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Research, Education and Outreach in the Division of Agriculture, Forestry and Veterinary Medicine

Mississippi State University
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MSU 4-H specialists receive ATV safety training. (Photo by Scott Corey)

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The MSU collegiate 4-H chapter sponsors an annual sweet potato drop to help food pantries across the state. They were able to maintain the tradition, despite harvest-time rain that destroyed much of the state’s crop. (Photo by Scott Corey)

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Since assuming the duties of vice president for the Division of Agriculture, Forestry and Veterinary Medicine at Mississippi State in October 2009, I have been continually impressed with the great diversity of Mississippi. The state’s wealth of diverse cultural and geographic resources is easy to recognize as I drive through the hill counties, across the Delta and along the Gulf Coast.

What takes a bit longer to realize is the impressive economic diversity of our state. Shipbuilding, tourism and commercial fisheries all exist side-by-side along the coast. Further inland, south Mississippi is home to a thriving commercial nursery industry. The Delta’s agricultural capabilities are legendary, but the region also is home to manufacturers of home appliances, medical supplies and agricultural equipment, among others. Furniture manufacturing is a way of life in many small north Mississippi communities, and automotive manufacturing is on the horizon for the region.

Thousands of Mississippians are engaged in full-time and part-time livestock production, and commercial fruit and vegetable enterprises are found throughout the state.

As a land-grant institution, Mississippi State is part of the national education and research system created to support the nation’s 19th century industrial and agrarian revolutions. The land-grant system has adapted through the years to meet the needs of the nation. As a result, the Division of Agriculture, Forestry and Veterinary Medicine at MSU is providing up-to-date educational resources for individuals of all ages and research needed by agricultural and other enterprises in the state.

This issue of Landmarks contains articles on the diverse ways the units of the division are meeting the needs of Mississippians, from the MSU Extension Service’s ATV safety training to the diagnostic work of College of Veterinary Medicine labs.

MSU, along with every other public university in the state, will continue to work with reduced budgets during the months ahead. The university, however, is committed to its outreach mission, much of which is carried out by the MSU Extension Service, the Mississippi Agricultural and Forestry Experiment Station and other units of the Division of Agriculture, Forestry and Veterinary Medicine.

Through the valuable input we receive from our diverse clientele throughout the state, the talent and dedication of our personnel, and careful management of resources, we will continue to support Mississippi’s food, fiber, forestry and natural resources enterprises, as well as the state’s most valuable resource, its people.
Designing North Mississippi Ecotourism Park

By Cynthia Bullion
Times-Tribune News Staff
A group of Mississippi State University students is helping design what Horn Lake officials hope will one day become a 500-acre park attractive to residents and tourists alike.

Bettie Pruitt, the DeSoto County city’s urban forester, said she sees the heavily wooded acreage on the city’s outskirts as the future home of a lake for fishing and canoeing and surrounded by bicycle, equestrian and hiking trails tied into the county’s greenway system.

“We have all these ideas and they are trying to hone them in,” Pruitt said about a graduate landscape architecture class from MSU.

Additional ideas for the site include a museum that would focus on Horn Lake’s early history as a cotton-farming community whose growth was stimulated by the railroad construction and later became known for dairy operations at Gayoso Farms.

Pruitt said a village with a working blacksmith shop, general store and cotton and sorghum gins “like what you would see in an old town” also could be among plans for the park.

If and where such attractions would be located on the proposed park property is up for determination, she said.

“The students will figure out what the theme of the park should be and the best marketing strategy,” Pruitt said.

MSU Department of Landscape Architecture associate professor Wayne Wilkerson said his class has been tasked with coming up with a conceptual plan for the park using data from a Geographic Information Survey that began in January.

The “skeleton” of the park, he said, would depend on what the property will allow.

Donated to the city by the Dancy family, the property lies primarily in a floodplain and has a swampy area and mature trees that would need preserving.

“The forest there is probably 50 to 100 years old,” Pruitt said about one environmental aspect of the property that makes it appropriate for an ecotourism park.

She said an ecotourism park is typically one with elements that promote tourism yet have a low impact on the surrounding environment. One example is the Tunica River Park with its wildlife museum, aquariums, nature trails, Mississippi River observation deck and riverboat excursions.

Horn Lake’s ecotourism park is in its preliminary phase with completion estimated at five to 10 years.

Pruitt said the city would seek grants to fund the park’s construction, which could cost $5 million.

The amount would be higher, she said, if not for services from the Mississippi State class.

Horn Lake officials are providing the class with $3,168 to cover travel and other physical expenses during the planning process that should be complete before the end of the spring semester.

Graduate landscape architecture students participating in the project include Rob Anders, Jason Arnold, Ryan Kiel, Tariq Mahadin, Charles McCall, Derek Nause, Shelby Rayburn, James Schnepel and Courtney Terry.
Fires caused by lightning strikes are a part of nature in forests, and man has used fire as a forest management tool for thousands of years.

“Native Americans used fire as a natural and essential process to burn underbrush and promote growth of understory vegetation in timberlands,” said Wes Burger, a professor in Mississippi State’s Department of Wildlife, Fisheries and Aquaculture. “Fire is an important ecological process in Southern pine forests, responsible for the creation and maintenance of pine savannas that once dominated the uplands of the Southeastern Coastal Plain.”

However, the use of prescribed fire has declined throughout the region, and the result has left many areas in today’s Southeastern pine forests a tangled mess of thick, low-quality hardwood brush and shade-tolerant trees that flourish beneath the pine canopy, making wildlife habitat scarce in these areas.

“Without fire, hardwood brush and shrubs come to dominate the midstory, shading out the diverse native grass, forb and legumes groundcover on which many wildlife species depend,” Burger said.

When fire is withheld for several decades, a pine grassland forest will be replaced by a mixed pine/hardwood stand and eventually a hardwood-dominated forest, Burger added.

The absence of fire and subsequent loss of open pine grassland habitats has created a decline in many wildlife species, including the northern bobwhite, red-cockaded woodpecker, Bachman’s Sparrow, brown-headed nuthatch, gopher tortoise and indigo snake.

“Fire exclusion from these fire-dependent systems has perhaps had greater impact than any other factor on the function and integrity of Southeastern forest ecosystems,” Burger said.

Ground-nesting birds and other wildlife that depend on these habitats are not the only ones to lose with the decline in prescribed fires. Pine forests deteriorate without the use of fire as a management tool.

“The absence of prescribed fire increases the chances of wildfires,” said Edwin Sun, associate forestry professor.

Fire suppression allows fuel such as dead limbs, grass and needles to accumulate over time, leading to increased risk of dangerous wildfires, Sun said. Prescribed fire is the best prevention for wildfire.

Fire provides numerous benefits to Southern forest ecosystems, including accessibility by controlling unwanted vegetation and assistance with disease control and prevention.

“Yet, even with these advantages, the use of prescribed burning has become more challenging in recent years. To a large degree, this is due to the increasing concerns of landowners over liability exposure and legal consequences from smoke and escaped fires,” Sun said.

A study in MSU’s Forest and Wildlife Research Center examined the legal environment of prescribed burning and the enactment of the 1992 Mississippi Prescribed Burning Act.

“The Mississippi Prescribed Burning Act specifically recognizes the right of landowners to use prescribed fire as a management tool to accomplish ecological, forestry, wildlife management and fuel reduction goals,” Sun said.

Mississippi is not the only state to pass such a law. Led by the state of Florida in 1990, prescribed fire laws explicitly limit the liability of those who use prescribe fire in a safe, legal and responsible fashion, Sun added.

Ten Southern states have passed laws to define prescribed
fire burning as a legal activity with ecological and social benefits that does not constitute a public or private nuisance. Furthermore, the laws provide a measure of limited liability protection for damages and injuries resulting from fire or smoke, given that negligence is not proven.

“There has been increasing administrative regulations on the use of prescribed burning in Mississippi with the passage of the Prescribed Burning Act,” Sun said. “However, these regulations are designed to provide liability protection and preserve the right to use fire as a management tool.”

Prescribed burn laws vary from state to state in specific requirements, but in general, three or four conditions for liability protection have been established. Mississippi requires a burning permit, a written fire prescription or burn plan, and the use of a trained, certified prescribed burner.

The required burn permit may be obtained by the Mississippi Forestry Commission. Only when conditions to burn are favorable will the burn permit be granted.

The written fire prescription or burn plan specifies the conditions or parameters for the burn. Details include a description of the site to be burned, a map of the area to be burned, purpose of the burn, range of desired weather and summary of the burn, among other things.

“It is important that the burn be conducted within the parameters specified in the plan,” Sun said. “Execution of the burn outside of the parameters specified in the burn plan could constitute negligence and subject the burner to increased liability.”

A certified prescribed burn manager is one who has received training and has some minimum level of experience in fire behavior and the planning and implementation of a prescribed burn. To find a certified burn manager in your area, contact your local Mississippi Forestry Commission office.

Some states require notification of neighbors, local fire departments and municipalities before executing a prescribed burn. Such notification is not required in Mississippi, but it is not a bad idea to avoid unnecessary emergency responses, Sun added.

The Legislature has provided these regulations so that landowners can use fire as a management tool without fear of litigation. The state has also joined other states in developing a fire council.

The Mississippi Prescribed Fire Council was developed to increase occurrence of burning on public and private lands to restore ecological function, enhance wildlife and plant communities, and reduce hazardous forest or grassland fuel loads.

“The council and wildlife biologists are promoting the use of prescribed fire, in combination with heavy timber thinning and midstory competition control, to create and maintain Southern pine forests that are aesthetically pleasing and provide essential habitat for wildlife species of conservation concern,” Burger said.

The key is to get private, nonindustrial landowners, who hold about 135 million acres in the Southeast, to actively manage their land with prescribed fire.

“Landowners can create habitat for game species such as quail and turkey and numerous nongame species, including gopher tortoise, Bachman’s sparrow and brown-headed nuthatches, by adding prescribed fire to their management plans,” Burger said.
Mississippi State University’s 4-H program staff want to reduce the number of accidents and deaths occurring from the misuse of all-terrain vehicles by training 4-H agents as certified ATV safety and education instructors. Mississippi currently ranks No. 12 in the number of accidents and deaths occurring from ATV misuse. There were 271 reported deaths in Mississippi caused by ATV accidents from 1982 through 2007. Of this number, 89 were children under age 16. There were also more than 150,900 reported visits to emergency rooms for treatment of injuries related to ATV operation during this same period.

“Mississippi ranks quite high in serious accidents and deaths involving ATVs,” said 4-H youth development specialist Larry Alexander. “The state needs more education and awareness about ATV safety, particularly for youth under 16, and we..."
felt 4-H had the resources and the network to reach youth in the state.”

Mississippi’s 4-H program received a grant from the National 4-H Council to train youth and adults to become safe and responsible ATV operators. As part of the grant, eight 4-H professionals from the MSU Extension Service became All-Terrain Safety Institute instructors. To expand ATV safety efforts, Mississippi 4-H also has received funding from the Mississippi Department of Wildlife, Fisheries and Parks to build a permanent ATV safety training trail in West Point on land donated to 4-H by the Bryan family.

In addition to Alexander, youth agents who participated in the training were Randall Nevins of Monroe County, Donna Cliett and Fran Brock of Clay County, Jerry Burton of Lauderdale County, Lemon Phelps of Marshall County, Greg Biggs of Madison County and Laura Giaccaglia of Bolivar County. The 4-H professionals recently spent a week learning proper instruction techniques and performing riding demonstrations for instructor Clifford Manek of the ATV Safety Institute.

To complete the training, participants had to pass a written examination and then instruct a group of novice ATV riders. These riders were state 4-H program staff members.

The new instructors can now conduct training for youth and adults to certify safe ATV riders. They will also help other counties conduct ATV safety training.

“We were serious about obtaining certification,” Alexander said. “As part of the requirement, we had to attend pre-rider safety training in Little Rock, Ark.”

Many of the agents cited specific problems they have noticed with ATV operation in their counties as a primary reason for obtaining instructor certification.

“I have seen as many as two to three people riding on an ATV that was designed for one person, the driver,” Giaccaglia said. “Safe operation of an ATV is all about balance, which is not possible when there are other people on board.”

ATVs are powerful machines specifically designed for riders of certain ages, depending upon the motor and size. Any ATV can tip over easily, regardless of whether it is turned off, idle with the motor running or being driven. Youth and adults are often unaware of this fact.

“I’ve seen ATVs tip and roll on top of young people who were just leaning against them while the machine was turned off,” Biggs said. “One of the main problems with ATVs in my county is with riders, regardless of age, who don’t wear helmets or other proper safety gear. This is a consistent challenge we will face in dealing with riders who don’t know how to be safe or don’t care.”
While the global warming and climate change debate has been “heating up” worldwide, researchers at Mississippi State are examining how weather influences duck migration patterns.

“In the past few years, we have observed that ducks are not migrating to southern latitudes in abundance or are doing so generally only in the presence of severe weather,” said Rick Kaminski, waterfowl ecologist and the James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation.

“Our initial thoughts were that ducks were remaining at northern latitudes as a result of warmer weather, available food and habitat, among other factors,” Kaminski said.

To test the theory, Kaminski and Mike Schummer, postdoctoral research and teaching associate in MSU’s Forest and Wildlife Research Center, initiated a research project on the influences of weather variables on fall-winter duck migration.

“Our goal was to increase our understanding of duck migration patterns for planning habitat and hunting management,” Schummer said.

The research team set out to identify weather variables or their combinations that best explained rates of change in abundance of mallards and other dabbling ducks at midlatitude regions in the Mississippi Flyway. The scientists’ results are scheduled for publication in *The Journal of Wildlife Management*.

Two other objectives of the project were to determine patterns and long-term trends in a weather severity index and to model potential future distributions of ducks in North America using a variety of climate projections.

Using 10 years of waterfowl survey data provided by the Missouri Department of Conservation and weather data from U.S. Historical Climatology Network Stations, the MSU and Missouri collaborators found that cumulative effects of snow and temperature, as well as the duration of these events, best explained the rate of change in duck abundance.

“Our findings suggest that dabbling ducks, including northern pintail, gadwall and green-winged teal, migrate prior to freezing conditions or snow, while mallards generally migrate when freezing temperature and snow persisted for several days,” Kaminski said.

The scientists collaborated with experts in MSU’s geosciences department to look at the weather severity index for the past 50 years in an effort to help clarify the habitat versus climate debate. While the research is ongoing, preliminary data suggest that most winters since the late 1990s have been warmer than the 50-year average.

The research team has also developed a tool for hunters, biologists and bird-watchers to predict waterfowl movement patterns. A Web-based Duck Migration Forecast has a five-day outlook to indicate when mallards and other dabbling ducks will journey to the South.

Available at http://www.cfr.msstate.edu/kennedy-chair/weather.asp, the forecast is updated each Monday from November through January.

“The forecast includes areas from Jamestown, N.D., to Memphis, Tenn., and predicts the likelihood of duck migration down the Mississippi Flyway,” Schummer added.

When the research is complete, the information will help biologists and managers determine where and when habitat should be made available for migrating and wintering ducks and will allow hunters to determine the best days to take to the flyways in search of waterfowl.
Fewer cotton acres in Mississippi mean less demand for cotton ginning, and whole communities in the Mississippi Delta are feeling the impact of the loss of their livelihoods.

A cotton gin is the piece of equipment that separates the cotton seeds from the fiber. Eli Whitney mechanized this process for the first time in 1793.

John Michael Riley, an agricultural economist with the Mississippi State University Extension Service, said since 2000, Mississippi has seen a 34 percent decrease in the number of operating cotton gins, from 109 to 72. Back in 1991, the state had 181 cotton gins. Some of the decrease is due to the development of more efficient gins, but gins are simply processing less cotton.

“There were 62 gins in 2000 that ginned 10,000 or more bales a year, representing 53 percent of gins. That same year, 54 gins processed less than 10,000 bales,” Riley said. “In 2008, that changed to 47, or 65 percent, ginning less than 10,000 bales, and 25 ginning more than 10,000 bales.”

In that same time period, Mississippi’s cotton acreage has dropped about 72 percent from 1.2 million acres in 2000 to an estimated 300,000 acres in 2009. Riley said this change in the industry has had some significant economic impacts.

“Researchers at Louisiana State University calculated the specific economic impact for the Midsouth cotton-producing states and found that for every dollar taken out from a ginning standpoint, that’s $2.40 taken from the economy,” Riley said. “That figure is $1.45 in Mississippi because it reflects the upkeep of the gins, and we spend a portion of our money on gin upkeep in Memphis, so it has a less direct impact on the Mississippi economy.”

In addition to the amount of money spent, or not spent, in a community to operate the gin, there is the human factor.

“These gins hire people in the community, so whenever you lose that gin, that workforce has to do something else,” Riley said.

Many cotton gin laborers can learn new skills and get jobs in other agricultural enterprises. Some likely will have to move away.

“You need more labor for the production and processing of cotton than you do for any of the state’s other major row crops,” Riley said. “There are more steps in the process, and each of these steps requires people.”

Darrin Dodds, Extension cotton specialist, said cotton acres declined as farmers compared the profitability of the crop with others. Cotton’s technology fees are expensive, and the crop requires a fair amount of costly nitrogen and potassium. Pest control costs for insects, such as tarnished plant bugs and two-spotted spider mites, and weed control costs, especially where resistant weeds are a problem, are also high.

“Growing cotton requires a significant financial commitment,” Dodds said. “It is unclear whether we’ll ever have 1.2 million acres of cotton again. However, I could see us getting back to about 750,000 acres, but cotton profitability will have to increase and profitability for other crops will have to decrease.”

If the day comes when Mississippi increases its cotton acreage again, Riley said the existing cotton gins could resume operation.

“There is a cost associated with getting them running again, but if the demand is there, it’s worth switching them back on,” Riley said.
It has been said that there are only two things certain in life, death and taxes. To that, one could add a third: The economic future of agriculture in the Southeast will rise or fall with the availability and management of its abundant water resources. One only has to look to the economic and agricultural impacts of ongoing water shortages in California (1) and Australia (2) to appreciate the value of water resources in the Southeast. As a rice farmer in the Sacramento Valley recently said, “He could farm rice without burning straw and even without chemicals, but he will not even get out of the blocks without water” (1). Money cannot be made on the farm without water; it is an input that has no substitute. The National Research Council and the Council for Agricultural Science and Technology indicate that water issues will play a critical role in the future of agriculture and that agriculture will have to do more with less; i.e., produce “more crop per drop” of water (3,4). Because the Southeast is blessed with a relative abundance of rainfall and other water resources, the future of agriculture in this region is bright, assuming that these vital resources are carefully developed and managed.

How long it will be economically viable for arid regions to farm is not known, but it is clear that the Southeast’s rainfall patterns are extremely important to the future of its agriculture. Southeastern agriculture will grow in importance if the West dries out, as some anticipate. Indeed, agricultural scientists at...
Auburn University have noted that in the 20th century, water was moved to agriculture, as is reflected by the number of irrigated acres in the western states. The 21st century, however, will likely see movement of agricultural production back to regions, such as the Southeast, where rainfall is more abundant (7).

The amount of annual precipitation in each geographic area directly affects the agricultural productivity in that area. Annual rainfall is what generally waters the crops. In the arid West, irrigation is a necessity, but east of the Mississippi River irrigation is used much less. According to geologists, the West has undergone “megadroughts” that have at times lasted hundreds of years (8). They suggest that the West may be cycling back to this drier state.

The current drought in California has hit farmers and the economy hard, with as many as 95,000 people potentially out of work due to lack of water (1). On the other hand, the Southeast is relatively blessed with rainfall and requires only 6 to 9 inches of irrigation water to raise most crops as compared with more than the 4 feet needed in Arizona and California (7). The West uses snowmelt from the Sierra Nevada Mountains as a primary source of irrigation but receives only about 1 inch of water for every 13 inches of snowfall. Thus, it takes a lot of snow to irrigate an acre of cotton or rice in the Sacramento Valley.

While water is generally plentiful in the Southeast, agriculture in this area will still need to adapt water-saving practices so as to improve its water-use efficiency (WUE). WUE has been defined as crop yield / water input (9). Programs and techniques that increase WUE, such as the NRCS PHAUCET irrigation optimization program (10), will grow in importance. Programs that are user-friendly and show excellent results will have to be developed because, as I have observed on my family’s farm, a program or product has an impact only if it is used.

The WUE of a crop can also be increased without increasing water use by improving yield. For example, future advancements in crop genetics that help crops better protect themselves against pests will help to increase yields without necessarily requiring more water.

The soybean yields for the AgriEdge program have increased a great deal from genetic improvements (11). In addition, improvements in herbicide technologies that better protect crops from weeds will boost yields. Technologies such as Touchdown trait seeds, rootworm and earworm traits, and new drought-resistant traits should greatly increase yields in the Southeast. Thus, it will be a combination of both water-saving production practices and higher crop yields through advanced technology that will help Southeastern agriculture optimize use of its water resources.

In closing, water is essential for the future of agriculture. The Southeast has the water resources necessary to play an increasing role as supplier of agricultural products to this country and the world. Although one cannot predict the future, one can use technology that improves water-use efficiency and yield potential to further this goal. If the Southeast carefully uses its water resources to its competitive advantage, then greater economic prosperity in the region should follow. Reflecting on the California rice farmer’s earlier comments reminds us that there was a time before crop protection products, a time before molecular technology and a time before diesel-powered tractors, but there was never a time that agriculture truly prospered without this precious resource, water.

Works Cited
LABS SHARE RESOURCES, FORM “ESSENTIAL NETWORK”
Two Mississippi State University pathology laboratories work together to diagnose animal diseases across the state and also serve two important, yet different missions.

The College of Veterinary Medicine laboratories in Starkville and Pearl work within the Mississippi Veterinary Research and Diagnostic Laboratory System (MVRDLS) to provide veterinarians, producers and researchers with quality diagnostic services.

Both labs have an external focus and work with clients around the state. However, the lab in Starkville serves an additional function: it is the diagnostic lab for Mississippi State’s teaching hospital and the primary teaching lab for veterinary students and pathology trainees.

The laboratories in Starkville and Pearl functioned independently from one another until recently when they became part of the same laboratory system.

Dr. Lanny Pace, executive director of the MVRDLS, said pulling both laboratories into the same system has been a tremendous benefit and has enhanced the services they offer.

“It helps us here in Pearl to have such good collaboration with the teaching laboratory on campus,” Pace said. “We have samples going both ways, and we often put our heads together to answer clinical questions. It is exciting to have the students up in Starkville involved in the diagnostic work.”

The Starkville lab offers a wide variety of diagnostic services to clients, while also providing important learning opportunities for CVM students.

“Veterinary students participate in the day-to-day operations of the lab,” said Dr. Jim Cooley, CVM associate professor in the Department of Pathobiology and Population Medicine.

CVM faculty and residents provide guidance to veterinary students in the Starkville lab by assisting them as they study and identify animal diseases and perform necropsies. Students also are given opportunities to travel to area farms to perform on-site testing.

“Our residents get experience here that prepares them for a variety of careers in pathology,” Cooley said. “Residents in anatomic and clinical pathology have the opportunity to pursue careers in diagnostic laboratories, teaching, research and the pharmaceutical industry.”

The Starkville pathology lab has a client base around the state but also serves an internal client, the MSU community. The lab can analyze samples from other schools and colleges, and the collaboration opportunities are endless.

“There is a great advantage to having the diagnostic service on campus,” said Dr. Bill Epperson, head of the Department of Pathobiology and Population Medicine. “The students get hands-on diagnostic experiences, and there are so many opportunities for cooperative studies here on campus. The lab works within the CVM and beyond by collaborating with the departments of Animal and Dairy Science, Agricultural and Biological Engineering, Biological Sciences and others.”

The lab in Pearl receives and analyzes samples from clients around the state, primarily from industry groups and producers. The staff also manages all state and federal regulatory testing for diseases such as exotic Newcastle disease, avian and swine influenza, and Johne’s disease.

Epperson said the diversity of expertise between the two labs makes collaboration not only beneficial, but also essential.

“It is one system, and we don’t do the exact same type of work at both places. For instance, the Starkville lab has expertise in toxicology, food safety, and unusual bacterial and fungal pathogens, while the Pearl lab has specialty expertise in bone pathology, molecular diagnostics, virology and disease field investigations,” Epperson said. “There is so much internal support within this system, and the labs complement each other in every sense.”

Cooley said communication is a two-way street between the labs.

“We utilize the expertise in Pearl, and they do the same with us,” Cooley said. “We often trade cases for a second opinion and communicate with each other about new and different techniques we can use.”

In addition to sharing knowledge and offering second opinions, the labs often depend on each other to perform additional testing.

“Our lab handles pathology and necropsy, so we send samples needing molecular analyses to the Pearl lab,” Cooley said. “Their lab handles molecular pathology, and we often work with their experts in that area.”

Similarly, the Pearl lab staff sends samples for toxicology testing to the lab in Starkville since that service is not available in their laboratory.

“The partnership between the labs has become an essential network,” Epperson said. “Faculty and staff have developed such a strong and diverse skill set over the years, and we are fortunate that we have the opportunity to share resources.”
Farm women with a passion to succeed are increasing their business knowledge and skills through the Mississippi Women in Agriculture (MSWIA) program.

The program is sponsored by Mississippi State University and the Southern Rural Development Center. Funding for the project is provided by the Southern Region Risk Management Education Center and the U.S. Department of Agriculture’s National Institute of Food and Agriculture. It is specifically designed for farm women and is inspiring participants to step up to the forefront of agricultural operations.

MSWIA has a variety of opportunities for women who wish to gain business knowledge, increase productivity or even start a new business. In Mississippi, women play a significant role in farming operations, either as the primary operator or as the spouse of a farmer. Therefore, women’s involvement in the decision making and financial management of operations is critical.

The purpose of the MSWIA program is to increase the knowledge and skills of farm women in aspects of business management, including risk management. Information and educational opportunities are available through regional workshops, bimonthly video conferences, special programs and podcasts.

Participants said the program has helped them maximize their roles in business management, which has been critical to their success.

“Women in Agriculture has meant a lot to me in the last couple of years. It has given me the self-confidence that I needed to take an idea and develop it into an agritourism business that we now have on our farm.”

JAN HOLLEY
crop farmer from Fulton. “Not only has it given me the self-confidence I needed, but it has given me a network of people I have been able to call upon.”

MSWIA provides opportunities for women to interact through educational seminars and an annual state conference. Program coordinator Sonia Hancock said women can learn from a variety of business-related topics.

“We cover information on human resource development so individuals can learn to work better with their employees and business associates,” Hancock said. “We also include how to prepare for borrowing money from financial institutions, how to manage risks encountered in farming operations and help participants review their estate plans.”

Women claimed their involvement in MSWIA helps them prepare for the expected and most importantly, for the unexpected in the agriculture industry.

Sandra Berryhill, a farmer in Franklin County, knows better than most about how the unexpected can happen at any time. She turned to the program after her husband passed away three years ago. She wanted the skills to help her better manage her farm while also taking care of her seven children.

“The program taught us a lot about how to make loans, keep records and manage credit scores. We also learned a lot about farm credit and estate planning,” Berryhill said. “Whether or not you have children, you need to think about farm succession because you’ll need a plan to continue your farm.”

Berryhill said she now has a better understanding of why it is important to be a good steward of the land.

“When my husband got sick he told me, ‘I don’t have anything to give you but this place. But if you take care of this place, it’ll take care of you,’” she said. “So that’s what we try to do. I tell our children we have to be good stewards of

“We cover information on human resource development so individuals can learn to work better with their employees and business associates. We also include how to prepare for borrowing money from financial institutions, how to manage risks encountered in farming operations and help participants review their estate plans.”

SONIA HANCOCK
what we have and we need to work together to keep it going.”

Hancock said that women farmers have a growing interest in computer programs and other technology for business management.

“Participants want computerized record-keeping programs, so we have offered instruction on the QuickBooks record-keeping program,” she said. “In addition to that, they want to learn to build and manage Web pages and blogs to promote their agricultural products.”

Poultry grower Delean Robertson of Pike County said that using updated technology is useful in managing her poultry operation.

“It was what I needed to help our farm become more productive and to know what areas we can improve in,” Robertson said. “The technology helps me keep better track of inventory, what we’re doing, when we’re making improvements, when we’re having glitches.”

Robertson says she now feels more qualified to support her husband and provide her input on managing the farm.

Jan Holley said being around women with similar interests fuels her creativity and helps her make the best of what she calls her “pack rat” tendencies.

“I think it gave me permission to be the person that I always felt I could be,” Holley said. “I will talk to another woman who has used a similar idea, and then I can come back home and I can use all of my stored belongings and put them to use or create something with them.”

Holley said that being a part of a sixth-generation farm has fostered plenty of opportunities to use what she has learned to create a better business atmosphere.

Robertson said being around women creates more opportunities for networking and communicating new information.

“We tend to be more vocal than men, and we know what we are talking about with each other,” she said. “It just feels like you can get more information from other women.”
Robertson said the biggest reward has been becoming a knowledgeable businesswoman and producer.

“It’s just really fulfilling to know that you can work with your hands to produce something, to make something grow, to have something that makes a difference,” Robertson said. “It is supplying a need in our economy and in our society, and it’s just very rewarding.

Robertson said her experience with MSWIA will be useful in the future as she expands her farm.

Hancock said women interested in agriculture are encouraged to get involved in the program.

“If you’re a woman and you’re interested in agriculture, no matter the role you play in the field, be it a wife, a daughter, an owner, or consultant, you should get involved,” she said. “There is so much information to be gained, and networking with women that have the same interests is so important.”

All participants said business partners and spouses are also grateful to the MWIA program for helping them play greater roles and diversify the industry.

“It was what I needed to help our farm become more productive and to know what areas we can improve in. The technology helps me keep better track of inventory, what we’re doing, when we’re making improvements, when we’re having glitches.”

DELEAN ROBERTSON
MSU Lets "FREEDOM" Ring as Viable Biofuel Feedstock

A field of "Freedom" giant miscanthus on Mississippi State University's South Farm towers over research agronomist Brian Baldwin. Baldwin's 12-year study of grassy feedstocks indicates that giant miscanthus is a viable source of energy for biofuel production. (Photo by Scott Corey)
Collaboration between a Mississippi State University research agronomist and Georgia’s self-proclaimed “sodfather” may offer the Southeast the “Freedom” of a viable grassy feedstock to capitalize on sustainable bioenergy production.

One focus of MSU’s research is giant miscanthus, or Miscanthus x giganteus, a warm-season Asian grass that many scientists believe has potential as a biomass crop for fuel. Researchers with the Mississippi Agricultural and Forestry Experiment Station have been studying grassy biomass feedstocks for 12 years. Team leader Brian Baldwin went a step further in isolating, identifying and selecting a genotype of this species that fits agricultural production systems of Southeastern farmers.

Baldwin’s investigation culminated in the Freedom cultivar, which is uniquely suited to the South. Production of foundation stock for this grass has been licensed to turfgrass magnate Phillip Jennings of Soperton, Ga., who has incorporated his ideas about alternative energy into a new business venture, SunBelt Biofuels.

Jennings, who will have an exclusive license for the giant miscanthus genotype Freedom, said he intends to make the foundation stock commercially available in the spring of 2010. He said he hopes to have several hundred acres of the stock in production at his turfgrass farm.

“Many researchers around the world have proven giant miscanthus works well in capturing energy from the sun for biofuel,” Jennings said. “Dr. Baldwin’s investigation identified Freedom as a superior variety compared with other miscanthus genotypes and other grassy biomass materials.”

Baldwin began his research in 1998 to investigate yield potential of different grassy plant species considered to be possible sources of biomass for fuel. He chose 10 promising species to evaluate. When Baldwin compared results, giant miscanthus consistently landed in the top four. It outperformed its nearest competitor, switchgrass, by a ratio of at least 2:1.

“Yields and performance have allowed us to quantify the difference,” Baldwin said. “Yields for Freedom averaged 18–20 tons an acre in the variety trials. When compared with the performance of Alamo switchgrass, Freedom produced the same yields on about half the acreage. That gives the grower a good fit for a production scheme and the ability to meet supply needs when biomass is converted into fuel and other energy.”

Freedom is seed sterile, so growers must obtain propagation material, or rhizomes, to produce a crop.

“It takes considerable time to obtain material for propagation,” said Chase Kasper, who coordinates the commercial licensing of agricultural technologies for MSU. “Phillip evaluated a small sampling of the material and was impressed enough by its performance to embark on production of foundation stock.”

Since that time, SunBelt Biofuels has worked diligently to produce plant material it plans to register, certify and make available to growers in the spring of 2010, Kasper said.

Giant miscanthus can offer several production advantages. It is a perennial plant and takes three years to establish. The crop produces biomass that can grow as tall as 12 feet. The plant thrives on marginal cropland, is tolerant of drought and excessive rain, and requires few inputs once established and maintained under a one-cut system.

Giant miscanthus can be harvested and baled like hay using the same type of equipment. It is usually cut in late fall after other crops have been harvested. After harvest, the plant goes dormant until spring. Another advantage the plant offers is its ability to store nutrients in the root system, which returns organic material to the soil.

“We’ve been pleased with Phillip’s commitment and high level of activity in trying to raise awareness of grassy biomass materials,” Baldwin said. “The next steps for Phillip are to continue maintenance of his foundation nursery for Freedom and provide plant material to landowners, turfgrass businesses, plant propagators and farmers across Georgia and the rest of the Southeast.”

This is exactly how Jennings plans to launch Freedom.

“We can achieve energy independence by using our agricultural resources and know-how to produce biofuel,” Jennings said. “Corn-to-ethanol production was a wonderful first step, but ethanol is not a long-term solution because its energy output is low. It is going to take educational research and industrial commitment to help rural America produce energy. Mississippi State has done its part, and I am ready to do mine.”

By Patti Drapala
Poultry’s spot as the No. 1 agricultural commodity in Mississippi is due in large part to a strong relationship between the poultry industry and Mississippi State University.

MSU’s poultry science department assists the growing industry through education, research and outreach to help improve production. Sanderson Farms, the fourth-largest U.S. poultry producer and processor, has been located in Laurel since 1955. The company has a long-standing relationship with MSU researchers.

“MSU’s poultry science department has been integral in helping us make decisions of major significance,” said Sanderson Farms corporate nutritionist Carla Price. “We can go to them at any time and make requests for research that can aid us in production decisions.”

She said Sanderson Farms always aims to provide their consumers with the highest quality product. When looking for broilers that produce the highest amount of meat per bird, they turned to Alex Corzo, assistant poultry science research professor at MSU.

“To help Sanderson Farms find the right type of broilers, we evaluated the genetic strains and feeding regimens of all the birds they were using,” Corzo said. “Through this, we were able to find the type of bird that would produce the highest yield of meat.”

Corzo said there are many different broilers on the market, and producers are often in search of a specific type. One bird is not superior to another, but producers look for types that best fit their marketing strategies.

“Dr. Corzo produced the research we needed to choose the right type of broiler for our consumers,” Price said. “We have several different types of birds, and we appreciate the perspective on which types best fit the varying needs of our customers.”

Price also looked to MSU when choosing feed ingredients for the broilers being raised at Sanderson Farms.

“We helped find them a feed that was cost-effective while also contributing to the best performing bird,” Corzo said.

Price said the research helped her and her colleagues make big decisions about changing their feeding programs.

“The benefit of pulling in MSU researchers to our operation is that they help us examine issues on a smaller scale,” she said. “From what the research shows us, we can make major decisions that provide us with cost-saving benefits while still delivering a quality product.”

MSU poultry science department head Mike Kidd values the relationship his department has with Sanderson Farms.

“We’ve been fortunate to be able to provide scientific advice on breeding and nutrition to Sanderson Farms,” he said. “The production decisions they make are of large magnitude, and we are proud to be a part of that.”

Corzo and Kidd strive to maintain good communications with all poultry nutritionists in the state. One way of doing this is through an annual meeting held during the first week of December. At the meeting, nutritionists get a firsthand look at the newest research being developed at MSU.

“We let them know what we are working on and how it might benefit their operations,” Corzo said. “The attendees also bring us their research needs so that we can incorporate them into our plan for the following year.”

Price said the ongoing communication between MSU and the industry is a two-way street. The accessibility to expertise is what keeps the relationship so strong.

“They bring us research ideas that we can incorporate into the work we are doing here. Similarly, we go to them with our ideas and requests,” Price said. “It’s a fantastic relationship, one that we’ve been building together for years.”
New Formulas Help Preserve Wood, the Environment and Cash

By Karen Brasher

Each year, replacing deteriorated wood in U.S. homes cost billions of dollars, but research at Mississippi State is helping protect homeowners’ wallets and the environment.

“Since 1988, scientists in the Forest and Wildlife Research Center have been studying the development of totally organic biocides,” said Tor Schultz, MSU forest products professor.

In the past, wood preservative formulations contained copper and other heavy metals. However, environmental risks and disposal of wood treated with heavy metals have required the development of newer, environmentally benign wood preservatives.

“We have developed formulations that increase the efficiency of the organic biocide mixture and lower the cost,” Schultz said. “The nonbiocidal additives which we have used are so safe they are also used as approved food additives.”

The research has garnered Schultz and colleague Darrel Nicholas three patents.

“We are conducting both ground-contact and above-ground testing of the products,” Schultz added.

To speed the process along, new procedures and equipment have been developed to reduce by half the time it takes to determine if newly developed wood preservatives effectively prevent decay. These new processes will replace methods developed in the 1950s that can take eight to 10 years to complete.

“Our new test procedures simulate the outdoors,” Nicholas said. “The procedure involves the addition of water in soil tubes to simulate the below-ground laboratory testing, or a new method for outdoor field tests. For above-ground simulation, we employ a humidity- and moisture-enriched laboratory.”

Speeding the testing period is critical because of increased governmental restrictions on the use of copper products.

“Our goal is to develop wood preservatives that are both environmentally friendly and effective at preventing wood decay,” he said.

Long-standing methods of visual inspection to determine decay have proven ineffective in spotting early decay, Nicholas added.

The new equipment tests the mechanical properties of wood, including bending strength, changes in compression strength and torsion strength.

“Changes in these properties have proven excellent measures of the extent to which fungi is causing early decay,” Nicholas said.

In addition to being more effective, the compression strength test reduces from 14 weeks to six weeks the time needed for laboratory decay tests.

Forest products scientists are also testing the use of near-infrared spectroscopy to determine how soon decay can be detected, as well as the extent of the decay.

“Homeowners spend $5 billion annually replacing deteriorated wood,” Schultz added. “If we can develop nondestructive test methods to measure the loss of mass and compression strength without harming the wood product, we can save homeowners time and replacement cost.”
It is no secret that excessive drinking can take a toll on the body, but new research from Mississippi State University shows that binge drinking can even weaken its ability to fight off infection.

Dr. Stephen Pruett, head of basic sciences at MSU’s College of Veterinary Medicine, and Dr. Ruping Fan of Louisiana State University’s Health Sciences Center conducted a study examining the effects of binge drinking on the immune system. Binge drinking is the consumption of five or more drinks in one sitting.

Funded by the National Institute of Alcoholism and Alcohol Abuse, the study was published in the online journal *BMC Immunology* and has received national and international attention. Media outlets around the world have reported on Pruett and Fan’s work.

To examine the impact of alcohol on the immune system, Pruett and Fan gave laboratory mice varying amounts of alcohol and measured the effects. They also conducted similar studies in vitro (using cell cultures in test tubes). Results of their experiments showed that excessive alcohol consumption blocks important components of the immune system.

“The body produces proteins that activate a range of immune responses,” Pruett said. “The mice we studied were unable to produce these proteins, thus making them more susceptible to viruses, bacteria and parasite infections.”

Pruett said the time frame during which the risk of infection is increased might be at least 24 hours. Alcohol has a persistent effect on the body’s immune response system even after the alcohol is cleared from the body. This information can help researchers better understand how the immune system works.

“The knowledge that alcohol changes the ability to fight infection is helping us learn even more about the immune system and what keeps it functioning properly,” Pruett said. “If we know what it takes to diminish the immune system’s ability to fight off disease, we can then look at ways to counteract that.”

The results also help researchers understand what populations may be more susceptible to infections because of weakened immune systems.

“Dr. Pruett’s work is highly relevant to the general population but is especially important for college students because of the prevalence of binge drinking in young people,” said Dr. Jan Chambers, a College of Veterinary Medicine basic sciences professor. “Most college students are on their own for the first time, anxious to socialize and subject to peer pressure. The negative impacts of binge drinking on immunity make such populations of students even more vulnerable to the diseases that easily pass among people in crowded settings such as classrooms and dormitories.”

The results also fit into the body of knowledge on how a healthy lifestyle that includes avoiding drugs and alcohol can help the immune system fight off illness more effectively.
By Bonnie Coblentz

A beetle that made its presence known in Mississippi this summer is threatening the extinction of redbay trees in the state and could harm the future of traditional Cajun cuisine.

The beetle is the redbay ambrosia beetle, a dark brown insect about half the size of an uncooked grain of rice. It spreads the pathogen that causes Laurel wilt disease in many tree species, including Mississippi’s redbay and sassafras trees. Redbay leaves and file, which is made from sassafras leaves, are used commonly as spices in Cajun dishes such as gumbo.

John Riggins, a Mississippi Agricultural and Forestry Experiment Station forest entomologist, was the first to identify this beetle in Mississippi. Riggins, who is with the MSU Department of Entomology and Plant Pathology, found it in redbay trees in the Sandhill Crane Refuge near Gautier in Jackson County. This location on the Mississippi Gulf Coast, identified in July, is 300 miles from the nearest known location in Georgia.

“It only takes one beetle to penetrate the bark of a redbay tree, and that is enough to inoculate the tree and kill it in less than one growing season,” Riggins said.

The beetle and the fungus were both introduced to the United States from their native range in Asia. Since 2002, they have been a problem on the Atlantic seaboard in Florida, Georgia, and South Carolina.

“This beetle is not a major problem in Asia,” Riggins said. “The trees in Asia have a natural resistance to the fungus, and the beetles have natural enemies.”

There are chemical insecticides that can be used against the beetle and fungicides that can help prevent the disease in trees, but Riggins said these are too expensive and impractical to consider on a large scale. Efforts are being focused on preventing the spread of the beetle and finding out where the infestation came from.

“We’re conducting research to try to find out how it got into Mississippi so we can try to stop a future problem,” Riggins said. “We’ve also been monitoring the beetle and the disease and trying to describe the extent of the infestation. Our future plans are to use remote sensing to do forest change detection and trace this infestation back to where it began.”

Riggins’ lab at MSU is monitoring the problem and trapping the beetles to identify their numbers and locations. Researchers will soon do genetic analysis to compare the Mississippi beetles with those found on the East Coast.

“We want to determine if our population of beetles is more related to those on the Atlantic coast or those in Asia,” Riggins said.

This information may indicate whether these beetles came to Mississippi on a load of firewood from an infested state or on a shipping crate through the Gulfport or Mobile ports near where the beetles have been detected.

Randy Chapin, forest health coordinator with the Mississippi Forestry Commission, said MSU received an initial $5,000 grant through the U.S. Forest Service to investigate the beetle problem when it was first reported. With this money, which came through the Cooperative Forest Health Funding, Riggins was able to document the presence of the redbay ambrosia beetle. Based on Riggins’ initial reports of the problem, the U.S. Forest Service gave MSU another $25,000 for further study.

“The biggest thing we want to know right now is how it got here,” Chapin said. “It is definitely high on the Forest Service radar.”

To date in Mississippi, only redbay trees are being killed by this beetle, but several other tree varieties, including sassafras, are susceptible.

Redbay trees are a common understory component of Mississippi’s coastal forests. They are an important food source for many different species of birds and mammals, which eat the small fruits that the redbay trees produce. Redbays are not an economically important species, but they are sometimes used in cabinet making and woodturning because of their attractive wood grain and coloration.

Chapin said Georgia has not been able to stop the spread of the beetles and the disease, although they have tried insecticides, buffer strips, and cut-and-burn practices. A few trees in Georgia have escaped the infestation and appear resistant to the beetle, and these are being examined for possible natural immunity.

In the meantime, Mississippians are being urged to use local sources of firewood. Landowners with dead or dying redbay or sassafras trees are asked to contact the Mississippi Forestry Commission so they can investigate the cause.
**County Seat:** Bay Springs/Paulding

**Population:** 18,500

**Municipalities:** Heidelberg, Montrose, Louin, Bay Springs

**Commodities:** Poultry, Timber, Cattle, Commercial Vegetables

**Industries:** Georgia Pacific, Hol-Mac (welded steel fabrications, hydraulic and pneumatic cylinders), Peco Foods, HSI Corp. (custom cylinders), TEC (communications technology), Denbury Resource Management (oil)

**Natural Resources:** Timber, Oil, Wildlife, Natural Springs

**History Notes:** The capitol of the Choctaw Nation was located in present-day Jasper County until 1824. Jasper County was established in 1833 and was named for a Revolutionary War hero, Sgt. William Jasper. Many of the first settlers came from North Carolina, South Carolina, Georgia and Alabama. The first railroad was built through the county in 1882.

**Attractions:** Bay Fest, Jazz in the Grove, Lake Claude Bennett, Bay Springs Golf Club, Hunting

**Did you know?** Founded in 1852 in Paulding, the Eastern Clarion was the forerunner of the Clarion Ledger, Mississippi’s only statewide newspaper.

"The people of Jasper County have a tradition of good management and effective leadership. Those qualities make the county and its communities great places to live and work."

**Ricky Ferguson,** Extension County Director

Editors note: 1/82 is a regular feature highlighting one of Mississippi’s 82 counties.
Whether you like casting a line for a big speckled trout or enjoy a succulent seafood platter, chances are good you have benefitted from Mississippi’s marine fishery resources in one way or another.

The seafood industry has undergone sweeping change in the last few decades, responding to world market forces, increased production costs, and increasingly more restrictive management regimes.

The Mississippi seafood industry is a major contributor to the state’s economy. Landings for 2008 were about 202 million pounds of seafood products entering Mississippi ports worth about $44 million to the fishermen. More than 5,000 people are employed in the harvesting, processing and distribution of seafood. There are two major fisheries in which Mississippi producers and processors participate: shrimp and oysters. A handful of fishermen also catch crabs and finfish for local markets.

Mississippi currently has about 400 shrimp boats in both the offshore and the inshore fleet. The inshore boats work primarily in Mississippi Sound and the adjacent Louisiana marsh. These are the boats that are active during Mississippi’s shrimp season, which usually runs from June through November. These smaller boats make short trips of about three to seven days. They provide direct dockside shrimp sales to consumers where fishermen can get a better price for their catch than selling to processing plants.

At the other end of the spectrum are the large offshore boats that work year-round in the Gulf of Mexico and have on-board freezing capacity allowing them to make month-long trips. Most of these larger boats (90 to 100 feet in length) are owned and operated by Vietnamese-Americans and operate with a crew of four or five. They will typically unload 40,000 to 50,000 pounds of shrimp per trip to shoreside processing plants.

Shrimpers pull two or four nets at a time along the seabed and burn a lot of diesel fuel in the process. Offshore boats hold upwards of 25,000 gallons in their tanks. In 2008, when fuel prices soared to near $4 per gallon, many boats tied up because the shrimp they were catching wouldn’t pay for the fuel bill.

Ninety-three percent of the shrimp consumed in this country are imported. Shrimp is a global commodity, and the price Mississippi fishermen receive for their catch has been steadily decreasing in recent years, hitting all-time lows in 2009.

Shrimpers are required by law to install devices in their nets that release sea turtles and finfish from the nets as they are being pulled through the water. Because these devices also lose a certain percentage of the shrimp catch, fishermen and fishery managers work together to try and improve them.

Most of the state’s oyster reefs are located in the western portion of Mississippi Sound, where seawater from the Gulf and outflow from coastal rivers come together in the proper mix to foster oyster growth and reproduction. After spending the first part of its life floating freely through the water, a young oyster will cement itself to a rock or other hard surface, never to travel again.

The average 3-inch oyster filters about 50 gallons of water a day to obtain food and oxygen. In 2008, Mississippi oyster landings had returned to normal after rebounding from the impacts of hurricanes Katrina and Rita in 2005. Because oysters are often consumed raw, water quality at the reef sites is closely monitored and reefs are temporarily closed to harvest following periods of rain and/or high river flows. Many of Mississippi’s most productive areas have been closed to harvest due to increased pollution associated with coastal development.

Mississippi’s oyster season usually runs from October to April during the cold-weather months when oysters are plump and provide higher yields at the shucking houses. About 380,000 sacks (each sack is about 80 to 90 pounds) of oysters worth $6.9 million to fishermen were landed during the 2008-2009 season.

Although landings in Mississippi are significant, the bulk of economic activity is generated by the processing sector. Processors are still working their way back up to pre-2005 storm season levels due not only to damage here, but to damage in surrounding states where much of the seafood processed here is landed. There are currently 26 processing plants and 26 wholesale operations in Mississippi employing about 3,100 people.

The processing plant labor force is ethnically diverse with many Asian-American and Hispanic workers. In an average year, Mississippi plants process about 40 million pounds of shrimp and 7 million pounds of oyster meats with a plant-gate value of $125 million and $20 million, respectively.
New Leader Named at Delta Research Center

Steve Martin has been named head of Mississippi State University’s Delta Research and Extension Center (DREC) in Stoneville.

Martin assumed his duties as head of the regional facility Nov. 1. He was named interim head of the center in July 2008 after the appointment of former DREC head Joe Street as associate director of the MSU Extension Service.

The new center administrator began his MSU career in 1997 as a graduate research assistant in the Department of Agricultural Economics. He earned his doctorate in agricultural economics at Mississippi State and also holds master’s and bachelor’s degrees in business administration and agricultural and extension education, respectively, from MSU.

“Dr. Martin’s almost decade of service as a research scientist in the Delta, plus more than 12 years in agricultural business, give him a unique mix of experiences for this role,” said Greg Bohach, vice president of MSU’s Division of Agriculture, Forestry and Veterinary Medicine. “He has a strong commitment to all aspects of the region’s economic development, as well as dedication to MSU’s role in educational outreach.”

Veteran Professor Named Head of MSU Forestry

A 24-year-veteran faculty member is the new head of the MSU Department of Forestry.

Andrew Ezell assumed his new duties on Dec. 1, leading the only four-year forestry degree program in the state.

“Dr. Ezell has a wealth of experience in research, Extension and teaching,” said George Hopper, dean of the College of Forest Resources. “His experience working with private landowners is extensive, and he will be an asset to the university and the state in his new role.”

A native of Linden, Tenn., Ezell holds a bachelor’s degree in forest management from the University of Tennessee, a master’s degree in forest ecology from Yale University and a doctorate degree in forest management and wood quality from Louisiana State University.

Ezell, whose research interests include hardwood growth and regeneration, previously worked at the University System of Georgia and Texas A&M University.

Ryan, Anderson Named Outstanding Ag Workers

An animal scientist who explores physiological factors of horse reproduction and an agricultural economist who makes sense of the interaction of market forces have been honored with prestigious awards.

Peter Ryan, a faculty member of the MSU Department of Animal and Dairy Sciences, received the 2009 MAFES Excellence in Research Award. The award is sponsored by Southern Ag Credit, a part of the Farm Credit System.

John Anderson, a faculty member of the MSU Department of Agricultural Economics, was named 2009 Outstanding MSU Extension Service Worker. This award is sponsored by the Land Bank of North Mississippi, also a part of the Farm Credit System.
Ryan joined MSU in 1999 and has earned international acclaim for his research on fescue toxicosis in horses. This syndrome often causes pregnancy complications in mares and can affect the health of the developing fetus.

“Dr. Ryan has added a new dimension to our research program,” said Terry Kiser, head of Animal and Dairy Sciences. “He has distinguished himself, the department and Mississippi State University.”

Anderson, who has been with MSU Extension for eight years, provides market updates on livestock and row-crop commodities to Mississippi producers. He is known for his ability to combine an applied economic perspective and his knowledge of production agriculture to issues that involve the disciplines of animal and poultry science, agronomy, aquaculture and veterinary medicine.

“His analysis of economic problems and policies has benefited the citizens of Mississippi,” said Steven Turner, head of Agricultural Economics. “Because he continues to develop expertise in his field, Dr. Anderson has become a valuable and reliable resource for agricultural producers throughout the nation.”

**MSU Launches Turf Web Site**

Mississippi State University has launched a Web site to promote its development of high-quality turfgrass cultivars and help consumers find vendors for commercial varieties that result from this research. The site, http://www.msuturf.com, highlights several new and improved varieties of bermudagrass and St. Augustine grass researched and developed by the Mississippi Agricultural and Forestry Experiment Station.

The new Web site includes a list of turfgrass vendors, licensing information, a list of stadiums and ballparks where MSU turfgrass is installed as a playing surface, frequently asked questions, contacts and links to other informative Web sites.

“This site is something we’ve planned to develop for some time, and we are really excited to see it launch,” said Chase Kasper, assistant director of MSU’s Office of Technology Commercialization.

MSU’s football Bulldogs play on their “home” developed turfgrass at Scott Field’s Davis-Wade Stadium. Other athletic venues with turfgrass surfaces developed at MSU are college football’s Rose Bowl in Pasadena; Chase Field, home of baseball’s San Diego Padres; and the Home Depot Center, home of Major League Soccer’s LA Galaxy and Chivas USA.

“We wanted the site to speak to broad audiences,” Kasper said. “The information we have provided will help people interested in selecting turfgrass for their home or business, as well as professionals who produce, install or manage turfgrass.”

During January, two Mississippi teams won honors at the National 4-H Horse Classic competition in Colorado. The Hinds County team, top photo, placed first in horse judging. Team members are, front row left, Robyn Soigner, coach Greg Williams and Joanna King; and back row left, Taylor King and Allison Guider. Joanna King was the high point individual. The Pontotoc County team, bottom photo, placed second in the Hippology Contest, which tests knowledge and understanding of equine science and management. Team members are, front row left, Mississippi State 4-H livestock specialist Dean Jousan and 4-H agent Sherry Thompson; and back row left, Hanna Collins, Morgan Jones, Ben Albers and Sarah Albers. Sarah Albers was the high point individual. (Photos by Julie Marie Sheperd)
A deep appreciation for agriculture and a love of athletics continue to draw Donald Ford to Mississippi State University. He understands the importance of remaining loyal to his agricultural roots and his alma mater.

Mississippi State holds fond memories for Ford, who credits the university with providing him the education necessary for a successful career in the agricultural industry. Today, Ford is chairman of the board and president of American Plant Food Corp., a domestic and export chemical fertilizer company that supplies nitrogen fertilizer in the form of ammonium sulfate in Texas, as well as the U.S. and North American markets.

“I feel that without my agriculture degree from Mississippi State, my success in the industry might not have been possible,” said the Kerrville, Texas, resident. After graduation from MSU in 1960, Ford began a career in the chemical fertilizer business. In 1967, he joined American Plant Food Corp. as a salesman. He later became sales manager and then vice president. In all, Ford has enjoyed a 45-year career with the company, which has plant operations throughout Texas with sales across the U.S., as well as Central and South America.

Born and raised on a farm in Greenville, Ford said he fantasized as a youngster about attending Mississippi State. Following high school graduation, he received a football scholarship and his dream became a reality.

“During those days, players held positions on offensive and defensive sides of the game. So, I played fullback on offense and cornerback on defense. It was a great all-around experience,” he recalled.

It was during his days as a student that Ford met his wife, Phyllis, who was also attending MSU. After graduation, the two were married and moved to the Rio Grande Valley of Texas. While he was pursuing a career in the field of agriculture, she was busy as a homemaker and mother of their two sons, Don Jr. and Stan. The couple, who recently celebrated their 50th wedding anniversary, have been blessed with four grandchildren.

The Fords are among the latest contributors giving in support of a new university initiative. StatePride: An Initiative for Student and Faculty Support seeks gifts from alumni and friends of the university for scholarships and faculty support. Through StatePride, the Fords have established 10 $1,000 annual scholarships for deserving students in the College of Agriculture and Life Sciences. The Donald and Phyllis Ford Loyalty Scholarships will benefit entering freshmen or community college transfer students with a minimum 3.0 grade-point average who demonstrate leadership potential. Loyalty Scholarships are among several annual scholarships emphasized through the initiative.

The Fords also have established annual awards for exceptional faculty members in the college. Their $40,000 gift will be matched dollar-for-dollar through a special partnership with MSU Athletics, which will result in $80,000 for the college.

Over the next two years, the College of Agriculture and Life Sciences and other colleges will receive matching grant funds from the athletic department to fund a faculty awards program. Needs for each college are dependent on the number of faculty within the individual unit.
“We are proud to have the opportunity to award 32 full-time faculty in the College of Agriculture and Life Sciences with a stipend of $2,500 for their meritorious achievements this year,” said Melissa Mixon, college interim dean. “The gift from the Fords, coupled with the athletic match, will allow us to recognize these exceptional faculty at a time when our budgets do not allow for raises.”

Recipients will be selected based on an individual’s contributions to the university’s mission of teaching, research and service. Currently, the College of Agriculture and Life Sciences has a 156-member faculty.

“We are very pleased to be able to double the impact of our gift with matching funds from the athletic department,” said Ford. “It’s a win-win situation for academics and athletics since strides in both areas will make the university the best it can be.”

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*StatePride: An Initiative for Student and Faculty Support* has raised more than $33 million toward a goal of $100 million since it began in January 2009.

The four-year initiative seeks private gifts to assist Mississippi State in reaching 22,000 students by 2015, a goal set forth by MSU President Mark E. Keenum. The initiative will allow the university to award need-based scholarships for deserving students and academic scholarships to compete for the best and brightest students. *StatePride* also will create opportunities for top performing faculty.

In conjunction with *StatePride*, the MSU Foundation has partnered with the athletic department for a matching gift program. MSU Athletics will match up to an average of $750,000 annually for scholarships and faculty support as funds become available.

All contributions for annual scholarships and faculty support made before Dec. 31, 2012, will count toward *StatePride*. Over the course of *StatePride*, the MSU Foundation will continue to raise funds for other campus needs, such as building renovations and expansions, but an emphasis will be placed on scholarships and faculty support.

Learn more about *StatePride* by visiting the MSU Foundation online at www.msufoundation.com.

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It’s all in the name. Check it out for news and information from the Division of Agriculture, Forestry and Veterinary Medicine.