can be expensive, so MSU researchers Ashleigh Robbins and Matt Virden were part of a team that made gauges with parts from a home improvement store. The DIY wave gauges were in acceptable to near-perfect agreement when tested side by side with a commercial wave gauge.

Wind, waves, sunshine, and boat rides on the Gulf of Mexico represent peace and relaxation for many people. But the same waves that soothe beachgoers are making changes to the shoreline—an impact Mississippi State University researchers want to know more about.

The natural action of waves is responsible for much of a coastline's features, but what happens when boats are added to the equation? In a confined space such as a bay that hosts hundreds of pleasure boats, these vessels could create a significant amount of wave energy that laps onto the miles of Gulf Coast shoreline.

MSU researchers are confronting this challenge head-on by seeking a way to preserve coastlines while boaters continue to enjoy the freedom their watercrafts offer.

Dr. Eric Sparks, director of the MSU Coastal and Marine Extension Program, said there are a variety of funded projects underway that examine different aspects of wave action impact on shorelines. These programs are coordinated from the MSU Coastal Research and Extension Center in Biloxi.

"A better understanding of wave energy sources and impact can help with design of coastal restoration projects," said Sparks, an associate Extension professor in the Department of Wildlife, Fisheries, and Aquaculture.

Matthew Virden, Extension associate with the Coastal and Marine Extension Program, is working on three different wave studies.

One study specifically examines the influence of boat activity on waves in a semi-enclosed area that serves as an estuary. An estuary is a partially enclosed coastal body of brackish water where fresh water from rivers or streams mingles with salt water. These areas serve as valuable breeding grounds for numerous forms of sea life.

The Back Bay of Biloxi is the specific target of this wave study.

"Wave energy is a major driver for many coastal processes that directly influence shoreline vegetation and stability," Virden said.

He explained that coastal conservation and restoration projects often include wave climate estimations in the decision-making process, but these rely on data from wind-wave models that incorporate variables such as wind speed and wind direction to estimate wave climate.

"Boat wake is often not incorporated into these models and is an important contributor to wave energy in semi-enclosed bodies of water," Virden said. "In this study, site-specific wave measurements are being used to compare wind-protected and open sites in Back Bay, Mississippi."

In tackling this tough issue, the preliminary results indicate that waves caused by boats in the Back Bay have as much or more impact on the shoreline as naturally occurring waves.



The natural action of waves is responsible for much of a coastline's features, but MSU researchers are exploring what happens when boats are added to the equation.

A second study is looking at the impact of waves on shoreline vegetation. Many coastal conservation and restoration projects have the primary goal of establishing or maintaining shoreline vegetation.

“Knowing which species to plant and whether or not protection structures are needed based off site-specific wave climates will help in developing an economically and ecologically efficient restoration plan,” Virden said.

Ashleigh Robbins, an Extension associate who is also a part of the Coastal and Marine Extension Program, is working on a project that focuses on the sustainability of shoreline solutions under rising sea level scenarios.

“When wave energy estimates are derived from wave gauges rather than solely relying on wind, shoreline management models can produce more accurate recommendations,” Robbins said.

She also contributes to another project that involves collecting wave data from around the bay to integrate wave gauge data into a living shoreline suitability model for Back Bay.

Wave gauges are important tools in these projects, as researchers must know the exact size, strength, and frequency of a wave impacting an area. Virden said commercial wave

gauges are effective data-collecting tools, but they can be expensive.

MSU researchers developed a creative solution to the cost challenge. In another project, Virden and group members took a do-it-yourself (DIY) approach to wave gauges with a trip to the local home improvement store.

“With partners from the University of South Alabama, we created wave gauges using housing components we bought at a local store combined with high-performance yet affordable electrical components,” Virden said.

When tested side by side with a commercial wave gauge, measurements from the DIY wave gauges were in acceptable to near-perfect agreement.

“This development allowed for access to premium wave climate estimations for a fraction of the cost of commercial counterparts,” Virden said. “Additionally, these low-cost DIY wave gauges provided many opportunities for Extension and other STEM educators to incorporate low-cost teaching tools for product design, electrical engineering, data collection, coding, and processing into their curricula.”

MSU offers the DIY wave gauge plans for free to anyone who is interested. Visit coastal.msstate.edu/waves.

BY BONNIE COBLENTZ • PHOTOS BY KEVIN HUDSON

Entomologists Cross State Lines for Partnership

Dr. Fred Musser, a row crop entomologist with a PhD from an Ivy League school, never saw a cotton plant until he arrived at Mississippi State University. He quickly surmised that he would need to earn credibility among his southern peers. Enter the university’s Midsouth Entomology Working Group (MSEWG).

“The group jumpstarted my career here at MSU,” said Musser, a Mississippi Agricultural and Forestry Experiment Station (MAFES) scientist and professor of entomology. “It was critical for getting me in the field to do relevant work that is important for farmers, crop consultants, and Mississippi ag stakeholders.”

This work remains the group’s objective, which is still going strong with 12 members in six states.

“Grower impact is the key goal of the MSEWG, and that is what makes the group so great,” said Dr. Chase Floyd, an MSU alum and entomologist who now works as a crop protection specialist at the University of Missouri’s Fisher Delta Research, Extension, and Education Center. “We’re able to gather metadata quickly because we’re getting it from all over the Midsouth, so we can really see how well a product works.”

The shared knowledge among members is another important component.

“You’re getting advice and mentorship from everybody else, and you have all of their advice on what makes the most impact on the grower and his or her operation,” Floyd said.

Dr. Whitney Crow, assistant professor of entomology and Extension entomologist, saw the benefit of the group’s



dynamic as a student when insect pests shifted across state lines. She noted then how each state representative worked with the MSEWG to draw on the group’s expertise to provide the best recommendations for their growers.


“You have other people to rely on across the Midsouth, and you make a decision as a unit,” Crow said. “You’re able to see the differences in environments across a large geographic area, so we can pinpoint the problem and decide what would be best for our state. The best thing about the group is we conduct the same trials every year, and that has built a magnitude of shared knowledge.”

Having formed between the 1970s and 1980s to fight the

tobacco budworm and boll weevil, the MSEWG faced a natural decline in activity as the boll weevil was eradicated and Bt (*Bacillus thuringiensis*) cotton reduced the impact of these pests on cotton production. However, as plant bug populations increased, entomologists discovered a revived need for the group.

“About the mid-2000s is when plant bugs were first blowing up into the problem they are now,” said Dr. Don Cook, MAFES entomologist and associate research professor of entomology stationed at the Delta Research and Extension Center. “That brought everyone together to work on a common problem, and we’ve just made an effort to keep it together. You can accomplish so much more by working together.”

STORY AND PHOTOS BY LAURA HOUGH SMITH

A man wearing a white long-sleeved shirt, sunglasses, and a straw hat is standing in a field of tall green grass. He is holding a large, light-colored net with a wooden handle, and he appears to be catching insects. The background shows a clear blue sky and a distant horizon with some trees and structures.

“[Plant bugs in the mid-2000s] brought everyone together to work on a common problem. You can accomplish so much more by working together.”

DR. DON COOK

Mississippi's State Fruit

Blueberries

Growing in Popularity
Despite Challenges



“Wholesalers are demanding higher quality fruit than most small growers can provide due to old varieties, changing environmental factors, or other management practices.”

DR. ERIC STAFNE

Blueberries recently celebrated their one-year anniversary as the official state fruit of Mississippi, joining magnolias and mockingbirds as symbols of the state.

A group of fourth graders from Madison County lobbied the state legislature to give blueberries this honor. Their bid for this state title was backed with research-based information they found on the Mississippi State University Extension Service website.

“My class was the brain behind the project, and your website is what led us to picking the blueberry,” Lisa Parenteau, fourth-grade teacher at Mannsdale Upper Elementary, said of MSU Extension in a tweet.

Blueberries have grown in popularity over the last two decades. Americans now consume more than 2 pounds of blueberries each year—a significant rise from the annual 0.3 pounds consumed at the turn of the century.

Despite the fruit’s popularity and elevated status in the state, the blueberry industry in Mississippi has an uphill battle to remain strong. The way blueberries were grown for decades in the state is becoming less economically viable.

“For a long time, small growers had a crop that they took to a co-op to sell through a wholesaler to other markets,” said Dr. Eric Stafne, MSU Extension and Mississippi Agricultural and Forestry Experiment Station fruit specialist. “Now the wholesalers are demanding higher quality fruit than most small growers can provide due to old varieties, changing environmental factors, or other management practices.”

Mississippi growers who decide to shift to a new variety face a time-consuming and expensive process.

“Depending on how fast the new bushes grow, the first harvest for new bushes usually begins in about year three,” said Stafne, a plant and soil sciences Extension/research professor stationed at the Coastal Research and Extension Center.

Stafne said blueberry producers who want to compete in the wholesale market must adopt new varieties, add irrigation, implement better spray programs, and use improved harvest technology and frost protection.

“These changes are necessary for growers with significant blueberry acreage, but small and mid-size growers may not have the capital to implement

“Despite the challenges facing the industry, Mississippi growers can take advantage of significant market opportunities.”

DR. ELIZABETH
CANALES



Using blueberry harvesters, such as this one demonstrated at Bounds Blueberry Farm in Wiggins, is one way to manage the expensive labor market for blueberries. In addition to cost, these have challenges of their own, including fruit bruising. (Photo by Jenny Ryals.)



MSU staff, including Dr. Eric Stafne, are working to help Mississippi growers overcome challenges facing the Mississippi blueberry industry while taking advantage of significant market opportunities currently available. (Photo by Kevin Hudson)

these changes, or it may not be cost-effective based on the size of the operation,” Stafne said.

Unpredictable weather also has an impact. The freeze in March 2023 devastated the blueberry crop, but droughts present even more challenges.

“Drought can damage root systems, causing them to shrink in size, and they may not fully support the entire bush, especially when it has set a full crop,” Stafne said.

The majority of blueberry farms in Mississippi are small-scale operations. The 2022 Census of Agriculture reports Mississippi has 493 blueberry farms with just under 1,000 acres in production.

Dr. Elizabeth Canales, an MSU Extension agricultural economist, said in a regular year, blueberry production in the state is valued at about \$13 million.

“Despite the challenges facing the industry, Mississippi growers can take advantage of significant market opportunities,” said Canales, an associate professor in the Department of Agricultural Economics.

Blueberry farms that remain commercially successful must continue to adapt to current market demands, and there may be a shift to adopt new, improved blueberry varieties.

“This would require investment like any other business, along with careful consideration and long-term planning,” Canales said.

With all these challenges, Stafne said many blueberry growers are looking to explore other crop options such as pecans, blackberries, grapes, tea, and muscadines.

But for those wanting to stay in the blueberry business, Stafne said the state’s commercial blueberry industry is capable of making the next set of changes necessary to be competitive.

Those selling wholesale blueberries must manage the labor market, which is expensive and difficult. While many farms still pick blueberries by hand, machine harvesters are becoming more common.

“The challenge is to avoid bruising the fruit, which leads to lower fruit quality and a shorter shelf life,” Stafne said. “Some improvements can be made on the machine side and some with variety selection. If these problems associated with machine harvest can be mitigated, then we will probably see much more of that type of harvesting in the future.”

MSU provides a variety of support to the Mississippi fruit industry through workshops and short courses, the establishment of best management practices, integrated pest management recommendations, and in-person assistance from specialists. Learn more at extension.msstate.edu/agriculture/crops/fruit.

BY BONNIE COBLENTZ



College of Veterinary Medicine Expands

Mental Health and Wellness Program

“You don’t realize
the complexity
of all of it until
you experience it
yourself.”

DR. KIM KLUNK

Dr. Kim Klunk talks with Cindi and Daryl Redditt
of Stubborn Heifer Cattle Co. during a farm visit.



Dr. Kim Klunk expected a certain level of stress when she began practicing veterinary medicine two years ago near her hometown of Magnolia, Mississippi.

“It’s one of those things that you hear other people talk about when you’re in vet school, but you don’t realize the complexity of all of it until you experience it yourself,” said Klunk, who works with her mom, Dr. Rachel Bateman, at her mixed-animal clinic in McComb.

Understanding the exhaustion and compassion fatigue that affect veterinarians even before they earn their degrees, the Mississippi State University College of Veterinary Medicine has expanded its mental health services for students this year.

Staff psychologist Dr. Pauline Prince, who has managed the Mental Health and Wellness Program for the past five years, and her staff work to ensure students get the tools and support they need to be successful and healthy in school and in their careers.

“It is our goal to help students have the mental health and wellness skills necessary to thrive in school and to live a long and happy life in their chosen career once they graduate,” said Prince, an MSU graduate who has more than 30 years of experience working with students, parents, and athletes.

The Mental Health and Wellness Program provides access to counseling, academic support, and professional skills enhancement to combat burnout, anxiety, and depression.

“Our staff is fully embedded in the clinic,” Prince said. “We’re here from the first day they walk through the door up to graduation.

“We go into their classrooms so that we can know more about what our students face and how we can help them. For many sophomore surgery students, it’s the first time they are cutting into an animal. That can be very overwhelming. Often it reduces their stress just having us there,” Prince continued.

With the addition of staff counselor Dr. Katie Cagle-Holtcamp in January and staff psychologist Dr. Kristin Tew in July, the college will have two dedicated, full-time psychologists, a part-time social worker, and psychology graduate students interested in working with veterinarians.

“There is nothing that tells mental health professionals how to work with veterinarians,” Prince said. “We collected data through needs surveys and then crafted evidenced-based strategies to meet those needs.”

What she and her colleagues are learning can help mental health professionals understand the needs of working veterinarians as well as students. That’s important because a growing body of research indicates the inherent stressors of the profession can lead to anxiety, depression, and burnout for some.

Both anxiety and depression raise the risk of suicide. The suicide rate among veterinarians is four times higher than the

general population, according to a study published in the *Canadian Veterinary Journal*.

Further, Prince said one in six veterinarians have considered suicide, and one in three have clinically significant anxiety and/or depression. Less than one-third of them will seek help despite knowing they need it.

“There are a lot of things that contribute to scary mental health statistics among veterinarians,” Prince said. “They work extremely long days, serve clients who are also friends and family, have substantial debt after they graduate, are one of the only professions that can legally euthanize, and often work in private practice with no support system.”

Both small- and large-animal veterinarians face many of the same stressors. However, large-animal vets have highly physical workloads, limited diagnostic equipment in the field, and long, unpredictable days. As one of just four large-animal vets in her area, Klunk knows the unique pressures of the specialty.

“Being a new veterinarian, there is anxiety that comes with it,” Klunk said. “A lot of it is having to gain experience to know what to do, what things look like, and how to treat them.”

Klunk admits stress is a primary part of the job—from learning how to set boundaries with clients to exhaustion. She said it is important for veterinarians to build a set of coping strategies to help.

“The challenges are different every day,” she said. “On the long days when there was a lot going on and a lot went wrong,

you have to deal with processing whether you did the right thing. It’s hard, and you have to learn how to manage that effectively.

“It helps when you have someone to talk to or to ask questions,” Klunk said of her support system that consists of mentors from school and friends. “You also have to give yourself the room to evaluate the situation and learn something if you need to and then, move on. You have to reel things in and go back to the core reason you are doing this—for the love of animals. Those things are what carry you through the hard days.”

Prince said the Mental Health and Wellness Program has served almost half of the 600 students enrolled in veterinary medicine and veterinary technology programs. Services are also available to faculty, staff, interns, and residents.

Prince, Cagle-Holtcamp, and Tew plan to provide more training to community mental health professionals to help them better understand the stressors and needs of veterinarians.

The MSU Television Center created a second *On the Farm* documentary series that explores farm-related stress. Klunk and Prince participated in one episode that explores the challenges of large-animal veterinary practitioners. Episodes can be viewed at films.msstate.edu/series/on-the-farm.

BY SUSAN COLLINS-SMITH
PHOTOS BY KEVIN HUDSON



Rooting Out Rot

Student Studies Early Detection of Brown Rot Fungus in Lumber

Wood rot can be a homeowner's worst nightmare. Spotting signs of decay often means significant structural damage has already occurred. But what if you could detect wood rot before it is visible?

Researchers in the Mississippi State University Forest and Wildlife Research Center are teaming with the United States Department of Agriculture Forest Products Laboratory to identify the earliest presence of brown rot fungus in southern yellow pine—a widely used source of lumber in the U.S. construction market.

Landon Greene, a sustainable bioproducts graduate student who earned his bachelor's degree in forestry, has assisted Dr. Tamara Franca, assistant professor in sustainable bioproducts, with her ongoing research to identify the presence of brown rot fungus in southern yellow pine at its earliest stages and examine its impact on the wood's integrity. Currently, when brown rot fungus is detected on cross-laminated timber, major structural damage has occurred, resulting in the replacement of lumber, which is expensive and labor-intensive.

"If you can see decay in the wood, the damage has already been done," Franca said. "Our goal is to try to identify incipient decay, when the fungus is just taking a foothold, before anyone can see it."

Greene studied samples over a 12-week period, testing the strength of experimental boards exposed to the fungus and comparing them to the control sample. The study also involved extensive soil sampling to test for the fungus, with Greene collecting more than 400 samples. This research points out the need for early testing to prevent future damage to structures built with southern yellow pine lumber.



Landon Greene and Dr. Tamara Franca examine samples of southern yellow pine.

"At these early stages, we can't see the decay with the naked eye, but if the wood is losing two to ten percent of its mass, that loss affects its mechanical properties," he said. "If we can test early, we can replace the few affected boards—keeping the rest of the original boards in service for as long as possible and the structure of the building intact."

According to a USDA report, in the first half of 2022, U.S. repair and renovation construction expenditures were \$347.2 billion. Residential repair and renovation currently use more wood products than new housing construction.

"Brown rot fungi consumes cellulose that provides wood fibers their tensile strength," said Dr. Rubin Shmulsky, head of the Department of Sustainable Bioproducts and FWRC scientist. "This action creates a distinctive cubical pattern in the wood, turns the wood brown, and reduces its structural capacity."

Brown rot spores are everywhere and spread quickly under favorable conditions, often causing severe damage. An early detection system could be a game changer for homeowners who bear the expense of replacing decayed wood, Shmulsky added.

For Greene, who graduated in May, the hands-on learning experience has prepared him for success in the workforce.

"I have a broad range of skills that will prepare me for a wide variety of jobs," he said. "I would like to work in some aspect of quality control management—treating and testing products and making sure they meet industry standards."

With Greene on the job, armed with his MSU research, he will make a difference in extending the use of wood products.

BY MEG HENDERSON
PHOTOS BY DAVID AMMON



“If we can test early, we can replace the few affected boards—keeping the rest of the original boards in service.”

LONDON GREENE



Bolstering Industry

Practical Food Science Research that Improves Safety, Shelf Life, and Taste

Dr. Wes Schilling discusses a sensory panel with former graduate students Jasmine Hendrix (right) and Morgan Von Staden.


When the nation’s top meat producers want to extend food shelf life and improve its quality, taste, texture, and appearance, they turn to Mississippi State University scientists. The Mississippi Agricultural and Forestry Experiment Station (MAFES) Muscle Foods and Sensory Laboratory, run by Dr. Wes Schilling, has been extending shelf life and growing the industry by training future leaders for more than 20 years.

Schilling, a professor in food science, nutrition, and health promotion, leads the team of MAFES scientists, including Dr. Xue Zhang and Sawyer Smith. They focus mainly on shelf-life testing, analytical chemistry, and sensory panels. Industry partners are quick to point out how essential Schilling is in

conducting relevant research that has helped transform the meat industry.

“Wes has had a transformational impact on our business,” said Dr. Travis Selby, senior director of research and development and food safety and quality at Johnsonville. “He has helped us expand and build on our knowledge of novel antioxidants and how these antioxidants suppress the free radicals in fresh sausage as well as helped us expand our sensory testing methodologies and statistical analysis of these testing methodologies.”

For the past 11 years, Schilling has collaborated with Johnsonville, the country’s largest sausage producer. Schilling said working with Johnsonville helped lay the foundation for a



“The reason we conduct so much industry research is two-fold: make food companies more successful and, most importantly, train students for future careers in industry or academia.”

DR. WES SCHILLING

research career focused on solving practical problems for meat and poultry companies.

“Working with Johnsonville with natural antioxidants to help lengthen the shelf life of their bratwursts was a lot of fun, and it really helped me see the importance of working with industry for the mutual benefit of the company, myself, and, most importantly, students,” he said.

Dr. Brian Smith is director of business development—food ingredients at Hawkins, a food ingredient manufacturer supplying the meat, poultry, and seafood industries. Smith said Schilling’s multidisciplinary approach to research makes him an ideal industry partner.

“In our world, not only do we have to assess microbial aspects of shelf life for food safety, but there are many other

aspects to consider, including the palatability and sensory aspects. The best technology can give you the most shelf life and unbeatable food safety, but if it tastes terrible, it’s not going to be a commercial success. Being able to tap into the other disciplines—chemistry, texture, and other sensory attributes—is very valuable. Having a principal investigator from a third-party institution who collects data that’s scientifically valid and allows for publication in refereed journals goes a long way with our customers,” he said.

With Hawkins, Schilling evaluated the impact of using buffered vinegar in combination with carbon dioxide in an enclosed plastic bag to lengthen the shelf life of chicken parts so they can be shipped across the country without spoiling.

“It was a simple thing, but it was adopted by the industry and has been a game changer in reducing food waste,” Schilling said.

Schilling has mentored more than 100 graduate students, garnered \$8 million in extramural funding through collaborative research, and secured \$4 million for the MAFES Muscle Foods and Sensory Lab alone. He has published 198 peer-reviewed articles, 73 invited articles for industry magazines, and 180 scientific abstracts. He has also presented research findings at numerous national and international conferences, often taking students along so they can benefit from the experience of presenting at a professional conference.

One of Schilling’s former doctoral students, Dr. Vijayakumar Radhakrishnan, now works for Nestlé as a senior meat scientist and corporate ingredient advisor. He shared that his experience as a student set him on a path to achieve and grow in a field he’s passionate about.

“Dr. Schilling excels at recognizing and cultivating leadership qualities in his students. Many of his students have gone on to assume significant roles in our industry. He inspires us to adopt a broader perspective, encouraging us to think critically and creatively,” Radhakrishnan said.

Radhakrishnan now works with Schilling as an industry partner and considers him a lifelong mentor and advisor.

For Schilling, it comes down to educating students through experiential learning opportunities and meeting the needs of industry stakeholders through product testing, sensory evaluation, experimental design, research projects, and product commercialization.

“The reason we conduct so much industry research is two-fold: make food companies more successful,” he said, “and, most importantly, train students for future careers in industry or academia.”

BY VANESSA BEESON • PHOTO BY DAVID AMMON



MSU Graduates Find

Successful Careers in Mississippi

“There’s no doubt ag
autonomy is going
to play a major role
in Mississippi.”

CADE MOODY

Cade Moody, an MSU alumnus, works as
an ag technology specialist for IntelliFarm
by WADE Inc. (Photo by WADE Inc.)

When Cade Moody graduated with a master's degree in agribusiness management from Mississippi State University in 2017, he had the credentials and internship experience companies look for in new hires. Job opportunities were already lining up. After accepting an offer from a Kentucky-based company, Moody and his wife, Elizabeth, headed north. Soon, a promotion relocated them to Tennessee, but there was one problem.

"We realized we weren't home," said Moody, a Grenada native.

Moody and Elizabeth, an Indianola native, started looking for career opportunities in Mississippi in 2020. During that time, WADE Incorporated was on the brink of redefining its identity in agriculture innovation with the launch of its agriculture technology division IntelliFarm, signaling a new era for the oldest John Deere family-owned dealer in the U.S. Moody previously interned with WADE Inc. in 2013 while pursuing a bachelor's degree in agricultural engineering technology and business from MSU. When the opportunity for a job arose, it was more than a career move—it was a homecoming.

Moody now works as an ag technology specialist for IntelliFarm by WADE Inc., serving the Greenville, Indianola, and Cleveland areas.

"I focus on getting the next level of technology into our customers' hands that can make them more efficient and more profitable," he said.

Moody was excited to see the launch of MSU's Agricultural Autonomy Institute in 2023.

"There's no doubt ag autonomy is going to play a major role in Mississippi, but that will look different here than in Iowa and Indiana. That's one of the benefits of having MSU right down the road," Moody said. "Not only are they training the next generation that's going to drive this industry into the future, but they are also creating potential solutions and equipment to serve our state."

Wade Litton, president and CEO of WADE Inc., said the company's relationship with MSU and its agricultural units goes back many years.

"We've always believed in integrating students into a true working environment, specifically agriculture," said Litton. "Our recent collaboration with MSU's Precision Ag Flight program further solidifies our belief that MSU continues to lead our region in ag teachings and innovation."

A recent First Destination Survey shows a 93 percent successful career outcome rate for MSU graduates, with more than half remaining in Mississippi, including some out-of-state students.

"The people in Mississippi are just so nice," said Molly Graham, an MSU graduate and Florida native. She received a bachelor's degree in forestry with a concentration in forest management and a minor in geospatial and remote sensing in May 2023.

Graham chose MSU because of the family-like atmosphere and its renowned forestry program.

"MSU holds a reputation across our industry for teaching old forestry practices," Graham said. "We have the technology to press a button and get a number, but it's important to know how that number got there because if you don't know the background behind it, you don't fully understand the 'why' behind what you're doing."

In 2022, Graham secured a coveted internship at the Brookhaven location of Weyerhaeuser, one of the world's largest sustainable forest products companies, and was offered a full-time position following graduation. She is now on Weyerhaeuser's drone team, combining traditional forestry practices with cutting-edge technology to tackle challenges for the industry.

"We've done an aerial project trying to assess the beetle damage in South Mississippi and identify ways to tackle that problem. I've been pretty involved in that process because it has a lot to do with GIS systems and drones, which I know a lot about," Graham said. "We also use drones to create aerial imagery to get a correct acreage amount after land has been cut or harvested."

Dr. Gunnar Dunnam and his wife, Dr. AudreyAnne Estess-Dunnam, who are recent graduates of the MSU College of Veterinary Medicine (CVM), were contemplating their next career move when they opened a fortune cookie with a message that read: *To build a better world, start in your community.*

"As silly as it may sound, it was a turning point for me and my wife," said Dunnam. "We had been talking about our future and where we would live."

The couple met during their first year as aspiring veterinarians at MSU. After graduation, they married and moved to the Jackson area, where Estess-Dunnam began her career at a small animal practice. Dunnam specialized in



(Top) Dr. Gunnar Dunnam examines a baby chick at the Poultry Research and Diagnostic Lab. (Photo by Tom Thompson)

(Bottom) Dunnam and his wife, Dr. AudreyAnne Estess-Dunnam, met as first-year MSU CVM students and chose to stay in Mississippi to give back to their home state. (Photo by Robby Followell)

poultry medicine, completing his residency at the MSU CVM Poultry Research and Diagnostic Lab in Pearl.

“Poultry medicine is a niche market, so the plan was to move where I got a job and then my wife could practice as a small animal veterinarian wherever we ended up. But then Cal-Maine came into our lives as a great company with values that align with ours,” Dunnam said.

Founded in 1957 and headquartered in Ridgeland, Cal-Maine Foods is the largest producer and distributor of fresh shell eggs in the U.S., selling 1.1 billion dozen eggs annually. While the company works closely with veterinarians, Dunnam became the first full-time poultry medicine veterinarian on staff.

“Eggs are not the biggest commodity in Mississippi, but poultry is, and I get to have a small hand in that,” Dunnam said. “I’m able to have a direct impact on providing a quality product to consumers not only in our state but also across our territory.”

“Home is where you make it, and I’m looking forward to a long, successful career here.”

GUNNER DUNNAM

Brian Ballard, corporate recruiter for Cal-Maine Foods, said the MSU poultry science department is exposing graduates to nutrition, animal welfare, food safety, and strong leadership development.

“MSU is preparing today’s students for a bright future in the poultry industry,” Ballard said. “We are blessed to have a valuable partner in MSU!”

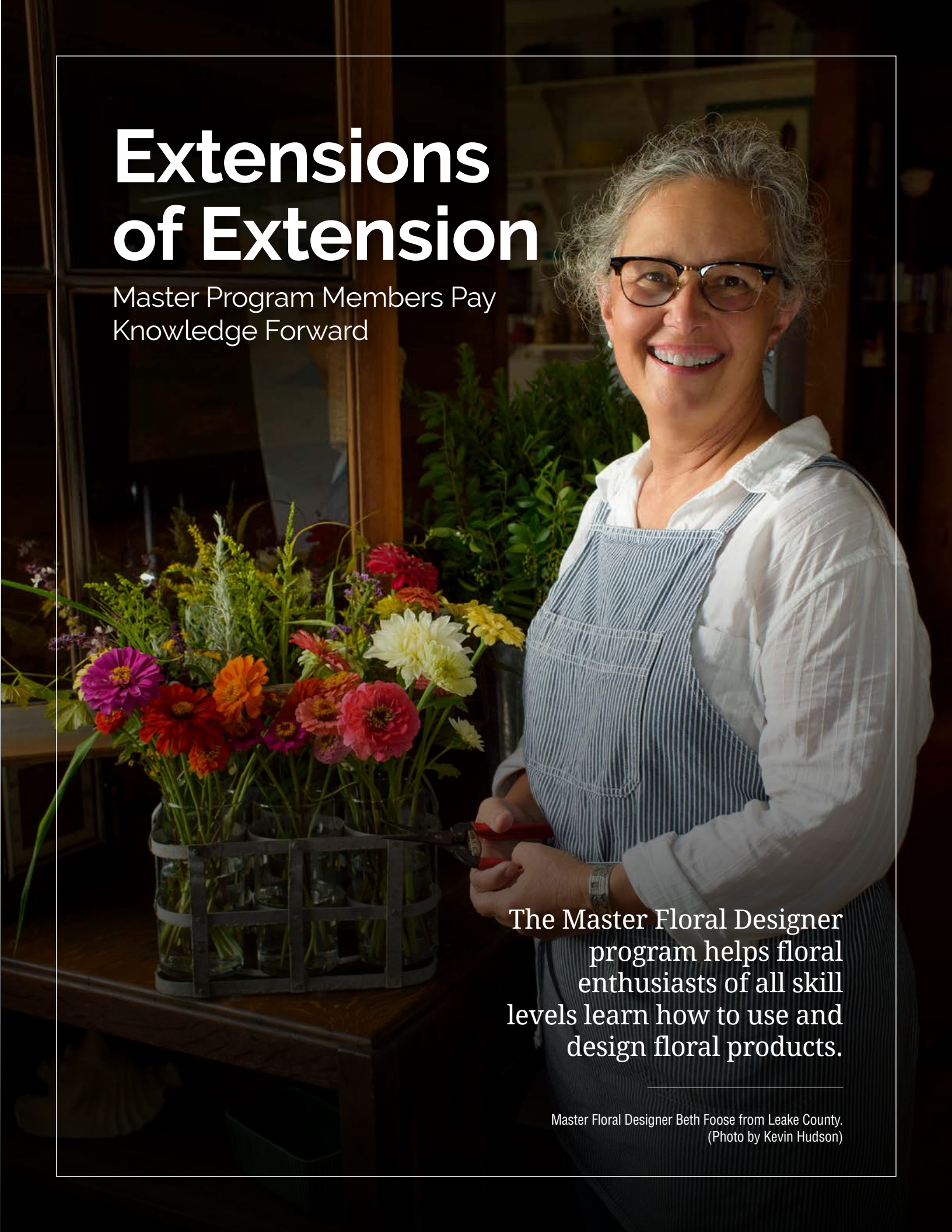
The Dumnams’ fortune cookie message is taped under their picture in their home and serves as a reminder that you can make a difference from coast to coast by starting in your backyard.

“I think home is where you make it, and I’m looking forward to a long, successful career here,” Dunnam said.

BY MARY KATHRYN KIGHT

Extensions of Extension

Master Program Members Pay
Knowledge Forward



The Master Floral Designer
program helps floral
enthusiasts of all skill
levels learn how to use and
design floral products.

Master Floral Designer Beth Foose from Leake County.
(Photo by Kevin Hudson)

More than 50 years ago, the first Master Gardener program took root. The concept has been adopted in every state, and the Mississippi State University Extension Service has not only embraced the idea but also replicated the model to offer programs in other areas. The ripple effect has been magnified by one fundamental idea: train the trainer.

Like the Master Gardener program, additional programs include a public service component.

Earning a Master Gardener certification carries the perks of receiving 40 hours of horticultural instruction and training from MSU Extension specialists. In return, participants complete 40 hours of volunteer service on community horticultural projects. After the first year, Master Gardeners attend 12 hours of training annually and volunteer for at least 20 hours each year to maintain their certification.

Dr. Jeff Wilson, MSU Extension state Master Gardener coordinator and assistant professor in plant and soil sciences stationed at the North Mississippi Research and Extension Center, said the program's approach provides county offices with an extra educational arm to deliver horticultural information backed by university research to the public. Continuing education is offered to encourage long-term commitment.

"What I enjoy most about working with Master Gardeners is seeing the difference they make in others' lives through their educational efforts," Wilson said. "It can be as simple as learning how to prune a rose bush or as complex as how to grow, harvest, and cook vegetables."

In Mississippi, 54 out of 82 counties have an active Master Gardener group, with approximately 1,400 Master Gardeners, not counting the 4-H members who participate in the Junior Master Gardener program throughout the state.

The Mississippi Master Naturalist program has both coastal and central chapters, with more than 150 members combined, and offers a similar program for high school students. Participants receive 40 hours of specialized instruction and give back the same number of hours in volunteer service.

Program co-coordinator Dr. Adam Rohnke said the primary goal is to develop an organization of knowledgeable volunteers to help promote conservation and management of Mississippi's natural resources through education and service within their communities.

"Our urban wildlife monitoring program here in the Jackson metro is contributing to science that is supporting urban wildlife management decisions in 52 cities in North America and as far away as western Europe, Africa, South America, and Costa Rica through our collaboration with the Urban Wildlife Information Network collaborative," said Rohnke, assistant Extension professor in wildlife, fisheries, and aquaculture stationed at the Central Mississippi Research and Extension Center.

Led by Dr. Jim DelPrince, a plant and soil sciences associate Extension professor stationed at the Coastal Research and Extension Center, the Master Floral Designer program has helped floral enthusiasts of all skill levels learn how to use and design floral products. To receive certification, participants must follow along with video demonstrations and participate in hands-on



Lowndes County Master Gardener Julie Holman tends plants in a greenhouse. (Photo by Michaela Parker)

classes, where they apply what they've learned and create designs for corsages, bows, bouquets, and other shapes. They then complete 40 hours of volunteer service, teaching others how to create designs, and volunteer for at least 20 hours each year afterward to maintain their certification.

The newest program, Mississippi Master Irrigator, launched in 2024 and is designed to provide advanced training to producers on irrigation water management practices, soil health, agronomics, irrigation systems, and equipment maintenance. Led by Dr. Drew Gholson, an assistant plant and soil sciences professor and director of the National Center for Alluvial Aquifer Research, this program helps growers make sound irrigation water management decisions that improve water use efficiency and on-farm profits.

Beef cattle producers interested in learning more about improving production at their own pace can participate in the Mississippi Master Cattle Producer program. Dr. Brandi Karisch, Milton Sundbeck Endowed Associate Extension/Research Professor in the Department of Animal and Dairy Sciences, leads this comprehensive training program in major beef cattle production with topics ranging from nutrition and forage systems to economics and marketing.

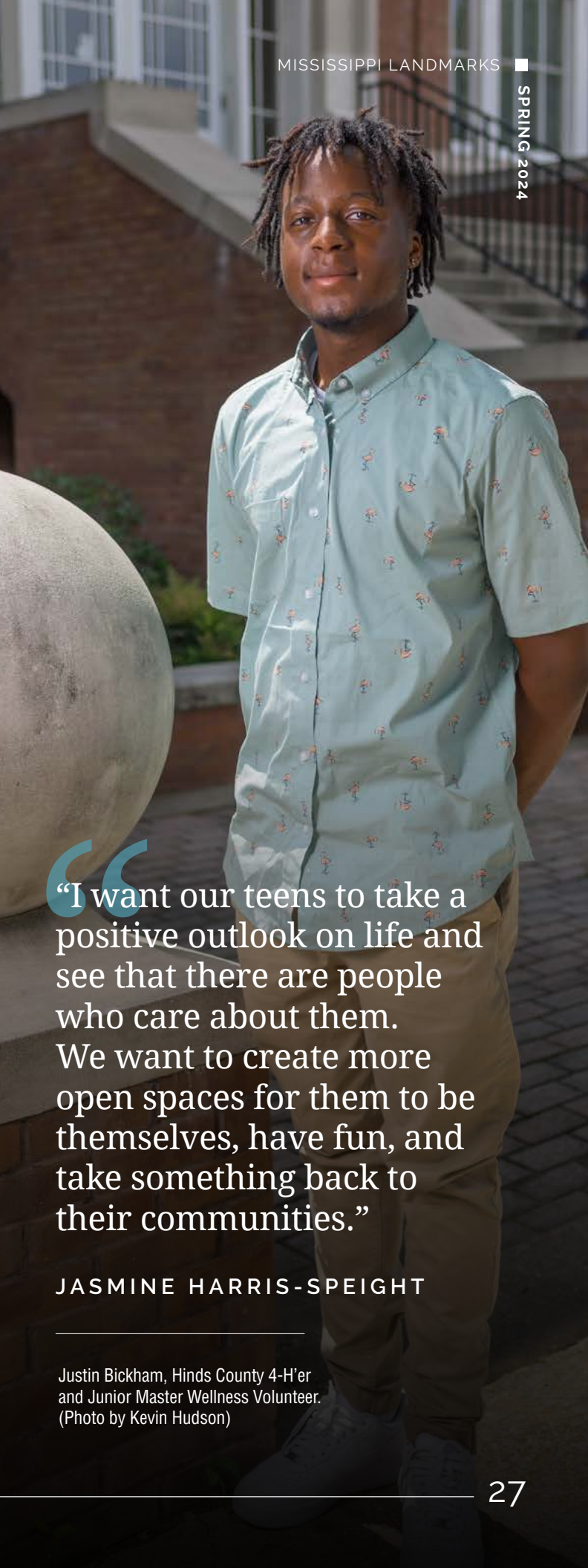
If gardening and livestock are not the right fit for someone interested in a master's program, there's the Master Clothing Volunteer program. This program uses textile techniques and garment construction to develop participants' leadership and teaching skills. Trained Master Clothing Volunteers work in their communities to help youth, families, and community groups learn how to sew garments and create other textile items. County volunteers are responsible for developing and delivering educational programs in their area based on their training.

The Junior Master Wellness Volunteer program empowers 14- to 18-year-olds to improve health literacy and make healthy lifestyle choices.

Program co-coordinator Jasmine Harris-Speight said the 4-H program develops leadership and team-building skills in teens. To earn certification, participants must complete 24 hours of volunteer service during a school year through community projects that promote health and wellness. Volunteers have opportunities to meet peers across the state at events promoting the program to other teens.

"I want our teens to take a positive outlook on life and see that there are people who care about them," Harris-Speight said during a recent Junior Master Wellness Volunteer event. "We want to create more open spaces for them like this to be themselves, have fun, and take something back to their communities."

BY NATHAN GREGORY



"I want our teens to take a positive outlook on life and see that there are people who care about them. We want to create more open spaces for them to be themselves, have fun, and take something back to their communities."

JASMINE HARRIS-SPEIGHT

Justin Bickham, Hinds County 4-H'er
and Junior Master Wellness Volunteer.
(Photo by Kevin Hudson)

NewsNotes



Catchot

Dr. Angus L. Catchot Jr. is the new MSU Extension director. He previously served as the associate director of the Mississippi Agricultural and Forestry Experiment Station (MAFES) and was a professor in the College of Agriculture and Life Sciences (CALS). Catchot earned his bachelor's degree in agricultural pest management and both his master's and doctoral degrees in entomology, all from MSU.



Lacy

Dr. Curt Lacy is the new head of the Central Mississippi Research and Extension Center in Raymond. He previously oversaw county operations for the MSU Extension Service. He earned his bachelor's degree in agricultural and extension education and his master's and doctoral degrees in agricultural economics, all from MSU. He is a graduate of the Food Systems Leadership Institute and LEAD21 program, two national peer leadership communities.



Irby

Dr. Trent Irby has moved into an administrative role as associate director for MSU Extension after more than 12 years as the Extension soybean specialist. Irby earned three degrees from MSU: a bachelor's degree in agricultural engineering, technology, and business, and master's and doctoral degrees in weed science.



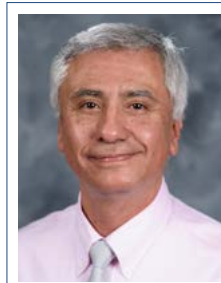
Spafford

Anne Spafford is the new head of the Department of Landscape Architecture. She most recently served as professor and associate department head of the Department of Horticultural Science at North Carolina State University. She earned her bachelor's degree in ornamental horticulture and master's in landscape architecture from the University of Illinois, Urbana-Champaign. She currently is a Doctor of Design candidate in the College of Design at North Carolina State University's online program for mid-career professionals.



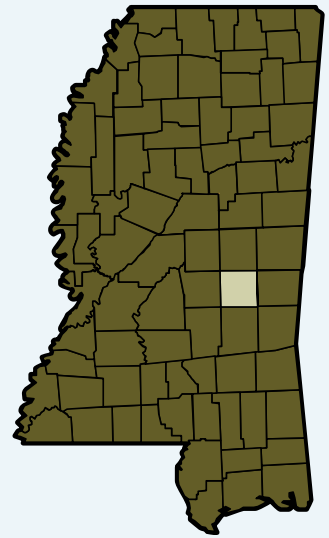
Manginsay

Dr. Natalie Manginsay is the new director of the College of Veterinary Medicine (CVM) Poultry Research and Diagnostic Laboratory in Pearl. She previously was an associate clinical professor of avian medicine at the lab. She received her veterinary degree from the University of Pretoria in South Africa and her master's in avian medicine and doctorate in veterinary and biomedical sciences from the University of Georgia. She is a diplomate of the American College of Poultry Veterinarians.



Banda

Dr. Alejandro Banda is the new executive director of the Mississippi Veterinary Research and Diagnostic Laboratory System. He previously was a clinical professor in the Department of Pathobiology and Population Medicine. He is a diplomate of both the American College of Poultry Veterinarians and the American College of Microbiologists.



The Alabama and Vicksburg Railroad Depot in Newton is on the National Register of Historic Places. (Photo by Michaela Parker)

1/82: Newton County

MSU in Newton County:

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“Newton is a great small town where history and nature unite, making it a great place to visit or call home.”

KATRINA MCCALPHIA,
MSU Extension County Coordinator

| | |
|---------------------------|---|
| County seat: | Decatur |
| Population: | 21,720 |
| Municipalities: | Newton, Decatur, Union, Hickory, Chunky |
| Communities: | Conehatta, Lawrence, Liberty, Cedar Grove, Little Rock, Duffee, Stratton |
| Commodities: | Poultry/eggs, forestry, beef cattle, grains (including oilseeds, dry beans, dry peas) |
| Industries: | Agriculture, manufacturing, health care and social assistance, retail trade |
| Natural resources: | Wildlife, forests, streams, and rivers along with mineral resources that include clay, sand, and gravel. No oil or gas of economic importance has been reported from Newton County. Clays found in the county have potential uses in the manufacture of lightweight aggregate and brick. |
| Attractions: | Turkey Creek Water Park, Lazy Acres Christmas Tree Farm, Chunky River Kayaking |
| History notes: | The land that would become Newton County was purchased from the Choctaw under the terms of the Treaty of Dancing Rabbit Creek. Newton County was split off from the southern part of Neshoba County and was established in 1836. The county is named for famous scientist and philosopher Sir Isaac Newton. Newton County was home to a significant moonshining industry during the Prohibition era. The county's remote location, dense forests, and lack of law enforcement made it an ideal place for distillers to hide their operations. |
| Did you know? | Newton County is the only perfectly square county in the state. In the early 20th century, Newton County was an important center of the timber industry. The county's vast pine forests provided a source of wood for pulp and paper mills throughout the region and still is a viable source to this day. |

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

DevelopmentCorner

History Guides the Future

Ballew Hall's Renovation Marks a New Chapter for the College of Agriculture and Life Sciences

Mississippi State University's former butcher shop is fulfilling a new purpose for the land-grant institution with a major renovation. Ballew Hall served as MSU's Meat Laboratory for nearly six decades before it moved to the newly constructed Meat Science and Muscle Biology Laboratory in 2019. Now the renovated facility will serve as an educational space for students and office space for faculty and staff.

The redesigned 25,000-square-foot building provides a hub for collaboration and discovery within the College of Agriculture and Life Sciences (CALs) and the Mississippi Agricultural and Forestry Experiment Station (MAFES). Renovations include a flexible teaching lab, development suite, conference room, recruiter suite, auditorium, and administrative spaces. Though the building has received a modern makeover, former students, faculty, and staff may recognize familiar elements such as the iconic green tile and the names of people and organizations that have helped shape the future of learning and research at MSU.

In 2023, Susanne Boyd Purvis and her husband, David Purvis, along with her mother, Dr. Catherine Boyd, named the



Ballew Hall renovations include a flexible teaching lab, development suite, conference room, recruiter suite, auditorium, and administrative spaces. (Photo by Russ Houston)

Ballew Hall auditorium after their father, father-in-law, and husband, respectively, Dr. Leroy H. Boyd.

Leroy, an Ellis County, Oklahoma, native, served as a faculty member in the animal husbandry department (renamed the Department of Animal and Dairy Sciences) for 38 years. He was among the first occupants of the newly constructed building, which opened in 1962. From 1963 until his retirement in 2001,

Leroy focused on ruminants and taught classes about sheep, horses, western equitation, and livestock judging, which was his lifelong passion.

“My father would probably say he’s ‘tickled pink’ that his name is on a room at Ballew Hall,” Susanne said. “But at the end of the day, I know that my dad and I would just be glad to make sure the room is equipped with the technology and furnishings for students to have a great learning experience. He was really invested in teaching his students and preparing them for not just a future career but for their everyday lives so that they could be successful in their endeavors.”

A gift from the Mississippi Farm Bureau Federation (MFBF), another long-term supporter of MSU agricultural research,

service, and teaching, is making its mark on the renovated building through the naming of the recruitment suite.

“It is vital that Mississippi’s largest land-grant university and largest general farm organization are on the same page for the future of agriculture in Mississippi,” MFBF President Mike McCormick said. “The field is changing every day from technology to natural resources, and how they are utilized to sustain our land to grow the food, fiber, and shelter we all consume day in and day out. We rely on CALS to educate the next generation of agricultural leaders and Farm Bureau members to continue Mississippi’s rich legacy of agriculture.”

Will Staggers, director of development for CALS, said these gifts are essential to education and research within the historic building.

“To have their support and their names throughout the building is an incredible gesture and exposes students, who will be in and out of these halls all day, to the legacy of support and family in the field of agriculture,” Staggers said. “Their generosity is changing the face of MSU’s campus, preserving the building’s legacy more than 60 years in the making, and providing essential support for generations of CALS students to come.”

Both Mississippi Farm Bureau and the Purvis and Boyd families are longtime supporters of CALS and the university through previous scholarships and donations.

If you are interested in the naming opportunities available in Ballew Hall, contact Staggers at (662) 325-2837 or wstaggers@foundation.msstate.edu or Lacey Gordon at (662) 325-6312 or lgordon@msstate.edu.

BY CHLOE MADISON



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For more information on giving in support of Mississippi State University, visit the MSU Foundation website.

msufoundation.com



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Dr. Kim Klunk (center) talks with Daryl and Cindi Redditt of Stubborn Heifer Cattle Co. during a farm visit. The MSU College of Veterinary Medicine expanded its Mental Health and Wellness Program to address stress and other mental health issues among veterinary students and veterinarians. Read more on page 15. (Photo by Kevin Hudson)

