

MISSISSIPPI

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VICE PRESIDENT'S LETTER

This semester, our division launched an electronic newsletter, *Common Ground*, where we deliver timely stories each month to your inbox. If you're not already subscribed, I invite you to

scan the QR code below or visit dafvm.msstate.edu to sign up. You will continue to receive *Mississippi LandMarks* in your mailbox twice a year. There are so many stories to share, and we hope you enjoy the more frequent updates through *Common Ground*.

Growing up on a dairy farm in southern Missouri, our local veterinarian was essential to my family's livelihood and also a close personal friend to my father. Even after my brother took over the farm and my dad was not in good health, Dad would get up and go out to the barn to visit with our veterinarian, Jim, and the stories would ensue. This May, our College of Veterinary Medicine will officially begin the Enhanced Clinical Practicum (ECP) program (page 8) to give our students additional experience working with farm animals in rural areas. We hope more of our students take an interest in pursuing this route.

I'm inspired daily as I see the work our faculty and staff are doing to meet the evolving needs of our communities, state, nation, and world. The latest report by the National Science Foundation ranks Mississippi State University 11th nationally for agricultural research and 13th for natural resource and conservation funding. We could not achieve these rankings without the steadfast work of our faculty and staff. Faculty in the Division of Agriculture, Forestry, and Veterinary Medicine leverage state-appropriated funding with extramural grants and contracts, which reached a record level of nearly \$117 million in 2022.

In this issue, you'll read about how our researchers are tackling issues by using natural and renewable materials to remove toxins from water and discovering strategies to protect pollinators. You'll learn about how our people are working to restore bottomlands and improve efficiency in sweetpotato packing lines. We're making an impact that matters.

We hope you enjoy this issue!



KEITH H. COBLE
Vice President

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ON THE COVER

Mississippi State University supports all types of crop production in the state, including pecans. These trees grow at Lott's Pecans in Harrison County. Owner Alfred Lott is a regular client of MSU Extension agent Tim Ray. Mississippi's 2022 crop is estimated at 3 million pounds with prices ranging from \$3 to \$6 a pound for pecans in the shell to \$12 to \$16 a pound for mammoth shelled halves. (Photo by Kevin Hudson)



MAFES Researchers Work to Automate Midsized Sweetpotato Packing Lines

Sweetpotato production is labor-intensive and completely vertical, meaning the producer is responsible for the crop from slip to sale. Midsized producers who want to improve their production efficiency by automating sweetpotato packing lines have turned to Mississippi Agricultural and Forestry Experiment Station (MAFES) scientists for help.

This project is an example of outreach informing research, said Dr. Mark Shankle, MAFES scientist and research professor in the Department of Plant and Soil Sciences based at the Pontotoc Ridge-Flatwoods Branch Experiment Station.

“People familiar with the MSU Extension Service know it delivers MAFES research to the community, but many don’t realize how important it is for us to listen and gather information on the front end,” Shankle said. “This project did just that, building research and securing funding around a major industry problem brought to us by a producer.”

That producer is Anna Rhinewalt, second-generation sweetpotato farmer in Senatobia, Mississippi, who reached out to discuss automating packing lines for midsized producers.

“My family has farmed row crops, cattle, and sweetpotatoes for over 45 years,” she said. “As with any business, we’ve dealt with and worked through various challenges along the way. One of those obstacles has us analyzing options as we seek to upgrade our packing line equipment. The scale of some of these options can make utilizing technology cost-prohibitive for farms our size.”

Rhinewalt noted the desire to automate stems from labor challenges.

“In the past few years, we’ve gone from relying mostly on domestic labor to depending almost solely on H2A labor, or temporary agricultural employment of foreign workers,” she explained. “A challenge with H2A labor is that employees must travel back to their home country for 2 months every year. For a pack house like ours that operates 52 weeks out of the year, that presents a major problem. We need to be fully dependent on as few people as possible.”



“In the past few years, we’ve gone from relying mostly on domestic labor to depending almost solely on H2A labor, or temporary agricultural employment of foreign workers...For a pack house like ours that operates 52 weeks out of the year, that presents a major problem.”

ANNA RHINEWALT

Dr. Lorin Harvey (left) consults with sweetpotato producer Anna Rhinewalt of Senatobia.

Currently, sweetpotatoes are sorted and packed manually. Harvested roots are graded in the field by hand—primarily according to size—and moved to storage. Once a purchase order is received, crates are pulled from storage and brought into the packing house, where they are washed and regraded based on size and cosmetics.

A MAFES research team is working to develop a machine-vision prototype for automated sweetpotato sorting. Dr. Yuzhen Lu, who is now at Michigan State, initiated development of the prototype, and Dr. Nuwan Wijewardane, MAFES scientist and assistant professor in the Department of Agricultural and Biological Engineering, will now lead the project.

Dr. Alex Thomasson, agricultural and biological engineering department head and William B. and Sherry Berry Endowed Chair, discussed the project's status during the transition.

"The team is developing a conveyor system that will automatically sort sweetpotatoes at a higher level of detail than what commercially available systems are capable of," Thomasson explained. "The camera and computer on this innovative system will process images in real time, sorting the crop without human hands touching them."

Presently, the team is working to figure out how to rotate a sweetpotato 360 degrees on the conveyor system so the camera can assess quality across its entire surface. The next step will be collecting data with the camera and training the machine-learning software to detect size and quality.

"The team will build a model to automatically grade the sweetpotatoes and will basically teach the machine-vision prototype how to grade them," Thomasson said. "Then they will collect sweetpotatoes to test the software's accuracy at real-time image analysis. They will manually grade and label the sweetpotatoes and then compare manual grades to automated grades to see if the sorting prototype is accurate."

Dr. Lorin Harvey, MAFES scientist and MSU Extension sweetpotato specialist, said the automation will help in an industry where success is so hard-earned.

"Many factors play into the success in sweetpotatoes," he said. "It isn't traded like other commodities, it's difficult to insure, and once the crop is harvested, producers must store it until they're able to market and sell it directly to the buyer. Labor can account for a large amount of sweetpotato production costs. For the middle to smaller lines that we're building this technology for, easily half of their total cost is labor, if not more. Our hope is to reduce that labor, save them money, and make their jobs a little easier."

The researchers believe that Mississippi is well poised to embrace affordable automation in sweetpotato packing houses.

"Our state's sweetpotato crop accounts for between 18 and 22 percent of the nation's sweetpotatoes, depending on the year," Harvey said. "Current automation methods can cost up to a million dollars for a producer to implement, which prices out most small and mid-sized sweetpotato producers. Automating the packing process on a smaller scale will help those producers like Anna, who have 400 to 500 acres of sweetpotatoes or less, cut down on the cost and dependence on labor in a big way."

Mississippi is the second largest sweetpotato producer in planted acreage in the U.S. Approximately 29,500 acres of the Southern staple were produced in 2022 with a yield of about 440 bushels of marketable sweet potatoes per acre, about 275 bushels of U.S. #1 potatoes. Sweetpotato production was valued at \$112 million in 2022.

This research is funded by the Specialty Crop Block Grant Program through the Mississippi Department of Agriculture and Commerce.

BY VANESSA BEESON • PHOTOS BY DOMINIQUE BELCHER



Project Helps Prepare for Sea-Level Challenges on Gulf Coast

Shoreside communities are blessed with being located on a coast, but they are increasingly impacted by what is often called "nuisance flooding," a term that obscures the serious nature of this problem.

Rising sea levels worldwide are causing nuisance or high-tide flooding to become more common. The increasing frequency and impact of these smaller floods interrupt businesses, damage vehicles, and cause insurance rates to rise. The MSU Extension Service addressed some communication and financial barriers to understanding and addressing nuisance flooding and other aspects of rising seas through the Resilience to Future Flooding project.

This project, funded by a National Oceanic and Atmospheric Administration Regional Coastal Resilience Grant, developed short videos to address communication barriers and provided grants to communities to address financial barriers.

"Sea-level rise directly affects all our coastal communities," said Dr. Eric Sparks, director of the MSU Coastal Marine Extension Program. "It is crucial that coastal decision-makers understand how sea levels will rise, what impacts could be, and what their options are for addressing potential impacts."

Resilience to Future Flooding funded five subprojects with \$40,000 to \$60,000 grants. Communities that received these grants created short video diaries of their experiences so others can learn from their work.

"These videos highlight the work these communities are doing to increase their own sea-level-rise resilience," said Andrew Medhurst, an Extension associate working with the program. "We offer their case studies as a way to provide new ideas to other communities and inspire the next projects."

In Biloxi, Mississippi, officials developed a plan to improve flood resiliency in the city's economic-development corridor. They looked at first floor elevations to determine risk from potential flood and storm-surge scenarios.

Photo Submitted



Apalachicola, Florida, assessed its historic properties for risks related to sea-level rise and associated flood hazards. The Resilience to Future Flooding project helped city leaders develop specific recommendations and cost estimates for measures such as floodproofing or elevating the vulnerable properties.

The Magnolia River in Alabama has had problems with flooding, sediment, and pollution. A team of community organizations and officials conducted a study to assess the feasibility of constructing wetlands on the uplands of the river.

In Alligator Point, Florida, persistent issues surround the community's sole access and evacuation route. This road was the focus of an effort led by the Apalachee Regional Planning Council to consider what options are available for resiliency improvements.

Santa Rosa County, Florida, conducted a vulnerability assessment and developed a flood-risk cost estimator web application. Their goal was to inform residents of future flood risks and stimulate open community dialogue at public workshops.

"We hope others will begin these efforts in their own communities," Medhurst said. "The Resilience to Future Flooding project is here to help and serve as a resource for those who want to move forward addressing future flood resilience."

This project is led by the MSU Extension Service and Sea Grant's Program for Local Adaptation to Climate Effects: Sea-Level Rise, Mississippi-Alabama Sea Grant, Dauphin Island Sea Lab, Gulf of Mexico Alliance, NOAA, Climate and Resilience Community of Practice, University of Florida IFAS Extension, Mississippi Department of Marine Resources, and Louisiana Sea Grant.

This project has been recognized nationally and regionally with awards from the Environmental Protection Agency and the Association of Natural Resources Professionals for overall quality of its outcomes and the partnerships created to achieve them.

These efforts to increase sea-level-rise resilience in the northern Gulf of Mexico were highlighted in Yale Climate Connections, a nonpartisan, multimedia service providing media content on the issue of climate change. The organization

aims to help citizens and institutions understand how the changing climate is already affecting lives.

BY BONNIE COBLENTZ

CVM Launches New Enhanced Clinical Practicum Program

The MSU College of Veterinary Medicine has long prided itself on the outstanding curriculum provided to its students, which is routinely praised for preparing them to be practice-ready on day one.

Now, CVM leaders are pleased to announce the addition of a new program created to further prepare students and meet some key demands within the veterinary profession.

Officially designated the Enhanced Clinical Practicum (ECP) program, this new rotation will include two 4-week core clinical practice experiences for third- and fourth-year veterinary students. It will provide opportunities for them to enrich their clinical skills in a private setting, while enhancing other skills such as client communications and business management.

Students will be even better prepared as new graduates with a more well-rounded and comprehensive education involving real-world veterinary practice experience, said Dr. Carla Huston, CVM professor, MSU Extension Service veterinarian, and director of the program.

“There is nothing that can replace actual experience in the field,” Huston said. “It’s been said many times, but actually walking in someone’s shoes is the only real way to fully understand and appreciate what they do. In addition, knowing what to expect in the real world may also lead to less stress and anxiety for new grads.”

There are currently 52 practices in 11 states enrolled in the program; 16 are in Mississippi. More than half of the practices are mixed-animal practices, reflecting the college’s intention to increase the awareness of rural veterinary practice. Participants include practices in states where CVM has developed professional veterinary education relationships, such as West Virginia, South Carolina, and Arkansas, as well as practices owned by alumni who can meet the program objectives and standards.

Amber Box, who became the manager of the ECP program in 2022, said criteria for practice participation is based upon a

clinic’s ability to provide a safe, first-rate learning experience for the students according to American Veterinary Medical Association Council on Education accreditation standards.

“We truly believe this is a win-win program for our students, the state of Mississippi, and the veterinary profession as a whole,” Box said. “Having a larger and more diverse caseload will provide a more realistic experience in veterinary medicine. This program will provide a better understanding of the art and business of good veterinary practice, and students will learn communication, time management, and business skills.”

“This practicum will give our students the best of both worlds by combining our already rigorous, on-site training with highly trained and specialized faculty and facilities with the practical and real-world education from the private veterinary practice setting,” CVM Dean Kent Hoblet said.

For this new component of the curriculum, students will be matched with practices based on their educational goals and interests, as well as the location of the practice. They will be evaluated in three main categories: knowledge, clinical skills, and professionalism and interpersonal skills.

In the case of Lauren Zell, a fourth-year CVM student from Arkansas, the ECP program opened the door to her first postgraduate job. She trained at the Animal Medical Center in Brookhaven, Mississippi, for a month in 2022 before receiving an offer to work there full time upon her graduation in 2023.

“I got to be a part of the everyday appointments we had for pets and also got to participate closely with doctors and get a lot of hands-on experience with livestock and equine patients. Whether it was an emergency call or something during normal office hours, I got to do a little bit of it all,” Zell said. “I didn’t think my first job out of vet-med school would be the outcome of the program, but the clinical experience and confidence I gained out of it opened the door for me and the next chapter of my life.”

BY NATHAN GREGORY • PHOTO BY TOM THOMPSON



During her clinical practicum with Dr. Mike Pallone, Madi Young (DVM Class of 2024) tested bulls at Town Creek Farm near West Point, Mississippi.

“There is nothing that can replace actual experience in the field.”

DR. CARLA HUSTON

Wildlife Experts Seek to Improve Native

Forages and Habitat for Deer

David Hall is reaping the benefits of research focused on increasing native food plants for white-tailed deer on his property in Meridian, Mississippi.

“We’ve already seen a big response in the health of our deer herd over the last several years since we began implementing some of these activities,” Hall said. “Body weights have increased every year, kidney fat index measurements are up, and antler mass has increased on all age classes of our bucks.”

For several years, Hall has worked with Mississippi State University scientists who manage the Deer Ecology and Management Lab, also called the MSU Deer Lab, allowing them to conduct research on his property. He has implemented two of the most common methods for encouraging growth of native plants: selective timber thinning and prescribed fire.

Deer Lab researchers have projects in various stages that address the importance of native forages and how to encourage their growth, said Dr. Bronson Strickland, Extension wildlife specialist and scientist with the Forest and Wildlife Research Center.

Other researchers involved in these efforts include Dr. Steve Demarais, Taylor Chair in Applied Big Game Research and Instruction and Dale H. Arner Professor of Wildlife Ecology and Management; Dr. Ray Iglay, who leads the Wildlife Habitat and Human Interactions Lab; and Luke Resop, a graduate student in the Deer Lab. Demarais and Strickland are codirectors of the Deer Lab.

“We are currently looking at the optimal timing of prescribed fire to influence the herbaceous plant community and get the greatest amount of deer forages in subsequent months and years,” Strickland said. “Our

habitat management recommendations promote a diversity of plants that deer have adapted to eat. Native plants are critical to maximizing habitat quality and the nutritional status of the deer herd.”

Hall participates in this study, which is still in the early stages of comparing native forage response to prescribed fire done in the dormant season, early growing season, mid growing season, and late growing season. Prescribed fire helps control undesirable species and encourage growth of desirable species after the timber thinning process allows sunlight to reach the forest floor.

“What we have seen so far is that the later burns taking place in mid to late summer are providing a stronger response from the native forages that we really want to promote for wildlife food sources,” said Hall, who is an MSU graduate and a forester. “The more traditionally timed burns of late winter and early spring have a stronger response from woody vegetation like sweetgums and shrubs that can be more beneficial as cover but do not provide high-quality forage.”

In some cases, properties benefit from a selective herbicide application after timber thinning to help control unwanted grasses, trees, and invasive species. Forests and old fields benefit most from these methods.

“Deer are all across the landscape, and they eat all kinds of plants,” said Bill Hamrick, an Extension wildlife associate. “Plants that occur in the landscape will provide everything they need to survive and grow. But you must make sure those plants are there.”

Deer prefer some plants over others, but sometimes it is a matter of what forage is available. Deer select plants that are easy to digest and have the greatest nutrient concentration;



“We’ve already seen a big response in the health of our deer herd over the last several years since we began implementing some of these activities. Body weights have increased every year, kidney fat index measurements are up, and antler mass has increased on all age classes of our bucks.”

DAVID HALL



Photo by Bill Hamrick

those plants taste good to deer. Because deer are always seeking the most nutrient-dense diet, their selection of certain plants can vary across the state and throughout the year.

“Food plots have an important place in habitat management and are great for times when plants are sparse,” Hamrick said. “But native plants are available from season to season and are cost-effective for the landowner, especially as fuel and fertilizer prices rise.”

Hall said he found that managing his property to encourage native plant growth for deer has improved his timber stands and increased other wildlife populations, including wild turkey, bobwhite quail, and songbirds. He noted that three to four bobwhite quail coveys are established across his property; just a few years ago, quail were not seen or heard anywhere in the area.

“Our primary goal has been to find a balance between timber management and improving wildlife recreational opportunities,” Hall said. “I think we have surpassed that goal, and I am very excited to see more improvements as we expand the use of these methods. With the research and knowledge that comes from the MSU Deer Lab, we have been able to have a very positive impact on the wildlife and recreational opportunities on our property while also keeping our focus on timber production.”

Extension Publication 3618, *A Guide to Common Native Deer Forages in Mississippi and the Southeast*, provides a list of common food plants, their characteristics, and a general summary of how to actively manage property for their growth.

BY SUSAN COLLINS-SMITH

Undergraduate Research Program Sets Students on Paths to Discovery

As a provost scholar from Prattville, Alabama, Isabella Burger planned to earn a bachelor’s degree and attend veterinary school when she came to Mississippi State. A requirement Burger saw as an obstacle at the time turned out to influence her future career path far more than she could have imagined.

“My scholarship required a research experience,” she said. “At the time, I planned to do as little research as possible and move on.”

Three undergraduate research projects and one MSU master’s degree later, Burger is beginning a doctoral program at Iowa State University with a clear passion for research that guides her future goals.

In her first research project as a freshman, Burger fell in love with the process. She studied fruit flies to better understand habitat quality.

“I loved asking questions and seeking answers,” she said.

In another project, Burger quantified how undergraduate research impacts students and faculty alike. Her research team designed and sent surveys to students and faculty mentors who participated in the Undergraduate Research Scholars Program in the College of Agriculture and Life Sciences (CALS), College of Forest Resources (CFR), and MSU Office of Research and Economic Development over a 5-year period. Burger said the project helped her see how research affects other students.

“I knew how it affected me, so I was curious how it affected others,” she said. “It was neat that

Isabella Burger participated in the Undergraduate Research Scholars Program.



people had a similar reaction to the program that I did. All students felt they grew and developed in at least one of the several measures we explored in our survey,”

Seventy-five students from 17 departments responded to the survey and reported a total of 76 professional meeting presentations, eight coauthored publications, and 40 pending coauthored publications at the time of the survey. Seventy-three percent said the opportunity confirmed their decision to attend graduate school, and 18 percent said it inspired them to pursue graduate education.

“The 18 percent is the category I fell in, so I was happy to see other people who also pursued further education because of the experience,” Burger said.

Dr. Leslie Burger, associate Extension professor, mentored Isabella Burger on the project. She said faculty participate in these programs mainly to help enrich students.

“Faculty mentors were motivated most by their desire to influence the careers of talented students,” she added. “The second most common motivator was the opportunity to contribute to their own research.”

Dr. Burger said her fellow faculty members also saw marked growth in participating students.

“Faculty saw undergraduates gain improved understanding of research methods, better critical thinking and independent learning skills, and increased self-confidence,” she said. “They also said the research opportunity fostered meaningful relationships between students and mentors.

“The Undergraduate Research Scholars Program lets students explore avenues they might not have considered and see potential in themselves they didn’t know they had,” she said. “In Isabella’s case, I’m most proud that this experience gave her the opportunity to have the courage to pursue what she wanted to. That was a hard decision for her, but, because she found success as an undergraduate researcher early on, she grew in confidence.”

The CALS Undergraduate Research Scholars Program is funded by the Mississippi Agricultural and Forestry Experiment Station.

In CFR, the program is funded by the Forest and Wildlife Research Center.

BY VANESSA BEESON
PHOTO BY DOMINIQUE BELCHER

MAFES Developing Heat- and Drought-Resilient Corn Varieties

Scientists in the Mississippi Agricultural and Forestry Experiment Station (MAFES) are studying how corn reacts to today's changing weather patterns to inform the design of more resilient varieties that will hold up to increasingly stressful climatic conditions.

Heat and drought are the two greatest stressors jeopardizing the growth cycle of the corn plant, ultimately decreasing its grain yield and quality. Dr. Raju Bheemanahalli Rangappa and Dr. Raja Reddy, MAFES scientists in the Department of Plant and Soil Sciences, are examining the effects of heat and drought at various stages in the growth cycle to understand their impact on the plants' flowering and grain-filling processes.

"Water and temperature, to a certain extent, control vegetative growth, producing and growing leaves that are needed to produce the carbohydrates that feed the other parts of the plant," said Reddy, research professor and director of the Soil-Plant-Atmosphere Research (SPAR) Facility.

Reddy has seen increasing impacts of these stressors on corn plants in recent years. Extreme weather events, such as hurricanes and tornadoes, are becoming more frequent and severe, and average weather patterns are shifting, too. According to Reddy, recent patterns include flooding early in the growing season, drought and high temperatures later in the season, and generally unpredictable rainfall.

"We are not sure whether these shifts are due to climate change, but these patterns have become more of a norm in recent years, and we are likely to experience extreme events more frequently in the future, both at home and worldwide," Reddy said.

"In Mississippi, we usually plant corn in late March or early April, but with heavy rains, we delay planting by 15 to 20 days," added Rangappa, assistant research professor. "Because of the delay, nearly every growing season in Mississippi, corn crops have been exposed to higher temperatures and humidity and not enough rain in the later stages of the growth cycle."

Simulating different environmental conditions in the SPAR Facility, researchers observed the response of genetically diverse genotypes growing in two greenhouses: one set at optimal temperatures not exceeding 86 degrees and the other at higher temperatures, reaching as high as 100 degrees. Within each greenhouse, half of the plants received 100 percent of their optimal irrigation, while the other half received 50 percent.

Results showed that combined drought and heat treatment had a greater detrimental effect on pollen germination than individual stress. Drought and combined stress also affected the process of photosynthesis and increased ear-leaf temperature. Plants grown under the combined-stress conditions had almost 85 percent less kernels. Overall, a short-term hot and dry climate during pollination can cause an acute impact on yield components, the study showed.

Corn is a thirsty plant, especially during its reproductive stages. Corn plants are susceptible to drought or heat stress during this short but critical period of about 5 to 7 days. Heat or drought during pollination negatively affects physiological events, including pollen and silk development, pollen tube growth on the silks, and fertilization, reducing seed set.

"This stage is so critical in corn because, once the damage is done to the reproductive organs, it is irreversible," Rangappa added. "In short, your season is gone."

The end goal of the study is to generate knowledge and resources that will lead to better management during the critical period and, in the long term, the development of corn genotypes or hybrids with enhanced stress tolerance for future climates.

"Most of the breeding work on hybrid development has focused on efficient nutrient use under favorable growing environments, but little attention has been placed on stress tolerance," Rangappa said. "With climate conditions only growing more extreme, the future of corn is in genetics."

BY MEG HENDERSON

"In Mississippi, we usually plant corn in late March or early April, but with heavy rains, we delay planting by 15 to 20 days. Because of the delay...corn crops have been exposed to higher temperatures and humidity and not enough rain in the later stages of the growth cycle."

DR. RAJU BHEEMANAHALLI RANGAPPA



Graduate research assistant Ranadheer Reddy Vennam tests corn leaves at the Soil-Plant-Atmosphere Research Facility. (Photo Submitted)

MSU Experts Take Aim at

Plastic Pollution

“Training people to look for microplastics and pick up trash helps with their recognition of the problem, and we find they are more likely to care about the situation.”

JESSI JAMES

Extension associates Anthony Vedral (left) and Jessi James confront the problem of plastic pollution on the Mississippi coast.

Helping individuals directly combat a global problem is the goal behind MSU Extension Service efforts to train citizen scientists for the battle against microplastic pollution damaging the world’s marine environments.

Microplastics are plastic pieces smaller than 5 millimeters, which is about the width of a pencil eraser. They often are created as large plastic items break down, but some are intentionally small pieces, such as microbeads used in cosmetics and toothpaste.

Microplastics cause many environmental problems, but none are more damaging than plastic marine debris. The primary source of marine debris is not boaters and those who use the water. Rather, most of it comes from the land—from dumping, littering, and natural disasters.

“Most people know that marine animals can eat debris or become entangled in it, which is obviously harmful to those species,” said Mandy Sartain, Extension marine debris specialist. “But what people do not always know is that eating marine life that has been exposed to microplastics can be harmful to humans.”

Anthony Vedral, a coastal ecologist with the MSU Extension Service pursuing a doctorate in the Department of Wildlife, Fisheries, and Aquaculture, is investigating potential for different plastics to fragment into microplastics over time after exposure on land, in fresh water, and in salt water.

“Unlike most organic materials, plastics don’t typically biodegrade, or break down through biological processes into nutrients that are available for other organisms,” Vedral said. “Plastics do photodegrade slowly from the sun, but primarily, they just break into smaller and smaller pieces. In the environment, they cause issues for organisms that may ingest them, from plankton to all the way up the food chain to fish, birds, and turtles.”

Vedral said this threat to oceans and marine life may also extend to humans who consume seafood that may contain plastics.

“My goal is to identify the environments where plastics degrade the most as they move from land to water and then to the ocean,” Vedral said. “If we identify the environments that have the highest potential to lead to microplastics, that will give us information for better targeting cleanup efforts.”

Jessi James, an Extension associate and coordinator for the Mississippi Inland Cleanup Program, is focused on training volunteers to accurately collect data on the litter they gather.

“Training people to look for microplastics and pick up trash helps with their recognition of the problem, and we find they are more likely to care about the situation,” James said. “The more awareness you bring to something, the more people realize this is a problem they can fight.”

Adding to the problem of microplastics are nurdles, the small plastic pellets made to be melted down and turned into plastic products.

Through leaks, spills, and storage or transportation errors, nurdles end up in the environment and eventually the ocean. Many pollutants are attracted to the surface of nurdles, and these tiny pellets can be mistaken by wildlife as food.

“A lot of nurdles are shipped up the Mississippi River, and there is a large amount of nurdles that have ended up on lake shores around New Orleans,” James said. “We get them on the Mississippi Gulf Coast because the outflow of the river comes here.”

Beyond these projects, MSU is working to address the problem by coordinating both the Mississippi Coastal Cleanup and the Mississippi Inland Cleanup. Extension Publication 3243, *Microplastics: Sampling and Processing Guidebook*, was published to help train citizen scientists in methods to use for capturing microplastics.

Together, these efforts are aimed at reducing the amount of plastic debris entering the world’s oceans.

BY BONNIE COBLENTZ • PHOTO BY MICHAELA PARKER

Improving Bottomlands

How Diversifying Tree Species Helps Timber and Wildlife

Bottomland forests provide many benefits for the environment and wildlife, but they are steadily disappearing. Scientists in the Forest and Wildlife Research Center (FWRC) are working to restore these critical areas and the habitats they provide.

Dr. Joshua Granger, an assistant forestry professor, and his team aim to demonstrate novel silvicultural techniques to restore floodplain forests and wildlife habitat across Mississippi and Arkansas.

Bottomland forests reduce the risk and severity of downstream flooding by providing areas to store floodwater. They store large amounts of carbon in trees and soil, while providing critical habitat for waterfowl, birds, wild turkey, and other wildlife. These wetlands also improve water quality by filtering and flushing nutrients, processing nitrates and organic waste, and reducing sediment before it reaches open water.

At one time, 30 million acres of bottomland forests covered the Southeast. Today, only about 40 percent of that area still supports these wetland environments, according to the Environmental Protection Agency.

The FWRC study is conducted on the O’Keefe Wildlife Management Area (WMA) in Lambert, Mississippi; Malmaison WMA near Greenwood, Mississippi; and two private properties in Charleston, Mississippi,

and Humphrey, Arkansas. The team has partnered with the National Fish and Wildlife Foundation (NFWF), whose goals to sustain, restore, and enhance wildlife populations, plants, and natural habitats align well with the MSU project.

“We are conducting research predominantly on oak plantations and on older, more natural bottomland hardwood stands,” Granger said. “We are studying regeneration of those stands to better the environment for wildlife and improve timber quality. Right now, these stands and plantations are not benefiting wildlife to their full capacity, and they are not producing a lot of volume in timber. Partnering with NFWF will enhance our ability to open those stands to regenerate and help them move forward, while creating more benefits for wildlife species, and improve tree quality.”

The team plans to restore 344 acres of degraded natural bottomland hardwoods and 400 acres of early-rotation bottomland hardwood plantations across the four sites. The scientists plan to diversify these stands, which are pure monocultures, by planting multiple species.

“We seek to demonstrate that managing degraded stands and plantations can produce substantial

Drew Fletcher (left), forestry undergraduate research scholar, and T. J. Gatlin, forestry graduate student, stand by a large hardwood in one of the bottomland study sites. (Photo Submitted)

benefits for landowners and wildlife alike by implementing systematic thinning treatments, crown lifting treatments, and interplanting hardwood species to enhance wildlife habitat,” Granger explained. “These methods have been long favored for improving tree quality and restoring wildlife habitat, but no large-scale projects within the Lower Mississippi Alluvial Valley have demonstrated the implementation of these practices.”

The team will start underplanting, or planting under the trees with lower-growing plants, this winter. As the research continues, the researchers say they are excited to diversify the land while restoring habitats and the environment.

“There needs to be a larger focus and more research on bottomland hardwood plantations,” Granger said. “In Mississippi, loblolly pine plantations are something we know how to grow efficiently

for timber, while bottomland oak and hardwood plantations are more difficult to grow when aiming for higher quality timber.”

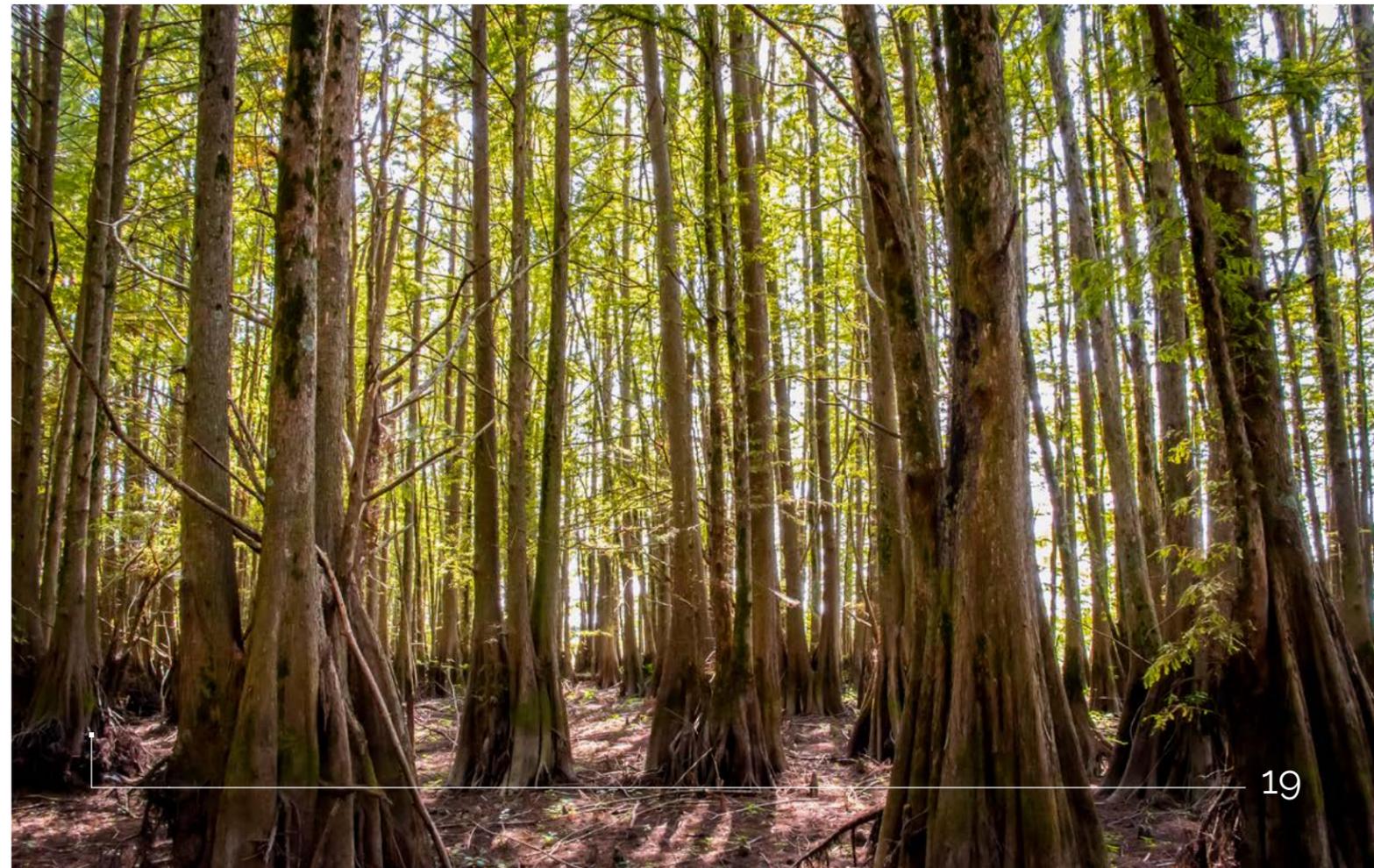
This research is sponsored by the National Fish and Wildlife Foundation. In addition to Granger, the MSU forestry team includes Dr. Krishna Poudel and Dr. Jia Yang, both assistant forestry professors; Dr. Brady Self, associate Extension professor; Dr. Robert Grala, George L. Switzer Professor of Forestry; and Timothy Gatlin, forestry graduate student. Collaborators in the Department of Wildlife, Fisheries, and

Aquaculture (WFA) include Dr. Dana Morin and Dr. Mark McConnell, both assistant professors; Dr. Brian Davis, James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation; and Chloe Beall, WFA graduate student.

BY GRACE JONES

“We seek to demonstrate that managing degraded stands and plantations can produce substantial benefits for landowners and wildlife alike...”

DR. JOSHUA GRANGER



Fields of Green

MAFES Scientists Develop New Crops and Grasses

Mississippi State scientists are not necessarily searching for greener pastures, but when it comes to developing stronger, better performing grasses and crops, they are on the cutting edge. Teams of researchers in the Department of Plant and Soil Sciences have successfully developed new varieties of native grasses, bermudagrass, and rice.

Dr. Brian Baldwin, professor of plant and soil sciences and scientist in the Mississippi Agricultural and Forestry Experiment Station (MAFES), led a 15-year project breeding new native grass varieties that germinate faster and are better suited to the heat and humidity of the Southeast.

“The varieties of native grasses that are currently commercially available come from Illinois, Nebraska, or Texas, so none of them are truly adapted to the Deep South,” Baldwin said.

Baldwin, along with MAFES scientists Dr. Brett Rushing, associate Extension and research professor, and Dr. Jesse Morrison, assistant research professor, started out with seed from the Whitten Plant Materials Center in Coffeeville, Mississippi, which maintains a living repository of plants from Mississippi, Arkansas, Louisiana, and Alabama.

Switchgrasses and other native grasses are commonly used in land restoration projects and for biofuel. They often have a high seed dormancy rate, which means that most of the seeds fail to germinate even in optimal growth conditions. Among the first native grass varieties released by Baldwin and his team are the switchgrass varieties including Robusto, Espresso, and Tusca—named as a nod to their Coffeeville home. They germinated at least twice as many seeds as the leading commercial varieties over a 2-week period.

MSU is working with Roundstone Native Seed Co., based in Upton, Kentucky, to deliver the seeds to the commercial market.

Rice is another crop that performs better when adapted to the climate in which it grows. Dr. Ed Redoña, plant and soil sciences research professor and MAFES scientist at the Delta Research and Extension Center, and his team recently developed a high-performing conventional rice variety named Leland. Development of the new variety in the

MAFES rice-breeding program is funded by the Mississippi Rice Promotion Board.

This early-maturing, lodging-resistant variety, with high yield potential in the Mississippi Delta, also has a broad-spectrum gene for resisting blast disease, which is caused by a fungus and considered the most prevalent rice disease worldwide. Its grain quality is also superior, receiving a score of 9 of 10 from participating millers and exporters.

“The advantage of Leland over other MAFES-developed rice varieties is its resistance to blast,” Redoña said. “It’s like having an insurance policy for maintaining high yield potential in case of blast disease occurrence, at no additional cost to the grower. Leland also has an outstanding overall grain quality, which meets the preferences of millers, exporters, and consumers alike, both in the U.S. and abroad.”

While one might not think about agriculture when it comes to golf, turfgrass plays a critical role in the sport, and MSU scientists are working on creating a better putting green.

Dr. Hongxu Dong, a former assistant professor and MAFES scientist who specializes in turfgrass breeding and genetics, was part of a team, which included Wayne Philley, retired senior research associate and turfgrass breeder, that developed two new turfgrass varieties for putting greens that may give golfers a competitive edge.

The varieties MSB-264 and MSB-285 are visually similar to other bermudagrasses, but they are genetically different. They also have a more upright leaf orientation than traditional bermudagrass putting green cultivars.

“The superior performance of these two grasses provides stakeholders with new options in the putting green market,” said Dong. “They have the potential to allow truer putting and to hold golf shots better than existing ultra-dwarf bermudagrass cultivars.”

These varieties were included in a 2013 5-year, 10-state study of bermudagrass varieties bred for putting greens. While they are not yet ready for the commercial market, as the process takes 10 to 12 years and is extremely competitive, both grasses are available for licensing.

BY MEG HENDERSON • PHOTO BY DAVID AMMON

Grass developers and MSU faculty researchers Dr. Brian Baldwin (left) and Dr. Jesse Morrison examine Robusto switchgrass growing at the MAFES R. R. Foil Plant Science Research Center.



“The varieties of native grasses that are currently commercially available come from Illinois, Nebraska, or Texas, so none of them are truly adapted to the Deep South.”

DR. BRIAN BALDWIN

“Fish and seafood is what the Mississippi coast is all about, so protecting that is very important. It is a bit self-serving in that regard, but it is community-minded because I’m helping the industry and the whole coast.”

TIM KIRKMAN

Water Stewards Monitor State's Water Resources

A growing group of engaged citizens is learning how to become more active at ensuring Mississippi’s abundant waterways stay clean and remain a valuable resource to the state.

Dr. Beth Baker, a Mississippi State University Extension Service specialist in the Department of Wildlife, Fisheries, and Aquaculture, oversees a pilot program that trains citizens in bacteriological and chemical water-monitoring methods and biomonitoring, as part of the new Mississippi Water Stewards Extension Program.

“Science is absolutely something everybody can do, and we are helping our citizens be aware of where our water comes from, what makes it clean, and how they can be involved civically in protecting water,” Baker said.

The pilot program is funded by the Environmental Protection Agency as part of the Education and Outreach Program from its Gulf of Mexico office. The program was adapted from the Alabama Water Watch Program, with partners at Auburn University. It strives to provide training and support to local citizen organizations like the Pearl Riverkeepers.

Mississippi has a wealth of water resources in the form of multiple ports, rivers, reservoirs, creeks, streams, and the Gulf of Mexico. Each serves a different purpose, including flood control, fisheries, transportation, and recreation.

“Water quality is determined based on the designated use of a water body,” Baker said. “Citizen monitors provide value by filling information gaps about the health of water bodies around the state. The time and effort they spend monitoring is economically valuable.”

Tim Kirkman of St. Martin is part of a growing group of people monitoring waters along the Mississippi Gulf Coast.

“I got interested because of fish,” Kirkman said. “I eat local fish on a very regular basis. Fish and seafood is what the Mississippi coast is all about, so protecting that is very important. It is a bit self-serving in that regard, but it is community-minded because I’m helping the industry and the whole coast.”

For more than a year, Kirkman has tested three areas monthly and entered his findings into a publicly available database.

“My concentration is the bayous and rivers that feed into the Biloxi Back Bay,” he said. “In the beginning, it wasn’t very exciting, but I discovered after a while that by looking at the data over a length of time, you can see changes that happened and kind of understand why. I feel like I’m actually contributing.”

Water stewards begin their training with online modules and then receive in-person, hands-on training to practice the methods they learned. They also learn how to correctly enter data. Participants can be certified in one, two, or three of the monitoring methods that follow those approved by the EPA.

Ten people completed the training in September held at the Mississippi Museum of Natural Science in Jackson. Since the program officially started in 2019, about 78 people have been trained, resulting in more than 100 certifications.

“Our overarching goals are education, training, and empowering citizens to be active in the preservation of their local water resources,” Baker said. “This empowers community members to track water quality and to be able to share information with others and to be involved when decisions that impact water quality are being made.”

Baker reviews the citizen-submitted test data for quality control.

“The Mississippi Department of Environmental Quality can follow up if concerns are identified, and citizens can get engaged in community discussion about pollution sources,” Baker said.

Although this monitoring is an opportunity for proactive management to prevent rather than address problems, the Water Stewards Program also highlights healthy water bodies with landscape features that aid in watershed protection, such as riparian areas, which are buffer zones with grasses and trees that filter water flowing into a water body. The program also draws attention to the value that greenways and blueways add to a community.

BY BONNIE COBLENTZ • PHOTO BY KEVIN HUDSON

Abuzz in the Delta

New Unit Examines Pollinators Amid Large-Scale Agriculture

A new research unit in Stoneville, Mississippi, is focused on protecting the health of honeybees and native bees in a stressful agricultural landscape and studying the relationship between pollinators and large-scale row-crop production.

Many people might not consider the Mississippi Delta a pollinator haven, but commercial beekeepers have taken advantage of its rich agricultural landscape for years. According to the U.S. Department of Agriculture, Mississippi ranked fourth nationally in significantly increasing honeybee colonies from 2021 to 2022, with a 34 percent gain.

“In the Delta, crops are traditionally known to not need pollinators, but recent studies show pollinator presence increases yield,” said Dr. Pierre Lau, a research ecologist at the new USDA Agricultural Research Service Pollinators Health in Southern Crop Ecosystems Research Unit in Stoneville.

“In turn, the crops help pollinators because they bloom during a seasonal nectar dearth when not much else is blooming,” he explained. “It’s a win/win for farmers and beekeepers alike.”

This symbiotic relationship is why USDA-ARS recently selected Stoneville as the site of its sixth pollinator center in the nation. The new center is unique in that it is the only one focused on honeybees and native insect pollinators.

Dr. Gadi V. P. Reddy, former research leader for the unit and current associate area director for the USDA Southeast Area, said the Mississippi Delta is different from other areas rich in pollinators.

“The unit was founded at the request of stakeholders, including farmers, beekeepers, the Delta Council, and others, to promote insect pollinators in this region,” he said. “Our focus is to study and improve the health of both honeybees and native bees in an intensive agricultural landscape with many stressors.”

The Mississippi Agricultural and Forestry Experiment Station (MAFES) has partnered with the unit to study the relationship between pollinators and row crops on a large scale.

“Our area is rich in insects, which means we have to manage insect pests with insecticides in row crops while honeybees are collecting pollen,” said Dr. Jeff Gore, head of the Delta Research and Extension Center. “This collaboration will help conduct

much-needed research on interactions between pollinators and crop production in our environment.”

As part of the collaborative agreement, Dr. Esmail Amiri, an MSU Extension entomologist and MAFES scientist who has traveled the world studying bees, joined the MSU Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology and is stationed at the Delta center. Amiri said honeybees could provide a window into the health of all insect pollinators.

“My long-term goals are to connect beekeepers and farmers and improve pollinator health,” he said. “Because honeybees are manageable, they serve as a model for other insect pollinators. We can monitor them closely to better understand factors affecting all insect pollinators here.”

Amiri said colony collapse disorder inspired him to study viruses and other stressors of honeybees, with a growing interest in how viruses and immunity can affect subsequent generations. His current research includes a study of the dynamics of viruses and how they affect workers, drones, and queens in a hive. Amiri also partnered with the Delta Weather Station to study how microclimates can impact honeybee health and how climate change impacts pests of pollinators.

“We’re hoping to understand the importance of weather and climate change on the expanding range of the small hive beetle, an important pest affecting honeybees,” he said.

Angus Catchot III, an entomology doctoral student, is studying honeybees in the Delta and other regions of the state. He is examining the interaction between bees and row crops and how intensive agriculture can impact pollinator health. Catchot evaluates the interactions between pesticides and poor nutrition in honeybees, as well as colony health and forage availability.

“My goal is to determine how these two environmental factors—pesticides and poor nutrition—impact colony health across the state,” Catchot said. “While beekeepers bring their bees to the Delta because they produce more honey, we need to know how healthy the bees are to make recommendations that promote honeybee health along with honey and crop production.”

BY VANESSA BEESON

Dr. Esmail Amiri displays a frame from a honeybee hive box. (Photo Submitted)

“The unit was founded at the request of stakeholders, including farmers, beekeepers, the Delta Council, and others, to promote insect pollinators in this region.”

DR. GADI V. P. REDDY

Water Purification

FWRC Scientists Find Renewable Water Treatment Methods

Water-treatment plants have historically relied on petrochemicals to filter out contaminants, such as toxic metals and dyes, that pollute local water sources. But these treatments can create their own wastes and are made from nonrenewable resources.

To overcome this problem, a team of Forest and Wildlife Research Center (FWRC) scientists is examining natural, renewable resources that purify water just as effectively as their conventional counterparts.

Dr. El Barbary Hassan, a professor in the Department of Sustainable Bioproducts, has led this effort over the past several years. Hassan's team includes Dr. Xuefeng Zhang, assistant research professor; Dr. Islam Elsayed, sustainable bioproducts postdoctoral associate; and Dr. Chanaka Navarathna, chemistry postdoctoral associate. They partnered with Dr. Gregory T. Schueneman, supervisory research materials engineer at the USDA Forest Products Laboratory.

Toxic metals, such as lead, mercury, and arsenic, could end up in local water sources when industrial pollution runs off into lakes, rivers, and reservoirs. According to Hassan, these toxins are serious threats to human health and aquatic life.

Hassan and his team have developed a chemical process that converts cellulose and chitin, two natural and renewable materials, into gel-based adsorbents designed to filter toxic substances from water. They chose these materials because of their worldwide abundance.

Researchers tested these natural hydrogel adsorbents for their effectiveness at removing the common industrial pollutants arsenic and methylene blue from water.

"All trees consist of about 45 percent cellulose," Hassan said. "And chitin comes from the exoskeleton of shrimp. These are both widely available natural compounds."

"Most hydrogels are made of synthetic polymers, which come from petrochemicals and are not renewable," Hassan said. "This is problematic. It is better for nature, and for us, if we can replace the synthetic polymers with natural polymers."

In recent years, Hassan said he has seen a gradual shift toward adopting hydrogel and aerogel-based filtering methods—evidence of movement toward making the water-treatment industry more sustainable.

"There is growing interest, and I see more companies starting to produce renewable solutions for water treatment," Hassan said. "It's just not on a large scale yet because the process is still in its beginning stages. We are communicating with companies to help implement our technology on a larger scale."

"We were focused on one technique when we conducted this study, but now we're considering process improvements for more sustainable solutions," he said.

Zhang added that the team is exploring other purposes for these adsorbent materials.

"This aerogel adsorbent could also be used as an air filter or mask media to protect against dust, bacteria, and viruses in the air," he said. "Our future research will focus on fabricating aerogel-based green masks and testing their protective performance against viruses."

This research is funded by the USDA Forest Service Forest Products Laboratory.

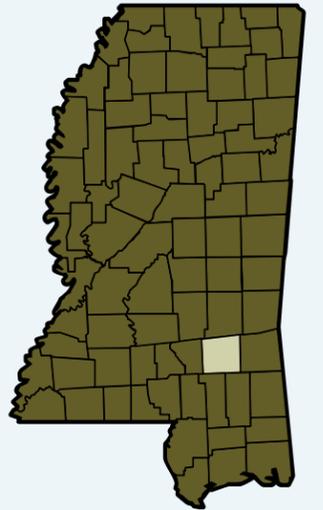
BY MEG HENDERSON • PHOTO BY DOMINIQUE BELCHER



Graduate student Alhassan Ibrahim (left) and Dr. Islam Elsayed, postdoctoral associate, load rice straw in a dryer to produce renewable biofuels and adsorbents.



The Lauren Rogers Museum of Art in Laurel was opened in 1923 as a memorial to Lauren Eastman Rogers, the only son of one of the town's founding families, who died in 1921 at the age of 23. (Photo by Michaela Parker)



1/82: Jones County

MSU in Jones County:

515 N. 5th Avenue
Laurel, Mississippi 39440
kim.hancock@msstate.edu

- County seat:** Laurel and Ellisville
- Population:** 68,307
- Municipalities:** Eastabuchie, Ellisville, Laurel, Moselle, Ovett, Sandersville, Soso
- Communities:** Hoy, Shady Grove, Sharon, Big Creek, Calhoun, Centerville, Gitano, Matthews, Mauldin, Pleasant Ridge, Soso, Springhill, Antioch, Erata, Glade, Mt. Olive, Myrick, Ovett, Powers, Rustin, Tuckers Crossing, Benson, Boggy, Ellisville, Johnson, Landrum, Moselle, Rainey, Sandhill, Shelton, Union, Pine Grove, Cook, Currie, Pendorff, Roosevelt
- Commodities:** poultry, cattle, forestry
- Industries:** healthcare, education, manufacturing
- Natural resources:** forest, oil, minerals, water
- Attractions:** HGTV show "Hometown," downtown Laurel/Laurel Main Street, Lauren Rogers Museum of Art, Landrum's Homestead Village

History notes: In the 1820s and 1830s, the lands now incorporated into Jones County were ceded to the U.S. by the Choctaw Indians through the Treaty of Mount Dexter, the Treaty of Doak's Stand, and the Treaty of Dancing Rabbit Creek. The county is named for Revolutionary War hero John Paul Jones.

Did you know? Jones County is most famous for the story of the Free State of Jones, which was dramatized in a 2016 movie about a band of Confederate army deserters who resisted the Confederacy during the Civil War.

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

"Jones County is a place where simplicity meets Southern charm. Our environment comes to life throughout the seasons with various community events and festivals. The streets of Laurel are filled with historical homes, rich history, and beautiful people. It is a great place to live and teach children about the richness of faith, family, and values."

KIM HANCOCK,
MSU Extension County
Coordinator

NewsNotes



Ball

Tom Ball, program coordinator for disaster response and recovery in the MSU Extension Center for Government and Community Development, will serve as chair of the Extension Disaster Education Network (EDEN) for a 2-year term.



Krutz

Dr. L. Jason Krutz, director of the Mississippi Water Resources Research Institute and professor in the Department of Plant and Soil Sciences, is a new American Society of Agronomy fellow, the highest recognition awarded to members of this professional society.



Gore

Dr. Jeff Gore, an entomologist with the MSU Extension Service and a researcher with the Mississippi Agricultural and Forestry Experiment Station, became head of the MSU Delta Research and Extension Center on Nov. 1. Gore is a professor in the Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology.



Fox

Dr. Sean Fox, an expert in applied research in consumer economics, agricultural marketing, and experimental economics, is the new head of the Department of Agricultural Economics. Fox came from the University of Illinois, where he was head of the Department of Agricultural and Consumer Economics.



DelPrince

Dr. Jim DelPrince, associate Extension professor in the Department of Plant and Soil Sciences stationed at the Coastal Research and Extension Center, was a coauthor of the third edition of the American Institute of Floral Designers' 360-page reference manual, *Guide to Floral Design*, and served as terminology researcher for the publication.



Brown

Dr. Ashli Brown, DAFVM associate vice president, was one of four MSU faculty members who completed the 2-year Southeastern Conference Academic Leadership Development Program. Brown is a professor in the Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology.



Buys

The Preventing Opioid Misuse in the Southeast (PROMISE) Initiative, led by **Dr. David Buys**, Extension state health specialist and associate professor in the Department of Food Science, Nutrition, and Health Promotion, was awarded the National Innovative Programs and Projects Partnership Award by the USDA National Institute of Food and Agriculture.



Reichley

Dr. Stephen Reichley, associate director of the MSU Global Center for Aquatic Health and Food Security and assistant professor in the College of Veterinary Medicine Department of Pathobiology and Population Medicine, is the new deputy director of the Feed the Future Innovation Lab for Fish.



Sims

Dr. James Sims, an accomplished atmospheric scientist, joined MSU as deputy director of the Northern Gulf Institute. During her career at the National Weather Service and National Oceanic and Atmospheric Administration, Sims led units and projects focused on artificial intelligence, numerical weather prediction, remote sensing, and satellite meteorology.



Eddy

Dr. Alison Eddy, associate clinical professor in the College of Veterinary Medicine, began a term on the Resident Credentialing Committee for the American College of Veterinary Surgeons (ACVS), which evaluates all applications for ACVS membership credentials and recommends qualified candidates.



Evans

Dr. Kristine Evans, associate professor in the Department of Wildlife, Fisheries, and Aquaculture, won the Cooperative Ecosystem Studies Units Network Award for a \$1.7 million sustainability project that created a web tool to determine where and how to best spend funding to restore and enhance healthy coastal ecosystems. Evans also became associate director of the MSU Geosystems Research Institute.



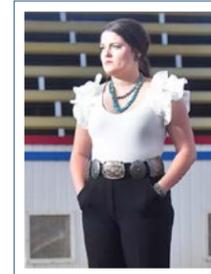
Womack

Dr. Erika Womack, who earned a bachelor's degree in biological science and doctorate in molecular biology from MSU, returned to the university as director of the Mississippi State Chemical Laboratory and interim state chemist. Womack previously worked at the University of Alabama at Birmingham, where she served as a research laboratory manager.



Hoblet

Dr. Kent Hoblet, who has served as dean of the College of Veterinary Medicine for more than 16 years, will transition to a part-time faculty role when a new dean is in place. Before his time at MSU, Hoblet operated a private veterinary practice for 12 years and later served on the faculty at Ohio State University for 23 years.



Pittman

Alexandra Pittman, who completed undergraduate and master's degrees in the Department of Animal and Dairy Sciences, has become leader of the MSU Livestock Judging Team at the age of 25, making her one of the youngest college livestock judging team leaders in the U.S. Pittman also serves as an instructor in the College of Agriculture and Life Sciences.



Betbeze

Dr. Caroline Betbeze, associate clinical professor in the College of Veterinary Medicine, was elected to serve on the American College of Veterinary Ophthalmologists' Board of Regents. She will serve a 3-year term as a general regent before becoming an officer.



Gordon

Harvey Lee Gordon Sr., who served as a 4-H state specialist from 1997 until he retired in 2014, was inducted into the National 4-H Hall of Fame in Washington, D.C. Gordon died unexpectedly on May 27, 2021.

DevelopmentCorner

Wingo Gift

Modernizes Entrance, Offices at CVM Wise Center

First impressions are important, and a recent gift to the MSU College of Veterinary Medicine helped that school improve theirs.

The recently completed renovation to the dean's suite was made possible by a \$500,000 gift from Turner A. Wingo, a 1967 general business alumnus from Collierville, Tennessee. The dean's suite is named in his honor.

While there are several entry points to the college, the dean's suite entrance welcomes most guests, including prospective students, parents, and other visitors to the college.

"This is the first thing you see when you enter the college," said Jimmy Kight, CVM senior director of development. "For some people, this is the first impression they have of CVM and, in some cases, MSU. This renovation was much needed and provides a better space that is much more functional. It is transformational for the front entrance of the college, our employees, and our guests."

In addition to the dean's office, the suite houses the admissions office, along with other student services, and provides an area where various meetings are held.



Turner Wingo cuts the ribbon for the Turner A. Wingo Dean's Suite in the CVM Wise Center. From left are Dr. Ron McLaughlin, CVM associate dean; Gloria Wingo, donor's wife; Wingo; Dr. Mark Keenum, MSU president; Dr. Kent Hoblet, CVM dean; Dr. Keith Coble, DAFVM vice president; and Dr. David Shaw, provost and executive vice president. (Photo by Tom Thompson)

Except for a few new coats of paint and new carpeting through the years, the space had never been updated since it was built in the 1970s.

"The needs of the college are much different now than they were in 1977," Kight said. "The offices were all too big for today's needs, and we didn't have enough spaces for conference-type meetings. There was no kitchen or break-room area. If you wanted to wash your coffee cup, you had to go to the bathroom."

Wingo, a dog lover who contacted Kight with a desire to give to the college, chose the area specifically for his donation to be used.

"He came in and we gave him a tour of the college, and this is the area he chose to put the funds toward," Kight said. "Once that decision had been made, we brought in an interior-design expert who helped us lay out the space to get the most functionality. Now, we have an area that will serve us well for the foreseeable future."

Philanthropy is important to Wingo, and he felt his donation would have the most impact in this area of the college.

"Our dean's office was very dated and lacked a lot of modern conveniences that are important today," Wingo said. "We have a lot of students who go through that office, so I thought it was important to devote the funds to that area of the college."

"This is the first thing you see when you enter the college. For some people, this is the first impression they have of CVM and, in some cases, MSU. This renovation was much needed and provides a better space that is much more functional. It is transformational for the front entrance of the college, our employees, and our guests."

JIMMY KIGHT

is not only long, but the waiting list is also long, usually stretching into years," CVM Dean Kent Hoblet said. "The immediate and lasting impact of gifts like Mr. Wingo's cannot be overestimated in terms of how they enable the college to advance among its peers."

Wingo is a retired real-estate developer and the former owner of Sherry's Hallmark. He was honored as MSU's 2016 National Alumnus and the 2011 MSU College of Business Alumnus. His contributions to MSU include the Turner A. Wingo Endowed Professorship in the College of Business, several scholarships, funds for various campus facilities, and support for athletics. He serves on the MSU Foundation's board of directors.

BY SUSAN COLLINS-SMITH

"I've been fortunate to be successful, and I've always felt it is important to give back. I give to other things, too, but MSU is one of my passions. Giving is part of what I do," Wingo said.

Wingo's gift was used for two purposes: \$400,000 funded the renovation, while the remaining \$100,000 was placed into an endowment to support future maintenance and updates.

Various renovation projects are ongoing at the college, and donations are critical to such projects.

"The DAFVM list of worthy projects for capital funding by the legislature

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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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Photo by Kevin Hudson