Improving Animal and Human Lives … page 16

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

Mississippi State University
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The fall semester is underway at Mississippi State University, and there’s nothing quite like the buzz of anticipation as we reset our calendars to the rhythms of the school year. Enrollment in the Division of Agriculture, Forestry, and Veterinary Medicine is up again for the 2015–16 school year, with an 8.2 percent increase in the College of Agriculture and Life Sciences, 0.6 percent in the College of Forest Resources, and 6 percent in the College of Veterinary Medicine. We welcome all of these students to our campus and know they will make their mark on Mississippi’s flagship university.

Throughout the summer, MSU and the division hosted numerous educational opportunities for young people. The Fun with Food Camp, sponsored by CALS and directed by Dr. Sylvia Byrd, professor in the Department of Food Science, Nutrition, and Health Promotion, received a $50,000 donation from Kroger in support of this camp’s efforts to introduce new and healthy food choices to kids. Other popular camps sponsored by departments within the division include Bug and Plant Camp, Horticulture and Landscape Architecture Camp, Veterinary Camp, Rural Medical Scholars, FashionPrep15: Metamorphosis, Livestock Judging, Cake Boss, and three different conservation camps.

Our 4-H’ers were busy, too! From the annual Club Congress held on campus in late May to project achievement days, horse shows, the cooperative tour, and national team competitions, these outstanding and hardworking young people stayed busy making the best 4-H Day at the September 19 football game, where we recognized Toyota for funding the 4-H Tech Whiz program.

Unmanned aerial systems (UAS) continue to be a significant focus on campus. This fall, MSU will host a meeting of the Alliance for System Safety of UAS through Research Excellence (ASSURE) and the Federal Aviation Administration. ASSURE is a Mississippi State University-led consortium that includes 15 core university members and more than 100 of the world’s top UAS and aerospace companies working together to integrate unmanned aircraft into the national airspace with minimal changes to the current system. Each member university will conduct its own UAS-related research, but the center’s work will be concentrated at NASA’s Stennis Space Center in Hancock County to take advantage of airspace over the Gulf of Mexico, in the Mississippi Delta, and around Mississippi State’s Raspet Flight Research Lab in Starkville. We are excited about the many opportunities this field of study offers our students, researchers, and clients.

Under President Mark Keenum’s leadership, MSU is partnering with universities around the world. These relationships will benefit our students and faculty by providing exchange opportunities, encouraging information sharing, and bringing diverse students, faculty, and researchers to study at MSU. As our researchers develop new knowledge, we see more clearly how scientific advancements made at MSU can translate to improving the living standards of some of the world’s most impoverished and malnourished citizens. Be sure to read about women who are growing soybeans in Africa and the work our students, staff, and faculty are doing to enhance lives—not just at home, but abroad.

With stories about everything from forages and forestry to fire ants, we hope you enjoy this issue of Mississippi LandMarks.

Gregory A. Bohach
Dr. Rocky Lemus leads MSU’s official forage variety trials. Plots include 20 different species and 110 varieties at four different locations.
Dr. Rocky Lemus knows there are times when watching grass grow is incredibly exciting.

Lemus, an associate professor of forage systems with the Mississippi State University Extension Service and Mississippi Agricultural and Forestry Experiment Station, is always plotting his next variety trial.

“MSU has the only complete forage testing plots in the United States,” he said. “We have 20 different species, 110 varieties, and four different locations.”

Lemus said the locations—Starkville, Holly Springs, Newton, and Poplarville—help reveal each forage’s ability to adapt to different soil types and climates across the state. The results are published in information bulletins throughout the year. They focus on annual cool-season forages, warm-season forages, perennial cool-season forages, and native grasses.

“This information is relevant to the companies that sell the forages, as well as cattle and hay producers. We provide an unbiased assessment of the performance of the forages and give producers an information source other than the company’s marketing,” he said.

Lemus said warm-season perennial grasses in the trials include bermudagrass and bahiagrass. Sorghum-sudangrass hybrids and pearl millets are summer annual grasses. Annual ryegrass and small grains (oats, wheat, and cereal rye) are common winter annual grasses. Perennial cool-season tall fescue is grown extensively in the Prairie sections and in north Mississippi. Perennial legumes include sericea lespedeza.

Annual lespedeza and alyce clover are warm-season annual legumes in the trials. Alfalfa, white clovers, and red clovers are perennial cool-season legumes. A large number of cool-season annual legumes include crimson, ball, berseem, and arrowleaf clovers. Vetch and wild winter peas are also cool-season annual legumes.

“When I came to MSU in 2007, the only thing we were testing was annual ryegrass,” Lemus said. “Producers needed information on other species, so we soon started expanding to other species.”

Josh White, manager of the forage test plots, oversees planting, growing, and analyzing the varieties. In addition to weighing yields on test plots, researchers study varieties under grazing pressure.

“Producers want to see how forages perform with cattle on them. In those cases, we weigh the cows every 20 days to see how well they are gaining weight,” White said.

Andy Young of the East Texas Seed Co. in Tyler, Texas, said the MSU-provided variety trials are essential for the sales and marketing of their bermudagrass, Texas Tough +.

“This data backs up what we are telling people about our product,” Young said. “MSU is the only university doing field trials on bermudagrass at this time.”

Young said growers benefit from the trials at different locations.

“We know it will grow well in southern areas, but we need to know how well it grows farther north,” he said. “It’s good to know how well it performs in different soil types, but bermuda will grow just about anywhere, except areas prone to flooding.”

Results are printed in Mississippi Agricultural and Forestry Experiment Station forage variety testing bulletins, which are published at least three times a year. Printouts with variety trial results are available at county Extension offices. Results also are available on the university website at http://mafes.msstate.edu/variety-trials/forage.asp.

The MSU forage program also provides and promotes educational field days throughout the year. In addition to hosting events on the main campus in Starkville, MSU’s forage specialists promote in-state tours and field days in locations such as Prairie, Holly Springs, Thaxton, Okolona, Corinth, Poplarville, White Sand, Waynesboro, Tylertown, Newton, Mendenhall, Philadelphia, Newton, and other locations across the state.

Lemus, director of the MSU Extension Center for Forage Excellence and Stewardship, maintains an extensive Internet presence for Mississippi forages at http://msucares.com/crops/forages and on Facebook (Mississippi Forages) and Twitter (@MSForages). For forage-related events across the state, visit http://forages.pss.msstate.edu/events.html.

By Linda Breazeale  •  Photos by Kat Lawrence
EQUALITY
FOR WOMEN FARMERS
Helps Feed the World

Fridah Mubichi, project member, facilitates focus groups in rural Mozambique. (Photo by Nina Furstenau)
In regions across the globe, women in agriculture have less access to resources and opportunities than their male counterparts, according to the Food and Agriculture Organization of the United Nations.

Identifying gender disparity and breaking down barriers can help solve food insecurity and protein malnutrition within families, across communities, and around the globe. In fact, the U.S. Agency for International Development, or USAID, estimated that closing the gender gap would increase yields by 30 percent, feeding an additional 150 million people.

Mississippi State University is one of five universities involved in a 5-year project aimed at enabling small-scale farmers to meet the rising demand for soybeans and to feed their families. The research is enabling low-resource countries to address problems of food insecurity and protein malnutrition. The project is funded through USAID and is part of the Feed the Future Innovation Lab for Soybean Value Chain Research, or Soybean Innovation Lab.

Dr. Kathleen Ragsdale, associate research professor in the university’s Social Science Research Center, and other collaborators are evaluating gender empowerment using the Women’s Empowerment in Agriculture Index (WEAI). They are studying income generation and identifying constraints for women integrating soybeans into their cropping mix and household diets.

Ragsdale, who also is a scientist with the Mississippi Agricultural and Forestry Experiment Station, is co-principal investigator on the project alongside Dr. Jill Findleis, professor of agricultural and applied economics at the University of Missouri.

“We are assessing gender equity between women and men farmers within and across the same households, villages, and regions in rural Ghana and Mozambique, as well as the role of women as soy producers,” Ragsdale said. “Our overarching goal is to understand gender inequalities in agricultural sectors in Sub-Saharan Africa in order to help transition rural women farmers, their families, and their communities toward better food security, health, and economic development.”

The researchers adapted the WEAI to include soy-focused modules regarding past experiences with soybean production, soybean seed access, types of soybean varieties planted, inoculum use on soybeans, inoculum access, phosphorus fertilizer use, pesticide use, planting methods, and harvest periods.

“This research is important because women farmers in Sub-Saharan Africa—who produce approximately 80 percent of the food in this region—have different priorities, power over decision making, and access to resources than men,” Ragsdale said.

“Soy is an ideal crop for Ghana and Mozambique and is increasingly utilized in lower-latitude regions of the world where food insecurity and poverty rates are high and where poor populations are often deficient in protein consumption. Our project will help further advance soy production and utilization in Sub-Saharan Africa and other regions.”

Ghana is situated in western Africa and is about the size of the state of Oregon. It has a population of about 27 million, with 75 percent of the population living in the southern portion of the country. Northern Ghana is considered a low-income, food-deficient area. The World Food Programme reported that poverty is the leading cause of food insecurity in northern Ghana. The region has some of the highest rates of malnutrition in the country, with four out of ten children malnourished.

Mozambique is approximately three times larger than Ghana in terms of landmass and slightly smaller in terms of population. Mozambique is home to 24.5 million people. It is one of the most impoverished countries in the world, ranking on the United Nations Development Programme’s 2014 Human Development Index at 178 out of 187 countries.

Ragsdale’s team visited Ghana twice to gain permission to survey community members and collect baseline data in
Mississippi State scientists Drs. George Awuni and Dan Reynolds are part of the Soybean Innovation Lab, working to enable small-scale Ghanaian farmers to share in the rising demand for soybeans in Ghana.

Awuni is a native of Ghana and a postdoctoral researcher in the university’s Mississippi Agricultural and Forestry Experiment Station. Reynolds holds the Edgar E. and Winifred B. Hartwig Endowed Chair in Soybean Agronomy in the university’s Department of Plant and Soil Sciences.

Soybean is a relatively new crop in Ghana and is primarily used as a rotation crop. The introduction of the soybean is significant in Ghana.

Maize is the most important staple crop in Ghana and accounts for more than 50 percent of cereal production in the country, with rice a close second. Ghana is not self-sufficient in either of these crops. All of the crops are cultivated manually, and most are not irrigated.

“Introducing the agronomic practices that improve soybean yield will also be beneficial for corn and rice production, increasing productivity and meeting the country’s growing demand,” Awuni said. “This is essential to improving food security.”

Soybeans provide protein and nutrition and aid in soil fertility. Ghanaians can use soybeans to prepare more than 20 different protein meals, including soy meat as a meat substitute similar to tofu, Awuni added.

Small-plot farmers in Ghana farm about 5 acres or less and harvest about 15 bushels of soybeans per acre. That’s a relatively small yield compared to the average Mississippi yield, which was 52 bushels per acre in 2014.

Awuni and Reynolds are responsible for implementing research and demonstration farms in Ghana. Research on the farms evaluates issues related to germination, planting date, soil amendments, planting methods, and varietal performance. Farms also serve as hubs for research related to seed quality, soil improvement, and nodulation, a process critical to plant growth in soybeans.

This year the team will conduct its first field day to teach others how to disseminate information to the growers in Ghana. The team hopes that the field days will help farmers increase their income and provide more low-cost, high-quality protein and oil to rural and urban communities in Sub-Saharan Africa.
New Insect, Weed, and Disease Threats

CHALLENGE PRODUCERS

Farmers know how to handle ongoing threats posed by insects, diseases, and weeds, but new threats continue to surface that keep them on high alert and change the way they operate.

Mississippi Agricultural and Forestry Experiment Station researchers and MSU Extension Service specialists work to monitor the arrival of new crop threats, determine the best way to address the problem, and pass on those recommendations to producers.

Extension entomologist Dr. Angus Catchot is leading the charge against kudzu bugs in soybeans and sugarcane aphids in grain sorghum. Both entered the state in 2013, and their populations and impact are building.

“We probably didn’t treat more than 5,000 acres for kudzu bugs last year, and just 2,500 acres the year before,” Catchot said. “I’ve had numerous calls this spring about kudzu bugs in places we’ve not seen them before. Apparently they made a pretty big jump in numbers out of overwintering.”

Kudzu bugs overwinter in protected places, such as wooded areas, homes, and sheds. As they emerge in the spring, they head to wisteria, kudzu, or early-planted soybean fields.

Catchot said these insects are highly visible because their dark brown color makes them stand out on the green soybean plants. They don’t appear to cause much damage until their numbers get high.

Trey Bullock is a crop consultant with Bullock’s Ag Consulting in Hattiesburg. He has been dealing with kudzu bugs and said management decisions related to these insects are hard to make.

“We had some really bad numbers last year, but we didn’t have yield loss,” Bullock said. “This year, we started out with probably the earliest beans planted in the state and for 100 to 150 yards around the borders of the fields, we had an average of nine or ten kudzu bugs per plant.

“With that many bugs on a plant, you’d think it would be wilted or something, but I saw nothing,” he said. “We made a decision not to treat, and when we came back and checked again, the population had declined significantly.”
Plant pathologist Dr. Tom Allen said fungicide-resistant frogeye leaf spot in soybeans has recently become a major problem.

“During this project, we thought we might not find much resistance, but by the fourth year, we realized that we couldn’t find any fields where the fungicide would still work,” Allen said.

Mississippi producers typically plant high-yielding soybean varieties, which can be more susceptible to frogeye leaf spot. The occurrence of fungicide resistance within the frogeye leaf spot fungal population likely occurred because it is common management practice to spray a strobilurin fungicide for late-season disease management at the R3–R4 growth stage as a preventative measure. Allen said that allowed frogeye leaf spot to develop resistance to this fungicide class.

Catchot said he expects kudzu bug numbers to make a big jump this year and reach high numbers. MSU researchers have already made recommendations on how to manage these pests.

The sugarcane aphid is a pest that makes a direct threat to yields in grain sorghum.

“We found sugarcane aphids in one county in 2013, and, last year, they had spread to every county that had grain sorghum,” Catchot said. “They are very damaging if not controlled, so we put a lot of effort into education, treatment thresholds, and what products to use for this pest.”

Another insect pest that looms on the horizon is the old world bollworm. It was recently discovered in Brazil and has been confirmed in Puerto Rico.

“It’s currently not in the U.S., but it seems to be making its way here,” Catchot said. “The question is when.”

At first glance, old world bollworm looks identical to the traditional bollworm found in soybeans and other crops. Treatment is possible, but the insect tends to be more tolerant of some insecticides typically used in soybeans to control pests.

“This insect will change the way we do things, and it will be important to stay on top of it,” he said.

The newest threats in both weeds and plant diseases come from those that have developed resistance to chemical treatments.

Dr. Tom Allen, a plant pathologist with MSU Extension and the Mississippi Agricultural and Forestry Experiment Station at MSU’s Delta Research and Extension Center in Stoneville, said fungicide-resistant frogeye leaf spot in soybeans has recently become a major problem.

“A graduate student conducted an extensive survey of the frogeye leaf spot fungal population in the state and determined that resistance to the most commonly used class of fungicides is already present in 73 of the state’s 82 counties,” Allen said. “When we started the project, we thought we might not find much resistance, but by the second year, we were concerned that we wouldn’t find any fields where the fungicide would still work.”

Mississippi producers typically plant high-yielding soybean varieties, which in some cases are more susceptible to frogeye leaf spot. The occurrence of fungicide resistance within the frogeye leaf spot fungal population likely occurred because it is common management practice to spray a strobilurin fungicide for late-season disease management at the R3–R4 growth stage as a preventative measure. Allen said that allowed frogeye leaf spot to develop resistance to this fungicide class.
There are other fungicide classes that can be used to manage this disease, and there are frogeye leafspot-resistant soybean varieties available, but they may not yield as well, so they’re not the preferred varieties,” he said. “We have to change some management practices, rely on resistant varieties, and apply alternative fungicide classes to help manage frogeye leaf spot in the future.”

A second disease problem Mississippi producers are facing is actually the resurgence of an old problem. Nematodes, nearly microscopic roundworms, have become a greater threat to cotton and soybeans because of continuous cropping practices. Nematodes prefer certain plants as hosts, and when one crop is planted continuously, it allows the parasite to flourish. Crop rotation introduces a different crop that the nematode population may not affect and can help by reducing nematode numbers.

“We don’t have enough folks taking soil samples and sending them to the diagnostic lab and then changing their overall management practices because of the particular nematode species or population numbers they have in their soil,” Allen said.

Dr. Jason Bond, a weed scientist with the Mississippi Agricultural and Forestry Experiment Station and MSU Extension, said there are nine glyphosate-resistant weeds in Mississippi, but the biggest problem by far is battling resistant Palmer amaranth in the summer and Italian ryegrass in the winter.

“We use paraquat to control any Palmer amaranth that has emerged and to control Italian ryegrass prior to planting our spring crops,” Bond said. “If we were to identify Palmer amaranth or Italian ryegrass that is resistant to paraquat, or Palmer amaranth that is resistant to Liberty, that would be a game changer.”

Extension agents work alongside producers and crop consultants year-round to identify new threats and manage crop conditions, and MSU researchers work to develop effective strategies to handle the challenge. Up-to-the-minute crop information from MSU can be found online at http://www.mississippi-crops.com.

By Bonnie Coblentz

Weed scientist Dr. Jason Bond said the two biggest weed threats in Mississippi are Palmer amaranth and Italian ryegrass. (Photo by Kenner Patton)
Dr. Cathleen Mochal, CVM assistant clinical professor, said physical soundness is critical for the usefulness of most horses.
Like the star athletes they are, horses have access in Mississippi to many of the same therapies humans need after exercise. Equine veterinarians at the MSU College of Veterinary Medicine offer a variety of treatments and surgeries to mend potentially career-ending conditions.

Dr. Kathleen Mochal, assistant clinical professor, said physical soundness is critical for the usefulness of most horses. While some horses are maintained simply for their beauty and personality, most are also ridden for pleasure, work, or competition.

“The equine industry is a billion-dollar industry whose sole function is the athletic soundness and performance in horses,” she said. “Athletic soundness is paramount for all our clientele, ranging from the trail-riding enthusiast, barrel racer, 3-day eventer, and 4-H member learning to ride, to low-environmental-impact logging horses.”

Mochal said arthroscopy is becoming a mainstay in veterinary treatment plans. Another therapy gaining popularity is IRAP (Interleukin-1 Receptor Antagonist Protein), which blocks the inflammation that damages tissues. IRAP is useful in treating joint inflammation and arthritis.

“The services we offer range from arthroscopic joint surgery to regenerative medicine—including stem-cell therapy, IRAP, and platelet-rich plasma—to pain and inflammation management in the forms of joint injections, shock wave, and specialized shoeing,” she said.

Like humans, horses suffer wear and tear on their joints as they age, often requiring surgery to keep them comfortable and active, Mochal said.

“Many times, riders find that their best horses are the older horses because they are better trained and better behaved,” she added. “However, they acquire arthri-

tis and wear with age. Most of our patients are middle age to geriatric but belong to owners who have valued relationships with their horses and want to keep enjoying their careers.”

Mochal said arthroscopic surgery and regenerative medicine can give these horses a new lease on life.

“A good example of this is horses that receive cruciate ligament injuries in their stifle, which is similar to an ACL tear in humans,” she explained. “This injury used to be career-ending for horses. However, with surgery and IRAP therapy, many of these horses are able to return to their careers.”

Dr. Robin Fontenot, assistant clinical professor, said noninvasive shockwave treatment can stimulate healing in both new and old injuries. Offered at MSU since December 2014, this treatment is administered by introducing a focused, high-energy sound wave through tissues using a shockwave probe.

While the service is relatively new to MSU-CVM, Fontenot said clinicians have already used the technology to treat soft-tissue stifle injuries in conjunction with regenerative therapies as part of a multitherapy plan.

“The therapy has also been used to treat navicular syndrome, tendon and ligament injuries, and back pain in horses,” she added. “Both muscle- and spine-related back pain can be treated with the therapy.”

Dr. Andrew Mackin, interim head of the CVM Department of Clinical Sciences, said MSU has a group of enthusiastic veterinarians who are committed to helping maintain the comfort and happiness of equine patients.

“Ultimately, people have horses so they can ride and enjoy them,” he said. “The fundamental goal of our facility is to provide care and services to our patients that maintain their comfort and happiness to keep them performing successfully in their careers, whatever they may be.”
Graduate student Tamara Amorim measures a piece of lumber at MSU's Forest Products Laboratory.

Researchers Evaluate
Lumber Quality and Strength
When he walks into a hardware store and starts looking at lumber, he could be your average do-it-yourselfer, ready to start a project.

But Dr. Dan Seale is no ordinary weekend warrior building a little something for the house. This sustainable bioproducts professor in the MSU Forest and Wildlife Research Center is on a cross-country mission, looking for lumber from the Southern pine region cut from dozens of different mills. Once he finds what he needs, he buys it and takes it back to the Forest Products Lab at MSU. In Starkville, these lumber samples will undergo some of the most rigorous testing and scrutiny in the industry.

Seale and his colleagues Dr. Rubin Shmulsly, head of the Department of Sustainable Bioproducts and associate director of the Sustainable Energy Research Center, and Dr. David Jones, associate professor with the MSU Extension Service and Forest and Wildlife Research Center, are in the pilot phase of a randomized sampling project designed to add value to Southern forests.

“Trees are like kids,” explained Seale, who is the MSU Warren S. Thompson Professor of Wood Science and Technology. “They eat a lot and grow fast when they’re young. This quick growth, coupled with early thinning of stands to generate income, can result in forest products with different characteristics than those created from older timber harvested generations ago.”

The MSU team understands how significant the timber industry is in Mississippi. They are passionate about helping Mississippians make the most of this abundant natural resource, and the goal of their project is to provide a scientific framework for accurately evaluating this important commodity.

Over the past few years, all lumber has come under closer scrutiny. Given lumber’s many purposes, particularly in construction, this scrutiny is necessary to keep people safe.

“If you’re walking on a plank four stories up, you want to know that plank is going to bear the load that’s on it,” Seale said. “Mills continually grade their lumber and periodically pull samples for strength testing. There are industry standards that must be met. It’s a serious business.”

With a background in agricultural economics, Seale is fascinated by data and how it can be used to support sustainable forest products. So he and his colleagues secured a grant from the U.S. Department of Agriculture’s Agricultural Research Service for a 3-year investigation unlike anything they have done before.

Seale, Shmulsly, Jones, and a team of graduate students are conducting a series of tests related to the lumber grade, stiffness, and strength. They will characterize the physical attributes of each board and use non-destructive techniques, including stress wave analysis, to predict strength and stiffness. Then they will break the boards and analyze the accuracy of the tools used to predict the lumber values. The team will also use industry methods to characterize the break or failure of each board. Each one of the thousands of boards will have more than 50 measurements and resultant calculations.

Shmulsly said the team’s long-term goal is to maximize the value of pine lumber and timberland.

“Developing more options and opportunities to assess the performance of lumber accurately translates to higher engineering performance of the lumber and higher economic value of timberland,” he said. “Additionally, in this process, we’re relying heavily on graduate students, so another outcome will be that we produce a cadre of educated young professionals who will positively influence the industry for the next generation.”

Finally, they will synthesize the data and create statistical models that can be used to develop new forest products valuation techniques and standards, investigate new products and markets, and address any challenges they encounter.

Jones said this project has the potential to impact both landowners and mills in several ways. “First, it could help create potential premium for logs with properties that the mills desire,” he explained. “Secondly, it will help sawmills understand the properties of the product they are producing, so they can make decisions about how they buy logs as well as how they process the logs they bring into the mill. Finally, the largest impact may be to dispel myths about wood quality and growth.”

To conduct this testing, an elaborate system has been set up at the Department of Sustainable Bioproducts. It includes a video system that will record each board as it is broken and several instruments that test different strength factors, such as stress waves and vibration, all with the aim of improving lumber performance and valuation.

“No other university has a setup like this,” Seale said. “We’re the only one in the wood industry using this type of instrumentation. We are serious about finding ways to enhance the value of Southern forests.”
Established by the Mississippi Legislature in 1974, the Mississippi State University College of Veterinary Medicine strives to improve the lives of animals and humans—in Mississippi and around the world—through education, research, and outreach.

“As part of a modern land-grant university, our primary goal is to make advancements in teaching, research, globalization, and community service,” said Dr. Kent Hoblet, dean of the college. “We are committed to working through these different areas for the greater good of people and animals and to contribute to the economic development of Mississippi.”

Hoblet said each of the college’s three departments—the Department of Basic Sciences, the Department of Clinical Sciences, and the Department of Pathobiology and Population Medicine—fulfills the goals of the land-grant university by providing quality education, advancing research, and serving the community through excellent diagnostics, clinical care, and shared learning.

Students receive an integrated education, including a balance of basic science instruction delivered in a classroom setting; high-quality, practical research experiences; and service to the community through hands-on learning. The college bases research on area-specific issues encountered by Mississippi’s pet owners, livestock producers, veterinarians, and the food animal industry.

The college has a current enrollment of almost 500 students and offers a doctor of veterinary medicine degree, a bachelor of science in veterinary medical technology, and various master’s and doctoral degrees. Graduate candidates can specialize in general veterinary medicine, population medicine, veterinary medical research, computational biology, infectious disease, and toxicology. The college recently added a dual-degree (DVM-PhD) program, designed to allow students to simultaneously pursue a doctor of veterinary medicine degree and a PhD degree.

Residencies are available in small animal medicine, small animal surgery, neurology, radiology, primary care, equine internal medicine, equine surgery, clinical pharmacology, and anesthesia. Veterinary graduates from around the world, including Spain, Australia, Italy, and Scotland, have completed residencies in their specialties at the college.

The 360,000-square-foot Wise Center cost $32 million and took 3 years to complete. When classes began in the fall of 1977, the complex consisted of an education wing, a research wing, and the Animal Health Center.

Devoted to providing the highest standard of quality in all its programs and activities, the college has maintained full accreditation since 1981.

“Receiving accreditation verifies that our college has met or surpassed 11 important standards in providing quality education for veterinary medical students,” Hoblet said. “Animal health, safety, and research are more important than ever to the welfare and security of our state and nation, so it is crucial to receive validation that our teaching programs are accomplishing their goals.”
The college is one of 28 veterinary medical colleges in the U.S. that holds accreditation from the American Veterinary Medical Association’s Council on Education. The council reaffirmed the college’s accreditation status in March 2015.

Accreditation is a yearlong process that includes a meticulous self-evaluation and a 5-day site visit by council members. The council assesses the college’s compliance with AVMA standards in 12 areas: organization, curriculum, admissions, clinical resources, finances, facilities, equipment, learning resources, students, faculty members, research programs, and outcomes assessment.

Once the council reviews the 100-page self-evaluation document, they conduct a site visit and meet with administrators, faculty, staff, students, and alumni.

“This process is long and intense, but it ensures we are meeting the highest standards of education, research, and outreach for the veterinary profession,” Hoblet said. “By meeting and exceeding accreditation standards, we advance animal health, translate it to human health, and provide quality experiences for the next generation of veterinarians.”

The council grants reaccreditation status for up to 7 years.

“As a result of the self-evaluation process, we can see the numerous strides we’ve made that benefit animals and humans,” Hoblet said. “Veterinary medicine plays a critical role in society. Many of our faculty members are researchers in addition to being teachers. They investigate One Health topics that include food security issues and infections, such as influenza, that can pass between animals and humans. Our research also benefits human disease research by studying similar diseases that occur naturally in horses, farm animals, and pets.

For example, we now have a team studying treatments that help dogs with cancer. This work is giving insight on medication regimens that may also work for humans.”

Hoblet said the college is committed to serving the people of Mississippi, the nation, and the world through cutting-edge training, research, and outreach by recruiting and maintaining the best faculty in veterinary medicine.

“We continue to build on that expertise, which makes us stronger,” he said. “Up-to-date facilities and curriculum are also imperative to a solid veterinary medicine program. Recently, we’ve updated laboratory space, built a new necropsy wing, and increased caseloads at our animal health clinics.”
In August 2014, the college completed a $12.2 million necropsy laboratory funded by the Mississippi Legislature. Built on the footprint of the old laboratory, the new space provides a larger, improved teaching area and uses less energy. It also houses a 24-seat classroom and a modern, well-equipped histopathology laboratory.

The necropsy lab is used primarily for instruction of 3rd-year veterinary students who participate in necropsy sessions each afternoon and on many weekends.

“Having an adequate-size facility is important since the number of students in rotations has increased since I arrived at the college 10 years ago,” said Dr. Jim Cooley, professor of anatomic pathology in the college’s Department of Pathobiology and Population Medicine. “More tables allow us to perform small and large animal necropsies simultaneously. And my favorite part of the new lab is the show-and-tell area.”

This area consists of theater seating that can accommodate up to 40 people and has a separate entry and barrier from the necropsy floor. This area is used on Fridays to present and discuss cases that have been presented during the week.

“This gives students on rotations in the college’s Animal Health Center the chance to have a different perspective on their patients that could not be successfully treated,” Cooley said. “Freshman students also use the gallery during their pathology course laboratories.”

Pathologists and pathology residents use the histopathology laboratory to study biopsies submitted by area veterinarians and to collect samples from on-site necropsies for microscopic investigation. These samples help them select tests for definitive diagnosis of farm animals and pets of clients in Mississippi and surrounding states.

New walk-in coolers help preserve samples for teaching and provide a holding area for upcoming necropsies.

“These coolers are an absolutely essential part of a teaching necropsy facility,” Cooley said. “We now have a cooler that is dedicated to preservation of samples that are selected and held in a special solution that preserves much of the color of the tissue. I use these specimens extensively in freshman pathology laboratories for demonstrating concepts of tissue reaction to injury and consequences of disease.”

Researchers also use the facility to conduct necropsies and histopathology work.

The college has expanded its teaching tools throughout the state, giving students a well-rounded, realistic clinical experience while performing groundbreaking research and helping farmers, pet owners, and the food animal industry.
A recently forged partnership between the college’s Veterinary Specialty Center, the MSU Office of Research, and Premier Imaging, a radiology clinic in Starkville, allows 4th-year veterinary students to complete a required rotation in neurology, ophthalmology, and radiation oncology. At the shared facility, Premier physicians see human patients, while VSC specialists treat animals.

The partnership also provides veterinary researchers a way to study the best diagnostic imaging technology available as a noninvasive method for prescribing treatment for companion animals with brain tumors and other conditions.

The arrangement also helped physicians realize the potential benefits of one specific imaging technology for human patients.

Veterinarians Drs. Jennifer Gambino, Andy Shores, and Michaela Beasley and Premier’s lead animal and human imaging technologist Gary Sorrells are using magnetic resonance spectroscopy (MRS) to study the different types and functions of brain tumors in dogs and cats. MRS is an advanced form of magnetic resonance imaging and provides images so detailed that clinicians can see a tumor’s form and function on a molecular level. This type of imaging helps technicians identify biomarkers in normal brain tissue and brain tissue with various types of tumors, Gambino said. Clinicians and imaging technicians work together to determine the best treatment for the patient by assessing the patient’s symptoms, brain images, and biomarkers.

The team hopes this groundbreaking work leads to a noninvasive method of tissue sampling that allows veterinarians and human practitioners to make confident recommendations for surgery, chemotherapy, radiation, or a combination of these.

Because it is one of only a few U.S. veterinary facilities with the specialized equipment, software, and trained personnel to do this work, the Veterinary Specialty Center gets case referrals from across the country.
In 2009, CVM leaders expanded the school’s ability to train students in an emergency and laboratory setting and reach a larger number of clients who need the expertise offered by the school’s veterinarians and specialists.

All 4th-year veterinary students now fulfill a required rotation at the Animal Emergency and Referral Center (AERC) in Flowood and gain experience with food animal medicine at the Mississippi Veterinary Research and Diagnostic Laboratory in nearby Pearl.

“These rotations build student expertise in first-opinion emergency cases and specialty care, and also give students a glimpse at what goes into running an emergency hospital,” Hoblet said.

The AERC grew from the Animal Emergency Clinic begun in 1985 by eight private-practice veterinarians who saw a need for an after-hours clinic in the Jackson area. Over the next 20 years, the practice outgrew its downtown location on Monroe Street, which led the clinic’s board of directors to decide to build a new, modern facility at the current Treerops Boulevard location in Flowood.

More space and updated equipment meant the practice could handle more emergency cases, but the group of nine veterinarians who built the new clinic saw an opportunity to help even more clients in the southern half of the state.

They invited the college to operate a referral specialty practice within the clinic during weekdays. The college seized the opportunity to enhance its teaching and clinical services offered at the campus-based Animal Health Center, Hoblet said.

“The trip from the Jackson metro area to the college’s Animal Health Center can be challenging for critically ill or injured pets,” Hoblet said. “We already had a large client base in the Jackson area, so it made sense for us to meet them where they are.”

The staff provides critical care and surgery for complicated orthopedic and neurological cases from 7:30 a.m. to 6 p.m. on weekdays. The center functions as an emergency clinic during evenings, weekends, and holidays.

Board-certified specialists, including surgeons, internists, dermatologists, and ophthalmologists, practice at the center and take referrals of difficult cases from veterinarians in south Mississippi.

The 5,200-square-foot center was completed in 2010, and MSU’s partnership was made possible through private funding. With continued growth at the facility, the college plans to build an addition to the center that will house the specialty practice and provide dorms for veterinary students on rotation.

The Shelter Medicine Program is part of the primary care rotation for students and has a threefold mission: to give students practice in both surgical and preventive health care; to make shelter animals more adoptable; and to teach local communities about the importance of spaying and neutering.

In 1994, now-retired professor Dr. Phil Bushby began holding class at animal shelters in Starkville and Columbus. Not only did the students learn surgical skills, but they also helped control the problem of pet overpopulation and increased the chances that shelter animals would be adopted.

It’s a cause Bushby supported throughout his career after working with many homeless pets during his internship and surgical residency at the American Society for the Prevention of Cruelty to Animals’ (ASPCA) Henry Bergh Hospital in Manhattan, New York, in 1972.
The Shelter Medicine Program expanded in 2007 with the addition of a mobile veterinary clinic that allowed the students to serve more shelters. Through the continuous generosity of private donors and grants from organizations such as the ASPCA, the program now has two mobile clinics that regularly travel to 20 north Mississippi animal shelters.

“Dr. Bushby left a wonderful legacy of compassion and concern for the welfare of animals and service to local communities through the Shelter Medicine Program,” Hoblet said. “In addition to gaining surgical experience, students practice preventive medicine in working with shelters on proper ventilation and disease control and prevention.”

The mobile veterinary clinics require about $500,000 per year to operate.

Donations and endowments help the college carry out its mission of teaching, research, and outreach. They are the main source of funding for some programs and features at the college, such as the Shelter Medicine Program and the collaboration with the Animal Emergency and Referral Center.

“Gifts advance opportunities for students who are dedicated to using their skills and scientific knowledge for the benefit of society,” said Jimmy Kight, director of development for the college. “Today’s veterinarians are in the unique position of being trained to protect the health of both animals and people. For instance, our researchers are making advances in treating canine cancer, and our care for those patients is being translated to human medicine. Our friends and donors get to be a part of those advancements—whether it be through a scholarship, travel fund, or bequest.”

With the college’s recent facility updates, naming opportunities for donors are available. Friends of the college who are interested in being a part of the recent advancements have the opportunity to name the necropsy facility, waiting rooms, college classrooms, and the upcoming addition to the Animal Emergency and Referral Center. Donations can be made to specific programs or scholarships, or for general, unrestricted use through the MSU Foundation. Contributions are accepted through the foundation’s secure site at http://www.msufoundation.com or by contacting Kight at (662) 325-5893 or jkight@foundation.msstate.edu.

For more information about specific funds and ways to give to the college, visit http://www.cvm.msstate.edu/giving.
MSU Extension entomologist Dr. Blake Layton recommends a two-step approach to fighting fire ants: Spreading granular fire ant baits over the lawn two or three times a year is a good preventive strategy, while applying mound treatments can kill ants that have begun to build mounds. (Photo by Kevin Hudson)
Fire ants have made homes in just about every Mississippi scene, and they don’t have a reputation of being courteous neighbors.

What they are known for is their penchant for establishing roots wherever they can. From schoolyards to backyards, around fishing holes, farms, and pastures, fire ants have become the kudzu of pests and are impossible not to encounter.

When fire ants begin to colonize close to home, they can easily grow from being an annoyance to a health hazard. To help people learn the basics of fending off fire ants, the Mississippi State University Extension Service launched the Bite Back campaign—a series of six news stories and two videos providing information and treatment strategies—in April.

Where did they come from?

Fire ants originate from the open, grassy areas of Argentina and Brazil. Soil from those countries was placed on early 20th-century ships from South America to stabilize them. When the ships arrived at the Port of Mobile, crews would unload the soil so the cargo they carried back. From the port, the red and black import ants multiplied and spread from coast to coast in the U.S. They primarily reside in the southern portion of the country, where the soil remains relatively warm year-round, but have been spotted as far north as Nebraska and Maryland.

How did they spread?

MSU Extension entomologist Dr. Blake Layton said fire ants reproduce by swarming in the air.

“The males and females fly up into the air, mate up there, and then the mated queens fall back to the earth to start new colonies,” he said. “During this mating flight, they may travel several hundred yards to several miles, depending on wind. It is these mated females raining back down that cause new fire ant colonies.”

Joe MacGown, a research technician and scientific illustrator for the Mississippi Agricultural and Forestry Experiment Station, said worker fire ants commonly seen building the mounds vary in length from about 1 to 4.5 millimeters. Depending on food sources and environmental conditions, queen ants can lay anywhere from 200 to 2,000 eggs daily. Several distinctive dome-shaped mounds scattered across open areas characterize an infestation.

“The number of mounds per acre is somewhat dependent on whether or not the colony has multiple queens (polygyne form) or a single queen (monogyne form),” MacGown said. “For monogyne forms, there are usually fewer than 300 mounds per acre given the right habitat, but with polygyne colonies, there can be more than 300 mounds per acre.”

What health risks do they pose?

Fire ants are a nuisance for backyard activities, but it is their sting that causes the biggest problems. While they do not deliberately seek to attack humans or animals, they aggressively defend their colonies by stinging whoever disturbs them. Stings cause sharp pain, swelling, and itching, but their venom can also cause severe allergic reactions, Extension medical and veterinary entomology specialist Dr. Jerome Goddard said.

“A small child or pet who inadvertently steps in a mound and doesn’t realize it right away or doesn’t know what to do could get many stings,” Goddard said. “If that child or pet is allergic to the venom, just one sting could be very bad.”

Particularly venomous stings can cause anaphylaxis, a reaction characterized by hives, swelling, and spasms of the airway, as well as low blood pressure from the collapse of blood vessels. These stings require immediate medical attention.

The pests can also have an economic impact on producers when they invade farms and pastures, said Dr. Jane Parish, a research professor with Extension and the Mississippi Agricultural and Forestry Experiment Station.

“Their mounds can damage cutting equipment, and if a calf is born too close to a bed, the results can be catastrophic, especially for weaker calves that may already have health issues,” Parish said.

Why are they difficult to control?

Layton said misconceptions about how to get rid of fire ants impede many people who are trying to do so. Folk remedies such as gasoline, grits, and club soda are either ineffective, costly, or environmentally unsafe.

“Gasoline is not legal to use in this way because it is not safe or environmentally suitable,” he said. “Also, it would be a very costly method of control.”

Fire ants supposedly explode after eating grits. However, this remedy is a tall tale, Layton said. Some people believe that drenching a mound with club soda will smother ants with carbon dioxide, but this method is also inefficient.

“Fire ants like grits just fine and will not explode after eating them,” he said. “It is possible to smother a mound with carbon dioxide, but it would take a good bit of effort. Some people will shovel mounds together so the ants will fight and kill each other. Ants from different mounds will usually fight, but this is not really an effective way to control fire ants—far too labor intensive, even if it did work.”

What is the right way to get rid of them and keep them away?

A two-part attack is needed, Layton said. Spreading granular fire ant baits over the lawn two or three times a year is a good preventive and long-term strategy, while mound treatments are effective in killing ants that have begun to build mounds. Baits are effective, low-cost ant control methods that typically cost $8–15 per acre.

“Baits are slow-acting, and it can take a month or more to see the effect, but they are important for lasting control. If I was limited to only one method of fire ant control, I would use baits,” Layton said. “Successful fire ant control has to be an ongoing effort.”

Find more information on the Bite Back campaign at http://msucares.com/biteback.
Cassie Brunson has had one goal for the MSU Extension Equine Assisted Therapy Programs since she became coordinator of the Therapeutic Riding and Activity Center (TRAC) in 2013: to help as many people with special needs as possible.

Achieving that goal requires having a prototype for volunteers who want to start their own riding programs but need certification to become instructors. As one of seven Professional Association of Therapeutic Horsemanship International (PATH) centers in Mississippi, TRAC provides that prototype.

“The goal for our program as a whole is to be a model for volunteers who want to start their own riding program or go work with one that is already established,” Brunson said.

Physical and speech therapists have long used therapeutic riding for its emotional and physical benefits to children and adults with physical and psychological disabilities. But therapists who use horses as part of physical, occupational, or speech therapy have to learn safety guidelines and regulations in order to be accredited, Brunson said.

“You can’t just pull out an old saddle, put it on the horse, and go,” she said. “There are safety regulations. You must have the proper mounting tools. We have steps they walk up and wheelchair ramps that people in wheelchairs have to roll on to get on the horse. There’s so much that goes into starting a program or becoming an instructor for a program that is already established.”

Because the Equine Assisted Therapy Program has earned PATH accreditation, it was allowed to host a training workshop in May at the Mississippi Horse Park. During the 4-day workshop, 12 volunteers were certified to teach therapeutic riding after taking classroom courses and practicing new skills.

“What is covered in this workshop is safety and the basic skill set you need to get this certification,” Brunson said. “It’s important for us to have an understanding of ways to handle therapy horses when they’re being mounted and dismounted during sessions. People who take these courses learn about horse movement and handling skills and how to pass those skills down to the volunteers.

“We cover a lot in a short amount of time,” she added. “You are not done learning when you’re done with the workshop.”

Brooke Eaves, a speech pathologist based in French Camp who has practiced therapy for 16 years, was one of the 12 workshop participants.

“Therapeutic riding is such a success with the overall improvements of the children and individuals who are participating,” Eaves said. “It improves mobility, including gait and flexibility, and it improves communication skills, which I’m specifically interested in. The transitions and the carryover from being on the horse also help with the family and home environment.”

As Mississippi’s chairperson for PATH, Brunson said she responds on a regular basis to requests for advice from people in and out of state on finding horses with the proper temperament for therapeutic riding and deciding which equipment would best serve their programs.

“They want to come look at our facility, see what our ramps look like, how we treat our horses, where they’re kept, and how we train them,” she said.

The therapy riding programs have expanded to serve MSU students enrolled in the university’s ACCESS program, which transitions students with special needs into higher education and prepares them for successful careers. TRAC has established additional community outreach programs under Brunson’s watch.

“Our vision has always been community outreach. We’ve moved toward starting a veterans’ program and have hosted several field trips for special needs classes,” she said. “We teach them proper nutrition and care, including how to groom and tack a horse. This semester, we started taking horses to nursing homes to visit patients. It means a lot to me to provide people with a positive experience.”
Marye Will Mitchell (left) and side-walkers Rufus Warren and Ashley Boatner take a break with one of the therapy horses carrying Debra Ann Breazeale during a trail ride near the Elizabeth A. Howard 4-H Therapeutic Riding and Activity Center in West Point.

TRAC coordinator Cassie Brunson helps Nancy Hudson settle into the saddle for a therapeutic horseback ride.

Side-walkers and horse leaders take advantage of beautiful weather for a trail ride.
Muscadine or Scuppernong Jelly
(without added pectin)

**Ingredients**
4 cups muscadine or scuppernong juice
3 cups sugar

**Equipment**
large saucepot
large glass measuring cup (will hold 6–8 cups)
cloth jelly bag
canning jars and two-piece metal lids
spoons
paper towels
boiling water bath (canner)

Yield: 3 or 4 half-pint jars

Please note: If this is your first time canning, contact your local Extension agent or download related publications at http://www.msucare.com.

**Procedure**

To prepare juice:
Select grapes that are in the “just ripe” stage. Wash and crush grapes. Without adding water, boil and simmer for about 10 minutes, stirring constantly. Press juice from the heated grapes. Pour the cool juice into glass containers and set in refrigerator. The next day, strain the juice through a cloth jelly bag. Do not squeeze the bag.

To make jelly:
First, sterilize the canning jars.

Heat 4 cups of juice to boiling in a saucepot. Add 3 cups sugar and stir until the sugar dissolves. Bring to a rolling boil, stirring frequently to prevent sticking. Cook until jelly mixture coats a spoon.

Remove from heat; skim off foam quickly. Pour hot jelly immediately into hot, sterile jars, leaving ¼ inch headspace. Wipe rims of jars with a dampened clean paper towel; adjust two-piece metal canning lids. Process in a boiling water bath for 5 minutes.

Recipe adapted from Bulletin 989 So Easy to Preserve (5th edition, 2006) by the University of Georgia Cooperative Extension Service, revised by Elizabeth L. Andress, PhD, and Judy A. Harrison, PhD, Extension foods specialists.
**1/82: Stone County**

Stone County Office, MSU Extension Service  
214 North Critz Street, Suite A  
Wiggins, MS 39577  
Phone: (601) 928-5286

<table>
<thead>
<tr>
<th>County seat:</th>
<th>Wiggins</th>
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<tbody>
<tr>
<td>Population:</td>
<td>17,000</td>
</tr>
<tr>
<td>Municipalities:</td>
<td>Wiggins</td>
</tr>
<tr>
<td>Communities:</td>
<td>Perkinston, McHenry, Big Level, Magnolia, Ramsey Springs</td>
</tr>
<tr>
<td>Commodities:</td>
<td>beef, pine trees, soybeans, cotton, corn, peanuts, watermelons</td>
</tr>
<tr>
<td>Natural resources:</td>
<td>pine plantations, cattle farms, plant nurseries, DeSoto National Forest hiking and horseback trails</td>
</tr>
<tr>
<td>History notes:</td>
<td>Baseball legend Dizzy Dean was a native of Stone County. Timber plantations have been the backbone of the county’s economy. John Guthrie Sr. patented the first tree-planting machine, pulled behind a tractor. It is still the prototype for today’s tree planter. In the past, Stone County had tung tree plantations to supply tung oil for paints and other products. Stone County was once known as the “Pickle Capital of the World.”</td>
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<tr>
<td>Attractions:</td>
<td>Flint Creek Water Park; festivals held at Blaylock Park; Pine Hill Day Celebration; Mississippi Gulf Coast Community College campus, including walking track and tennis court; McHenry Shooting Range; and Red Creek, which provides sandbars, swimming, and fishing.</td>
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<tr>
<td>Did you know?</td>
<td>Wiggins and Stone County are now known as Mississippi’s Official Mural County, with murals in the Stone County Courthouse, U.S. Post Office, “Dizzy Dean” Highway 49 rest area, Stone Elementary School, Perkinston Elementary School, Stone Junior and Senior High Schools, Wiggins and McHenry libraries, Wiggins Post Office, and Wiggins walking park at the foot of Pine Hill. To date, Wiggins and Stone County have 32 mural locations.</td>
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“Stone County is a quiet, clean, green county just above the Mississippi Gulf Coast. Highway 49, the major north/south transportation route for south Mississippi, comes through the center of the county, and the railroad comes though the center of town in Wiggins. Nestled between the coast and Hattiesburg, Wiggins is a jewel for quiet, country living!”

Judith Breland, MSU Extension County Coordinator

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Photo by Kevin Hudson

**Baseball legend Dizzy Dean was a native of Stone County.**
Jeff Gore, a research entomologist with the Extension Service and Mississippi Agricultural and Forestry Experiment Station at the Delta Research and Extension Center, is one of six scientists selected to receive grants through Monsanto’s Insect Management Knowledge Program. Gore’s research will be aimed at learning more about the corn earworm and bollworm. The other MSU investigators working on the project include Angus Catchot, Don Cook, and Fred Musser.

Jane Parish, an Extension and Experiment Station research professor in the university’s North Mississippi Research and Extension Center, is the new executive director of the Beef Improvement Federation, which works to connect science and industry to improve beef cattle genetics. Parish, who is based at the MAFES Prairie Research Unit, took over the leadership position at the 47th Beef Improvement Federation Annual Convention and Research Symposium in June. Parish conducts research on applied beef cattle production systems and is a beef cattle specialist with the MSU Extension Service.

Brent Fountain, associate Extension professor of human nutrition, recently completed the International Olympic Committee Diploma in Sports Nutrition program. He also joined a group of only eight certified sports dietetics specialists in Mississippi when he earned certification from the Commission on Dietetic Registration and the Academy of Nutrition and Dietetics. In addition, Fountain was recently named a fellow of the Academy of Nutrition and Dietetics, the world’s largest organization of food and nutrition professionals.

Four MSU professors participated in the joint conference of the Association of International Agricultural and Extension Education and the European Seminar on Extension and Education in the Netherlands in late April. Representing MSU Extension and the School of Human Sciences were Susan Seal, an assistant professor in international agricultural and Extension education, and Laura Lemons, an assistant professor of agricultural information sciences and agricultural leadership. James Henderson, associate Extension forestry professor, and Donald Grebner, forestry professor, represented the MSU Forest and Wildlife Research Center. The Association for International Agricultural and Extension Education was established in 1984 as a professional organization for educators who share a common goal of strengthening agricultural and Extension education programs and institutions worldwide.

Ron McLaughlin has been named the new associate dean for administration of the MSU College of Veterinary Medicine. McLaughlin, a board-certified veterinary surgeon, started at MSU-CVM in 2000 as an associate professor and chief of surgery. He became head of the Department of Clinical Sciences in 2006. As associate dean, McLaughlin, along with other college administrators, will help lead MSU-CVM in carrying out its strategic plan, continuing to recruit and retain quality faculty and students, and keeping ahead of the curve in new advances in animal and public health.

John Orlowski joined the MSU Extension Service and Mississippi Agricultural and Forestry Experiment Station July 1 as soybean agronomist. Orlowski, a native of Perth in rural, upstate New York, will concentrate on soybean production in the Delta. He is stationed at the MSU Delta Research and Extension Center in Stoneville. Orlowski said he plans to help producers not only increase soybean yields, but also evaluate their soybean production systems to maximize farm profitability.

Andrew J. Kouba, former director of conservation and research at the Memphis Zoo, is the new head of the MSU Department of Wildlife, Fisheries, and Aquaculture. He secured more than $3 million in competitive grants for zoo projects including work with amphibians, large carnivores, giant pandas, forest ecology, and reintroductions for endangered species. He worked closely with MSU faculty, employing numerous graduate students and postdoctoral fellows for research work in conservation. During his tenure with the Memphis Zoo, Kouba also served as adjunct professor in MSU’s College of Agriculture and Life Sciences as a mentor and committee member for graduate research.
MSU graduate student Chadwick C. Abbott of Martinez, Georgia, is part of a national group honored recently for achievements in agricultural research. He was among 18 selections for a Future Leaders in Science Award given annually by the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America. Abbott is pursuing a master’s degree in agronomy in MSU’s College of Agriculture and Life Sciences.

MSU College of Veterinary Medicine student Steven Hutter of Hot Springs, Arkansas, is the 2015 Bayer Excellence in Communication Award winner for MSU. CVM Dean Kent Hoblet said communication in veterinary medicine is crucial, as it helps clinicians establish good client relationships, helps pet owners understand how to administer medications and comply with treatment plans, and demonstrates the true value of veterinary care visits. Hutter, who will graduate with his doctor of veterinary medicine degree in 2016 and will continue at the college to earn his PhD, demonstrated competence in all of these areas to win the 2015 award.

Recent upgrades to MSU’s Custer Dairy Processing Plant are helping ensure the next generation of Bulldogs can enjoy the same quality that MSU cheese connoisseurs have come to appreciate and expect. The project included replacing and waterproofing the plant floor and updating the plumbing and electrical systems. Though the upgrade will have long-term benefits, the renovation also is cause for a short-term cheese shortage. Fewer balls of Edam and other cheese products at the MAFES Sales Store were available for 2015. The store is already out of Edam and Vallagret cheeses. Customers are encouraged to get their Christmas orders in early for other products. Orders will be filled on a first-come, first-served basis, including orders placed in-store, online, or over the phone. The upgrades now are complete and production going forward will be business as usual.

The College of Forest Resources announced the creation of two new majors: Natural Resources and Environmental Conservation (NREC) and Sustainable Bioproducts. The NREC major was created due to demand for a program that specializes in natural resources without the focus on forestry and includes three concentrations: natural resource law and administration, resource conservation, and natural resources technology. The Sustainable Bioproducts major focuses on the conversion of wood and other biomaterials into sustainable products and allows students to connect their studies with other fields through electives. Both of these majors prepare students for careers in the growing natural resources job market.

MSU is the 2015 neighborhood/community-level recipient of the U.S. Environmental Protection Agency Region 4’s Rain Catcher Award for its role in implementing the Ok-tibbeha County Heritage Museum’s rain garden program. The EPA Rain Catcher Award recognizes the efforts of more than 200 MSU undergraduate and graduate-level landscape architecture, landscape contracting, architecture, art, building construction science, and graphic design students who designed and built the museum’s green infrastructure and sustainable building technologies over a 5-year period. Marked by educational signage, features at the museum include a 700-square-foot rain garden, 200-square-foot sand filter, and more than 1,000-square-feet of new plantings. Students also used recycled and repurposed materials to create a 1,000-gallon rainwater cistern, 600-square-foot public-use green roof pavilion and circular stair to access it, as well as an American Disabilities Act-compliant entrance.

The Eventing Team, or “Equestrian Triathlon,” is MSU’s newest equestrian club sport, founded in the fall of 2014. The introduction of the Eventing Team to MSU follows that of the introduction of the Equestrian Team in 2001. MSU is the first university in Mississippi to compete in both collegiate Equestrian Team and Eventing Team competitions. The MSU Department of Animal and Dairy Sciences sponsors both teams. Eventing consists of three phases: dressage, cross-country, and show jumping. Eventing Team members travel with their own horses to these competitions.
Mississippi State University veterinary students are enthusiastic about traveling abroad to expand their veterinary experience, enhance their leadership skills, and teach others, all while helping people and animals in need. Interest in global veterinary medicine experiences among CVM students increases every year, and the college is committed to providing excellent learning experiences beyond the traditional classroom and laboratory.

Traveling across borders does not come without financial burden. Typical costs range from $1,500 to $8,000 per student. For most veterinary students, global experiences are only possible with generous support from friends and alumni of the college.

In 2003, the Pegasus Partners Fund was established by donors gifting $10,000 each over the course of 5 years. The goal is to create a $2.5 million endowment to sustain support for continued international efforts.

“The Pegasus Partners Fund has already made a significant impact on the number of CVM students who are able to participate in unique studies abroad,” said Jimmy Kight, CVM director of development. “We continue to seek additional donors who want to encourage our veterinary students to step outside of the classroom and travel all over the world to make a global impact.”

Recently, Dr. Todd R. Henderson, president and CEO of Nutramax Laboratories Veterinary Sciences Inc. and a 1992 CVM graduate, created a new travel fund dedicated to his classmate, Dr. Paul W. Farmer, who died following a battle with pancreatic cancer. The Paul Farmer Memorial and Nutramax Laboratories Student Travel Fund supports students who want to pursue domestic and international travel to promote the practice of veterinary medicine.
Rachel Montgomery and Megen Cummings are the first recipients of this award. In March, both students traveled to Haiti along with other Christian Veterinary Fellowship members. They were able to treat nearly 1,500 animals in 4 days. The students gained surgical experience, worked with the Centers for Disease Control and Prevention rabies control program, and helped educate the local people about caring for their animals.

Diane Eggert also recognized a need for support of student travel at the CVM. Her late husband, Paul Eggert, had a longtime career at the U.S. Department of Agriculture’s Animal and Plant Health Inspection Service. He was instrumental in many plant pest eradication programs. He traveled to Asia, Africa, and Europe to establish good working relations in the fair and safe trade of fruits, vegetables, and wood products.

The Eggerts were introduced to the international programs associated with CVM when their daughter, Karen Templeton, began working for the college. Diane Eggert, who is passionate about pets and the education of students, established the Paul Eggert International Education Travel Fund as a tribute.

“Knowing that I am able to financially help veterinary students participate in unique opportunities across the world is so fulfilling. It would make my husband proud to see that students are participating in similar activities in his memory,” she said.

CVM Dean Kent Hoblet and his wife, Connie, hear positive stories from students every day. They are also aware of the debt that most veterinary students incur. Through the Hoblet Family International Education Travel Endowment, students receive partial funding for hands-on veterinary experiences that connect them with the world and have a lasting impact on their careers.

Haiti, England, Scotland, Guatemala, and Honduras are just a few of the destinations on the travel agenda for CVM students, and contributions can help them extend the CVM impact worldwide. Contact Kight at (662) 325-5893 to fund a life-changing international opportunity.
Mississippians are used to seeing armadillos on the sides of highways, but this one was photographed recently near Starkville in its more natural habitat. (Photo by Linda Breazeale)