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

Mississippi State University
The value of Mississippi’s 2013 overall agricultural production is currently estimated at $7.86 billion, including $220 million in government payments. The combined value of poultry and forestry accounts for almost half that total. Record yields helped offset lower prices for corn, hay, peanuts, soybeans, and sweet potatoes. (Photo by Scott Corey)

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As 2014 began, we learned that Mississippi’s overall value of agricultural production hit an all-time high in 2013, despite lower prices for many crops. Longtime commodity leaders, such as poultry, soybeans, and forestry, led the way. They were followed by corn, cotton, and cattle and calves. Our economists put the total value at almost $7.9 billion.

Some years are bigger challenges than others because weather and the economy are beyond our control. Even so, the Division of Agriculture, Forestry, and Veterinary Medicine is proud to help farmers and landowners throughout the state as they overcome these challenges.

International activities continue to be an important part of the division and the university. A recent agreement between MSU and the United Nations Food and Agriculture Organization created the Global Center for Aquatic Food Security. This center will help our faculty engage in international activities that will address sustainable aquaculture designed to reduce world hunger. This and other international activities remain a high priority for the university administrative team.

In February, Congress rolled out the new farm bill. A key sponsor of this legislation, Senator Thad Cochran, visited our campus for a farm policy discussion shortly after the farm bill became law. Several of our agricultural economists advised members of Congress, notably the minority leadership of the Senate Agricultural Committee, on recommendations for the new farm bill. Others presented workshops to help Mississippi farmers understand the new law.

This year, MSU is celebrating two centennials. The Department of Agricultural Economics celebrated its centennial in 2013 and recently held a banquet to commemorate the milestone. The unit boasts more than 2,000 alumni, including MSU President Mark Keenum, State Economist Darrin Webb, former Tennessee Valley Authority Chairman Glenn McCullough, and former President of Honduras Rafael Callejas. The department and its work are valuable assets for our university, state, nation, and world.

Our division is celebrating another milestone this year: the 100th anniversary of the Smith-Lever Act of 1914, which officially created the national Cooperative Extension System at land-grant universities. A centennial celebration in Washington, D.C., on May 7–8 highlighted Extension’s past and focused on contemporary application of its educational programming in the future.

Our own MSU Extension Service will also celebrate the centennial in Mississippi. A list of activities and plans will be posted on the social media sites Facebook and Twitter, under @MSUExtService.

Recently, we learned that MSU ranks sixth among more than 700 public and private institutions for research and development expenditures in agricultural sciences in the National Science Foundation’s Higher Education Research and Development Survey. Our continued presence in the top 10 in this category for 15 consecutive years often reminds me of our commitment to our core mission.

When the Mississippi Legislature adjourned in early April, we were fortunate to receive funding increases ranging from 5 to 5.5 percent for the units in our division. We are also receiving preplanning and significant repair and renovation funds for the division’s 400-plus buildings in fiscal year 2015.

Thanks for your assistance in helping us secure these funds, and enjoy this edition of LandMarks.

Gregory A. Bohach
In a December ceremony, Mississippi State University officials recognized two longtime administrators when they dedicated Verner Hurt Boulevard and rededicated the Rodney Foil Plant Science Research Center.

MSU President Mark E. Keenum said the occasion celebrated two outstanding men whose combined careers spanned 70 years of service to the university and its Division of Agriculture, Forestry, and Veterinary Medicine.

Dr. Verner Hurt, who retired in 1996, served as director of the Mississippi Agricultural and Forestry Experiment Station, professor of agricultural economics, and head of that department. Keenum said Hurt had a direct influence on his own life as Keenum pursued undergraduate, master’s, and doctoral degrees in agricultural economics.

Keenum said that when he later joined the staff of U.S. Senator Thad Cochran, he saw firsthand Hurt’s direct influence on agricultural issues.

“My personal congratulations to you and your family for all that you’ve done for Mississippi State University,” Keenum said.

He went on to say that Dr. Rodney Foil was one of very few individuals who held such a significant level of influence over an extended period of time.

Foil retired in 1999 as vice president of the Division of Agriculture, Forestry, and Veterinary Medicine. He previously served as head of the Department of Forestry, dean of the School of Forest Resources, and associate director and director of the Experiment Station.

After his retirement from MSU, Foil went on to serve the Cooperative State Research, Education, and Extension Service (CSREES) for the U.S. Department of Agriculture. He oversaw the CSREES Initiative for Future Agriculture and Food Systems and served as chair of the CSREES Board of Agriculture. In 2004, he became one of the first inductees into the CSREES Hall of Fame.

Keenum said Foil’s career affected the lives of thousands. Having one of the finest research stations in the country named for him is a fitting tribute to a man who well understood the role of land-grant institutions for improving the lives of citizens throughout the state and the nation, he said.

Foil responded by thanking those who attended the ceremony.

“I appreciate those who worked with us, and I appreciate those who continue to work now,” he added.

Hurt also thanked Keenum, saying the ceremony brought good memories and that he appreciated having the connection with Foil, his longtime colleague. Hurt added that he spent many years of his professional career working alongside Foil. He thanked Dr. Vance Watson, a retired university vice president who also attended, for his contributions to agricultural research.

Dr. George Hopper, dean of the College of Agriculture and Life Sciences and the College of Forest Resources, and director of MAFES and the Forest and Wildlife Research Center, said Mississippi producers set several all-time yield records in 2013. He said while many factors affect agriculture, the land-grant university’s missions of research and service have helped advance production across the state and nation.

Dr. David Shaw, vice president for research and economic development, echoed remarks about Hurt’s and Foil’s contributions both to the university specifically and to agriculture in general.

“We all are indebted to you for the contributions to agriculture you have made,” Shaw said.

Verner Hurt Boulevard serves as an entrance both to the Rodney Foil Plant Science Research Center and to the nearby Phase II developments of the Thad Cochran Research, Technology, and Economic Development Park.

For more information about agricultural research at Mississippi State University, visit the Division of Agriculture, Forestry, and Veterinary Medicine online at http://www.dafvm.msstate.edu.
The state’s senior U.S. senator was at Mississippi State February 19 to participate in a roundtable discussion about national farm policy with some of the university’s top agriculture, forestry, and veterinary medicine majors.

During Senator Thad Cochran’s meeting with undergraduate and graduate students, some of whom were his former interns, he explained the challenging process of writing and gaining successful passage of the new farm bill. The farm bill is a multiyear piece of authorizing legislation that governs an array of programs under the U.S. Department of Agriculture. It recently was completed after nearly 3 years of deliberations.

In January 2013, Cochran was selected to serve as ranking member on the Senate Agriculture Committee. The House of Representatives and the Senate passed separate versions of the farm bill in summer 2013, and the farm bill conference committee formally began resolving differences between the two bills in late October, Cochran said. The Agricultural Act of 2014 was signed into law in early February.

Cochran explained to students that the law affects a great variety of issues and programs related to the country’s agricultural interests, from production agriculture to trade opportunities to nutrition assistance programs.

When asked about regional battles between Midwestern and Southern producers over the focus of the farm bill, Cochran said getting input from constituents helped set the priorities.

“We needed to take into account the financial benefits for production agriculture and the impact on trade opportunities,” he said.

The bill was both comprehensive and important, drawing bipartisan support, but balancing competing interests took diligent work from all who helped draft the final legislation, Cochran said.

Regarding the length of time the bill required for passage, Cochran said he expects future farm legislation will be equally challenging to finalize, requiring painstaking and meticulous compromise.

“You remember the old saying, ‘This is not a horse that is soon hurried,’” Cochran said.

Dr. Keith Coble, an MSU Giles Distinguished Professor of Agricultural Economics who also served as chief economist for Cochran while he worked on the farm bill conference committee, opened the discussion. Coble explained the extensive diplomacy that Cochran and his Senate peers on the committee employed to finalize the act.

“It was extremely difficult with a great deal of negotiation. There was a great deal of weighing the interests of different groups,” Coble said.

The National Science Foundation ranks Mississippi State as number six in the nation in agricultural research and development. MSU is also home of the state’s only veterinary college.

Dr. Gregory Bohach, MSU’s vice president for agriculture, forestry, and veterinary medicine, said Cochran’s visit helped students understand how farm policy in the U.S. is created.

“MSU’s USDA research and Extension funding for capacity building and grants and contracts are authorized by the farm bill,” Bohach added. “Also, the well-being of our stakeholders in the farming community and general public is impacted directly by the language in the farm bill.”
LANDSCAPE STUDENTS
Volunteer, Practice Skills
By Kaitlyn Byrne
Landscape architecture and landscape contracting and management students at Mississippi State University often gain hands-on landscape design and installation experience through unique service-learning opportunities that lie outside of their traditional classrooms.

In 2013, a group of students won the Award of Excellence from the American Society of Landscape Architects for their work developing the Oktibbeha County Heritage Museum grounds into an exhibit. The Award of Excellence is the highest award given by the society.

The project was constructed in five phases over a span of 4 years and included collaborations with students from architecture, art, building construction sciences, and graphic design. The project also benefited from contributions from City of Starkville street crews, local contractors, and MSU faculty, staff, and alumni.

Brian Templeton, an Extension associate in the MSU Department of Landscape Architecture, said the students performed all aspects of the project that did not require heavy machinery. They installed a spiral staircase, signage, sidewalks, a cistern, and plantings.

“Due to a limited budget, the students resorted to using labor-intensive manual techniques where expensive equipment would likely have been used in the professional field,” he said. “They used the opportunity to better understand all that is involved in implementing construction projects and how obstacles can be overcome.”

Although some of the students were required to work on the projects as part of their classes, Templeton said the majority volunteered additional time to continue working on the projects until completion.

“The students were very eager to learn about aspects of the professions and trades that are difficult to communicate through a lecture or video,” Templeton said. “They never complained about the manual labor and seemed to enjoy and thrive on being involved with the project and being able to interact with museum personnel and visitors.”

Another group of students gained hands-on landscaping experience through a service-learning opportunity with the Pilot Club of Starkville’s Music Trail in McKee Park.

The Pilot Club Music Trail consists of playground versions of nine unique musical instruments, including a rain wheel, palm pipe drum, and kalimba. The instruments are designed to be accessible to children with special needs, but all children can enjoy them. The project began in 2011 and was completed in October 2013.

About 20 students volunteered to landscape the Music Trail after a Department of Landscape Architecture graduate student created a conceptual landscape design of the trail. Templeton said the students were challenged by planting around roots of existing mature trees and had to implement knowledge learned in the classroom.

“A big benefit of the project was learning how to follow a layout procedure,” he explained. “It consists of laying out all of the plants first and making adjustments before you ever start planting, and then making minor revisions to it when needed, like with the root situation. It’s something they learn about in class, but putting it into practice is an experience they can’t get in the classroom.”

Hardy Simmons, a landscape architecture and landscape contracting and management student from Ridgeland, Mississippi, said the student volunteers helped in all areas of the plant installation process, including ground preparation, planting, mulching, and cleanup.

“It is a good experience and very rewarding to give back to the community, especially in a way that shows an interest in our future within the landscape industry,” Simmons said. “It is always good to know that you have done something for the community that makes this area of the park a pleasing place for children and their parents to enjoy while they are there. As with any well-designed landscape, there is satisfaction in knowing the plants that were planted are aesthetically pleasing and give just another attribute to the park for many years to come.”

Templeton said the landscape architecture program in the College of Agriculture and Life Sciences strives to teach students that putting an emphasis on community should be an important aspect of their future careers.

“One role of a landscape architect is to build community,” he elaborated. “We try to instill and foster that in our students throughout their tenure in our program. Our students have worked on a lot of projects in the community, and it shows how community service is part of our culture, as well as our curriculum.”

For information about the heritage museum, visit http://oktibbehaheritagemuseum.com/wordpress/.
To learn about the MSU Department of Landscape Architecture, visit http://www.lalc.msstate.edu.
For information on the Pilot Club Music Trail, contact Starkville Parks and Recreation at (662) 323-2294.
Poultry is Mississippi’s No. 1 agricultural commodity, valued at $2.9 billion in 2013. As the industry grows, so does the need for specially trained poultry veterinarians. A new dual degree and residency program at the MSU College of Veterinary Medicine is one of only five such programs certified by the American College of Poultry Veterinarians. (Photos by Tom Thompson)
A new dual degree and residency program at Mississippi State University’s College of Veterinary Medicine addresses the state’s growing need for specially trained poultry veterinarians. The poultry specialist program supplements the 4-year DVM program with hands-on education for those veterinarians interested in poultry medicine, health, and management.

Poultry has ranked number one among Mississippi’s commodities for the last 19 years and in 2013 was valued at $2.7 billion. As the industry grows, it becomes increasingly more important to have specially trained poultry veterinarians available to this vital industry.

“We want to prepare veterinarians for roles in nontraditional veterinary practice, such as in the private sector, in academic research, or in regulatory or public health service,” said Dr. Sue Ann Hubbard, clinical professor at the Mississippi Poultry Research and Diagnostics Laboratory in Pearl. “We’ve crafted a program of study that can be tailored to each student’s strengths and interests.”

Current MSU veterinary students can enroll in the program as dual degree students and complete coursework in Starkville and in Pearl. And for veterinary school graduates, a residency program provides focused, hands-on experience at the laboratory and in the field.

“We work closely with industry professionals, as one of our goals is to serve their needs and keep their flocks healthy,” Hubbard said. “They love our students. They help shape their future careers and engage them in relevant issues, which helps keep the students ahead of the curve.”

The CVM poultry medicine degree program is one of only five certified by the American College of Poultry Veterinarians. Over the last few years, student interest in the program has increased significantly.

“We credit the new interest in poultry veterinary medicine to the industry we serve and to our increasing national reputation,” Hubbard said. “We have veterinary graduates from around the country asking to be a part of the program. We are proud of the opportunities we can provide them alongside our state’s top agricultural commodity industry.”

Students and residents in the program work on everything from developing plans to protect the health of backyard flocks to researching reactions to veterinary vaccines. They benefit from the diverse experiences and exposure to current industry issues, and their research provides the industry with information about increasing marketability and protecting poultry health.

“We’ve had students and residents in the program who have provided research findings that have direct benefits to Mississippi’s poultry, specifically the broiler industry,” Hubbard said. “Our students are eager to apply all they’ve learned and work hand-in-hand with producers in making a difference.”

Dr. Kevin Maschek’s major adviser at the University of Florida introduced him to the idea of poultry veterinary medicine as a career option.

“Around my second year of veterinary school, I got exposure to poultry medicine and it took off from there,” Maschek said. “I completed an externship at the University of Georgia and, after graduation, applied for the residency at MSU-CVM.”

Since beginning his residency in July 2013, Maschek has worked primarily with broiler producers, but he has also worked with backyard birds and done some diagnostic work.

“My main focus is on researching a natural product that can be used as a pesticide in the industry,” he said. “I’m getting a lot of experience in clinical investigations, specimen collection, and diagnostics.”

Maschek said every day of his residency is a little different, and in his pursuit to assist producers, he is learning volumes from them.

“Dr. Maschek’s work in Mississippi is a perfect example of what we provide the industry and how they help us,” Hubbard said. “We want our trained poultry veterinarians to get right out there and work to continuously improve the industry and the markets they serve.”

Whether it is at the laboratory, in a processing plant, or at a hatchery, Maschek is gaining what he believes will guide him in his career.

“I’m learning so much from the Mississippi poultry industry and the MSU-CVM faculty, but I really don’t feel like a student in this program,” Maschek said. “Everyone treats me like a colleague and appreciates what I can provide. It really feels like I’m a part of a family.”
AG ECONOMISTS

Estimate Record
Farm Income in 2013

The value of Mississippi’s overall agricultural production in 2013 appears to be at an all-time high despite lower prices for many crops. The 2013 estimate of $7.86 billion includes $220 million in government payments.

Gains stemming from longtime state commodity leaders—poultry and forestry—and record crop yields helped offset lower prices for soybeans, corn, hay, peanuts, and sweet potatoes.

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“As 2013 drew to a close, we knew proper variety selections and best management practices had helped many growers produce some great yields,” Bohach added. “We knew most crop prices were going to be lower, so we were a little surprised that the total value of farm and forestry production advanced to an all-time high.”

Dr. John Michael Riley, an agricultural economist with the MSU Extension Service, said agronomic crop prices were a drag on the state’s total agricultural commodity value despite high production levels.

“In 2012, when most of the nation’s farmland was experiencing a major drought, Mississippi farmers were able to produce very good yields,” he said. “While yields were down in other parts of the country, our growers were able to capitalize on the higher prices, which put the bar rather high.”

For perspective, Riley charted estimated agricultural commodity values for 2013 compared with the previous year and the 5-year average. Drastic differences from one year to the next can be due to factors that are beyond the control of industry participants, especially in agriculture.

Poultry, the state’s No. 1 agricultural commodity, is estimated at $2.9 billion in 2013, which is 19 percent more than in 2012 and 23 percent more than the 5-year average. Forestry, the state’s No. 3 commodity, is valued at $1.13 billion, an increase of 11 percent from 2012 and 14 percent above the 5-year average.

“The 5-year average is a good gauge of the industries that are on the rise, as well as those that are declining,” Riley said. “Comparisons to the 5-year average provide better context with respect to an industry’s general direction, as can be seen in the values for the state’s No. 2 and 4 crops: soybeans and corn.”

The 2013 soybean value is estimated at $1.17 billion, down 7 percent from 2012 but up 35 percent on the 5-year average. Average soybean yields tied the previous year’s record of 45 bushels per acre. Corn, which set a new record with 176 bushels per acre in 2013, has an estimated value of $782 million, down 14 percent from 2012 but up 46 percent on the 5-year average.

Some of the biggest declines in production values over the last 5 years include a 24 percent decline in rice, a 10 percent decline in cotton lint, and a 10 percent decline in catfish. In addition to poultry, forestry, and corn, the largest trending increases in the state’s main crops were 108 percent in grain sorghum, 53 percent in wheat, and 30 percent in livestock.

Dr. Tim Walker, former rice specialist with the Mississippi Agricultural and Forestry Experiment Station based at the MSU Delta Research and Extension Center in Stoneville, explained that Mississippi rice growers started reducing their acreage from the 20-year average in 2011, but 2013 was an excellent year for rice. The rice value estimate was $145 million.

“Growers planted just a few thousand acres less than the year before, but our final average yields should be a state record,” he said. “2012’s average was 7,200 pounds per acre, and we should have at least 7,400 pounds per acre in 2013. We are down significantly on the 5-year average value because of how many more acres we used to plant. In recent years, we have planted about 50 percent of the typical acreage.”

Walker said two strong years will motivate growers to expand rice acres in 2014. Mississippi rice farmers could plant nearly 200,000 acres, compared with 130,000 acres in 2013.

Cotton is another crop expected to post record yields in 2013 and predicted to gain ground in 2014. Each positive factor comes after years of reduced acres. Mississippi growers planted nearly 1 million or significantly more acres of cotton each year until 2007. In 2013, however, Mississippi cotton growers harvested only 285,000 acres. The value of Mississippi’s cotton lint was estimated at about $271 million and cottonseed at about $60 million, for a total value of $332 million.

“We just harvested 1,229 pounds of cotton per acre, beating our previous yield record of 1,024 pounds per acre in 2004,” noted Dr. Darrin Dodds, Extension cotton specialist.

“We got a late start with a long, cold, and wet spring, but then the weather provided just what the crop needed,” he said. “It was warm during the summer but not oppressively hot, especially at night. The hottest weeks of the year were late in the summer when we needed it to finish out the late crop. We also got some timely rains.”

Dr. Jimmy Avery, Extension aquaculture specialist and director of the Southern Regional Aquaculture Center in Stoneville, revealed that U.S. catfish processing numbers are projected to rise about 10 percent from 2012. This is the first significant production increase since 2002. He said the recent trend of reducing pond acreage appears to be near its conclusion.

“We lost about 2,600 acres from 2012 to 2013. Most of those ponds were used for fingerlings, leaving a larger percentage of food fish acreage for 2013,” he said. “That change could eventually result in a shortage of stocker fish.”

Avery explained that some consumers chose cheaper foreign imports in 2011, when catfish supplies were tight and retail prices for catfish increased about 50 percent. The shortage peaked in late 2011 and early 2012.

“Now that our supply has stabilized and more consumers are requesting U.S. products, our markets are returning,” he said. “Farmers are finding a way to intensify production and be more efficient. They ended the year much more optimistic about profit potential in 2014.”

The 2013 crop value estimate for catfish, the state’s No. 7 crop, is $184 million.

The improvement in livestock’s value can be attributed to significant increases in hogs and moderate improvement in cattle, both offsetting decreases in dairy, Riley said. The agricultural economist estimated hog values to be 45 percent higher than the 5-year average. Individual livestock values for 2013 are $289 million for cattle and calves, $126 million for hogs, and $41 million for dairy.

“The U.S. Department of Agriculture showed a significant increase in the state’s sow numbers in 2012, but the bulk of that increase did not start producing litters until 2013, causing the jump in production,” Riley said. “Beef cattle declined a bit due to smaller numbers, mostly in feeder cattle, where we saw a significant increase in 2012 due to drought in other parts of the U.S. The dairy industry continued to decline and is off the 5-year average by 11 percent.”

Mississippi forage production declined as the rest of the nation came out of the severe drought. The estimated value of hay production for 2013 is $119 million. That total for the state’s No. 11 crop is 13 percent lower than the previous year and 5 percent lower than the 5-year average.

Other 2013 crop values and their percentage changes from 5-year averages included wheat at $156 million, up 53 percent; specialty crops at $115 million, up 23 percent; sweet potatoes at $57 million, down 4 percent; peanuts at $28 million, up 11 percent; and grain sorghum at $29 million, up 108 percent.

The USDA report also factored government payments into the state’s agricultural commodity values. In 2013, Mississippi farmers received $220 million, which was close to the amount they received in 2012. That total is 28 percent less than the 5-year average for government payments.

“Most prices are above the levels set in the 2008 farm bill, so there are fewer payments needing to be paid to farmers,” Riley said. “Most of this was related to direct payments, which will be phased out in the new farm bill, and subsidies on crop insurance premiums.”
Mississippi producers who rely on Mississippi State University for information have some valuable new guidelines to help them time their insecticide applications in 2014.

Mississippi Agricultural and Forestry Experiment Station researchers and MSU Extension specialists spend a lot of time counting insect pests and calculating the damage they cause. They compile the data to determine at what point a producer should use insecticides to maintain a crop’s profitability.

Dr. Angus Catchot, a row-crop entomologist with the MSU Extension Service, said producers look to these MSU-established thresholds to know when it is time to treat for insect pests.

“We made a number of changes to thresholds this year,” Catchot said. “That’s a big deal. We don’t do it on a whim, but we base these thresholds on research data compiled carefully over several years.”

MSU scientists rolled out the new recommendations at the 2013 Row Crops Short Course in December, well in advance of the 2014 growing season.

Dr. Fred Musser, an Experiment Station entomologist, provided specifics for stinkbugs and Southwestern corn borers. He also offered new recommendations for when to stop applying insecticides to soybean fields.

Existing thresholds for the Southwestern corn borer were based on egg and larval densities, and treatment was triggered when 25 percent of the plants were infected. Although the threshold was clearly defined, it was very hard to determine when it had been reached, Musser said.

“Searching for eggs is time-consuming and requires trained and diligent search,” he said. “It’s easy to miss eggs even when you know what you’re looking for.”

MSU now recommends that producers set out pheromone traps to capture adult Southwestern corn borers. Researchers established new thresholds using the number of adults found in these traps.

“To have any kind of accurate prediction of losses based on egg counts, a producer would have to look at 10,000 plants,” Musser said. “The predictive quality of eggs and pheromone traps is fairly similar, but the effort going into making that decision is vastly different. For that reason, we’re recommending a pheromone trap threshold.”

MSU recommends that producers treat for the first generation of the pest when they trap 50 adult Southwestern corn borers in a week or find 5 percent of the plants with egg infestations. When the second generation arrives, MSU recommends treating a field when at least 100 adults per trap per week are captured or there is a 10 percent egg infestation.

MSU recommends using a four-trap unit placed near—but not in—the field, where there is good airflow to allow the pheromone to attract insects. Turn rows are ideal locations.

MSU also changed the thresholds for stinkbugs in soybean fields.

“By the time we get to reproductive stage 6, or R6, the beans are already filled in, and we don’t see actual yield losses,” Musser said. “There are some quality losses, but it is rare that will make an economic impact. For that reason, we have raised the threshold to 20 stinkbugs per 25 sweeps from the R6 to R6.5 maturity stages. When beans reach R6.5, we are recommending a termination of insecticides targeting stinkbugs.”

R6 is when soybean seeds are almost mature. Seeds are fully mature at R8.

The final change addressed the point at which producers stop spraying insecticides to control insects that defoliate soybeans. MSU still recommends producers spray insecticides when soybeans at reproductive stages are 20 percent defoliated by insects such as soybean loopers. Researchers now recommend no insecticides be sprayed after the R6.5 maturity stage. Results from four Mississippi trials from 2009 to 2011 indicate there is no economic benefit in applications after this point.

“The yield loss from defoliation during R6 is less than at earlier growth stages, so if defoliation has not exceeded 20 percent by R6.5, it will not reach economically damaging levels before the soybeans are mature enough to harvest,” Musser said.
Mississippi farmers and beekeepers are working together to protect the state’s pollinators from accidental exposure to pesticides used on crops.

Dr. Jeff Harris, Mississippi State University Extension Service apiculturist, said ongoing discussions over the course of several months resulted in the Mississippi Honey Bee Stewardship Program.

“In light of the global decline of honey bee populations, the Extension Service and Mississippi Farm Bureau Federation facilitated discussions to foster a better working dialogue among Mississippi’s row-crop farmers and beekeepers, all in the spirit of coexistence and cooperation,” Harris said. “The potential for great tension between these two groups exists because some commercial beekeepers keep thousands of colonies near soybean and cotton fields.”

Harris said these two crops bloom during hot and dry periods, when no other major food source for bees is available.

“But farmers must manage pest populations to prevent damage to their crops, so there is a relatively high potential for honey bees to be killed accidentally by pesticide applications,” he said.

Some states now have laws that require beekeepers and farmers to follow certain protocols, but so far the level of cooperation in Mississippi has allowed for the stewardship program to be voluntary.

Dr. Angus Catchot, a row-crops entomologist with the MSU Extension Service, said he is pleased with the results of the collaboration.

“As this topic has gained attention over the last couple of years, I have been surprised to see how few farmers were aware of the issue. Now that they realize there is a problem, they have seemed more than willing to figure out how to work together,” Catchot said. “This program will certainly not eliminate all risks, but it will no doubt go a long way to head off future problems with acute bee kills.”

One component of the program is a unified flagging system to be used throughout the state to identify hive locations that are near agricultural fields. Beekeepers will work with farmers to place the black-and-yellow-striped “Bee Aware” flags so they will be visible both on the ground and from the air, to alert pesticide applicators.

“The Mississippi Honey Bee Stewardship Program is setting a precedent by showing there is cooperation and commitment on both sides. They’re willing to work together to minimize the risk of economic losses by both the beekeepers and the farmers,” said Dr. Jeff Gore, an entomologist with the Mississippi Agricultural and Forestry Experiment Station and MSU Extension Service. “The Bee Aware flags that resulted from this agreement are an additional tool to help raise everyone’s awareness about pollinator health and protecting pollinators.”

The Mississippi Honey Bee Stewardship Program has been adopted by Mississippi Beekeepers Association, Mississippi Farm Bureau Federation, Mississippi Agricultural Aviation Association, Mississippi Agricultural Consultants Association, Mississippi Department of Agriculture and Commerce, and the MSU Extension Service.

More information about the stewardship program is available online at http://bit.ly/1fi9L2a.
Newton County 4-H alumna Paige Nicholson has a new personal illustration to use in speeches about dusting off and getting back on the horse, and she will have many opportunities to use it as she travels the country as the 2014 Miss Rodeo America.

Deshannon Davis of Meridian, Mississippi’s national director for Miss Rodeo America, said spectators were on the edge of their seats when Nicholson’s horse became the second mount to fall in the same spot in the arena during her queen’s run.

“It’s a very scary moment when a horse goes down, but she reassured the crowd that she was OK. Paige just dusted herself off and got back on to finish her run,” Davis said. “She really proved her horsemanship skills. We were very proud of the way she handled the fall. The judges really appreciated the recovery.”

Nicholson said she learned that kind of perseverance in Mississippi’s 4-H youth development program.

“4-H taught me not to give up. I never dwelled on losing a competition but would just work harder for the next time,” explained Nicholson, who earned a degree in agricultural information science from Mississippi State in 2013, when she was the reigning Miss Rodeo Mississippi.

She earned the national crown in December in Las Vegas. A competitor for the national title presents a speech about her state, answers an unprepared question, and demonstrates her horseback riding skills. Nicholson’s speech focused on the music of Mississippi.

Davis said Nicholson is the third contestant from Mississippi to be in the top 10 since 2010, when Kelli Jackson won the national title. Nicholson shadowed Jackson during her reign as a teen queen.

Nicholson grew up on her family’s farm and showed cattle in the Newton County 4-H program. Her love of horses and rodeo activities led her to pursue the national title, which allows her to promote agriculture in general and the sport of rodeo in particular.

“Newton 4-H was a big deal. I couldn’t wait until I was old enough to join a club,” Nicholson revealed. “Some of my role models were in 4-H, and their drive for success influenced me. They were willing to work hard to prepare to win.”

Nicholson explained that she loved the competition 4-H offered. She showed cattle and took part in dairy products judging, dairy cattle judging, horse judging, and horse bowl. She also enjoyed speed events, including barrels, poles, team roping, and breakaway.

“There was a time when I wanted to be an Extension agent because of their commitment to the kids and commitment to agriculture,” she said. “I was fortunate to have some of the best Extension agents and volunteer leaders throughout my 4-H career.”

LeAnne Peters, director of communications for the Mississippi Cattlemen’s Association, said Nicholson is very proud of her Mississippi roots.

“Her platform is to advocate for agriculture,” Peters said. “An additional goal is to reach out to different demographics to bring them into rodeo and develop or expand rodeo’s fan base.”

Nicholson writes for the Cattle Business in Mississippi magazine, has served as a volunteer for the 4-H horse project Relay for Life, and has assisted as a special-needs horse show instructor.

“Volunteering has allowed me to build connections in several communities in my state,” Nicholson said in an official press release. “Service fosters camaraderie and fellowship in groups of volunteers while giving hope and support to recipients.”

Nicholson is a former intern with the Mississippi Beef Council and Mississippi Cattlemen’s Association. She won Miss Dixie National in 2012. While a student at MSU, she was selected Miss Maroon and White.

Dr. Kirk Swortzel, a professor in the MSU Department of Human Sciences, said even as a student, Nicholson was an advocate for agriculture.

“She was active in campus and professional organizations and really blossomed as a student in this program,” he said. “Her people skills and ability to communicate about agriculture are her strengths.”
A decade after watching her first demonstration of Pat Parelli’s natural horsemanship techniques, Katie Cagle entered the arena with her horse for some personal instruction from the world-renowned horseman.

Cagle has experienced many equine challenges during more than 10 years in 4-H and a lifetime around horses. When the Parelli organization requested local horses that were difficult to load into a trailer, Cagle knew her horse, Popeye, was the perfect challenge.

“Popeye has a history that makes him difficult to load in a trailer,” she explained. “He is blind in one eye and experienced abuse from a previous owner, so he has trust issues. He hasn’t had much attention since I left for college.”

Cagle, a 19-year-old from Tupelo, Mississippi, is majoring in animal and dairy sciences at Mississippi State University. The sophomore’s focus is on equine science, and she wants to pursue a career in therapeutic riding.

“I remember Parelli’s lessons about working with, not against, your horse, but Popeye’s issues just seemed too big,” she said.

When Cagle and Popeye entered the arena at a training seminar in Tunica, Mississippi, Parelli asked them to demonstrate Popeye’s willingness to address several obstacles before approaching a trailer. His distrust of the entire situation was easy for the audience to see.

Parelli’s first instruction was to allow plenty of time for a horse to load into a trailer. He emphasized the need to build connections with the horse based on trust and mutual respect.

As Cagle worked patiently with Popeye under Parelli’s close supervision, the audience could easily see the horse’s trust build and fears subside.

“I learned how to be truly patient by not giving up or rushing the horse. I learned how to read the horse effectively,” she said. “Most problems are caused because the horse feels rushed, doesn’t understand, or is truly scared. By doing everything slowly and correctly the first time, we can prevent so many upsets later.”

Parelli said adults tend to make simple things difficult.

“When we say to keep things natural, we mean to keep them simple,” he said. “What we are really teaching are leadership skills. They not only help with horses, but also with people.”

Cagle’s dad, Scott, values the leadership aspect of the Parelli program. As the Chickasaw County Extension agent, he works many hours with 4-H groups and horse programs.

“During the program, Mr. Parelli said he’d like to see this method taught to every 4-H group or any others who work with horses,” Scott Cagle said. “Ending abusive training techniques is a big part of the Parelli platform. All leaders know there are times when they have to be firm, but that does not mean abusive, whether it’s training an animal, a child, or an employee.”

Cagle said his daughter saw the importance of patience and a firm hand.

“When anyone cuts corners in the training process, they are setting up for failure,” he said. “You can’t rush the training process.”

Cagle said he has seen 4-H open the door to future careers many times, and he said his daughter’s experience with Parelli reinforced her career choice.

“When working in therapeutic riding, you have to be able to understand the horse as well as the rider,” he said. “Just because a horse is well trained does not mean you can take things for granted. You still need to engage the horse to keep it on task. Understanding how a horse thinks, which is one aspect of the Parelli program, is key to anticipating a horse’s needs and avoiding problems.”
Focus

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

MSU Scholarship Helps Educator Raise the Bar

By Tim W. McAlavy

Judy Prine enters the classroom and quietly sits down with a group of preschool children. They are soon engaged in a learning activity; little faces light up as they start building with stacking blocks. Little hands select farm animal figures, while excited voices work out the details of placing them in the block barn lot.

A few minutes later, Prine rises and talks to her staff about when nap time will commence. Meanwhile, three education students from Jones County Junior College (JCJC) finish up their notes on Prine’s interactions in the classroom.

Prine is in her element as an early-childhood-education instructor and director of the college’s laboratory school, where college students learn practical lessons in caring for and teaching preschool-aged children. Later she will conduct one of the four classes that she teaches at the college in Ellisville, Mississippi.

As she moves through her day, Prine implements steps to improve the educational curriculum and the laboratory classroom—goals she set while earning a national director’s credential through the Mississippi Child Care Resource and Referral Network. The network is a program of the Mississippi State University Extension Service funded by the Mississippi Department of Human Services Division of Early Childhood Care and Development.

“I received an email from the resource and referral network at MSU about scholarships available for earning a national director’s credential,” Prine said. “I completed the credential training in 9 months. You work through one online training module per month, with the help of a mentor. My mentor was Madonna Shannon, a field technical assistant with the network.

“The modules are quite challenging,” she added. “They walk you through all the aspects of running a child-care center. You start with a career assessment and work up from there. By the time you are finished, you have learned about curriculum development, facilities design, staffing, and financial management, and even promotion and advertising.”

Even with 26 years of experience as an educator, Prine said the training taught her new ways to think about her work.

“It pushed me and my thinking out of the box. It made me think about what is ideal and what is practical,” she said. “Now I get to apply both to the work situation I am in. It’s not a skill-and-drill exercise. It also helped me expand my knowledge base within my field. One of the exercises, for instance, required me to design an outdoor playground. I had limited experience with that, but it was fun.

“I also learned how to improve my people skills as a manager,” Prine continued. “I learned how to work with the different personalities of my staff, how they learn, and how to draw on their input and skills so we can find solutions together that improve our center. The module on public perception—how the public perceives your center and services—was also fascinating. Now I know how to gauge our public value in real terms and work with the community to improve our value and services.”

Prine said the credential training has encouraged her to raise the bar for early care and educational excellence at JCJC. She has implemented hearing and speech assessments for the preschool children in her lab classroom and is working with administrators to improve the quality rating of the early-childhood program at the college.
“In Mississippi, child-care centers can earn star ratings on the Quality Rating and Improvement System. We are currently a three-star facility,” Prine said, “but we’re working toward a five-star rating. That’s the top of the rating scale. That will benefit our preschoolers and our college students who leave Jones with an associate’s degree and go right to work in child care or continue their education elsewhere.”

She said her national director’s credential enables her to see her work at the college as a gift and a privilege. It is a gift that has spilled over into her family life, too.

Prine and her husband, Mark, a U.S. Army colonel stationed at Camp Shelby in Hattiesburg, Mississippi, recently enrolled in a continuing-education program at William Carey University in Hattiesburg. There, they will earn certification in higher-education administration, and she will pursue a doctorate in educational leadership.

Prine earned bachelor’s and master’s degrees in early-childhood education from Louisiana Tech University. She completed 3 years of graduate study in family relations and child development at Oklahoma State University. Aside from her 8 years at JCJC, she has taught at Northwestern State University of Louisiana, the University of Southern Mississippi, Pearl River Community College, and Presbyterian Christian School in Hattiesburg.

The Prines are the proud parents of Caleb, 20, a sophomore at JCJC, and Mary Grace, 16, a freshman at Presbyterian Christian School.

The Mississippi Child Care Resource and Referral Network is a project of the Mississippi State University Extension Service. It offers coordinated professional development and on-site technical assistance for care and education professionals, referrals for parents seeking child care, and a resource library for providers, directors, parents, and community members.

Lydia Bethay, a network regional technical assistant supervisor in professional development, said the national director’s credential is offered through the Aim4Excellence program offered by the McCormick Institute and the McCormick Center for Early Childhood Leadership at National Louis University in Wheeling, Illinois.

“Eleven Mississippians had completed the national director’s credential at the close of 2012,” Bethay said. “And we had another 28 enrolled in this program in 2013. Judy Prine is a good example of those who have completed the program.

“Earning the credential instills a new sense of pride,” she continued. “Those who have worked for a number of years as a director at a child-care center say that completing the credential course work gives them a renewed interest in early childhood. It also often results in a desire to revitalize their program, a bit like a fresh start.”
Jacob Megehee believes he needs a couple of things to boost the success of his cattle operation near Macon, Mississippi. Those things are a cool-season perennial forage that can survive Mississippi summers and a perennial summer legume that requires no nitrogen fertilizer.

Megehee and his wife, Martha, own Megehee Cattle Company. Their 140 head of crossbred cows with Charolais influence are bred with black Brangus bulls to produce small-eared black heifers and steers for the feeder market.

He took his request for two forages to the Mississippi State University Extension Service as a member of the Northeast Mississippi Producer Advisory Council, and he knows he was heard.

“Martha and I—well, our whole family—have a long history with Extension,” he explained. “Extension taught me the basic lessons for success back when I was showing livestock in 4-H.”

Megehee is the youngest of three sons raised in Pearl River County on a family dairy, beef, and hog farm. Those early days on the farm taught him how to wear many hats and to define success on his own terms.

During his 70-plus years, Megehee has been a livestock showman, a university scholar, a decorated combat veteran, a career military officer, a university administrator, a community college teacher, a civil servant, a crop and livestock producer, and a husband, father, and grandfather.

“I knew I was going to marry Martha when we were both in grade school, but I didn’t get that done until 1963, when I received my bachelor’s degree in dairy production at State,” he said. “Then the military called, and we didn’t get back to our dream of owning land and raising livestock back home until 1970.”

The life of an army medevac helicopter pilot took Megehee to Germany for 3 years and put him in the line of fire in Vietnam in 1967 and 1968. Afterwards, he tested new aircraft as a military pilot in Ft. Rucker, Alabama, and mustered out of active service in 1970. The Megehees were living on their land and raising cattle when he received his master’s degree in agricultural economics at MSU in 1972.

By Tim W. McAlavy
“That was a busy time,” Megehee said. “We had some stocker cattle, mamma cows, and three kids by then. I was flying three weekends a month with the National Guard, running the university’s South Farm, and working for the Mississippi Agricultural and Forestry Experiment Station. I started my PhD program, too, but never finished…I just burnt out.”

The Megehees concentrated on raising children, cattle, and crops for the next 20 years. During that time, he also taught agriculture at East Mississippi Community College, worked for the state health department, served as an emergency services coordinator in Noxubee County, and continued to serve in the National Guard.

Through it all, the Megehees banked on Extension information, programs, and specialists to help them improve their cattle and crops and start their children on their roads to success through participation in 4-H.

“They all showed livestock in 4-H, and they are all successful professionals now,” Megehee said. “Extension has done a lot for our family and our cattle operation.”

A voracious reader, Megehee said he and his wife rely on Extension information and specialists to keep their cattle healthy, raise quality forages and hay, and produce quality heifers and steers.

“We enroll a lot of our feeder steers in the Homeplace Producers Feeder Calf Board Sale, which is held in Hattiesburg,” he said. “We’ve put feeder steers in that marketing program for about 5 years now, and it has paid off as much as $200 extra per head. We sell most of our steers now through video auctions.”

The feeder calf board sale is a collaborative effort of producers, marketers, MSU Extension, Mississippi Farm Bureau Federation, Mississippi Beef Cattle Improvement Association, and the Mississippi Cattlemen’s Association. It allows producers to pool steers similar in size, color, weight, and breeding into truckload lots that many buyers prefer.

Producers sold more than 1,300 head in 18 loads at the sixth annual sale in August 2013, generating more than $1.3 million in receipts.

A similar sale, the Cattlemen’s Exchange Producer Sale, is held in April in Winona, Mississippi. Together, these innovative sales have sold more than 19,000 cattle and generated more than $15 million for participating producers.

Dr. Brandi Karisch, a beef specialist with a joint appointment in the Extension Service and Mississippi Agricultural and Forestry Experiment Station, said these sales give cattle producers more leverage in the market because many buyers prefer purchasing uniform lots of quality cattle from trusted producers.

Megehee credits Karisch and other MSU specialists—including Dr. Rocky Lemus, forage specialist, and Dr. Jane Parish, beef cattle specialist—with helping them improve their operation and profitability.

“Rocky Lemus has helped us improve our grass and hay quality, and Jane Parish gave us a computer program that we use to adjust the nutrition levels in our herd rations,” he said.

That program is an Excel spreadsheet developed by Extension specialists at several land-grant universities, Parish said. It helps producers evaluate the cost-effectiveness of different nutrient combinations and feed ingredients in beef cattle diets.

“The Megehees are good Extension clients,” Parish said. “They give us candid and thoughtful feedback that helps us improve our educational programs. Jacob and Martha are very engaged in agriculture and are leaders in the beef cattle industry within the state. They visit with lots of other producers throughout Mississippi and those outside the state, too. They are great people to bounce ideas off of and to get a sense of what needs to be done.”

Megehee said he also values the market outlook and forecasts provided by Dr. John Michael Riley, Extension agricultural economist, and said information and advice from the MSU College of Veterinary Medicine has helped him improve animal selection, health, and management in their beef herd.

“Extension programs bring dollars back to local communities by helping people succeed,” Megehee said. “Those added dollars ripple through our local and state economies. It has a very positive effect.

“Without the research and education offered by land-grant universities, America would not be a competitor on the international scene,” he added. “Those university programs are an investment in our future. Our farm and Extension background taught Martha and me how to succeed in life. We learned by doing and built our success in measures.”
The Mississippi State University Extension Service offers a variety of apps that place the tools users need right at their fingertips. A 2013 Pew Research Center study found that 56 percent of adults in the U.S. own smartphones. The Extension Service understands the value of offering information designed specifically for users to access on their smartphones and tablets.

Randy Loper, head of the Center for Technology Outreach (CTO), said he is excited about the opportunities Extension apps present to the public.

“We make every effort to stay abreast of new technology,” Loper said. “Creating apps uses technology that most of our clientele already have in their pockets or purses to provide useful tools that make their lives easier and more productive.”

The Extension Service has five free apps available for download: the Cattle Calculator, Mississippi Profiles, Extension Directory, Break Even Livestock/Commodities, and Master Gardeners. The first three can be found in the iTunes app store, and the last two are mobile web apps.

Dr. Brandid Karisch is an Extension beef specialist, Experiment Station scientist, and assistant professor in the MSU Department of Animal and Dairy Sciences. She provided the technical information that allowed CTO programmers to develop the Cattle Calculator app, which was produced at the request of Mississippi beef cattle producers. The Cattle Calculator offers producers the ability to assess issues related to reproduction, animal performance, and management. So far, this app has 834 downloads.

“Management assistance includes dosage calculations for dewormers and other medicines based on an animal’s weight and the manufacturer’s recommended dosage,” Karisch said. “It also provides frame scores and trailer stocking density.”

Reproduction-related calculations include expected calving dates based on known breeding dates, as well as breeding dates based on known calving dates. Cattle Calculator can also determine the number of days a cow has been pregnant based on the current date and a breeding date. It includes a breeding season calculator that provides calving and breeding dates based on a defined breeding season.

“The calculator provides insight into growth and overall performance with an adjusted birth weight based on the mother’s age, adjusted weaning weight, and adjusted yearly weight; average daily gain; and required gain to reach a certain projected endpoint,” Karisch explained.

The Mississippi Profiles app gives users the socioeconomic statistics for each of Mississippi’s 82 counties. These data were compiled by the CTO and the Center for Government and Community Development. It shows statistics on population, income, educational attainment, and employment.

Dr. Roberto Gallardo, an associate Extension professor with the CTO, played an instrumental role in the research and development of the Mississippi Profiles app.

“This app is intended primarily for anyone who wants to get a socioeconomic snapshot of their community and better understand trends,” Gallardo explained. “It can also be useful for grant-writing purposes.”

Gallardo’s goals do not end with the profiles app. He said he is excited about the endless possibilities apps provide in extending research to Mississippians.

“We recently started working on a grant with the MSU Department of Civil and Environmental Engineering to come up with some web apps to help farmers better understand the erosion on their fields,” Gallardo said. “We hope to get the apps completed within a year or so.”

The Break Even Livestock app allows users to calculate the break-even in price, break-even out price, and break-even cost of gain for a variety of livestock. Users input the beginning weight, number of days kept, expected pounds of gain per day, cost per pound of gain, and expected sell price per pound.

Dr. John Michael Riley, Extension agricultural economist, understands how this app can benefit the agricultural industry.
“The app is most useful for an individual who is buying and selling livestock in order to profit on the weight gain,” Riley explained. “The app can also be beneficial to someone who owns the livestock at birth, but this would require a less explicit knowledge of the cost of those animals’ weight gain.”

As technology progresses, Riley said he sees even more opportunities for producers to have the tools they need for success. “Like so many industries, agriculture will continue to benefit from technology,” Riley said. “Not only are producers receiving and reacting to information more quickly, but also these advancements have allowed producers to become more efficient in their productivity and their bottom lines.”

The Break Even Commodities app works in a similar fashion but is designed for crops. The user chooses the crop from a list of options and records the bushels per acre, selling price per bushel, and cost of production per acre to determine the break-even point or the profit/loss margin.

The Extension Directory app gives clients the ability to seek the expertise of more than 150 Extension agents instantly, no matter where the clients are. The directory app offers users the option of searching the directory by county, region, or agent’s name. It also offers maps to county offices and the ability to initiate an in-app phone call.

Kelli Alexander, CTO software architect, said she keeps the target user in mind when creating Extension apps.

“All the screens and controls are developed to make the user’s experience with the app as intuitive and easy as possible,” Alexander said.

The Master Gardener Association app allows certified Master Gardeners to input their own service activities and hours online. In the past, an Extension professional or a Master Gardener designated by the group had to enter each Master Gardener’s service report manually into a spreadsheet.

Dr. Lelia Scott Kelly, the Master Gardener state coordinator, credits the app for giving their organization the chance to transition to a new way of recording participants’ service. “With this new app, the Master Gardeners have the responsibility and the capability to report their service hours in a more timely and accurate manner,” Kelly explained. “This relieves others from having to do this for them.”

As technology advances, the Extension Service will use even more tools to reach out to Mississippians. Google Glass and other wearable technologies are already creating a buzz about their potential usefulness, particularly in the agricultural community. “Google Glass and ‘wearables’ offer hands-free operation, which would be useful for someone working outside or in a farm environment,” Loper said. “Being able to state commands to calculate chemical application rates or view upcoming weather data quickly would be helpful. I look forward to seeing what the future holds.”
If you ask Zach Senneff why Mississippi State University’s Student Chapter of the Society of American Foresters (SAF) is so successful, his answer is simple: dedication. “The students in this club work hard,” Senneff said. “We take pride in being from one of the best forestry schools in the nation. We also have great support and leadership from faculty, professional organizations, and sponsors. They keep us rolling in the right direction.”

Senneff, a Caledonia, Mississippi, native, is president of the student chapter and a junior forestry major in the MSU College of Forest Resources. The students’ hard work is evident in the numerous awards their organization consistently brings home from national competitions. Since 1996, the club has taken first, second, or third place in the SAF Outstanding Student Chapter category at national competition. Chapters are assessed on membership, service to members, community involvement, involvement in natural resource programs, and outside recognition. The assessment also takes into consideration the university’s forestry program as a whole. Last year, the group placed second in the outstanding chapter competition.

Students also compete against other forestry schools each year in physical and technical contests at the Southern Forestry Clubs Conclave. In 2013, they placed third overall in technical competitions, such as photogrammetry and timber estimation. They placed fourth overall in physical competitions, such as log chopping and pole felling.

“First of all, our students love the field they have chosen, and second, they understand what their involvement in the chapter means to their future success in the industry,” said Dr. Robert Grala, SAF student chapter faculty adviser and associate professor of forestry in the College of Forest Resources.

The 30 undergraduates who comprise the chapter have an opportunity to network with industry professionals, gain technical expertise, and sharpen their leadership skills.

By Susan Collins-Smith
Students can meet with and learn from current foresters during the national convention and at other gatherings. They are able to participate in any two special interest working groups. These groups focus on scientific subjects within the profession, such as forest ecology, wildlife management, fire management, soil conservation, and climatology.

Grala said involvement in the organization helps students become more familiar with the forestry profession and introduces them to experts already in the field.

“It is an important medium for getting connected to current issues, understanding each segment of the profession, and meeting potential employers,” Grala stressed.

As a member, Senneff said he has benefited and knows his fellow students have, too.

“The quality of the club has helped me mature and become a better leader,” Senneff explained. “It’s a great way to build a network of forestry industry contacts. And I know other members of the club have benefited in the same way.

“We also have numerous opportunities to get involved in the local community and on campus.”

Members help educate students and others in the community about the importance of forestry and good stewardship through several outreach avenues. For example, the group provides assistance during the annual Wood Magic Science Fair. During 2013, the club led volunteers in planting 7,200 seedlings on the MSU Golf Course. They set up booths and displays on campus during Arbor Day, Earth Day, and student recruitment events to explain the role of forestry. They travel to community colleges to showcase the College of Forest Resources and its programs.

The students also volunteer within the local community by participating in the Adopt-a-Highway program, Habitat for Humanity, and Project Learning Tree.

The club conducts fundraisers, such as concession sales and T-shirt sales, to raise money for special projects and trips. They also donate funds to charities such as St. Jude Children’s Hospital.

The College of Forest Resources is online at http://www.cfr.msstate.edu.
Thanks to four decades of dedicated research, Mississippi landowners have tools to manage their native deer populations and produce larger bucks.

After the successful efforts to restore Mississippi deer populations in the 1940s and ’50s, Mississippi State University’s white-tailed deer research began in earnest in the mid-1970s. Since that time, university efforts have expanded along with the state’s deer population.

“We have documented the genetic impacts of deer restoration during the 1940s through 1960s on the current deer population in Mississippi,” said Dr. Steve Demarais, the Dale Arner Distinguished Professor in the MSU Department of Wildlife, Fisheries, and Aquaculture.

He said researchers at the Deer Ecology and Management Lab have studied a variety of issues, making the lab one of the premier deer management research units in the United States.

The lab is a unit of the Forest and Wildlife Research Center in the College of Forest Resources.

“We have studied genetic issues from one region of the state to another, reproduction issues, predation concerns, and other factors that impact overall herd health,” Demarais explained. “Our goal is always to improve the quality of the herd.”

The wildlife biologist explained that their research sometimes challenges commonly held assumptions. For example, many assume that coyotes are to blame for low fawn numbers. While it is true that coyotes and bobcats can eat a significant number of fawns, many other factors also affect fawn survival.

“We wanted to address the knee-jerk reaction that all coyotes are bad. The answer is ‘it depends,’” he asserted. “We found that large populations of predators do not necessarily mean there will be fewer fawns surviving. Other factors, such as land use patterns and escape cover for fawns, also are important.”
In 2013, deer biologists at the lab launched a website to provide a one-stop location with all the information Mississippi hunters and deer managers might need (msdeerlab.com). The website gives information about predators, habitat management, food plots, breeding season variation, population dynamics, antler development, and diseases and parasites. Links on the site help hunters score trophy sizes based on photos or actual antlers from harvested bucks.

Demarais said lab researchers developed the first Deer Management Assistance Program in cooperation with the Mississippi Department of Wildlife, Fisheries, and Parks.

“This landowner assistance program has been widely emulated across the South with deer management input on millions of acres,” he pointed out. “We were the first to document impacts of unbalanced ratios of bucks to does and the first to document breeding success of bucks in wild deer populations and how dominance affects breeding success in pens. And we were the first to document multiple paternity in white-tailed deer—that is, two bucks that sire fawns by the same dam.”

Demarais said MSU is a leader in studying effects of antler-based selective harvest on deer populations. The scientists found that targeting bucks with certain antler characteristics can have both positive and negative effects on deer populations, depending on the antler characteristics selected and the intensity of harvest.

MSU biologists also developed software that can calculate the antler size and age of bucks from trail camera photos. A user uploads a good trail photo of a buck and then uses a computer mouse to score the antlers on the screen. The product is marketed under the name BuckScore.

Dr. Bronson Strickland, a wildlife specialist with the MSU Extension Service and a biologist in the Forest and Wildlife Research Center, explained that researchers have documented the differences in deer from one region of the state to another.

“Mississippi deer in the Delta average larger than those found in south Texas, an area known for trophy bucks,” Strickland said. “But the deer in Mississippi’s lower coastal plain are significantly smaller. We also studied regional variations of antler sizes.”

Scientists discovered that nutrition is a major limiting factor in the forested lands of the lower coastal plain compared with the rich agricultural fields in the Delta.

“The good news is that improving the nutritional quality in the south Mississippi habitats over two generations of deer—6 to 10 years—can produce antler sizes equivalent to the Delta bucks,” Strickland asserted. “Land management has a big impact. Even if the land is used for timber, deer need plenty of ground vegetation.

“While certain types of forest management, like closed canopies, shade out the forage for deer, if landowners stagger harvests so that trees are at different ages, deer will have more options,” he added.

Deer grow larger in areas with significant agricultural activity, which can please hunters but frustrate farmers whose fields are robbed by opportunistic wildlife. MSU biologists are studying the impact of deer on soybean production in hopes of helping farmers mitigate the damage.

“Deer and soybeans are each billion-dollar industries in Mississippi,” Strickland pointed out. “We need to determine when it is in the producers’ best interests economically to control deer.”

Strickland indicated that deer can actually improve soybean yields in some cases.

“The impact will depend on soybeans’ stage of growth,” he explained. “When soybeans are first coming out of the ground, deer can destroy the plant. This destruction typically occurs around the edge of the field, but it can occur deeper into the field if there are a lot of deer on the property. However, deer nips later in the plant’s growth can actually promote more bean development.”

MSU scientists also are evaluating the cost and effectiveness of deer repellents. The challenge for biologists is finding the “sweet spot” between using the repellents to protect the most vulnerable areas of the field and allowing deer browsing that may actually improve soybean yields.

“But the bottom line is the bottom line,” Strickland stressed. “These strategies must be shown to be financially beneficial to the farmer.

“Mississippi farmers will always have problems when there are too many deer, so we always need hunters to help control the deer population,” he added. “Harvesting in agricultural areas can have two important impacts. First, harvesting deer will minimize browsing pressure on soybeans and other crops. Second, some farmers can generate additional income by leasing the forested areas of their properties to hunters.”

Dr. Jerry Belant, associate professor of wildlife ecology and management, is also involved in the Deer Ecology and Management Lab. He directs the Center for Resolving Human-Wildlife Conflicts at MSU.
With 12 chicken houses and 10 years of experience in the poultry business, Delean Robertson of McComb, Mississippi, knows the important role women play in agriculture.

When Robertson’s husband, Donald, suggested starting a chicken farm in 2004 so he could quit his off-shore job and be home more often, she said everything seemed to fall into place as if it was meant to be. The loan for Straight Arrow Farm was approved quickly. Robertson, an auditor assistant, transferred from Citizens Bank in Columbia, Mississippi, to a closer branch in Magnolia.

“God seemed to be lining everything up for us,” she said. “Little did we know that my husband’s crew off-shore would be the ones that were killed when Deepwater Horizon blew up. God protected us by letting the plan for the farm work out before that happened.”

Robertson grew up on a dairy farm, so she was no newcomer to agriculture. When they started the poultry farm, Robertson helped with everything from cleaning chicken houses to setting up the houses for baby chicks and driving tractors. Being diagnosed with fibromyalgia in 2009 put an end to her intense physical labor in the farming venture.

“I helped with all of it—bookkeeping, running errands, driving tractors, cleaning the chicken houses, setting up the houses for baby chicks,” she said. “The physical part of the business became too difficult for me once I was diagnosed, though.”

The Robertsons expanded the farm from 6 houses to 12 in 2012, making their farm the largest square footage, single-owner farm in the McComb division of Sanderson Farms. They raise more than 2 million pounds of chicken every 3 months.

“The realization that we feed millions of people every year is the most rewarding experience,” she said. “Growing up on a farm, I learned a lot of valuable lessons for life. It is a heritage that has been given to me by my parents, and I hope to be able to give the same to my children and grandchildren.”

When Robertson got involved with Mississippi Women for Agriculture in 2008, she learned practical tips for running a farm and found camaraderie with other women working in the industry. Robertson was on the first Mississippi Women for Agriculture board and has a lifetime membership.

“I believe for an ag business to be successful, it requires the owners to know all that they possibly can know about their industry,” she said. “Women are often the behind-the-scenes support on the farm. Educating the younger generations seems to be a big role that women have in the ag industry. The children of today will be leaders of tomorrow, so it’s essential they understand the importance of agriculture.”

The poultry industry has appreciated Robertson’s leadership, according to Sylvia Clark, a Mississippi State University Extension Service agent for family and consumer sciences who serves on the Mississippi Women for Agriculture board with Robertson.

“Delean is a go-getter and has been a real leader in the poultry industry for years,” Clark said. “Her extensive experience in all aspects of being a poultry grower can give others practical insight into making their businesses successful. She’s mentoring the next generation of businesswomen involved in poultry farming.”

1/82: Sharkey County

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Mont Helena
(Photo by Kat Lawrence)

County Seat: Rolling Fork
Population: 4,799
Municipalities: Anguilla, Cary
Commodities: Corn, Soybeans, Cotton, Rice, Wheat, Grain Sorghum, Catfish, Peanuts, Pecans
Industries: Agriculture
Natural Resources: Wildlife, rich Delta farmland along Deer Creek, Delta National Forest (the nation’s largest bottomland hardwood forest), Twin Oaks Wildlife Management Area, Theodore Roosevelt National Wildlife Refuge, and prehistoric Indian mounds
History Notes: The Steele’s Bayou Civil War Expedition at Rolling Fork (sometimes called the Battle of Rolling Fork) took place in March 1863 as part of the Vicksburg campaign. Admiral David Porter’s Mississippi River Squadron traveled Steele’s Bayou into Deer Creek and stopped Major General William T. Sherman’s march to the sea.
Attractions: Muddy Waters Blues Trail marker, Muddy Waters blues cabin, prehistoric Indian mounds, chainsaw-carved bears, Delta National Forest, The Great Delta Bear Affair, Little Sunflower River paddling trail, and the local musical re-creation “Mont Helena: A Dream Revisited”

Did you know? On Nov. 14, 1902, at the invitation of Mississippi Governor Andrew H. Longino, President Theodore (Teddy) Roosevelt visited the Onward area for a bear hunt. Unlike the other hunters in the group, President Roosevelt had not taken a bear. Hunting guide Holt Collier, who was born a slave and served as a Confederate cavalryman, located an adult bear, subdued it, and tied it to a tree. Roosevelt was brought to the site but refused to shoot the bear. Newspaper cartoonists erroneously recreated the scene with a scared, shaken bear cub, giving rise to the stuffed animals we now call teddy bears.

“The Sharkey County area is rich in tradition, history, natural resources, talent, and camaraderie. The spirit of volunteerism in the area helps feed the vision for a bright future. I am blessed to serve here.”

Emily Carter, MSU Extension agent

Editor’s note: 1/82 is a regular feature highlighting one of Mississippi’s 82 counties.
4-H Volunteers Honored for Service at Conference

Volunteer leaders showed their commitment to the state’s youth when they spent 2 days at Mississippi State University learning how to do their jobs even better.

“A highlight of our conference each year is the honoring of our outstanding volunteers,” said Harvey Gordon, Extension 4-H youth development specialist. “This year, we honored 12 different volunteers for their dedication and service to the youth of the state through the 4-H program.”

Meleoline Cooperwood of Lee County, Dot Vance of Lauderdale County, Courtney Headley of Oktibbeha County, and Deborah Munn of Pontotoc County were named Volunteers of the Year.

Debbie Hill of Humphreys County, Ruby Beckley of Lee County, Linda Ellis of Lowndes County, and Audra Chism of Pontotoc County received the Outstanding Lifetime Volunteer award.

LaKezia Ham and Kimberly Englett of Lowndes County, Ricky Davis of Lee County, and Stephanie McMillian of Tishomingo County received Rising Star awards.

MSU Economist Named a Top Woman in Business

Dr. Becky Smith, director of the Mississippi State University Extension Center for Economic Education and Financial Literacy, has been an advocate for education since she was a child.

Because of her impact on teachers, students, and businesses, the Mississippi Business Journal recently named Smith one of Mississippi’s 50 leading businesswomen and honored her at a luncheon.

As an Extension professor, Smith spends the bulk of her time working with teachers, college students, agri-tourism operators, and community leaders. She is the only person in the South trained to facilitate the International Economics Summit, a role-playing event for high school students that involves research into global issues, economics, and trade.

MSU Students, Faculty Win Weed Science Honors

The Southern Weed Science Society recently honored several Mississippi State University students and faculty members for their outstanding contributions.

Alana Blaine of Starkville, Mississippi, won first place in the Master of Science paper competition for her paper, titled “The Effect of Dicamba Concentration and Application Timing on Soybean Growth and Yield.” Blaine is an MSU graduate student studying weed science.

Garret Montgomery of Union City, Tennessee, won a second-place award in the Master of Science speech contest with his presentation on how a rice cultivar responded to an herbicide used to control annual broadleaf weeds. Montgomery was also elected vice-chairman of the society’s Graduate Student Organization. He is a weed science graduate student in the Department of Plant and Soil Sciences.

Tyler Dixon of Boyle, Mississippi, won first place in the Master of Science poster competition for his poster, titled “Evaluation of Weed Control Programs in Enlist Cotton in the Midsouth.” Dixon is an MSU graduate student in the Department of Plant and Soil Sciences.

Kentucky native Gary Cundiff won second place in the PhD poster competition with his poster, titled “The Effect of a Deactivation Agent on Various Concentrations of Dicamba.”

Dr. Dan Reynolds, a professor in the Department of Plant and Soil Sciences, received the Southern Weed Science Society Distinguished Service Award. Reynolds holds the Triplett Endowed Chair in Agronomy. Reynolds has a three-way appointment with the College of Agriculture and Life Sciences, the Mississippi Agricultural and Forestry Experiment Station, and the MSU Extension Service.
Dr. Jay McCurdy, an assistant Extension professor, received the Southern Weed Science Society Outstanding PhD Student Award for his doctoral work at Auburn University. McCurdy is a turf specialist in the MSU Department of Plant and Soil Sciences.

Dr. Darrin Dodds, MSU Extension cotton specialist, was recently named the 2014 Extension Cotton Specialist of the Year, an award based on leadership and industry service.

Dodds received his doctoral degree at Mississippi State University and has worked at MSU for 6 years studying cotton variety performance, management, fertility, plant growth regulator use, irrigation management, and weed control.

Dr. Joe Street, MSU Extension Service associate director, said Dodds’s dedication to the industry helps Mississippi remain a leader in agricultural production.

The Extension Cotton Specialist of the Year award has been sponsored by Bayer Cropscience since 2008, and each winner is chosen by a panel of peers.

MSU Leaders Tapped for National Program

Two Mississippi State University administrators were accepted into a 2-year leadership development program that will connect them with food systems peers and industry professionals.

Dr. Peter Ryan, MSU associate provost, and Dr. Michael Newman, professor and director of the MSU School of Human Sciences, joined the national Food Systems Leadership Institute’s fall 2013 class.

The institute is an executive-level program designed to prepare participants for greater responsibilities within their organizations and in the broader context of food systems programs, including academia, industry, and government. Participants attend three weeklong residential sessions at host institutions, including California Polytechnic University at San Luis Obispo, North Carolina State University, and The Ohio State University.

A Mississippi State University forage expert received an award for outstanding contributions to the field from the American Forage and Grassland Council during its recent national meeting.

Dr. Rocky Lemus was recognized with the merit award for superior contributions to forage and grassland agriculture. He has a joint appointment with the MSU Extension Service and the Mississippi Agricultural and Forestry Experiment Station.

Members of the council represent the academic community, producers, private industry, institutes, and foundations. They promote and develop the forage industry to produce quality forage and grasslands.

Lemus received his master’s degree in agronomy from Iowa State University and a doctorate in crop and soil environmental sciences from Virginia Polytechnic Institute and State University. Before coming to MSU in 2007, he was an assistant professor in the Agricultural Sciences Department at Texas A&M University-Commerce, where he was responsible for teaching, extension, and research.

Lemus Receives Award for Forage Contributions
Mississippi State University’s ongoing capital campaign is at work, seeking ways to support the long-range strategic goals of the 136-year-old institution. With campaign contributions from alumni and friends, the College of Forest Resources, in particular, can extend its reach worldwide through teaching, research, and service.

Over the course of Infinite Impact: The Mississippi State University Campaign, the College of Forest Resources seeks $32 million in private gifts for endowed and spendable funds for an array of priorities. Gifts can continue the college’s vision and draw the most promising students and renowned faculty. The highly respected college is the only 4-year program in the state that offers degrees in forest resources, wildlife, fisheries, and aquaculture.

A significant gift could create an endowment that can advance the college’s mission and help educate students who respect the importance of habitat, population, hunting, fishing, and timber management.

“An endowment established with a private gift allows our college to lead in solving environmental issues facing our state and nation,” said College of Forest Resources Dean George M. Hopper. “We are ready to join with alumni and friends to solve the environmental challenges facing us today, tomorrow, and beyond.”

Campaign gifts can bolster student recruitment and engage young people in environmental education, attracting a diverse student body to the college’s curriculum. Furthermore, campaign gifts can establish annual and endowed scholarships that will equip today’s bright, capable students to become tomorrow’s natural resource professionals. These scholarships will both fulfill the needs of the profession and enable the recipients to become pioneers of discovery and future leaders in their fields.

The College of Forest Resources is working to meet the world’s needs. Statistics from the U.S. Department of Agriculture indicate that agriculture, food production, and renewal of natural resources will generate nearly 109,000 positions in the next few years for individuals with at least a bachelor’s degree in food, renewable energy, or environmental specialties. With gifts, the college can continue to develop cutting-edge programs and offer the best all-around educational experience.

“We need professionals astute in the management and utilization of our renewable resources, as well as in the protection of the environment,” Hopper said. “Leaders are needed in wildlife and fisheries management to extend habitats, and scientists are needed to advance our country into an energy-independent future through the development of renewable fuels and bioproducts.”

Infinite Impact: The Mississippi State University Campaign seeks to bring more endowed chairs to the college. A chair in large animal management will conduct research and mentor future leaders in wildlife management while advocating conservation through hunting. Likewise, a renewable-energy chair, along with licensed technology, will ensure that MSU continues to be a leader in bioenergy. Both positions can become a reality with gifts for endowments.

Endowed chairs may be funded with at least $1.5 million, while professorships are typically $500,000. These positions will recognize scholarly excellence and provide competitive salaries and resources for research, travel, and professional development for distinguished faculty members.

More alumni and friends are beginning to invest in endowed positions at the university. James C. Kennedy, chairman of Atlanta-based Cox Enterprises, is one of the college’s most devoted donors. He understands the importance of endowed positions and support for the college.

Kennedy recently gave a campaign gift of real estate in Carroll County, Mississippi, valued at more than $4.7 million. This gift increases the endowment for the James C. Kennedy Chair in Waterfowl and Wetlands Conservation he created in 2008, and it serves as a lead contribution for MSU’s Cardie Clark and Diane Worthington Young Wetland Education Theater slated for construction this spring.

“The environment is something we all have in common, and it’s important to educate people today on the impact we can have tomorrow,” Kennedy said. “As a landowner and frequent visitor to the state, I’m happy to continue my
support of the university and look forward to the completion of a wetland education theater for our future generations of waterfowl and wetlands conservationists.”

Although not an MSU alumnus, Kennedy is a fervent conservationist. He founded Cox Conserves, a national sustainability program that focuses on reducing waste, decreasing energy consumption, and conserving water.

“This incredibly generous gift from Jim Kennedy is a prime example of how the capital campaign will shape the future of Mississippi State University,” said MSU President Mark E. Keenum. “These resources will provide outdoor teaching and research laboratories for faculty and students and provide a showcase for innovative conservation and management practices for future generations.”

The campaign also seeks gifts for facilities and new laboratories that will foster growth and allow the college to excel beyond its current limits. Specifically, the College of Forest Resources seeks to add classrooms, laboratories, and offices to Thompson Hall. Another priority includes an endowment for a mechanical testing laboratory; these technologies provide new markets for natural resources and increase economic growth potential for Mississippi and the nation.

Alumni and friends may assist the college with campaign priorities through 2018. For giving information, contact Jeff Little, development director for the college and The Bulldog Forest, at (662) 325-8151 or by email at jlittle@foundation.msstate.edu.
A Buckeye butterfly and bees feed on the early flowers of the Blue Fortune agastache. This plant is loved for its beauty, toughness, and licorice scent.