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Vice President’s Letter

Spring has arrived, bringing with it a new planting season, a fresh crop of enthusiastic graduates, and our annual meetings with Mississippi’s legislators.

Mississippi State University and all of its units rely on federal, state, county, and private funds to continue offering cutting-edge basic and applied research programs, practical and research-based outreach programs, and top-notch academic programs. In the Division of Agriculture, Forestry, and Veterinary Medicine, we are fortunate to have strong support at all levels for the work we do with students, agricultural producers, business owners, families, educators, and communities.

Since the last issue of LandMarks, we set a new attendance record for the annual row-crop short course, which is held the first week of December each year. This 3-day intensive workshop has become one of the premier educational opportunities in the Southeast for row-crop producers, crop consultants, pesticide applicators, and Extension agents. The crowd of participants grows each year, and this year we hosted 450 attendees from Mississippi and surrounding states.

As we celebrate the arrival of another growing season, we also reflect on last season’s accomplishments. Preliminary estimates of the state’s farm-gate production values for its top commodities show that Mississippi producers surpassed the $7 billion mark for the third consecutive year. With an estimated total of about $7.86 billion for all commodities, including poultry, livestock, catfish, forestry, and crops, 2014 showed a slight increase over the previous 2 years.

Poultry continues to lead the list of Mississippi’s agricultural commodities, with a projected 2014 production value of $3.13 billion. The recent increase in U.S. residential housing starts resulted in a 13.8 percent increase in the forestry sector, with a preliminary production value estimate of $1.28 billion. Soybeans round out the top three commodities in the state. An increase of 200,000 harvested acres helped offset a drop in soybean prices for this important row crop. Agricultural economists estimate the value of the state’s 2014 soybean crop at $1.27 billion.

The crop with the biggest change this year was rice, with an estimated 31 percent increase in production value. Cattle and calves experienced the largest percentage growth of the livestock commodities, with a 33 percent increase in production value in 2014.

While favorable weather and the hard work of growers produced these record values, our research scientists and Extension specialists, agents, and staff contributed significantly to these successes in agricultural production. We are proud to partner with Mississippi farmers and ranchers to help sustain and grow the state’s economy while feeding, clothing, and housing a growing global population.

In this issue of LandMarks, you’ll find a variety of feature stories about the diverse academic, research, and outreach programs within the Division of Agriculture, Forestry, and Veterinary Medicine. Whether you want to learn more about row crops or find out how Mississippians are capitalizing on rural tourism opportunities, we hope you find something fresh, informative, and exciting to read.

Gregory A. Bohach
HELPING YOUNG PRODUCERS
Adapt and Thrive

Patrick Swindoll relies on MSU Extension experts to give unbiased, research-based advice. He also follows the Mississippi Crop Situation blog to keep up with the latest information and recommendations for producers.
As a whole, farmers aren’t getting younger.

In fact, the U.S. Department of Agriculture reported the average age of an American farmer today is 58 years old. Yet the ways successful crops are produced continue to evolve. Regardless of age, producers have to adapt to thrive.

To that end, a new generation of producers and ranchers in Mississippi is turning to local agents and specialists with the Mississippi State University Extension Service for the information they need to be successful.

Daniel Haire, an Extension agent in DeSoto County, said agents often serve as consultants for producers.

“Our services are free to producers, no matter the size of the operation, and we help our clients stay up-to-date on the latest issues,” Haire said. “Some producers call us and ask for solutions to questions they have about crops, and we give them an unbiased answer based on research.”

Haire is one of several Extension resources Patrick Swindoll uses on his farm in Hernando. Swindoll produces rice, soybeans, corn, grain sorghum, and wheat. He said Haire has conducted test plots on his land and identified harmful pests, such as aphids, in time to control damage and protect his sorghum yield.

Swindoll also relies on advice from state specialists with Extension. He said he closely follows the Mississippi Crop Situation blog, a digital publication of the MSU Extension Service. He uses social media to gather information about the latest technology available for producers.

For example, Swindoll said he has a Twitter account and follows Extension specialists, including row-crops entomologist Dr. Angus Catchot and plant pathologist Dr. Tom Allen. Allen is also a researcher with the Mississippi Agricultural and Forestry Experiment Station.

Extension specialists are connecting with the next generation of producers digitally to help them attain success, Swindoll said.

“The Crop Situation blog is definitely an invaluable tool,” Swindoll said. “I’m always reading whatever they send out. Angus might send something out about checking for bug pressure, or Tom will send something out looking for diseases on soybeans and corn. I would say in 2014, we probably had the most success out of our soybeans. It’s probably going to be the best average we’ve ever had.”

Swindoll said social networks provide producers an opportunity to get information to colleagues and the general public quickly.

“Somebody can be out in the field, take a picture, and you’ve got it out there to see,” he said. “You can get information out that people need to know. It’s also a way to connect with farmers and people outside of agriculture so they can get a better understanding of what we do every day.”

Jeremy Jack is chief executive officer of Silent Shade Planting Co., an 8,500-acre farm in Belzoni. He said he relies heavily on advice from multiple Extension specialists with expertise in irrigation, agronomy, weed science, and more.

“We’re very fortunate in the state of Mississippi to have so many younger, highly motivated Extension specialists who are there for the farmers,” Jack said. “They really get it. If I didn’t have them on speed dial, it would be extremely difficult to grow the crops we grow. They do a great job keeping up with the changes in technology. People on our crew are constantly looking at the Crop Situation blog for the latest information to help us keep up with that research.”

Like Swindoll, Jack grows a wide variety of crops, including cotton, wheat, corn, soybeans, and rice. Jack said he consults regularly with an agent for each crop and works especially closely with specialists at the Delta Research and Extension Center in Stoneville.

“Not only are we growing bigger crops, but we’re being more efficient with our time,” Jack said. “We’re taking care of the land exactly how it needs to be taken care of with fuel energy conservation.”

Dr. Bill Herndon, associate vice president of the MSU Division of Agriculture, Forestry, and Veterinary Medicine, said the future of farming depends on the cooperation between producers and land-grant universities and stakeholder organizations, such as Mississippi Farm Bureau and Delta Council.

“We have to take the long-term view to maintain and increase the agricultural production that people around the world rely on,” Herndon said. “We must work closely with all generations of agricultural producers to communicate our research, which is based on the needs they identify. Communication across all information platforms is essential. Whether it’s advice on implementing the most up-to-date technology for water efficiency or variety trial data to help producers select seed, our goal is to help them get the best results.”

By Nathan Gregory • Photos by Kevin Hudson
Bottomland Oaks

Help Clean Excess Nitrogen from River Water

The ecological diversity of the bottomlands in the Mississippi Alluvial Valley provides an ideal environment for a variety of wildlife, including ducks.

When MSU scientists in the Forest and Wildlife Research Center decided to learn more about how red oak acorns affect the fall and winter diets of ducks in the bottomlands of the alluvial valley, they decided to study factors that influence the acorns’ production. They evaluated nitrogen, carbon, sediment deposits, and soil characteristics. That research led to a discovery that broadened their inquiry significantly.

Dr. Andrew Ezell, head of the MSU Department of Forestry, was a coinvestigator in the study. He described how the scientists started down one path and ended up in an unexpected place.

“Good management comes from good decisions,” Ezell said. “Good decisions are based on good science. That science, however, doesn’t always lead you where you might expect to go.”

Researchers evaluated six red oak stands in Mississippi, Arkansas, Louisiana, Missouri, and Tennessee. Half the sites were well connected to rivers; the other half were not. Researchers analyzed soil and sediment and monitored hydrological events.

When they examined the soil and sediment, the scientists discovered that nitrogen eroded from upstream soils accounted for 20 percent of the soil nitrogen in the connected stands.

“The study demonstrated a benefit that was previously unknown,” Ezell said. “We knew that the plants used nutrients, but no one had ever quantified just how much nitrogen the oaks were able to extract from the water or deposits.”

Bottomlands are typically formed from alluvial deposits. In other words, their soil comes from water moving soil particles into an area as opposed to being formed in place from weathering of bedrock or other substrate. This process creates a landscape prime for ecological diversity.

“A bottomland includes six different recognized site types, which consist of fronts, bars, flats, ridges, sloughs, and swamps,” Ezell explained. “Each site is home to a host of species. Bottomlands are highly productive areas in terms of total biomass production per acre per year. It’s a very different landscape than the uplands. The uplands may have vast differences in elevation without much difference in plant species, while a difference in elevation of a few feet in the bottomlands significantly impacts diversity of species.”

That diversity offers many different ecological benefits, Ezell added. Some of these benefits are known, such as providing suitable habitat for specific wildlife. Other benefits are still being discovered, such as removing nitrogen from a river.

Bottomland oaks help clean excess nitrogen from river water.
The project began in 2009 under the direction of Ezell and Dr. Rick Kaminski, MSU professor of wildlife ecology and management and James C. Kennedy Endowed Chair in Waterfowl and Wetlands Conservation. The group originally set out to evaluate synchronicity of acorn production patterns across the Mississippi Alluvial Valley (MAV).

Dr. Jacob Straub worked as a doctoral student under Ezell and Kaminski. “We sought to find out whether acorn production patterns were similar throughout the MAV from Missouri to Louisiana,” Straub said. “This research is significant because production influences migratory and nonmigratory wildlife across the entire region.”

According to Straub, this was the first study to evaluate red oak trees in bottomland hardwood forests on such a large scale.

“Ultimately, we found a lack of synchronicity in acorn production; so what is happening in Missouri might not be the same in Louisiana,” said Straub, who graduated with a doctorate in forest resources from MSU in 2012.

Dr. Jeff Hatten, a former MSU professor now working at Oregon State University, joined the research team in 2011 to better understand some of the factors related to soil, sediment, and hydrology that might be controlling acorn production. Jonathon Sloan served as a graduate student under Hatten during the course of the research.

“We measured the percentage of carbon and nitrogen, along with the carbon-to-nitrogen ratio,” said Sloan, who graduated from MSU with a master’s degree in forestry in 2013.

The study found that stands connected to rivers had higher levels of deposited nitrogen and a lower carbon-to-nitrogen ratio than stands not connected to rivers.

The team said the scope of the research must be broadened to include multiple stands of varying species and ages.

The initial research, however, indicates that bottomlands might hold nitrogen that would otherwise end up in the Gulf of Mexico, which could add yet another benefit of planting hardwoods in reforestation efforts.

Dr. Brent Frey, study coinvestigator and assistant professor in the MSU Department of Forestry, said the research could impact future management practices.

“The study suggests there might be opportunity to filter some of the nitrogen coming from upstream into a forest where you’ve got those connections,” Frey said. “This could open up opportunities for land managers to target a connected site in forest restoration efforts to help with nitrogen mitigation.”
When the crew and cast members of the movie \textit{The Help} came to Greenwood, they had an immediate economic impact, but they also left behind benefits for the Mississippi Delta town's tourism industry.

Greenwood showcased the ways the film affected its tourism possibilities to nearly 100 tourism directors, main street managers, and others in the rural tourism industry during the 2014 Mississippi-Alabama Rural Tourism Conference.

“The goods and services purchased by the 200 members of the movie’s cast and crew, plus the local jobs they created during the 2 months of filming, had an immediate $13 million impact on the local economy,” said Tonja Ray-Smith, executive director of the Greenwood Convention and Visitors Bureau. “More importantly, Greenwood’s historic buildings and other filming locations used in the award-winning movie are now a major draw for visitors from throughout the U.S. and overseas.”

While most small towns will never be the location of a major movie, they all have unique features that can be used to promote local tourism, said Rachael Carter, a resource development specialist with the MSU Extension Service Center for Government and Community Development.

“All towns, no matter how small, have points of interest to potential visitors,” she said. “We brought speakers from Mississippi and Alabama to the conference to discuss how their communities are successfully using fairs, festivals, sports events, local history, and other local features to promote tourism and economic development.”

The annual conference is the result of a partnership among the MSU Extension Service, Alabama Extension System, and Tennessee-Tombigbee Waterway. It alternates between locations in the two states.

Among those on the 2014 program were small business owners who promote tourism in their communities.

Alexe van Beuren of Water Valley is one such owner. The renovation of the building housing her BTC Old-Fashioned Grocery helped launch the revitalization of Water Valley’s downtown area.

“If you’re not spending money on your downtown district, don’t expect other people to,” van Beuren said.

Entertainment, especially music, is a major draw for tourists. Greenwood businessman Allan Hammons, who has been instrumental in promoting Mississippi’s musical heritage, highlighted the importance of the Delta as the birthplace of the blues in his speech to attendees. Mississippi has almost 200 markers throughout the state that explain the significance of sites important to the history of blues, he said.

“Having Blues Trail sites identified by markers is a tremendous opportunity to share this musical heritage with the world,” he said. “We get thousands of European visitors to Mississippi every year because of the widespread influence of blues music.”

The diversity of topics covered at the conference and the opportunity to learn what others are doing to boost tourism are significant benefits, said Judy Sizemore, director of the Muscle Shoals National Heritage Area in north Alabama.

“Having the conference alternate between the two states is a chance to see firsthand what is working as economic drivers in various small towns,” she said. “It’s always beneficial to get together with others in the same profession to share ideas.”

\textbf{Greenwood Conference Tells Rural Tourism Success Stories}
Six planters at the entrance of a Mississippi State University building are among Dr. Sylvia Byrd’s efforts to take students who have never grown anything before and turn them into savvy consumers who have a better appreciation of where their food comes from.

Planters are frequently used outside homes and businesses to bring some color and life to otherwise sterile landscapes. Byrd, a professor of nutrition in the MSU Department of Food Science, Nutrition, and Health Promotion, is working with Dr. David Nagel, vegetable and home garden specialist with the MSU Extension Service, to combine beauty with food production and grassroots awareness.

“Our goal is to create awareness of how easy it is to garden and to let students experiment with different fruits and vegetables,” Byrd said.

The planters allow everyone who passes by to see foods being grown in the landscape, rather than being displayed on a grocery store shelf.

In December, the planters outside MSU’s Herzer Building were growing four kinds of colorful Swiss chard, mustard, onions, and strawberries. Before that, they grew broccoli, cabbage, and some greens. Last summer, the planters featured okra, tomatoes, cucumbers, watermelons, and peppers.

“Okra is a member of the hibiscus family and has beautiful flowers,” Nagel said. “In fact, I think the flowers of the okra are as pretty as any hibiscus. Chard used to only come as green leaves with white midribs and petioles. Now, it comes in red, orange, pink, and yellow.”
“Students pass by those planters every day on their walks to and from class. We hope with future signage, students will be encouraged to stop, study, and pick. We also want students to become interested in food production for themselves.”

Anna Laurin Harrison
Harrison said she recognizes the disconnect in modern American culture between finished food products and the sources that generated those products.

“Most of the time, we even bypass the process of cooking, which leaves a huge gap between us and what we’re eating,” she said. “This has many implications, especially for the health of this generation and future generations.

“It’s no secret that obesity and diet-related chronic diseases are rampant in the United States,” Harrison added. “As the gap between us and our food grows, so do our waistlines. We have strayed from eating whole foods, like those grown in the planters, to fast food from the drive-through.”

Harrison wants other students to know that health benefits are not the only reasons to eat fruits and vegetables. Growing them is a cost-effective way for individuals to supplement their diets with fresh produce. These planters are part of an effort to raise awareness of small-scale food production.

“We are a rural state, but most of our people live in towns and cities,” Nagel said. “They see farms, but all they know is what they can see while driving by at 70 miles per hour.”

In addition to overseeing the planters, Nagel teaches a vegetable production class. Agricultural information science majors typically make up the majority of this class, along with other non-plant and soil sciences majors in the College of Agriculture and Life Sciences who take the course as an elective.

“I have each student take a 2-foot-by-2-foot section of garden bed and grow something,” he said. “Every year, this will be the first time some of my students have ever grown something.”

Harrison said she believes that when people are not afraid to grow, harvest, prepare, and cook their own food from planters like these, there will be a lifetime improvement in the overall nutritional quality of diets.

“By increasing awareness of food production, we are shortening the chain between people and what they eat,” she said. “This, we believe, will improve not only eating habits, but quality of life.”

Byrd said raising awareness of where vegetables come from, introducing new vegetables into diets, and showing that they can be easy to grow is only part of the faculty’s overall efforts.

“Our goal is to start small and grow future foodies,” she said. “We have mothers and grandmothers who do not cook, so it’s not surprising we have students who don’t know how fruits and vegetables are grown.”

Byrd said agriculture students today are becoming more interested in the environment, sustainability, hunger issues, and food insecurity.

“They need to have an in-depth understanding of food and where it comes from so they can talk with potential employers and interact with clients in their future positions,” she said.
Invasive Asian Carp Threaten Native Species

“If the native populations or the quality of these populations begins to dwindle, there will be less sport fishing and less opportunity for the revenue that comes with it.”

Dr. Bruce Leopold

Many Mississippians are aware of the damage wild hogs do to the land in the region, but they may not know the Mississippi River and surrounding waters are facing a serious threat from another invasive species—the Asian carp.

“The ecological and economic impacts of the Asian carp invasion are vast,” said Dr. Bruce Leopold, executive director of the Mississippi State University Center for Resolving Human-Wildlife Conflicts (CRHWC). “Silver carp, in particular, as a variety of Asian carp, also present a direct threat to human health and safety.”

CRHWC, a respected national authority on invasive species, is conducting public outreach and education about issues associated with Asian carp.
with Asian carp. The center is a collaborative effort involving the MSU Forest and Wildlife Research Center, Mississippi Agricultural and Forestry Experiment Station, and MSU Extension Service.

“The public must truly understand the concept of invasive species,” Leopold said. “We must shift public perception from seeing a novel, exotic animal to seeing invasive species for what they are—dangerous pests that can potentially cause tremendous damage to our ecosystems.”

Asian carp compete with native fish for food and overtake an already occupied niche, he explained. They also could consume threatened or endangered native species, such as mussels.

“Asian carp are ferocious planktivores, aggressively feeding on zooplankton and phytoplankton,” Leopold added. “These invertebrates serve as the foundation for all aquatic ecosystems. All fish species depend on these plankton in the early life stages of development. Diminishing these resources could threaten all native fish populations.”

“Although Asian carp primarily filter plankton from the water, they have been observed eating other invertebrates, such as mussels and clams, as well as detritus, key food sources for some native fish populations,” Leopold continued. “Since many invertebrates, such as certain types of mussels, are already threatened or endangered, Asian carp could further endanger or render extinct some of these species.”

Recreational fishing is big business in Mississippi. In 2011, recreational-fishing-related expenditures in the state totaled $528 million. As Asian carp compete with native species fished recreationally, that revenue could drop dramatically.

“If the native populations or the quality of these populations begins to dwindle, there will be less sport fishing and less opportunity for the revenue that comes with it,” Leopold said.

Leopold has recommended that government officials at the state and local levels increase their understanding of the problem and help slow the spread of the species.

“Now is a critical time to act, as Asian carp populations are expanding in the Mississippi River Basin,” Leopold said. “Legislators need to know about the situation so they can implement policy and legislation to help solve the problem. Mayors, aldermen, and other municipal leaders need to be aware so they can take action at the local level and keep Asian carp out of the streams, ponds, and other bodies of water in their communities.”

Silver carp pose a significant threat to the safety of anglers and recreational boaters. Noise from outboard motors stimulates schools of silver carp, causing them to jump out of the water. When this happens, boaters can find themselves traveling at high speed through a flying swarm of silver carp, said MSU Extension associate Andrew Smith.

“According to reports from the Environmental Protection Agency, injuries have included cuts, broken bones, concussions, black eyes, and back injuries,” Smith explained.

In a CRHWC project, Smith is conducting an exhaustive literature review on Asian carp in response to the ecological, economic, and health and safety threats posed by the species.

“I am creating an annotated bibliography, which covers the taxonomy and natural history of Asian carp, with an emphasis on its invasion in the Southeast,” he said. “I’m also including information about environmental and economic effects, as well as management, distribution, and expansion details.”

The bibliography will serve as a starting point for future research on Asian carp. Along with an informational booklet and comprehensive information on the CRHWC website, the bibliography will also help educate the public and various stakeholders on the subject.

Smith stressed the importance of individuals understanding what to do when they come in contact with Asian carp.

“Never transport, relocate, or release Asian carp into a body of water,” he cautioned. “Also, be aware of the potential dangers when boating or fishing. People need to be a part of the solution, not the problem. This is where public education and outreach come into play. If people know how to handle this species, everyone can do their part to help solve the problem, by slowing down the invasion as opposed to speeding it up.”
A Mississippi State University researcher is directing two international studies to help scientists better understand how the body’s natural immune system could play a part in preventing heart disease and the prevalence of drug-resistant bacteria.

Dr. Matthew Ross, an associate professor of molecular toxicology in the MSU College of Veterinary Medicine, is collaborating with scientists at the Jiangsu Academy of Agricultural Sciences (JAAS) in Nanjing, China. They are investigating whether the endocannabinoid system can help the body’s immune system become more efficient at breaking down cholesterol and fighting microbial infections, such as salmonella.

The endocannabinoid system, a relatively newly discovered regulatory system, produces fatty molecules throughout the body. These endocannabinoids help regulate processes of the body such as mood, appetite, and anxiety. Recently, researchers discovered endocannabinoids play an important role in controlling blood circulation and the immune system. Further study seeks to shed light on the mechanisms of health and disease and provide new therapeutic options.

“Immune cells in the body’s tissues, such as the heart’s vessels, and white blood cells are frontline defenders in the innate immune system,” Ross said. “When the body encounters a foreign pathogen, these immune cells cause the body to make and secrete a variety of natural toxic molecules to kill that pathogen.

“We now have evidence that the endocannabinoid system plays an important role in the initial signaling of these immune cells and could influence host-pathogen interactions and reduce inflammation of the coronary arteries,” Ross said. “In addition, we are interested in how toxins contribute to endocannabinoid system activation and overall inflammatory processes.”

Ross and his JAAS counterparts want to pinpoint the enzymes inside the body’s immune cells that can be targeted by medications to enhance the response of endocannabinoids.

“There is emerging evidence that endocannabinoids can have a pro- or anti-inflammatory effect in a variety of physiological contexts, including in the heart’s arteries,” Ross said.

In their first study, the team is working to determine how environmental pollutants lessen the efficiency of cholesterol breakdown by the body’s immune cells, causing coronary artery disease. The researchers also are interested in how chemicals may trigger the endocannabinoid system to help or hinder natural immune processes.

The team’s second study focuses on how endocannabinoids can help fight salmonella infections in poultry.

“This segment of agriculture provides an affordable protein source and is a vital economic driver in the Southeastern United States,” Ross said. “We hope this study leads to information on how medications could increase endocannabinoid levels during salmonella infection and establishes whether the drugs help immune cells perform their job.”

Dr. Stephen Pruett, head of the CVM Department of Basic Sciences, said this type of research provides the necessary groundwork for developing useful medications.

“Pharmaceutical and biotechnology companies are already testing drugs that target the endocannabinoid system as anti-inflammatory agents that may not have the adverse side effects seen with commonly used anti-inflammatory drugs such as ibuprofen,” Pruett said. “However, to design the best possible drugs, we really need to know more about the endocannabinoid system, its normal roles in both health and disease, and how environmental influences affect this system.”

Ross and Ran Wang, a professor at the JAAS Institute of Food Safety, have made notable progress since they began their collaboration in 2011. They have coauthored five peer-reviewed papers. Wang spent more than 2 years training and performing research in Ross’s lab, and Ross visited JAAS twice.

Ross will return to JAAS for 2 months in summer 2015 to help set up bioanalytical equipment for research in food safety and toxicology. He will also help train one of Wang’s postdoctoral fellows at MSU.

Partnerships such as the one Ross and Wang have fostered benefit research and strengthen its outcomes, Pruett said.

“It is almost impossible for a single researcher or even a single university to have all the expertise and equipment to conduct the complex work needed to understand disease processes in great detail,” Pruett said. “The Chinese government is rapidly increasing the amount of funding invested in biomedical research, and we have benefited substantially from Dr. Ross’s relationships with Chinese colleagues. This research collaboration also helps promote understanding and peaceful relationships between two great countries that will be leaders in biomedical research for many years to come.”

By Susan Collins-Smith • Photo by Tom Thompson
As the planting season gets under way in Mississippi, producers have already spent months gathering information, crunching numbers, and determining what seeds to put in the ground in 2015.

Dr. Darrin Dodds, cotton specialist with the Mississippi State University Extension Service and researcher in the Mississippi Agricultural and Forestry Experiment Station, said producers in Mississippi have an advantage over growers in other states.

“I think the biggest benefit our growers have is the diversity of crops they can grow,” Dodds said. “I grew up in Illinois, and they can grow corn and soybean, maybe wheat and a bit of alfalfa. But here, you can grow cotton, corn, soybean, peanuts if you have the right soil texture, wheat, rice, grain sorghum, and sesame—so many options.”

By diversifying, growers can spread out their risk and potentially capture the greatest profit.

“The days of someone farming a single commodity are fading,” Dodds said. “Producers can make planting decisions based on rotation needs, pest management, weather, markets, and risk management.”

MSU experts help support row-crop producers through basic and applied research, Extension outreach efforts, and academic programs that equip tomorrow’s leaders in the agricultural industry.

In 2014, Mississippi producers set new records in two row crops. Corn and soybean yields broke previous records, at 185 bushels per acre and 52 bushels per acre, respectively. Rice, at 7,420 pounds per acre, was also a record.
Extension irrigation specialist and MAFES researcher Dr. Jason Krutz shares the latest research on efficient crop irrigation.

Krutz said MSU research consistently shows at least an equivalent yield with considerably less water in a new irrigating system developed for soybeans, cotton, corn, and rice. But he is not resting on his current findings.

“When you look at this big scale of the number of mouths to feed in the world, and irrigation gives producers a 20-bushel-per-acre increase in soybeans and a 50-bushel-per-acre increase in corn, it’s clear irrigation is going to be a component of making every acre as productive as possible,” he said. “If we’re going to feed the world while meeting our moral obligation to preserve natural resources for future generations and our legal obligation to use water in a way that benefits the Mississippians who own that water, we’ve got to continue to research ways to become more efficient.”

Krutz predicted future irrigation research will focus on the effects of using cover crops, gypsum, polyacrylamide gels, and tillage techniques. He also anticipates studying ways to improve water infiltration rates in sealing soils.

“We are training the next generation of scientists, and there’s a shortage of people with applied agronomic skills,” added Krutz, who supervises six graduate students. “Someone has to figure out how to feed billions of people in the coming decades.”

The variety trials program is another valuable research-based service provided by MSU. To learn more about this program, please see page 22.
Throughout the year, Extension personnel respond to the needs of clients across the state. From county agents helping with soil samples to agronomists making site visits to specialists conducting workshops and field days, producers have many opportunities to work face-to-face with Extension experts.

Each December, the Row Crops Short Course brings together experts in a variety of fields for three intensive days of learning. In 2014, the event attracted 450 participants, a significant increase from the 60 to 70 who attended in 2008, which was the last year the short course focused only on cotton.

“Mississippi growers are integrated, so we added a day to the event and changed it to the Row Crop Short Course,” said Dodds, organizer of the event. “Attendance has increased every year, and this year we had speakers from Tennessee, California, North Carolina, Georgia, Illinois, Mississippi, and Louisiana. We go out of our way to make everything about the event first class.”

The event is free to those who preregister, and continuing education credits are available.

“We have a lot of sponsors, including the university, ag companies, and promotion boards, and it gives us a chance to share

Dr. Larry Oldham, an Extension soil scientist, samples soil at the MSU Rodney Foil Plant Science Research Center after harvest in 2014. Analyzing soil nutrients informs production practices and helps producers determine what inputs different fields require.
the latest research and information with our producers to help them make the best decisions they can,” Dodds said.

Dodds said the strength of the MSU crops team is a key factor in the success of Extension’s outreach efforts.

“Our team has a lot of young folks who really want to get after it, for lack of a better term,” he said. “At the end of the day, we have two goals: to make our producers the most productive they can be and to maintain MSU’s position as a trusted source of unbiased information for our farmers.”

Throughout the year, Extension personnel respond to the needs of clients across the state. From county agents to area agronomists to specialists, Mississippi producers have a team of people dedicated to helping them get answers to their questions.

Many of those answers can be found on the Mississippi Crop Situation blog, which can be found online at http://www.mississippi-crops.com.

Dr. Angus Catchot, an Extension row-crops entomologist who contributes to the blog, said the posts reflect the collective expertise of the MSU crops team.

“Agronomists, weed scientists, fertility experts, economists, plant pathologists—we include every aspect of row-crop production,” Catchot said. “Our overarching goal is to take MSU’s fundamental and applied research and bring it to the end users in the state of Mississippi. We extend information so producers are more sustainable, profitable, environmentally friendly, and efficient.”

Catchot said the connection between all stakeholders has a positive impact on row-crop agriculture in the state.

“One of the huge advantages we have is that MSU has people in every county, dedicated people, who are thinking about agriculture when they wake up in the morning,” he said. “They go into communities and deliver the message. From the administrative level to legislators to stakeholder groups, people completely support and understand the importance of agriculture because we’re connected.”

Those relationships contributed to the development of a cooperative program last year that is being used as a model in other states.

“Mississippi is one of the first states to get all of the ag groups together to address the relationship between farming and pollinators,” Catchot said. “Everyone bought into the voluntary Mississippi Honey Bee Stewardship program because row-crop farmers and beekeepers both produce important commodities. This program created an environment in which we can coexist.”
The academic programs in the MSU College of Agriculture and Life Sciences (CALS) also reflect the importance of row-crop agriculture in the state.

Dr. Scott Willard, associate dean for the college, said several majors prepare students for careers in agronomic crops.

“Whether students are interested in plant science, soil science, weed science, integrated pest management, agricultural engineering, precision agriculture, or agricultural economics, we encourage—and sometimes require—internships, cooperative on-the-job programs, or experiential learning opportunities to gain hands-on, real-world experience,” Willard said. “The foundation the students get from the curriculum, combined with these experiential opportunities, prepares them to enter the workforce at various points in the agronomic crop marketplace.”

Willard explained that a partnership with the Mississippi Agricultural and Forestry Experiment Station resulted in an Undergraduate Research Scholars program to support undergraduate students who want to participate in CALS and MAFES research.

“Students can apply for grants to be matched with faculty and choose an area of interest,” he said. “They write up their research, present it at a conference or symposium, and gain recognition through awards. Plus, they get experience presenting their findings to a wide audience. This is the type of experience employers are looking for, but it also helps students find out what they like and don’t like, which further shapes their career choices and helps them find a path that excites them.”

While students with undergraduate degrees can enter directly into the workforce, many choose to specialize by pursuing master’s degrees at MSU in areas such as entomology and plant pathology.

“This extra credential allows students to enter the workforce at a higher level and often propels them more quickly into leadership positions or highly technical career paths,” Willard observed. “For those with an interest in further research, pursuing a doctorate at MSU offers advanced training and opportunities to engage in row-crop agriculture at another level, developing the next generation of discoveries that will shape the agricultural industries of the future.”

Just as Mississippi provides diverse options for its row-crop producers, it offers students training that is not available at other institutions, Willard said.

“With the unique cropping and agricultural systems of the Mississippi Delta and other regions of the state, students can learn from researchers concentrating on the molecular aspects of plant physiology, which is a basic science, and from the applied, real-world application of technology in the field,” he said. “MSU is unique in terms of immediate access to research farms, state-of-the-art laboratories, and first-class faculty who are respected regionally and nationally in row-crop agriculture.”

Willard said these opportunities would not be possible without help from stakeholders, industry partners, and those who support student scholarships.

“People in agriculture provide outlets for our students to engage in hands-on learning,” he said. “They participate on our advisory boards, speak about issues at our roundtables, assist with our career fairs, and support our programs in many other ways. It is a true give-and-take partnership with the goal being well-trained leaders who will help shape the agricultural landscape of tomorrow.”

By Keri Collins Lewis
Biochemistry student Cedric Reid examines corn samples under a microscope as students Karl Bell (left) and Erika Womack work in the background.

Agricultural and biological engineering students (from left) Hazel Buka, Christina Cooper, and Caleb McKee set up a GPS receiver in an on-campus demonstration.
MAFES Variety Trials
Provide Vital Information to Crop Producers

MAFES researchers conduct extensive official variety trials each growing season to document the performance of seed varieties under different growing conditions. Variety trials are conducted on corn, cotton, grain sorghum, peanuts, rice, soybeans, wheat, oats, and forages. In addition to trials in test plots across the state, MAFES researchers evaluate seed performance in controlled settings, such as these corn plants grown in a greenhouse on the Starkville campus.
Farmers can’t choose the weather they get for their crops, but they can choose the best seed for their growing conditions, thanks to evaluations performed by Mississippi State University.

Through the Mississippi Agricultural and Forestry Experiment Station, MSU conducts extensive official variety trials each growing season to document the performance of seed varieties under different growing conditions. MAFES provides variety trial information on corn, cotton, grain sorghum, peanuts, rice, soybeans, wheat, oats, and forages.

Brad Burgess, director of the MAFES Variety Testing Program, said the information is valuable because it allows growers to see an unbiased comparison of all the varieties tested.

“We test as many varieties as we can from numerous companies,” Burgess said. “This allows producers to see a side-by-side comparison of the seed under a large variety of growing conditions and a large geographic area.”

Burgess is responsible for the testing programs for corn, grain sorghum, peanuts, soybeans, wheat, and oats. For each crop, numerous varieties are planted each year and grown under conditions found at locations throughout the state.

Yield is a primary consideration, but growers also look at the data to see which varieties consistently perform well.

Dr. Brian Williams, MSU Extension agricultural economist, said variety trial information can be of tremendous value to producers.

“Our researchers take great care in providing the most reliable and unbiased data, and, perhaps more importantly, they are not trying to sell any one variety,” Williams said. “Care is taken to make sure no variety receives special treatment, and researchers do their best to minimize any difference in treatments between varieties.”

Information generated in the trials can help producers identify which varieties have been proven to perform best in their specific areas of the state.

“If a producer can use that information to boost corn yields by even 10 bushels per acre, which could be easily accomplished, it could translate into another $40 per acre in revenue,” Williams said. “By simply switching to a variety that has been proven to perform better in their area, producers can see benefits add up rather quickly when multiplied by 1,000 acres.”

There is a wealth of information available on the different seeds, and gathering and evaluating that information can be time-consuming and complicated.

“Having all the data at their fingertips in one place can prove invaluable in the decision-making process, allowing producers to compare data and performance from varieties that they are familiar with, as well as from new or unfamiliar varieties,” Williams said.

Dr. Rocky Lemus, an Extension forage specialist and MAFES researcher, oversees the testing of 12 different forage species, including bermudagrass, bahiagrass, tall fescue, clovers, alfalfa, summer annuals, and annual ryegrass. The forage program tests more than 130 varieties within those species. Forage tests are grown at MAFES branch stations in Poplarville, Newton, Starkville, and Holly Springs.

“Our variety trial is year-round,” Lemus said. “This information helps producers make decisions on what they need to plant long term.”

Information from these trials allows producers to determine what forage variety will perform best and be most economically sustainable in a specific area.

“We are one of the few forage-testing programs in the U.S. that has the complete screening,” Lemus said. “Research scientists and producers in the Southeast from Tennessee and Virginia and farther south use our information.”

Dr. Bobby Golden, an assistant Extension/research professor at the Delta Branch Experiment Station in Stoneville, is responsible for rice variety testing. During 2014, MAFES evaluated 21 conventional and 15 Clearfield rice varieties at seven locations in the Delta.

“We evaluate both publicly and privately developed rice lines, including inbred and hybrid varieties,” Golden said. “We strive for consistency and try to provide a data set containing different rice varieties that outlines rough and milling yields over time.

“This is very important because a new variety may have a very good yield potential in year one, but how does it react to a range of cultural environments or in years with adverse climatic conditions? If you have a history of how a specific variety has yielded in your area, you can feel confident where your yield range is going to be if everything goes smoothly,” he said.

Dr. Darrin Dodds, Extension cotton specialist and MAFES researcher, oversees cotton testing in large trials conducted on producers’ fields and in small-plot trials conducted at branch stations.

“The goal of the small-plot testing is to look at variety performance based on genetics in a number of different environments,” Dodds said. “They follow a tried-and-true, scientific, experimental design and look at a large number of varieties. Each variety is planted in four separate plots at each location.”

This year, MSU has eight small-plot and 25 on-farm variety trials at locations around the state on a variety of soil types and under both irrigated and nonirrigated conditions. Researchers tested 52 varieties of cotton in small plots and 10 at the on-farm locations. In the large-plot, on-farm trials, MSU personnel plant the seed and then rely on private growers to manage the crop.

“We come back at the end of the year and collect yield and fiber quality data,” Dodds said. “These are designed to give you an idea of on-farm, real-world performance under grower-managed conditions. The grower makes every management decision that goes into that crop. It gives you a true idea of how it would perform under that person’s management system.

“The take-away message from the variety trial information is not to look just at the variety that wins the trial,” Dodds said. “Most times, a given variety won’t win every single trial. Instead, look at the data that represents conditions on your farm as closely as possible; then look for varieties that are not only good yielders, but also consistently perform well across a number of different situations.”

MSU official variety trial data is offered free at http://mafes.msstate.edu/variety-trials.

By Bonnie Coblentz • Photos by Kat Lawrence
Christy Babin Staven discovered a love for floral design as a student worker at MSU's The University Florist. The 2009 horticulture graduate now owns her own shop and specializes in wedding flowers and special events. (Submitted photo)
Agricultural Careers
Offer Bright Futures

Students who want to make a difference in the world should consider careers in agriculture.

“Careers in agriculture are as diverse as the farming profession they support,” said Dr. George Hopper, dean of the MSU College of Agriculture and Life Sciences (CALS). “College degrees are the keys to success in this industry that feeds and clothes the world.”

Hopper said preparing students for real-world challenges is a priority for faculty in the nine departments of CALS.

“The agricultural industry has undergone rapid and significant changes in the past few years,” Hopper added. “Students need to have the opportunity to study a variety of subjects in order to completely understand this vast and versatile landscape. As new technologies emerge, we implement new curricula to train students in every facet of agriculture and life sciences.”

Precision agriculture is one area in which the college is considered a leader. CALS currently offers a precision-agriculture concentration for agricultural engineering majors and is planning an interdisciplinary precision-agriculture certificate program this year.

“Our stakeholders hire the next generation of agricultural leaders, and no doubt students having a solid understanding of precision/decision agriculture will be critical in the agricultural workforce of the future,” Hopper said. “We also encourage students to engage in professional experiences while in college to prepare them for their careers.”

Hopper said MSU student interns and graduates are highly sought by employers.

“Students can get their foot in the door by seeking work opportunities even before graduation,” he added. “It gives employers chances to see their work ethics, communication and leadership skills, and knowledge in their field of study.”

Hopper said agricultural career options have expanded in recent decades, and students are coming from a variety of backgrounds.

“We are seeing an increase in urban students who are attracted to the industry, but we still have many students who grew up on farms or in rural areas,” he said.

Staven Follows Floral Design Passion

Christy Babin Staven started her college career in psychology at MSU until a student job at The University Florist exposed unknown talents and uncovered her heart’s desire.

“Lynette McDougald, manager of The University Florist, recognized a talent for floral design in me,” said Staven, owner of May Flowers in Chattanooga, Tennessee. “She encouraged me to change majors, and I haven’t looked back since. I wanted to do something creative, hands-on, and interactive for my career. While I was working at The University Florist, I learned floral design would be the perfect avenue for my dreams.

“MSU taught me everything I know, from the extensive courses in floral design to business management,” she said. “Working at The University Florist gave me real-life, every-day flower shop experience for which I am forever grateful.”

Staven, a December 2009 horticulture graduate, opened her shop in 2013 and specializes in wedding flowers and special events. Since graduation, she has learned the challenges and rewards of owning her own business.

“I’ve learned the importance of networking in the floral design industry; it’s all about who you know,” she said. “Mentorship programs and small-business courses are valuable for helping small-business owners succeed.”

Networking lessons were started during Staven’s college career. She was active in the student chapter of the American Institute of Floral Designers and attended regional and national conferences.

“Not only was the travel enjoyable, but also the time spent competing and learning was invaluable,” she said.

Staven remains an advocate for higher education as a path to agricultural careers.

Davis Continues Learning Ag Lessons

Bolivar County farmer Judd Davis is not far removed from the college classroom. Likewise, when he was a student, he remained close (in spirit) to the farm.

Davis left his family farm south of Cleveland, Mississippi, to study mechanical engineering at MSU. He never intended to pursue a career in agriculture. Today, he said he believes agriculture majors are the key to the future of farming.

“During my first semester at school, I found that I missed the farm too much not to find a way to return,” he said. “I changed my major to agribusiness and learned the business side of farming.”

Davis credited an agricultural economics professor with teaching him the key to success: “Don’t spend more money than you make.”

In December, Davis was one of the speakers at the largest Row Crop Short Course in the history of the MSU-sponsored event. Almost 500 farmers, crop consultants, educators, and other industry representatives attended the meeting.

“How Technology Improved My Bottom Line” was the topic Davis addressed during the short course. He, his father, Larry, and his brother, Austin, are partners in Davis Farms near Shaw, Mississippi. Austin graduated from MSU in spring 2014 with a degree in industrial engineering.

“Dad is not interested in learning technology, so that’s my thing,” he said.

Davis described his technology uses as “pretty basic.” He uses guidance systems to be more efficient with tractors, sprayers, combines, land surveying, and record keeping. The Pipe Hole and Universal Crown Evaluation Tool (PHAUCET) program and water-well timers enable the best use of irrigation methods.

“The PHAUCET program is a game changer,” he said. “It is the first and best step to make sure water is available for future generations of farmers. This was our first year to use side-inlet irrigation, and I loved it. It decreases the time needed to regulate the water level and reduces unnecessary runoff.”

Davis said avoiding peak energy hours by using electric well timers can cut costs in half.
As an agricultural business graduate, Davis said he has had much to learn on the agronomic side of farming. He has relied on educational meetings in his county and at the MSU Delta Research and Extension Center in Stoneville.

“The Extension Service, Farm Bureau, and other agencies and consultants all help me determine what’s best for our farm,” he said. “Graduation certainly did not mark the end of my agricultural lessons.

Gholston Siblings Thrive in Ag Careers

Brent, Clay, Lakin, and Cole Gholston grew up on a cotton, corn, and beef cattle farm near Baldwyn.

“Agriculture was all we knew,” Brent said.

That did not change when they arrived at Mississippi State. Brent earned his bachelor’s degree in agricultural economics, and both his brothers received degrees in agricultural business. All three earned master’s degrees in agricultural business management. Their sister, Lakin, earned her doctor of veterinary medicine degree and practices in Baldwyn.

Today, Brent is a district sales manager for Monsanto and is based in Tupelo.

“I had professors who believed in me more than anyone other than my parents,” he said. “They helped me understand issues like the farm bill and pointed me to electives like soil science and meats processing that would help round out my studies.”

Additionally, professors encouraged internships and other appropriate experiences along the way to their degrees.

“Internships and work experience are extremely important for ag majors,” Brent added. “They give students the opportunity to develop and demonstrate a good work ethic. Work hard, show you care, and then find something you love and want to work hard at. If you’ll work and do what supervisors tell you to do, you’ll be OK when it comes to landing a job after graduation.”

The other brothers work with Sanders, a farm-supply distribution company. Cole is an area manager based in Memphis and oversees 14 locations in west Tennessee, east Mississippi, and Alabama. Clay is a retail sales representative based in Hamilton, Mississippi.

“This career is exactly what I dreamed of doing,” Cole said. “The people drew me to agriculture. I have had the opportunity to develop relationships with growers across the South that will last for a lifetime and have had fun doing it.”

Cole also described differences in agricultural practices that have kept his job interesting.

“When I started, all I had experience with was corn, cotton, cattle, and soybeans on a small farm in Mississippi,” he said. “I have had the opportunity in my career to meet many different people and learn about many different crops and farming practices used throughout the country.

“As an industry, we need to do a better job of educating students at the collegiate level about opportunities available in a career in agriculture,” he added. “It’s not just about being a farmer. We provide growers with the knowledge and technology they need to increase their yields and their bottom line—we are feeding the world and doing a better job of it each year with fewer acres in cultivation.”

College of Agriculture and Life Sciences

College of Agriculture and Life Sciences enrollment has increased annually from 1,409 in fall 2008 to 2,207 in fall 2014. CALS offers 16 undergraduate degrees with 46 concentrations. It is home to the School of Human Sciences and the departments of Agricultural Economics; Agricultural and Biological Engineering; Animal and Dairy Sciences; Biochemistry, Molecular Biology, Entomology, and Plant Pathology; Food Science, Nutrition, and Health Promotion; Landscape Architecture; Plant and Soil Sciences; and Poultry Science.

CALS Dean Hopper said each department contains award-winning faculty and students who are recognized across the country and beyond for their research and academic accomplishments.

“The Department of Poultry Science, which is one of only six in the United States, supports Mississippi’s largest commodity,” Hopper said. “Every single graduate since the program started in 1948 has found a job in the industry. Today, the industry is valued at more than $3 billion in the state.”

Hopper said he anticipates enrollment to continue to grow in all areas of agricultural education.
**1/82: Adams County**

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Longwood, also known as Nutt’s Folly, is the largest octagonal house in the United States. The antebellum mansion is known for its unique design and the contrast between its ornately finished first floor and the unfinished upper floors.

**County seat:** Natchez  
**Population:** 32,155  
**Communities:** Sibley, Kingston, Washington, Stanton, Selma  
**Commodities:** beef, horses, soybeans, corn, wheat, oil, blueberries, sweet potatoes, hardwood timber, pine timber  
**Industries:** Great River Industries, Howard Jones Lumber Co., Genesis Energy, Von Drehle, Elevance Renewable Science, Magnolia Frac Sand, Bastech, Delaney Oil Field Services, Jordan Carriers, Delta Energy  
**Natural resources:** Mississippi River, hardwood forests, pine plantations, creeks, lakes, abundant wildlife, oil, gas  
**History notes:** Natchez, the birthplace of Mississippi, is a quaint, Southern town with a rich culture and heritage shaped by people of Native American, African, French, British, and Spanish descent. Its first inhabitants were the Natchez, noted for being the only Mississippian Native American culture that maintained complex chiefdom characteristics long into the period of European colonization. French explorers first came to Natchez in 1716, making Natchez the oldest settlement on the Mississippi River. Adams County, named for President John Adams, was created on April 2, 1799, becoming the first county to be organized in the Mississippi Territory.

**Attractions:** Grand Village of the Natchez Indians, Historic Jefferson College, Homochitto National Forest, Sandy Creek Wildlife Refuge, St. Catherine Creek National Wildlife Refuge, Great Mississippi River Balloon Race, Natchez Literary and Cinema Celebration, Spring and Fall Pilgrimage, Riverstock, Natchez Bluff Blues Festival, Natchez Festival of Music, Adams County Sheriff’s Tri-State Rodeo, Food and Wine Festival, Natchez Museum of African Art and Heritage  

**Did you know?** Adams County is home to the town of Washington, which was the seat of the territorial legislature and was the capital of Mississippi until 1822. In 1879, the Jesse James gang stole $2,000 from two stores in Washington. Parts of two movies were filmed in Washington—*The Adventures of Huck Finn* and *The Horse Soldiers*.

“Adams County is a world of its own. Nowhere that I have ever been can you find such amazing representations of the past, present, and future of this great nation.”

David Carter, MSU Extension County Coordinator

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*Editor’s note: 1/82 is a regular feature highlighting one of Mississippi’s 82 counties.*
**Dr. Gary Jackson**, director of the Mississippi State University Extension Service, received the Mississippi Farm Bureau Federation’s Distinguished Service Award for 2014. The award was presented during the organization’s annual membership meeting. Jackson has served as director of the MSU Extension Service for 4 years, and, during that time, it has initiated a process of reorganization and strategic planning to reconnect the Extension Service to citizens across the state of Mississippi.

**Brian Templeton**, an Extension associate in the Department of Landscape Architecture, was elected president of the American Society of Landscape Architects’ Mississippi chapter. ASLA is a national professional association representing landscape architects, with 15,428 members in 48 chapters, representing all 50 states, U.S. territories, and 42 countries around the world, plus 68 student chapters.

**Dr. Shaun Broderick** joined the MSU Extension and MAFES as an assistant horticulture professor and researcher specializing in herbaceous perennials, shrubs, and trees. He is stationed at the Truck Crops Branch Experiment Station in Crystal Springs. Leisure gardeners and commercial producers can benefit from his research and outreach efforts.

**MSU Extension Forestry** team members won the 2014 Family Forests Education Award presented by the National Woodland Owners Association and the National Association of University Forest Resources Programs. The team includes 14 educators operating from six locations. Team members use traditional educational programs, publications, and media to reach and educate as many family forest owners as possible each year.

**Dr. Sead “Sejo” Sabanadzovic**, a professor in the MSU Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology, was invited to join the prestigious executive committee of the International Committee on Taxonomy of Viruses. This elite group of 18 international experts serves as the leading authority on describing, identifying, naming, and classifying viruses. Sabanadzovic is one of only three plant virologists on the executive committee. This recognition is the result of Sabanadzovic’s long-term contribution to virus taxonomy initiated during his tenure in Italy and continued over the past decade at MSU.

The Railway Tie Association executive committee gave MSU professor emeritus Dr. **Terry Amburgey**, a Giles Distinguished Professor, the 2014 Award of Merit for his lifetime of service to the industry. The award is given at the executive committee’s discretion and has been awarded only two other times since the association was formed in 1919.

MSU’s Brown Loam Branch Experiment Station was recently renamed in honor of E. G. “Gene” Morrison for his more than 40 years with MSU. He served at the MAFES facility as superintendent for 33 years, beginning in 1956. Morrison, a native of Utica, Mississippi, devoted his career to research projects aimed at improving livestock production methods. While at Brown Loam, Morrison strived to advance production efficiency for central Mississippi beef cattle and sheep producers. He brought regional fame to MSU and Brown Loam with his work on grazing newly weaned beef calves on cool-season forages.

MSU honored its 17th president with a public ceremony dedicating the **J. Charles Lee Agricultural and Biological Engineering Building**. The $11 million structure that opened in 2007 is located on Creelman Street between Dorman Hall and McCarthy Gymnasium. MSU President Mark E. Keenum said Lee made numerous outstanding contributions to Mississippi State during more than a dozen years of service at the university.
Ashley D. Boatner of Benton, Mississippi, a May 2014 summa cum laude graduate in kinesiology/clinical exercise physiology, and forestry professor Dr. Donald L. Grebner of the MSU Forest and Wildlife Research Center were selected for Love of Learning recognitions by Phi Kappa Phi, the nation’s oldest and most selective collegiate honor society for all academic disciplines. Each received a $500 award.

Dr. Phyllis Miller recently won Best of Show at the 105th American Association of Family and Consumer Sciences National Conference for her internationally influenced domestic designs featuring bright colors, bold patterns, and skillful knitting. Miller, a professor in the MSU School of Human Sciences, is a former Fulbright Scholar. The prestigious AAFCS recognition means members of the competition jury decided her design was the best among 60 entries.

MSU forest resources doctoral student Austin R. Omer of Starkville, Mississippi, received a $2,000 scholarship from the Alabama-Mississippi Section of the American Water Works Association. A former Illinois resident, Omer is pursuing an academic concentration in wildlife and fisheries. These scholarships are awarded to Alabama and Mississippi residents preparing for water works industry careers, whether pursuing advanced licensure or training in the water works science field or completing undergraduate or graduate degrees at an institution of higher learning.

In December, MSU’s University Florist celebrated 80 years of being a fun, enriching environment for MSU students to gain the work and management skills they need to be successful in the floral industry and beyond. Lynette McDougald has served as florist business manager and plant and soil sciences instructor for 17 years. She explained that, in addition to being a full-service flower shop, The University Florist serves as a hands-on, instructional laboratory for students majoring in floral management. The university also has a student chapter of the American Institute of Floral Designers, which connects students to future employers and internship opportunities.

Dr. Cyprianna Swiderski, associate professor in the MSU College of Veterinary Medicine, was recently named chair of the Morris Animal Foundation’s Large Animal Scientific Advisory Board. Swiderski, an equine internist who studies airway disease in horses, credits Morris Animal Foundation with the early support of her research that helped to give it credibility. The foundation is a nonprofit organization and is the largest private funding source for research to advance the health of companion animals, horses, and wildlife. The foundation relies on its board members to review research proposals and select which projects to fund. This service requires a significant amount of time and scientific expertise. Swiderski has served on the large animal board for 3 years and will spend her 4th and final year as the chair. She will coordinate the board’s review of proposals related to horses and other large animals.

Dr. Patricia Knight, head of the MSU Coastal Research and Extension Center in Biloxi, received the Paul Smeal Leadership and Administration Award at the 2015 annual meeting of the Southern Region of the American Society for Horticultural Science. This award recognizes superior leadership and administration for the improvement of horticultural science. Knight’s leadership and administrative support resulted in substantial progress for the advancement of professional horticulture.

Correction: In the announcement of Dr. Jeff Dean’s appointment to department head in the January 2015 issue of LandMarks magazine, the department name was inadvertently cut off. Dean is the new department head of the MSU Department of Biochemistry, Molecular Biology, Entomology, and Plant Pathology.
Franklin Burns touched many lives throughout his 50-year career in the horticulture industry.

Now, a new endowment established by the Brookhaven nurseryman’s family ensures that his legacy can live on through the work of the Mississippi State University Extension Service.

Burns’s daughter, Jill Logan, and son, Ted Burns, established the Franklin T. Burns Outstanding Extension Community Resource Development Award in 2014. The endowment awards a financial stipend to an outstanding professional with the MSU Extension Service.

“We wanted to honor my dad’s humble generosity,” said Logan, who is dean of academic instruction at Copiah-Lincoln Community College in Wesson, Mississippi. “He has given to his community throughout his entire life, and we want his legacy to live on through others who do the same. We are thrilled we can recognize our father while contributing to other communities through the work of the Extension Service.”

Ted Burns, who graduated from MSU in 1978 with a bachelor’s degree in business, owns Ample Energy in Birmingham. Franklin Burns’s granddaughter, Kelsey Logan of Cincinnati, Ohio, also contributed to the award. She is an associate professor of pediatrics at the University of Cincinnati and the director of the Division of Sports Medicine at Cincinnati Children’s Hospital Medical Center.

Lelia Kelly, Extension consumer horticulture specialist, was the 2014 award recipient. Kelly helped develop Mississippi’s Master Gardener program, which trains and certifies volunteers in consumer horticulture in exchange for their volunteer community service. She also works to meet clients’ needs through a variety of activities.
educational courses, publications, popular press articles, and website work.

“I am thrilled to receive this award,” Kelly said. “I was totally surprised when they called my name. It means a great deal to me, especially since the award is endowed by a family that knows the importance and understands the impact horticulture can have on communities.

“I love what I do, and it is such an honor to be recognized,” she said. “The very generous monetary award will help pay Santa Claus this year, and the beautiful plaque will proudly be displayed on my office wall.”

Franklin Burns, owner of Brookhaven Nurseries, was a member of the Mississippi Nursery and Landscape Association throughout his career. The organization worked closely with the Extension Service and relied on its research-based information and educational programs.

“That’s one reason we chose Extension to set up the endowment,” Logan said. “Dad was always deeply involved in the association and worked closely with the Extension Service.”

Burns’s parents, James Ele Burns and Lydia Jewel Nix Burns, established the nursery in the 1930s. After their retirement in the 1950s, Burns took over the business.

During his career, Burns served as president of the Mississippi Gladiolus Society and the Mississippi Nurseryman’s Association. For his many years of generous volunteer work to better his community, he was awarded the Brookhaven Exchange Club Goldene Deeds Award for 50 years of service.

Burns is a member of Brookhaven First Baptist Church, where he has served in many positions, including deacon. He is a World War II veteran and attended the University of Texas, where he studied mechanical engineering.

Michael Hatcher, who worked at Brookhaven Nurseries as a teenager and now owns a Memphis, Tennessee, landscaping company, said Burns helped shape his career.

“I’ve had many opportunities to reflect on the lessons I learned from him, even when I didn’t realize I was being taught. That is the sign of a true mentor. This award is a celebration of that influence and dedication to his community,” Hatcher said.

MSU Extension Director Gary Jackson said endowments such as these not only acknowledge an honoree’s passion and impact, but also help advance employees’ skills and propel the work of the Extension Service into the community.

“The Burns family’s gift is an example of how a closely bonded, hard-working, and successful family gives back to the community through a community-based organization—the MSU Extension Service,” Jackson said. “We are greatly appreciative to Mr. Burns and his family for this endowment and award.”

Each year, the award will be presented during the Extension annual conference. Agents who work closely with the nursery and landscape industry in their communities will get preference.

Donors who wish to honor Burns may make contributions to the fund. For more information about donating to the MSU Extension Service, contact Dees Britt, assistant director of development for the Extension Service and the MSU College of Agriculture and Life Sciences, at dbritt@foundation.msstate.edu or (662) 325-2837.
Late winter in Mississippi sometimes brings both blooms and snow. Daffodils, such as these blooming at Mississippi State University on February 26, will survive to look pretty once temperatures moderate. (Photo by Kat Lawrence)