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Vice President’s Letter

I can hardly believe that I have been at Mississippi State University for six months already; the time has passed quickly. My experiences have been very interesting and rewarding. I have met many great people, and I appreciate the kindness and assistance that eased my transition to Mississippi.

On a positive note, as we approach the end of the fiscal year, the nation’s economy is showing signs of recovery from its longest and deepest recession in decades. In Mississippi, some economic sectors seem to be improving, but the state still faces an overall sluggish economy that is expected to continue through FY 11. There are many other positive messages to convey to you as you can surmise from the contents of this issue.

We continue to make strides in our research, which is ranked seventh in the nation for agricultural research by the National Science Foundation. Our Extension faculty and staff are recognized for their commitment to our citizens. Also, our student numbers and ACT scores continue to grow. Enrollment in the division increased 4 percent between 2007 and 2009. Of special significance is the recent success on the North American Veterinary Licensing Examination by the senior class of the College of Veterinary Medicine. We are proud to report that the class achieved a 98.6 percent success rate. I am also proud of our response to the natural disasters in our state and region over the past month. Our Extension and College of Veterinary Medicine personnel across Mississippi have responded to weather-related events in an effective and passionate manner. Our researchers, Extension personnel and service providers are also stepping up to assist as needed in the ongoing oil-related environmental threat in the gulf.

The lower-than-expected state revenue collections have made budget cuts necessary for all state agencies, including universities. For the past two years, Mississippi State University has maintained services to students and other clientele through prudent management of resources. However, we expect deeper reductions in state funding over the next two years, and the university is preparing to respond to the smaller budget by consolidating support functions to eliminate duplication of services and by implementing other efficiencies recommended in a study conducted by a campus-wide Select Committee on Efficiencies and Innovations.

We have been mandated by the Institute for Higher Learning to plan for an overall budget reduction of approximately $18 million through FY 12. I have been working closely with the deans of our colleges (Forest Resources, Agriculture and Life Sciences, and Veterinary Medicine) and directors of our major research and outreach units (Extension Service, Mississippi Agricultural and Forestry Experiment Station, and Forest and Wildlife Research Center) to prepare plans that accomplish this goal.

In the Division of Agriculture, Forestry and Veterinary Medicine, we are assessing the feasibility of implementing changes recommended by the university’s Select Committee for Efficiencies and Innovation. As you likely know, several recommendations would affect the administrative structure of some of our units. President Keenum and I have been meeting with faculty and staff, as well as with external stakeholders. At the time of this letter, no decision has been made regarding any of the recommendations. It is our goal to preserve as many of our academic, research and Extension programs as possible as we look for ways to minimize administrative costs.

The Mississippi State University Extension Service has been holding listening sessions for its employees on campus and at locations throughout the state. We have also held sessions with representatives of the Delta Council, the Mississippi Farm Bureau, crop producer groups and others to gather input on how Extension can better serve the needs of their memberships.

The listening sessions have been extremely valuable because they have resulted in input from the men and women who are working daily with clientele ranging from day-care providers to row-crop and livestock producers. It is our goal to maintain our county programs and to provide additional expertise to our production agriculture and forestry clientele by maintaining a strong group of specialists.

While the current economic recession has been deep and long, we are committed to positioning resources to continue Mississippi State’s land-grant mission of conducting research relevant to the needs of the state’s economy and providing educational programs that equip young men and women with the tools they need for the best jobs of today and the future.

Gregory A. Bohach
Wild pigs are digging up trouble across the state and causing major crop damage, so Mississippi State University and federal experts are helping landowners and farmers eradicate the troublesome beasts.

Wild pigs are a highly adaptable species not native to North America. They are seen throughout the country, causing vast agricultural and environmental damage.

According to the U.S. Department of Agriculture, there are about 4 million wild pigs in more than 35 states, with the largest population being in Texas. They have been seen in Mississippi since the 1980s and have been spotted in almost every county, with higher concentrations in the Delta and southern parts of the state.

“Pigs are thought to have first been introduced to the United States by Hernando DeSoto during his North American explorations,” said Bronson Strickland, assistant Extension professor in the MSU Department of Wildlife, Fisheries and Aquaculture. “Today, most wild pigs seen in Mississippi are feral, from previously domesticated swine. Studies have linked some wild pigs back to feral-domestic and feral-Russian hybrids.”

Wild pigs vary in physical appearance and are seen in any combination of colors, but they are most frequently blackish in color or spotted. Their populations grow at an astronomical rate. Wild pigs reach sexual maturity in less than a year, and females can have more than one litter a year. It’s possible for their population to double in just one year, Strickland said.

“What made pigs so ideal for domestication is what makes them a problem in the wild,” Strickland said. “They are opportunistic omnivores, so they can survive on just about anything, such as acorns, roots, fawns, rabbits and reptiles.”

One of wild pigs’ favorite meals has caused major problems for farmers in Mississippi.

“Wild pigs are ruining crops all over the state,” Strickland said. “They can get on a farm and root up entire crop rows in just one night. They can dig up almost every single seed in a field. They aren’t picky; they get into soybeans, corn, and most recently, peanut farms.”

Strickland said one study estimated that wild pigs are costing the United States about $1.2 billion a year in agricultural and environmental damage.

“They not only are ruining row crops, but they are also causing major environmental damage,” said Kris Godwin, Mississippi Wildlife Services director for USDA’s Animal and Plant Health Inspection Service. “They are competing with deer and other wildlife for resources and causing erosion in creeks.”

USDA Mississippi Wildlife Services Director Kris Godwin and Paul Sellars, a tree farmer in Oktibbeha County, assess damage on Sellars’ property caused by wild pigs. The pigs’ deep rooting has made it difficult for Sellars to maintain parts of his land. (Photo by Scott Corey)
Paul Sellars, who owns a tree farm in Oktibbeha County, has seen firsthand the damage wild pigs can cause. His land has suffered major damage from wild pigs in the area.

“I cannot get my bush hog through the area they’ve been rooting up. I basically can’t maintain that part of my land,” Sellars said. “They multiply quickly and are completely out of control.”

Sellars depends on Godwin and her colleagues to help control the wild pig damage.

“We can remove hogs from property and will do so for free, as long as we are permitted to sample the animals for diseases,” Godwin said. “We are concerned about diseases such as pseudorabies and swine brucellosis. There have not been any confirmed cases of these diseases yet, but we need to be on alert. The spread of diseases such as these can be detrimental to livestock operations in the state.”

Godwin and her team have trapped wild pigs in much of the state.

“Our phones ring off the hook with requests for help with getting rid of wild pigs. We even removed a wild pig from downtown Gulfport,” she said. “Peanut farmers are working to make a significant comeback in Mississippi, so they’ve been diligent about letting us know of any wild pig problems. Their acreage is getting hit pretty hard.”

Strickland and Godwin both said setting traps is the recommended method for removing wild pigs from a property.

“Trapping followed by euthanasia is an effective way to reduce wild pig populations,” Godwin said. “The key to successful trapping is having the right trap door design.”

An effective door is one that activates once pigs have entered and then prevents the pigs from escaping, Godwin said.

“The most frequently recommended and used trap is a rounded cage trap that can capture a large number of pigs at once,” Strickland said.

To help farmers and landowners deal with wild pig damage, MSU Extension in partnership with USDA has been providing workshops on wild pig damage management across the state.

“The workshops have been successful so far. They give landowners a chance to get in-depth instruction and have the opportunity to ask questions,” Strickland said. “The workshops will soon add another component with the deployment of a Wild Pig Mobile Education Unit.”

MSU Extension associate Bill Hamrick is in the final stages of developing this unit, which will provide landowners and farmers hands-on experience with traps, trap doors and trigger mechanisms. He is also producing a how-to video guide.

In addition to workshops, MSU Extension is taking advantage of opportunities to raise awareness of the wild pig problem. In January, Hamrick and Extension associate professor Ben West were part of a group that delivered a wild pig damage presentation at the National Invasive Species Awareness Week in Washington, D.C.

“It was a great opportunity, and our presentation was well received,” Hamrick said. “It was the first time an invasive species other than a plant or insect had been included.”

MSU and federal experts also are encouraging hunting wild pigs as an additional means of population control.

“Trapping needs to be the main means of getting rid of wild pigs because recreational hunting alone will not even put a dent in the population,” Strickland said. “But we do encourage people to take advantage of the opportunity to hunt wild pigs.”

Godwin said hunters need to practice proper precautions when handling wild pig carcasses.

“Gloves should be worn when handling and cleaning wild game,” she said. “Also, like with any other pork product, wild pig meat needs to be cooked thoroughly before eating.”

Sellars said in addition to the trapping USDA is doing on his property, he has been hunting.

“I have to use whatever means I have available to get rid of them,” he said. “They certainly aren’t going to go away on their own.”
When Julian Watson decided to turn his erodible farmland into a tree farm, he had no idea that 24 years later he would be so widely recognized for his efforts.

Watson’s grandparents purchased the land in 1872. When Watson inherited it, he focused on trying to prevent erosion. The 1,100-acre parcel was washing away at a rate of 30 to 50 tons of topsoil per year.

Watson turned to the Soil Conservation Service, now the Natural Resources Conservation Service (NRCS), for a soil analysis to determine the best use of his inheritance. The agency suggested he plant pine trees on the land. Watson took that advice, not knowing he would eventually be named the 2009 Mississippi Forestry Association’s Outstanding Tree Farmer of the Year. While Watson appreciates the honor, he says it’s just the icing on the cake.

“My intent through the years has been to make money from my family land while holding onto topsoil and taking care of wildlife,” Watson said.

He has been successful on all counts.

The park-like forest, which belongs to Watson and his mother, Juanita Powers Watson, was last farmed in 1985, when the soybeans could not be harvested because of erosion.

“My family thought I was crazy when I began planting pines,” Watson said. “But I can tell you now that it was one of the best decisions I ever made.”

Watson was the first in Mississippi to sign up for the Conservation Reserve Program, a program administered by the NRCS to convert highly erodible land into productive vegetative cover. Under a multiyear contract, the program provides an annual rental payment and cost-sharing assistance for some forestry practices.

Watson was instantly hooked after planting his first pine seedling. Tree farming not only captured his interest, it became a lifelong passion.

“When I started, I knew absolutely nothing, but at least I knew I didn’t know anything,” Watson said. “I went to every field day and short course I could to learn as much as possible about land management.”

Watson first met Mississippi State University Extension forestry professor Tim Traugott at a field day in the late 1980s.

“I believe Julian attended every short course and field day offered through MSU Extension forestry, many of them more than once,” Traugott said.

Traugott, who retired in 2008, said that Watson’s love for tree farming energizes everyone around him.

“There are thousands of people who own tree farms, but Julian is a true tree farmer: he treats his forest as a crop,” Traugott said. “He can tell you when everything was planted, when it was sprayed and when it was harvested, and he loves to tell others about his success.”

“Julian is exactly what a tree farmer of the year should be,” said Extension forestry specialist Britton Hatcher. “He implements his forest plan, maintains his forest, educates others, forms county-level forestry associations and is very active in the forestry community.”

While Watson manages his family land primarily for income, he also manages to take care of wildlife and protect the soil from erosion.

“It wasn’t hard to care for the wildlife, since anything you do for the trees also benefits deer, turkey or other wildlife living there,” Watson said.

Watson makes a profit by thinning his trees. He also leases his land for hunting. Recently, he sold carbon credits. Although his knowledge about forestry has increased, he still relies on consulting foresters and a forest management plan.

“Julian implements his forest plan on the land,” Traugott said. “He actually puts it to use on his tree farm, so he will bene-
Almost 300 producers of agricultural products ranging from goats to sweet potatoes met at the North Mississippi Research and Extension Center in Verona Feb. 18 to discuss services they need from Mississippi State University.

Each year since 1953, north Mississippi agricultural producers have come together to discuss their research and educational needs. They then report those needs to Extension Service and Mississippi Agricultural and Forestry Experiment Station administrators.

“This is one of the nation’s oldest groups of its type, and this year’s attendance was the largest in recent history,” said Joe Street, associate director of the MSU Extension Service. “The input we get from the producers allows us to use our resources to target specific needs.”

This was the second year north Mississippi goat producers have been represented at the meeting, and their requests focused on information for new growers.

“Goat is one of the most widely consumed meats in the world because a goat thrives where a cow will not,” said grower Bill Lowry of Pontotoc County. “There is not, however, a lot of information on goat production in this country because it is just now getting off the ground here, and new growers need information.”

The producer group requested university help in creating a commercial goat producer’s guide. They also requested research aimed at parasite control.

Beef producers requested training sessions on animal nutrition with an emphasis on commodity feeds. Producer Jacob Megehee of Noxubee County said growers also discussed the use of county Extension offices and beef organizations to get accurate information on beef to the public.

Among the needs of cotton growers are new public varieties and testing of all commercial varieties before they are released, according to producer representative Tony Campbell of Itawamba County.

Bradley Taylor said north Mississippi dairy producers need grazing system efficiency research, as well as research with deep-pack bedding for use in dairy barns.

Extension associate Adam Tullos presented the equine report, noting the need for a state horse owners’ association and for an Extension equine specialist.

Discussion in the forest/wildlife group included the need for forest product market research, said Thelma Crumm of Clay County.

“We have to have economic development packages, similar to what was developed at Toyota at Blue Springs, for forest products,” she said.

Grain crop growers discussed the need for university research and information on the economics of on-farm grain drying and on variety selection based on weathering and maturity, said grower Garland Anderson of Chickasaw County.

North Mississippi growers of ornamental plants need research on alternatives for extending the ornamental growing season, said Sherra Owen of Union County. The group also requested information on gardening resources and speakers.

Commercial production of peanuts is expanding in Mississippi, and growers need additional peanut research results and educational opportunities, said MSU Extension peanut specialist Mike Howell. The north Mississippi growers also discussed the need for development of equipment for their crop, including a yield monitor for peanut combines.

Sweet potato grower Jami Earp of Chickasaw County said producers need continuing research on a variety of topics, including tip rot, insect control options, new variety selection and nematode control. He said the group also discussed the need for an Extension sweet potato specialist.

The need for help developing specialty markets for pork was a topic for the swine producer group, said grower Byron Wilson of Chickasaw County. Alternative uses for empty swine facilities also were discussed.

“There are no finishing (swine) growers left in Mississippi,” he said. “We need to find uses for their empty facilities.”

Education of the public about effective and efficient turfgrass management is an area where the university could help the Mississippi turf industry, said grower Harry Collins of Lee County. Growers also strongly encouraged the use of MSU-patented turfgrass cultivars.

Commercial vegetable and fruit growers requested research with different types of mulches, said Gerald Jetton of Itawamba County.
A Mississippi State University researcher has found that biology and computer science make the perfect combination for tracking animal flu viruses.

Henry Wan is an assistant professor in systems biology at MSU’s College of Veterinary Medicine and has years of experience studying flu viruses. While doing graduate work in China, Wan became the first scientist to isolate the highly pathogenic H5N1 avian influenza virus. Soon after this discovery, highly pathogenic H5N1 outbreaks occurred in poultry in Asia, Europe and Africa. This virus also caused more than 440 confirmed human cases across 15 countries. About 60 percent of the cases were fatal.

“I became very interested in influenza viruses during my education,” Wan said. “My research centers around influenza A viruses — where they come from, why they change and how they spread.”

Wan developed computer programs that provide information on each one of the more than 20,000 viruses’ gene segments. The programs display each gene segment and provide maps showing the distances between the segments. The information is used to determine how the segments relate to each other and group together to form different influenza viruses.

“Influenza viruses are always changing. They reproduce to become more fit, or virulent, to continue to spread,” Wan said. “The program aims to seek a better understanding of why they mutate and how they spread. Knowing this helps us more accurately predict when new viruses will arise.”

Wan began developing the programs when he was a graduate student at MSU. He earned both a master’s in computer science and a doctorate in veterinary medicine at the university.

Wan works closely with computer science experts to ensure the programs are tailored to exactly what he needs.

“Truly understanding the biological problem that needs to be solved is what helps us design appropriate computational solutions,” said Susan Bridges, professor in MSU’s Department of Computer Science and Engineering. “Dr. Wan has in-depth understanding of influenza biology and also of the computational problem that needs to be solved, making him an ideal collaborator.”

In addition to understanding the relationship between influenza virus gene segments, Wan and his research colleagues seek to determine what environmental factors affect the spread of viruses.

“Virus transmission could be affected by a number of factors such as climate, population density of a certain bird species, and bird migration patterns,” Wan said. “I am collaborating with researchers in the United States and in other parts of the world to better understand what environmental factors contribute to virus spread and mutation.”

Wan is working with researchers at Ohio State University to study bird migration routes in the United States, focusing on the four major flyway zones.

“One of the flyway zones is here in Mississippi,” Wan said. “Over the years, most of the attention has been focused on the Atlantic, Central and Pacific bird migration flyways. By expanding our focus to include the other flyways, we can gather information to better understand the movement of avian influenza viruses.”

Wan’s long-term goal is to use the research on influenza viruses to aid in the development and production of vaccines. Knowing the genetic code of viruses and predicting their mutation and movement can help scientists stop them before they become widespread.

“Our research on virus mutation and spread can help predict new strains of the virus and eventually aid us in foreseeing epidemics and pandemics,” Wan said. “That information could be used to develop vaccines before the epidemic or pandemic were to hit.”
“Peanut butter is portable, nonperishable and a very good source of protein.”

Malcolm Broome
In 1985, a young and energetic Mississippi State University forest products professor began an experiment to test a new treatment on railroad crossties. At the time, Terry Amburgey had little notion that his experiment would change railroad infrastructure almost 25 years later.

Amburgey, along with U.S. Forest Service colleague Lonnie Williams, had the idea that a dual treatment of borates (a chemical used as both an insecticide and fungicide) and creosote would extend the service life of railroad crossties. They also hypothesized that borate treatment of non-seasoned ties would protect them from fungi and insects while they were air-drying.

While creosote treatment was used on the nation’s railroad infrastructure for more than 100 years, most wood species, especially white oaks and hickories, were not completely protected by the oily, tar-like substance.

“Some wood species, such as black gum, are completely penetrated by creosote and can be in service for close to 50 years. Ties made of white oak and other hard-to-treat species were failing after as few as seven years in high-hazard regions such as the Southeast,” Amburgey said. “These failures were primarily from decay fungi and iron corrosion of spikes that caused the wooden beam to weaken.”

With more than 140,000 miles of railroad track and 3,000 ties per mile, the expectation of changing ties every seven years was expensive, Amburgey said.

“At the time of the initial study, treating ties that were already in service to extend their life was about $5 per tie, per year,” Amburgey said. “The cost for replacing ties was much more than this.”

After preliminary tests on the MSU campus, double-treated ties were placed on a stretch of track in Cordele, Ga., one of the areas where severe decay was a problem.

“We knew that the borates would penetrate and protect the interior against wood-destroying organisms, such as decay and termites, and protect spikes from corrosion, while the traditional creosote would weatherproof the outer portion of the wood,” Amburgey said. “However, we had no idea that after 23 years, the double-treated method would protect the wood to such a degree that the ties remained in perfect condition.”

Amburgey said the borates move to the highest moisture areas of the tie, which keeps decay fungi out. Additionally, the creosote coating keeps the borate from leaving the wood.

Norfolk Southern, a major transportation company that operates 21,000 miles of track, adopted the dual-treatment standard in 2005 for use in high-hazard regions.

“The dual-treatment system is saving us money by providing significantly greater tie life and extending the natural resource,” said Jeff McCracken, assistant vice president for maintenance of way and structures for Norfolk Southern.

“We also are experimenting with decreasing creosote retention in the dual-treated ties to not only extend the resource in times of shortage, but also find savings as we determine the optimal combination of borates and creosote,” he said.

Norfolk Southern is not the only company to adopt the technology. Some 25 years after the research idea was conceived, nearly a million ties are dual-treated and installed annually by Class 1 railroads, the largest of freight companies.

Amburgey retired in 2009 after 30 years of service, but his vision for long-lasting railroad ties is still being pursued at the land-grant university. MSU Forest and Wildlife Research Center assistant professor Shane Kitchens has continued the research program, collaborating with Amburgey to develop supplemental treatments for in-track wooden crossties.

“There are more than 400 million crossties in use, with an estimated 23 million replaced each year,” Kitchens said. “The system developed by Amburgey and Williams will provide long lives for railroad ties. We hope to increase the number of railroads using the system through education and demonstration.”

Norfolk Southern and the Railway Tie Association recently hosted a field trip to Cordele, Ga., to demonstrate the advantages of the dual borate-creosote treatment. More than 50 railroad engineers, purchasers and quality control staff were in attendance.

“When individuals see how well the crosstie performs and looks, they are immediately sold on the concept,” Kitchens said. The technology to extend the life of railroad crossties, which began at Mississippi State, is still on the move.
Where some saw an eyesore, others saw an opportunity: could an old hatchery be transformed into a much-needed child-care center? With a lot of hard work, patience and some help from the Mississippi State University Extension Service, not only did Sanderson Farms Inc. create a place for their employees’ children to be cared for, they developed it into the most highly rated child-care center in the area.

Sanderson Farms, which began as a farm supply store in 1947, invested more than $1 million to convert the hatchery into a child-care center that serves the families of its employees as well as the community. In fact, 70 percent of the company’s local workforce depends on the child-care center, where about 40 staff members serve 190 children over two shifts. When a child-care center is open nearly 24 hours a day, sometimes six days a week, the challenges are numerous and unique.

Director Glenda Bonds wanted to provide a high-quality learning experience and environment for children, but one key component of quality is teacher education. With staff serving on rotating shifts and children coming and going at all hours, child-care providers found it difficult to attend the local training sessions, which were held in the evenings and on Saturdays.

Enter Child and Family Development area agent Karen Benson and the Mississippi Child Care Research and Referral Network. As “The Helper Piece” in Mississippi’s early care and education field, the network offers free statewide training to increase quality. It also provides personalized technical assistance with experienced mentors and resource libraries filled with educational materials available for free checkout. In addition to conducting regularly scheduled workshops, Benson has worked with Bonds for six years to plan staff development, some of which is conducted on-site to accommodate different shifts.

“This past year we focused on the early learning guidelines classes to help them meet requirements in the quality rating system, or QRS,” Benson said. “They were committed to being trained in all of the guideline areas in one year and were willing to make needed changes in the learning environment.”

The administration and staff of the center successfully overcame many obstacles to participate in the QRS, Mississippi’s voluntary rating system for licensed child-care centers. Their hard work was rewarded when they received a four-star rating during their QRS assessment. Only six out of more than 245 rated child-care centers in the state have gained this designation. Receiving four stars requires extensive professional development and higher levels of education for providers, as well as a family resource center, a volunteer program for parents, weekly newsletters, a lending library and workshops for parents, above and beyond all of the requirements within the classrooms.

QRS assessment is part of a national effort to apply defined standards to early care and education programs in order to improve quality for our youngest and most vulnerable population.

Systems vary from state to state, but most include monitoring and assessment to hold centers accountable while offering incentives such as increased funding.

The Early Childhood Institute at MSU monitors and evaluates participating centers in five areas: administrative policy, professional development, learning environments, parent involvement and evaluation.

Bonds recognized the importance of the collaboration with the Extension Service in helping the Sanderson Farms child-care center reach its QRS goals.

“This challenge came with guidance, partners and mentors, making the challenge attainable,” she said. “Our staff responded to the requirements of QRS with enthusiasm. We’re very proud of Sanderson Farms Inc. Child Care Center and the care we provide for the children of our employees. Our accomplishments are a team effort.”

Their future goals are clear.

“My staff and I cannot wait to hang that Fifth Star in our center,” Bonds said.
It is not surprising to see an X-ray machine at a physician’s or dentist’s office, but research at Mississippi State University may help make them commonplace at seafood processing facilities and commercial produce operations.

Barakat Mahmoud, an assistant professor of food safety and microbiology with the Mississippi Agricultural and Forestry Experiment Station and spokesman for the Institute of Food Technologists, is researching X-ray machines as a way to decontaminate food products. He conducts his work at MSU’s Experimental Seafood Processing Laboratory in Pascagoula.

His research shows X-ray doses can kill dangerous bacteria that make people sick, such as salmonella, E. coli, vibrio, shigella and listeria. The process simply removes harmful bacteria and does not alter the food product in any other way. In 1963, the Food and Drug Administration deemed the irradiation of food to be a safe practice.

“Vibrios are the bacteria in raw oysters that can make them dangerous to eat,” Mahmoud said. “This technology completely eliminates the naturally occurring bacteria, making the delicacy safe to consume. The X-rays do not kill the oysters; they stay alive throughout the entire process.”

The technology is also being used on fresh produce, such as spinach, lettuce and tomatoes.

“The salmonella and E. coli outbreaks in fresh produce over the last few years have really brought attention to the importance of food safety,” Mahmoud said. “What I’ve been working on is a way to get rid of food-borne illnesses without affecting the quality and freshness of the food.”

Gary Bachman, MSU Extension assistant professor of horticulture at the Coastal Research and Extension Center in Biloxi, worked with Mahmoud on some of the research.

“I helped select the vegetables that would benefit most from the X-ray process,” Bachman said. “Given the issues leafy greens have had with contamination, they were a good choice.”

Bachman participated in evaluating the treated vegetables and found the quality stayed consistent.

“The process doesn’t seem to affect quality,” he said. “The technology is reliable, and as a result, the vegetables are free of pathogens.”

Mahmoud uses an RS 2400 X-ray machine to do his work. He carefully wraps the food items in plastic before putting them into the machine. In a matter of a few minutes, the food is irradiated and ready to eat. The final product looks no different than when it first entered the X-ray machine.

“The freshness of the food remains the same,” he said. “There is minor loss of vitamins A and C, but they always are reduced in any type of food processing.”

Mahmoud and his colleagues found that not only does the X-ray technique kill pathogenic bacteria, but it also extends the shelf life of irradiated food. Spinach, lettuce and other fresh vegetables last 30 days longer after the spoilage bacteria are eliminated.

Processes using chlorine dioxide gas have been used in the past to rid leafy greens of dangerous bacteria, but the gas diminished the quality of the lettuce and spinach, Mahmoud said. He also said gamma rays are often used for food irradiation, but X-ray is a more familiar technology for consumers.

“X-ray machines are more common, and their use can help consumers feel more secure,” Mahmoud said.

Now, Mahmoud and his colleagues are working to show the seafood and produce industries how useful X-ray machines will be in their operations.

“We want the industry to adopt this technique as a way to make food safer,” he said.

The research is being presented at industry and academic meetings across the country.

“This technique can be effectively used in large-scale commercial operations,” Mahmoud said. “Ridding food of dangerous bacteria before it reaches grocery store shelves can certainly help instill better consumer confidence.”
MSU Seed Production MEETS GROWERS’ NEEDS

By Linda Breazeale

“Most states have their own foundation seed program, but each agency maintains a unique blend of crop species. If an unexpected or low-volume request surfaces from one of our Mississippi seed producers for a variety not currently maintained by MSU, we work to locate seed at a foundation seed agency in another state.”

Randy Vaughan

Local seed companies and growers depend each year on Mississippi State University to provide quality foundation seed of improved varieties.

MSU established Mississippi Foundation Seed Stocks in 1959 as a unit of the Mississippi Agricultural and Forestry Experiment Station. At its peak production in the early 1980s, the unit supplied about 110,000 bushels of foundation seed each year of mostly soybeans, cotton and rice.

MSU is active in the production of various foundation seed stocks, which are the first generations of seed produced from seed supplied by federal and state plant breeders, said Randy Vaughan, seed stocks operations manager.

“Mississippi Foundation Seed Stocks exists as the link between public plant breeders and certified seed producers of Mississippi,” Vaughan said.

Foundation seed is the first of three classes produced within the seed certification system. The second generation is called registered seed, followed by certified seed.

“We continue to serve the certified seed industry by providing high-quality foundation seed,” Vaughan said. “Foundation seed crops available through MSU include soybeans, rice, sweet sorghum, southern peas, clovers, millet, ryegrass, partridge peas, wildlife soybeans and eastern gamma grass.”

Although the total volume of seed has diminished over the years, the number of public varieties available has not. The production methods also have changed from earlier years. Currently, some varieties of foundation seed are grown on MAFES land, while others are produced under contract for MSU by private seed producers.

“Our purpose is to provide Mississippi certified seed producers with consistent access to high-quality seed of newly developed and existing pub-
lic plant varieties of various species produced in the state,” he said. “This is accomplished through the efficient multiplication of ‘breeder seed’ to become foundation seed while preserving the variety’s known qualities.”

Vaughan said MSU preserves those qualities by following time-proven production methods.

“From clean land and proper rotation to in-field variety purification techniques and the cleaning of equipment — it all has a place,” he said.

The Mississippi Crop Improvement Association, which has regulatory authority over all classes of certified seed grown in the state, oversees the production standards. Before harvest, association representatives inspect crop production activities to ensure that strict standards were maintained.

“The standards are designed to safeguard the seed from threats to quality in the field and from equipment,” he said. “It is a team effort to ensure that all varieties of foundation seed produced in Mississippi conform to the breeders’ description of the variety.”

Vaughan said varieties and quantities are demand driven. Older varieties are replaced with newer varieties as interest changes. An advisory committee made up of registered seed producers and Extension and MAFES personnel provides MSU with guidance concerning the changing needs for available crop varieties.

“Some of the varieties MSU maintains are not available from any other foundation seed agencies,” he said. “Most states have their own foundation seed program, but each agency maintains a unique blend of crop species. If an unexpected or low-volume request surfaces from one of our Mississippi seed producers for a variety not currently maintained by MSU, we work to locate seed at a foundation seed agency in another state. Other states make similar requests of us.”

Terry Norwood of Rocky Ford Farms in Union County is one of the growers who depend on MSU seed.

“Farmers all across the United States and some in other countries depend on MSU for the seed,” he said. “There are a lot of considerations in producing foundation seed, but it is rewarding to see a crop from the very beginning until the end,” he said. “Even before the seeds go into the ground, someone from MSU is at the field to inspect and make sure it is appropriate for the intended seed. They even look at what is growing in nearby fields.”

Norwood said MSU sends someone to check the crop for anomalies about every two weeks throughout the growing season, but especially at key growth periods such as flowering and heading.

Louis Weeks of Delta Seed and Services in Arcola said he has relied on MSU for rice seed for more than 20 years. He said the biggest change over the decades is in the number of varieties to consider.

“We could get the seeds for some other crops, like soybeans, from private sources, but for rice, we totally depend on universities for foundation seed stocks,” Weeks said. “Whenever possible, I prefer to get my rice seed from MSU. It will be closer to breeder seed than other sources.”

Growers need to keep up with new varieties that offer better yields, Weeks added. When any university releases a new rice variety, the breeder seed will come to MSU for cultivation.

Weeks said the high quality of the Mississippi Foundation Seed Stock is a result of MSU working closely with the Mississippi Crop Improvement Association. Together they set high standards that pay off for business owners like Weeks.

“MSU doesn’t save me money, it makes me money,” he said. “You can’t take quality seed for granted, and MSU helps by providing the best seed possible. They are providing a tremendous service to the rice industry.”

Weeks said MSU and the Mississippi Crop Improvement Association set higher standards than most states follow for similar foundation seed programs.

“It is a team effort to set rules and regulations for foundation seed,” he said. “All foundation seeds are good, but Mississippi State’s are simply of a higher quality.”
Mississippi State University’s Division of Agriculture, Forestry and Veterinary Medicine offers a wide variety of educational opportunities to its students. Many of these opportunities are unique in nature and take the student beyond the traditional classroom setting. Students are involved in everything from volunteer work and fashion design to promoting their program of study and coming face-to-face with rare aquatic animals.

**Collegiate 4-H Appeal is Community Service**

MSU students who did not participate in 4-H at the county level have a chance to join the collegiate version of an organization that nurtures leadership and teamwork.

MSU is one of many institutions of higher learning across the country that offers Collegiate 4-H. While interest in sustaining a chapter at MSU has waxed and waned over time, efforts to revitalize the club by state 4-H program leader Susan Holder, youth development staff and students have been successful within the last two years.

MSU Collegiate 4-H has more than 40 active, dues-paying members. Some participants have been in 4-H since childhood, while others have no previous experience with the organization. There is standing room only at regular chapter meetings the second Monday of each month.
Hats once were an essential element of a woman’s wardrobe, and some MSU students have reinvented this accessory as cutting-edge fashion for their design class.

Phyllis Bell Miller, MSU associate professor of apparel, textiles and merchandising, teaches a course every fall called Visual Design in Dress. Students learn basic design and marketing principles of fashion in this class.

“The consideration of such elements as color, light and texture are what make fashion memorable, desirable and exciting,” Miller said. “Our students need to understand how these elements work together to create a successful fashion piece, display or advertisement.”

Miller selects a student project each year that involves the application of these principles. The project does not necessarily require sewing ability, and some past projects have focused on the design of flip-flops, denim garments and bags.

This year, students designed hats, and Miller encouraged them to use imagination in creating an item to express their approach to fashion.

Teamwork is an important aspect of Collegiate 4-H because the club’s focus is community service. Some of the service projects the group has undertaken include mentoring Palmer Home children, conducting drives for toys, clothes and food, and making special appearances at 4-H events.

“The focus of 4-H for elementary children and high school youth is personal development,” said MSU Collegiate 4-H President Terence Norwood, a 21-year-old senior from Harrisville. “You learn the importance of bettering yourself and taking responsibility as you work on individual 4-H projects and compete. When you join Collegiate 4-H, you put those concepts together and give back to others through service projects and mentoring.”
“I told students to design a hat and apply the elements of design that we talked about in class,” Miller said. Miller recruited a panel of faculty, senior students, graduates and business owners to judge the hats and pick the top five. She often asked her students to give progress reports and also bring the various stages of design development to class for critique and discussion.

Sophomore Christine White of West Point chose singer Lady Gaga as her fashion muse. White wanted a futuristic design the singer would wear. She constructed a wrap-around wire foundation and covered it with a stretchy, gunmetal-colored sock when other fabrics would not work.

“I played Lady Gaga’s latest album for inspiration, got caught-up in the mood and created something edgy and fun,” White said.

Other hats produced for class were just as unique. In the mix were basic hats, such as berets and cloches, that sit close to the head, and other shapes with crowns and bands, such as fedoras and derbies, that stand away from the head.

Hana Ali, a sophomore from Madison, won first place with a black beret inspired by a top runway model. She bought the beret and incorporated a neutral beige crochet overlay and black zipper detailing.

“Several people wanted to buy my hat,” Ali said. “That was really encouraging after the work I had put into the design.”

The hats will be part of the apparel, textiles and merchandising program’s first fashion exhibition on campus at the end of the spring semester. Clothing, fashion accessories and wearable art created by students and faculty will be on display.

“The enjoyable aspect of the project was the approach students took to design their individual looks and to motivate one another to do their best,” Miller said. “This is an essential part of the learning process.”

Next fall, the hats will have their own special exhibition in the Mitchell Memorial Library, and Miller may enter many of the hats in national and international competitions sponsored within the fashion industry.

Wedding Floral Design Class Keeps MSU on Cutting Edge

A bride who wants her wedding flowers to symbolize her personality and taste may want to work with a graduate of MSU’s floral management program.

Trendiness does not cut it with these professors, and weddings may never look the same again as more MSU graduates enter the workforce.

“Brides want something different, but in reality, there is little variation in what they are offered when the floral designer follows the trend too closely,” said floral management professor Jim DelPrince of MSU’s Department of Plant and Soil Sciences. “There are infinite ways to present flowers that reflect the bride’s own vision.”

Floral designers who venture beyond the trends to offer each customer a fresh approach often build a solid clientele base and reputation. Brides who want something unique seek these professionals. MSU’s floral management program helps students build the foundation for a successful career and become sought-after experts.

“The knowledge, experience and ability of the floral designer to pull away from the pack and create something different are what pull it all together for the bride to have a wonderful wedding experience,” DelPrince said. “Our graduates are in great demand because we build creativity and innovation into their education.”

One of the program’s building blocks is the wedding floral design course that DelPrince teaches. The four-hour class meets once a week and is open to students who complete the prerequisite course in floral design.

DelPrince opens the class with a discussion of design theory and often adds historical perspective to the picture. Students spend the rest of the time working on projects with flowers, foliage and support media, such as wire and florist tape.

Meryl Williams of Columbus, a public relations major at MSU, has her eye on a career as a wedding and event planner. She is pursuing a minor in floral management to enhance her skills.
“The program pushes you to seek opportunities to develop yourself into a designer with vision,” Williams said.

The semester begins with students practicing the technique of mounting flowers and foliage in a wedding corsage. As the course progresses, students construct more complex arrangements. As a final project, students make a presentation in which they serve as the consulting florist hired by DelPrince, who assumes the role of a demanding bride. The florist must convince the “bride” that her wedding flowers are in the hands of a trusted professional.

“Students need practical experience to go along with their classroom training,” said University Florist manager Lynette McDougald, a floriculture instructor in Plant and Soil Sciences. “By taking the wedding floral design class and then working in the shop, they set themselves up to succeed.”

Landscape Architecture Students Promote Program

When not working on design projects in the studio, a group of landscape architecture and contracting students at Mississippi State University dedicate themselves to educating the public about the program they are proud to be a part of.

Landscape Architect Delegates (LAD) was created in 2006 by three students in the Department of Landscape Architecture and Landscape Contracting. The organization is made up of faculty-selected student leaders from within the department. Their primary purpose is to recruit potential students into the landscape architecture and landscape contracting programs.

“Not only are we recruiting students, but we are also providing an understanding of what landscape architects do,” said Victoria Kelley, a senior in the department and LAD team captain. “A lot of people are under the impression that we cut grass and garden, so we want to correct that misconception and introduce students to what landscape architects and contractors are really involved with.”

LAD volunteers visit high schools and community colleges to educate students about getting degrees in landscape architecture and landscape contracting. They staff college fairs, career days and talk one-on-one with prospective students. Additionally, they provide tours of the department, develop recruitment material and send follow-up letters to visiting students.

Kelley said the group has even visited with elementary students, educating them about potential careers in landscape architecture.

“The LAD volunteers do a great job of representing the department. Their dedication really shows,” said Michael Seymour, assistant professor of landscape architecture and the group’s adviser. “The high schoolers can better relate to our students, and the faculty can concentrate on answering the parent questions.”
Entering sophomores and juniors can apply to participate in LAD. A team of faculty reviews the applications and chooses individuals based on factors such as grade-point average, availability and the ability to multitask.

“This group requires a big-time commitment. The students involved show a high level of dedication,” Seymour said. “They have to balance the group’s activities with a heavy workload.”

The delegates must stay on top of their course work, meet as often as every week and attend workshops. In addition to all of this, they also find time to do meaningful volunteer work.

“One of the most rewarding projects we participated in was helping a young girl with a serious nerve disease whose only real relief was being able to swim in her backyard pool. There was an erosion problem around the pool area, so we stepped in to help out,” Kelly said. “We designed and planted a landscape to help keep the soil intact, and she could continue her regular pool therapy.”

Seymour said students get a real sense of pride when being a part of LAD.

“They are really proud of the work they do and want to help diversify the program and create more interest in their chosen fields of work,” he said. “The benefits of participating are long-term.”
One of the largest freshwater fish in North America, the alligator gar, gets its name from the alligator-like appearance of teeth along its elongated snout. Once prevalent from Illinois to the Gulf of Mexico, the monstrous fish is now concentrated in the Southeast, providing the opportunity for a Mississippi State graduate student to get hands-on experience with the almost mythical creature.

Alligator gar populations have declined, primarily due to loss of spawning habitat and overfishing by anglers, but scientists and graduate students in MSU’s College of Forest Resources are hoping to reverse this trend.

“The alligator gar was once thought to eat only game fish, so anglers set out to remove them from slow-moving rivers and reservoirs,” said Daniel Schwarz, a graduate student in MSU’s Department of Wildlife, Fisheries and Aquaculture. “Now we know that alligator gars are opportunistic feeders and will eat anything from fish to birds.”

The U.S. Fish and Wildlife Service is currently tagging alligator gar with acoustic transmitters to determine their preferred habitat. While the government agency is tracking the gar in natural habitats, Schwarz is working with fish at the MSU South Farm’s aquatic facility in an experimental system of large tanks that simulate real-life conditions.

A native of Thompsontown, Penn., Schwarz will be trying to determine more about the saltwater needs of this elusive aquatic vertebrate. Schwarz had never seen a live alligator gar before coming to MSU.

“When the first gar was caught and brought out of the water, I thought I was back in prehistoric times looking at such a primitive fish,” he said. “I was never offered the opportunity to catch fish using gill nets before.”

Schwarz will expose alligator gar of two different ages to varied levels of salinity to determine the effects on their growth. The alligator gar will be kept in each treatment for 30 days.

“Numerous measurements will be taken, including their weights at the beginning and end of the 30-day period, food conversion ratio, drinking rate and the concentration of salts in the fish,” Schwarz said.

His research will aid in properly managing the species.

“Dan’s research is important for understanding alligator gar and for many species inhabiting similar habitats,” said Peter Allen, assistant professor in Wildlife, Fisheries and Aquaculture. “Understanding the physiological limitations of the gar will provide tools that will help create management practices on a species that is uncommon and relatively difficult to study.”

The knowledge gained from Schwarz’s study will improve management practices for protecting and replenishing this species of gar.

“The study, coupled with the study by the U.S. Fish and Wildlife Service, should provide the needed knowledge to understand the alligator gars habitat,” Allen added.
The Plant Disease and Nematology Diagnostics Laboratory at Mississippi State handled 726 samples in 2009—nearly 100 of which were digital images rather than actual samples of diseased plants.

Clarissa Balbalian, a diagnostician and lab manager with the MSU Extension Service, said the lab made reasonably confident diagnoses of 75 percent of these digital samples without requiring physical samples.

“That success rate is primarily due to the excellent quality of the photographs and the detailed descriptions that accompanied them,” Balbalian said.

Balbalian has been accepting digital photos for diagnosis for the past seven years, but she saw a definite increase in the number and quality of the images submitted in 2009. Each county Extension office is equipped with a digital camera, and some have microscopes attached to cameras that can be used to submit magnified images of fungal structures.

Stephanie Pendleton, the Extension director for Jackson County, submitted several disease samples last year, many of them digitally.

“When I started this job two years ago, I had samples coming in nearly every day,” Pendleton said. “Instead of mailing them in and my clients having to wait maybe a week to get an answer, Clarissa suggested I use digital photography and e-mail her the images.”

Balbalian advised Pendleton on how to take the photographs to provide the most information for diagnosis. Pendleton said she sometimes goes to the homeowner’s location and takes a picture of the whole scene and not just the ailing plant.

“Usually, if I send a picture in and she can see the problem, she will diagnose it from the image,” Pendleton said of Balbalian. “I will send her pictures of blemished fruit, leaves with leaf spot, and ornamental vegetable and landscape problems.”

The lab handled an average number of samples last year, but the wet weather increased the variety of problems and pathogens among the state’s plants.

“The most common disease problem for homeowners was take-all root rot of St. Augustine or centipede grass,”
Balbalian said. “Fungal leaf spots were the most common diseases farmers faced, and that was because it was so wet.”

Balbalian said most of the problems she encounters in the lab with grass disease samples are the result of poor home lawn management. She said she expected to see more disease problems with tomatoes because of all the rain, but that did not happen.

“There was a late-blight epidemic in the United States with tomatoes and potatoes,” she said. “We never got it in Mississippi, and we searched high and low for it.”

The wet weather did lead to some diseases on the stems of woody ornamentals that Balbalian said are more commonly found on stressed plants in the Middle Atlantic States. Her lab did not handle the soybean rust samples sent in across the state because these are now handled at MSU’s Delta Research and Extension Center in Stoneville.

When a disease sample comes in, Balbalian said the first thing she does is look at the information provided with the sample.

“It is really crucial that people fill out the form completely or describe in a letter what is going on,” she said. “I need to know the background on this plant. It is especially important because samples often do not look the same after spending a few days in the mail.”

Balbalian identifies the plant first and then considers the time of year and the diseases commonly affecting the plant. If she rules out common diseases, she starts researching further, calling other experts and running viral tests. Sometimes identifying the disease is difficult because the correct sample was not sent in.

“We may get a brown leaf or a branch that’s wilted, but the problem is not in the branch. It’s probably belowground, and I can only guess at the issues that are causing it,” Balbalian said. “Other problems are not caused by disease at all but are related to the cultivation of the plant.”

The lab charges $6 per plant disease sample and $11 for a nematode test. There is no fee if the disease can be diagnosed through examination of a digital image.

In addition to the Plant Disease and Nematology Diagnostics Laboratory, the MSU Extension Service also offers the Soil Testing Lab as a fee-based service to the residents of Mississippi and nearby states.

Soil Testing Lab

For a minimal cost, the MSU Extension Service Soil Testing Laboratory can tell homeowners and farmers the pH, lime requirement, plant-available phosphorus, plant-available potassium and other information about their soils. In addition, Extension experts can provide some suggestions on what to do with the information.

Clientele can have samples run at the MSU-ES Soil Testing Lab by taking them to their local Extension office and filling out the submission forms made available there. The submission forms ask clientele to provide information on the future use of the site where the soil was obtained. This information allows the lab to make crop or ground-cover-specific recommendations based on the chemical analysis of the sample. Usually, the results can be provided in less than 10 working days. It may be longer in the very busy spring months.
By Bob Ratliff and Frankie Gould

When it comes to new ideas, there are many who take an “adapt or die” attitude. For others, however, the approach is “adapt and profit.”

As a whole, America’s farmers are in the latter group. At the same time steam power was being harnessed to drive the industrial revolution, steam engines were put to work threshing grain across the nation. Soon after the horseless carriage made its appearance on city streets, gasoline engines began replacing steam power and horses and mules on farms.

By the 1950s, American farmers were not only feeding the nation, they were using mechanization, improved methods of pest control and a host of other new ideas to feed much of the world.

University research and Extension programs have been responsible for much of the basic and applied science behind agricultural innovations. The nation’s land-grant system of colleges and universities was established in 1862 with the specific mission of providing training and research in support of American agriculture and industry. In 1914, the Extension Service was created to provide an efficient, systematic means of getting university-based information into the hands of people hungry for knowledge.

Almost immediately, the car, the telephone, publications and newspaper articles were pressed into service by Extension agents to reach rural residents with the latest information about crop production, as well as educational programs to improve health and nutrition in rural areas.

By the 1980s, affordable personal computers and mobile phones began revolutionizing communications and business management for all Americans, including those in rural areas. Extension personnel were quick to adopt the new technology for computer-based crop production systems for farm enterprise management. One such program, Fishy software, was developed in 1982 by experiment station and Extension agricultural economists at Mississippi State University for use by catfish producers. The latest version, Fishy 9.0, is used in the management of about 30 percent of the nation’s catfish pond acreage.

For decades, the way to get help with a question about a crop, animal health, lawn care or almost any other farm or household problem was “call the county Extension office.” While county offices are still excellent sources of information, Extension agents and specialists can be reached almost anywhere via their cell phones or on the Internet.

Crop consultant Cecil Parker says he uses his cell phone to receive information from LSU AgCenter Extension specialists and agents as he works in fields in the Louisiana Delta.

“I follow Dr. Natalie Hummel’s blog on Louisiana Rice Pests (http://louisianaricepests.wordpress.com) because she gives me relevant, thorough notes from grower meetings and workshops,” he says. “The ways today’s Extension agents and specialists communicate definitely aren’t what they used to be—or at least they’ve evolved far beyond face-to-face meetings and printed publications to Web sites, blogs and much more.”

Yalobusha County, Miss., cotton producer Coley Little Bailey also is in touch with Extension whenever and wherever he needs information.

“I have county Extension Director Steve Cummings’ office phone and cell phone numbers on speed dial in my Blackberry,” he said. “I can be planting cotton and have a question about my soil sample results for a particular field, and Steve is available to help, even if he’s on another farm or anywhere else.”

Extension’s 4-H youth program also has adapted to meet changing needs. While livestock shows and other rural-based projects remain extremely popular, today’s 4-H’er also might be learning to build remote-controlled robots or a personal Web site. Young people in 4-H also have the opportunity to participate in the Congressional Awards program, which emphasizes leadership and community service.

Extension personnel are also using new communication tools to share knowledge among themselves as well as the public. Launched in 2007, eXtension (http://www.extension.org/) is a Web-based interactive learning environment where Extension professionals and experiment station researchers at 74 land-grant universities share information that is then made available to consumers.

“These teams of experts from throughout the nation work together to offer the best of the best research-based solutions to today’s problems,” said eXtension Director Dan Cotton. “Individuals looking for information can interact with the experts through eXtension’s ‘Ask the Expert’ site or Second Life, a free Internet virtual world where users talk and interact in real time.”

“Modern technology has opened even more doors for us to serve people who need the information and expertise we have to provide,” said Paul Coreil, LSU AgCenter vice chancellor. “But the difference we make in people’s lives is still the same. We’re giving them the information that can improve their lives and teaching them how to use it to produce the desired results.”

What began as a program to get unbiased, university-based information into the hands of people hungry for knowledge is still serving that mission—only the tools have changed.
Emergency Response Part of MSU Extension Mission

By Bob Ratliff
Photo by Scott Corey

In times of need, people know help has arrived when they see the symbols of certain organizations—vests with the American Red Cross logo, National Guard uniforms, and the blue-and-yellow shirts of state and federal emergency responders.

Residents hit by the spring 2010 tornadoes and flooding in areas of central and northern Mississippi also came to recognize maroon-and-white shirts as symbols of help. Mississippi State University’s school colors are on MSU Extension Service emergency response team shirts and were evident in areas of the state affected by the recent natural disasters.

Extension is part of the Mississippi Department of Agriculture and Commerce/Mississippi Board of Animal Health emergency response team. There are approximately 300 MSU Extension personnel certified for emergency response.

Although MSU personnel were not officially activated for statewide response to the recent storms, Extension county personnel quickly responded to calls from local officials for assistance.

“Immediately after the April 24 and May 1 storms hit Yazoo, Holmes, Choctaw and other Mississippi counties, Extension responded to requests from their county emergency management directors and other county officials to be part of the volunteer response,” said Extension Associate Director Joe Street. “Their knowledge of their counties and the resources available at the local level was extremely valuable in organizing efforts to secure temporary housing, child care, food and other necessities.”

Choctaw County was hit hard by the April 24 tornado, with five lives lost and dozens of homes destroyed or damaged. Extension food and nutrition assistant Dee Ann Williams helped with a feeding station set up by two local churches in the most heavily damaged area of Choctaw County.

“Initially we were helping volunteers prepare three meals a day for the people who lost their homes and for the volunteers helping with debris removal and other recovery activities,” Williams said. “We were trained a couple of years ago to assist with this type of situation, and that’s what we did.”

Choctaw County Extension Director Juli Hughes, 4-H Youth Director Traci Mongeon and office associate Jan Ballard also helped with a variety of duties since the storm.

“We organized volunteers to wash clothes at the local Laundromat for families that lost their homes and put together plastic storage totes for the families,” Hughes said. “Also, 4-H members and adult volunteers organized a collection of personal hygiene items.”

Similar work was done in Yazoo, Holmes and other counties hit by the April 24 and May 1 tornadoes and flooding.

“While the Extension Service’s primary mission is to serve as Mississippi State University’s educational outreach arm in the state, we are also available at the county level anytime there is a need for the ability to organize and work with volunteers in response to local needs,” Street said.
Editors note: 1/82 is a regular feature highlighting one of Mississippi’s 82 counties.

1/82: Jackson County

“To be able to work in the county in which I was raised is truly a blessing. Jackson County offers so much to its residents. Opportunities range from a vast job assortment, educational institutions and facilities to many recreational activities. It is truly the best place to work and live within the state of Mississippi.”

Stephanie Pendleton, Extension County Director

MSU in Jackson County:
Jackson County Extension Office
4111 Amonett Street
Pascagoula, MS 39567
Email: jackson@ext.msstate.edu

The Jackson County Marina is home to shipping vessels and pleasure boats.

History Notes: Jackson County was founded on December 12, 1812, and named after General Andrew Jackson after his campaign to fight the British in the Battle of New Orleans. Jackson County will celebrate its 200th anniversary in December 2012.

At Attractions: Gulf Islands National Seashore, Old Spanish Fort, Krebs Cemetery, Fort Maurepas, Ocean Springs Harbor, Grand Bay NERR, Pascagoula River Nature Tours, Mississippi Sandhill Crane Refuge, Barrier Islands and Gulf of Mexico

Did you know? The Port of Pascagoula is the largest seaport in the state of Mississippi and handles more than 35 million tons of cargo annually.

County Seat: Pascagoula
Population: 130,000

Municipalities: Ocean Springs, Gautier, Pascagoula and Moss Point

Commodities: Timber, Ornamental Horticulture, Cattle and Honey

Industries: Chevron Refinery, Northrop Grumman, VT Halter Marine, Signal International, CSX Railroad, Mississippi Power, Singing River Electric and Port of Pascagoula

Natural Resources: Pascagoula River and Escatawpa River
Intangible? Yes. Insignificant? No. Although the effects of 4-H on a young person may not always be instantly apparent, the impact 4-H has on a young person is priceless. 4-H programs are not like a training class where a test can show knowledge gained. 4-H is about teaching life skills to youth—to better them for today, tomorrow and the future. True, there are short-term results, such as mastering the art of showing an animal, learning to sew or model, or becoming a polished speaker. These are all important lessons, but the purpose of the 4-H program goes much deeper than these important skills.

4-H clubs and projects are only tools used to teach important life skills. For example, when a young person is given the task of caring for an animal or mastering a new robotics skill, he or she learns responsibility, determination, discipline and more, simply by working on a particular 4-H project.

The four H’s stand for Head, Heart, Hands and Health. 4-H includes all aspects of the development of a young person. Head: Youth develop their intellectual skills as they learn to analyze, reason and think about a particular 4-H project. Heart: Youth grow emotionally as they build relationships with others, working together and forming friendships across county and state lines. Hands: Youth learn to love and serve others as they participate in community service projects. Health: Youth participate in activities to stay in excellent physical shape.

Meagan Scott
4-H Youth Agent II
Pearl River County

In Pearl River County, 4-H involves youth from all parts of the county, led by nearly 230 volunteers that are just as diverse in makeup. These adult volunteers give unselfishly of their time and resources. There are 10 clubs, with an enrollment just over 300. Pearl River County 4-H is the total 4-H program, including all projects. No youth should say, “There is nothing for me in 4-H!” Whatever his or her interest, there is a 4-H project to match. Some of the most popular ones include shooting sports, horse, livestock, modeling squad, expressive arts, meats, plant and soil sciences, consumer decision making, leadership, dairy, dog, robotics and community service.

Youth who are in 4-H develop friendships outside of the county, the district and even the state. Any Pearl River County 4-H’er will tell you that friendship is the number-one thing they have gained through 4-H. Many have had the opportunity to travel to places they might never have otherwise been.

From an adult’s perspective, leadership skills and self-confidence top the list of things gained from 4-H. 4-H youth get practice making presentations, giving speeches and interacting with others, so that getting up in front of an audience becomes “no big deal.”

Let me share with you a personal story to illustrate my point. After being a 4-H agent for 5 years, I am starting to see some of the long-term benefits of the program. When I first met this 4-H’er, he would barely speak to me. He joined 4-H to show his cows, but I encouraged him to get involved in other projects. He participated in land judging, meats judging and livestock judging, and he was part of the state winning teams for all three, earning him the opportunity to compete nationally. All of these activities made him step outside of his comfort zone, challenging him to speak in front of groups, work with others and grow in his self-confidence. The biggest accomplishment I saw was in 2007, when he tried out for the State 4-H Leadership Team and was selected. He then ran for a State 4-H Council office and was required to stand in front of more than 700 youth his age and make a speech. He won the statewide election and spent the next year representing the Southeast District at different events, giving speeches and welcoming 4-H’ers and volunteers. This has made a huge difference in his life, and I know that the skills he gained in 4-H have helped him become the young man he is today.

When asked to sum up exactly what a young person gains from being a 4-H member, the four essential elements of 4-H immediately come to mind—Belonging, Independence, Mastery, and Generosity. Belonging: 4-H’ers find their niche or place in the world, having achieved a sense of being a part of a larger group. Independence: 4-H’ers learn to do things on their own, whether it be learning to be away from home on a 4-H trip or merely learning to do a 4-H project on their own. Mastery: 4-H’ers fine-tune their skills and become experts in their project areas. Generosity: 4-H’ers give of themselves in community service to others.

Finally you ask, “Why 4-H?” It’s simple. By learning essential life skills through 4-H, young people will one day grow to be successful young adults who are contributing members of the community.
New Southern Gardening Columnist

Mississippians looking for gardening tips and advice can now turn to Gary Bachman, the new Southern Gardening horticulturist.

Southern Gardening is produced by the Mississippi State University Extension Service and consists of a weekly newspaper column, along with radio and television segments. For the past 15 years, MSU horticulturist Norman Winter wrote the columns and appeared in the segments. Bachman was selected for the role after Winter left to become vice president for college advancement at Brewton-Parker College in Mount Vernon, Ga.

Bachman has been an Extension assistant professor of horticulture at MSU’s Coastal Research and Extension Center since 2008. He has held research and teaching appointments at Tennessee Technological University and Illinois State University. He also worked with GTE Corporation for 13 years and was a Clemson University researcher at Carolina Nurseries in Moncks Corner, S.C.

Helping people learn about gardens and landscapes is a job Bachman takes seriously. He is actively involved with Master Gardeners and gardening clubs all over southeastern Mississippi and enjoys interacting with the members.

“I want to use my passion for teaching in this new role,” Bachman said. “I think this is a great opportunity to bring new information to gardeners.”

Melissa Mixon, associate vice president for MSU’s Division of Agriculture, Forestry and Veterinary Medicine, said Mississippians will enjoy getting to know Bachman.

“Dr. Bachman understands Mississippian’s love of gardening,” she said. “Followers of Southern Gardening will certainly appreciate how knowledgeable and enthusiastic he is.”

Community Development Explored by MSU Expert

Research by the Southern Rural Development Center (SRDC) at Mississippi State University has been included in a new book about positive approaches to community development.

“Mobilizing Communities: Asset Building as a Community Development Strategy” includes a chapter by SRDC Director Lionel “Bo” Beaulieu and his colleague Mark Harvey, assistant sociology professor at Florida Atlantic University. Harvey completed his postdoctoral work at SRDC and was an assistant research professor at MSU.

The book is geared toward community development practitioners and economic development organizations. It explores how community-based organizations can take a positive approach to addressing concerns, such as economic challenges, political changes, housing needs and welfare programs.

Beaulieu and Harvey’s chapter, “Implementing Community Development in the Mississippi Delta: The Effect of Organizations on Resident Participation,” explores two approaches to implement community development in the Mississippi Delta. One approach involves a regional philanthropic foundation providing grassroots resident empowerment. The other is a closely managed top-down method conducted by a community development financial institution.

“Community-based initiatives in lower socio-economic communities have faced great challenges and achieved limited success,” Beaulieu said. “We looked at two different approaches in one of the nation’s most impoverished regions to better understand the barriers these initiatives face and what strengths and weaknesses these organizations have in terms of overcoming these barriers.”
The chapter provides an in-depth look at the research findings and highlights the difficulty of community building in places that are plagued by a long history of social conflict.

The book is published by Temple University Press.

**MSU Changes to Streamline College**

The College of Agriculture and Life Sciences at Mississippi State University is making several changes as personnel are shifted to take best advantage of their strengths.

Melissa Mixon, associate vice president of MSU’s Division of Agriculture, Forestry and Veterinary Medicine, remains the interim dean of the college, known as CALS. The duties of four people are being changed within the college.

Gary Jackson, former director of the School of Human Sciences within CALS, will serve in the capacity of interim associate provost for academic affairs for MSU. Walter Taylor, former assistant CALS dean and professor in the School of Human Sciences, will assume the role of interim director of this school in addition to his assistant dean responsibilities.

Jackson also served as interim state program leader for the Extension Service’s Family and Consumer Sciences division. This interim position will be filled by Paula Threadgill, an Extension associate professor in the School of Human Sciences.

Peter Ryan, a professor of animal and dairy sciences in CALS, will move into the MSU provost’s office where he will serve as interim associate provost for academic affairs.

“All four of these individuals have a long history of dedicated service to MSU and the Division of Agriculture, Forestry and Veterinary Medicine,” Mixon said. “We thank them for their willingness to serve these dual roles and look forward to their leadership.”

Each of these changes is set to go into effect April 16 pending approval by the Mississippi Board of Trustees of State Institutions of Higher Learning.
Like the branches of a large oak tree, Ruth Cook is capable of providing sturdy support.

Nearly 25 years ago, when Cook entered the forestry profession, there were few opportunities for women in operational roles. In achieving industry success, Cook has gained confidence she now shares with others.

“Women can successfully manage forest operations—logging crews, wood yards, chip mills, procurement purchases and the list goes on,” she proudly acknowledged. “During my career, I’ve placed a value on people—men and women—and tried to help them further develop their skills.”

Cook’s extensive resume is marked with experience she acquired after receiving her Bachelor of Science degree in forestry from Mississippi State University in 1982. Cook is a registered forester in Mississippi, Alabama and Arkansas. She is president of the Mississippi Forestry Association and a member of the Society of American Foresters, the Louisiana Forestry Association and the National Alliance of Forest Owners. In 2007, Cook was honored as one of Mississippi’s 50 Leading Business Women for her many accomplishments and leadership roles. Her advice to other women, in response to the honor, is to “be a cause.” She doesn’t want people to sit on the sidelines; they should step up and do what needs to be done. Cook credits her mother, Dorothy, as her role model. “She instilled in me a curiosity in the world around me. She’s a nurturer of family and friends, and she gave me the drive to always do my best,” Cook said.

Today, Cook lives in the Covington County town of Seminary and works in nearby Hattiesburg for a timberland investment management organization. She has a demanding job as director of Client Information and Reports for Molpus Timberlands Management, LLC. In this role, she is responsible for the coordination of client reporting, operational budgeting and property valuations.

Cook previously was director of strategic planning for the company. She provided support services, technical information and analyses for leadership within its parent company, The Molpus Woodlands Group, which is based in Jackson. Before joining Molpus in 1999, Cook spent 17 years in forestry management operations, much of it with Scott Paper Company and later with Kimberly-Clark Corporation’s Southeast Timberlands after the two companies merged.

“My college education and job experience have enhanced the scope of my forestry knowledge in the southeastern United States,” she said. “My technical disciplines include silviculture, biometrics, GIS, computer applications, forest law and accounting and business practices.”

The skills Cook searches for in others mirror many of her own—consistency, honesty, a strong work ethic and good communication skills.

“I believe my strength lies in people management because I love creating a work environment conducive for change, growth and success,” she said. “I typically find myself in the role of consensus builder and peacemaker and do think that is one of my unusual strengths.”

Cook was initially intrigued by forestry at an early age. As the Cook family traveled and camped across the country, she developed a love of the outdoors. From there, the fascination grew as she excelled in her studies.

Since MSU’s College of Forest Resources is the only nationally accredited forestry educational program in the state, it was logical for Cook to enroll as a student in the late 1970s. She followed her older sister, Sally Cook, into the forestry program. Growing up in Canton, Ruth and Sally, along with two other siblings, Peggy and David, benefited from what they affectionately called the “Cook family educational
“He gave each of us a cow on the family farm. Every year my cow produced a calf, and it was sold and the proceeds went into my college fund,” Cook laughingly recalled. “Fortunately, I didn’t have to use all my money since I received the John Sharp Scholarship in forestry at MSU. Now, my brother incorporates this with my sister Peggy’s children, so it’s become a family tradition.”

All four of the Cook children graduated from MSU. They learned an appreciation of the university from their father, who also attended and was a resident of the famed Old Main Dormitory.

Today, Cook remains involved with MSU and the College of Forest Resources. She was recognized as Alumna of the Year for the college in 2005. Cook has served as the college’s alumni president and continues to be active in alumni relations.

“My work with the college alumni group has helped me build relationships with a new set of professors I would not otherwise have met,” she said. “I view it an honor to serve on advisory boards for The Bulldog Forest and the College of Forest Resource’s Department of Forestry.”

Despite a busy career, Cook sets aside time for special projects. Her focus has centered on work with The Crosby Arboretum Foundation. She was elected president of the group in 2006.

The Crosby Arboretum, located in Picayune, was established in 1980 as a living memorial to timber pioneer and philanthropist L.O. Crosby Jr. As part of MSU’s Coastal Research and Extension Center, it provides protection to the native plant species of the Pearl River Drainage Basin of south-central Mississippi and Louisiana. The arboretum has become known as a premier native plant conservatory in the Southeast.

“Ruth is always willing to help with whatever we need from advice to fundraising. She unselfishly devotes an incredible amount of her time to the arboretum and has placed us in a position to move forward,” said Janine Conklin, arboretum director and Extension assistant professor of horticulture.

The internationally known arboretum has two key projects in the works. A $2 million fundraising drive is under way to construct a 6,700-square-foot education center. A second project is a gum pond exhibit for which the arboretum recently received a $35,000 matching Five-Star Restoration Grant from the National Fish and Wildlife Foundation. A gum pond is a depressional wetland with fluctuating water levels.

Cook stressed the importance of the arboretum at every available opportunity.

“I believe the work of the arboretum is so important because for many people it is their connection and often their introduction to nature, the environment and even MSU,” Cook said.

Maintaining a connection with her alma mater is important to Cook. Her most recent gift in support of MSU has funded a faculty award. The award, created through StatePride: An Initiative for Student and Faculty Support, will recognize a meritorious member of the College of Forest Resources faculty for the individual’s teaching, research or service activities in accordance with the university’s mission.

“During my professional career, I’ve been lucky to work for companies who awarded performance,” she said. “I see the award as the little something extra an individual needs as recognition for a job well done.”

In addition to faculty support, the StatePride initiative also will allow the university to award need-based scholarships for deserving students and academic scholarships to compete for the best and brightest students. To date, the four-year effort has raised more than $36 million toward its $100 million goal and will continue through Dec. 31, 2012.
It’s all in the name. Check it out for news and information from the Division of Agriculture, Forestry and Veterinary Medicine.