On the Cover
Bobwhite quail are popular game birds across the South, but their numbers are declining. Research at MSU is helping build quail populations by restoring habitat. (Photo by Kirtley-Perkins)

Back Cover
The 2005 CVM Open House led to some unusual animal encounters. (Photo by Tom Thompson)

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Unit serves patients while supporting research.

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Meet our development partners.
The seal of Mississippi State University lists the school’s three missions: learning, service and research. All three are important, but it’s not by chance that service is in the center. Without dedication to serving our citizens’ needs, the education and research roles would have less impact.

The Focus section beginning on page 16 of this issue of Landmarks looks at how outreach programs of the Mississippi State University Extension Service serve the needs of Mississippians in all walks of life. Extension has programs designed to help small businesses get off the ground and to assist farmers in managing their enterprises. Individuals also benefit from Extension nutrition education and the 4-H youth activities through outreach.

Service also is the driving force behind the research conducted by scientists in the Division of Agriculture, Forestry, and Veterinary Medicine. Several of those scientists are receiving 2005 Research Initiation Program Awards from MSU’s Office of Research. While the awards total $10,000 or less, they allow researchers to start projects that can have long-term benefits for the state.

The university’s spirit of service also extends to its alumni. The development report beginning on page 31 details how some of those individuals are helping students and programs at MSU. This issue of Landmarks also contains an article on a Mississippi State graduate who is leading one of the world’s major commodity exchanges.

Mississippi State University was founded on principles of service to agriculture, and today that role has been expanded to include all aspects of society. The men and women in the Division of Agriculture, Forestry and Veterinary Medicine are doing their part to make effective and efficient use of resources to meet the needs of all Mississippians.

Vice President’s Letter

Vance H. Watson
When a patient comes in the door of the Mississippi State University veterinary college’s Animal Health Center, three types of imaging tools help clinical faculty, staff and students provide the best care.

Diagnostic Imaging Services in MSU’s College of Veterinary Medicine has a cardiac-capable ultrasound, large- and small-animal X-ray facilities and a computed tomography, also known as a CT or CAT, scanner. Dr. Dan Cantwell, chief of diagnostic imaging services, said the acquisition of the CT scanner was important for the veterinary college.

“This equipment helps us serve our clients better. The CT scanner improves our ability to diagnose a problem, which results in better treatment, less hospital stay and less overall cost to the pet owner,” Cantwell said.

When Jackson residents Shannon and Steve Collins’ 6-year-old chocolate Labrador retriever Piper started limping, they took her to their veterinarian to see what was wrong. The active dog typically ran with Shannon but began having problems with her leg.

Traditional X-rays did not reveal the problem and medication only temporarily brought relief. Piper’s veterinarian and several friends and acquaintances of the Collins’ referred them to Dr. Andy Shores at Mississippi State University’s College of Veterinary Medicine.

“I just wanted something to be fixed, and obviously the medicine she was taking wasn’t helping her,” Shannon said of Piper. “Dr. Shores initially examined her and said the CAT scan could be the answer.”
The CT scan revealed the problem in Piper’s elbow, avoiding the added trauma of exploratory surgery. Minimally invasive arthroscopic surgery corrected the problem, and the now 6½-year-old Piper began her recuperation.

“Her recovery went very, very well,” Shannon said. “She had a gradual recovery for about a month, then after that, we saw the problem completely disappear.”

The CT scanner is located in the Mimi and Russell Gaines Unit within CVM’s radiology department. Russell Gaines donated the nearly $100,000 needed to outfit the room to house the CT scanner in memory of his late wife, Mimi.

LeeAnn Smith, a certified veterinary technician and a radiology technologist, said the unit arrived in October and was in use by November. The size of the gantry, or circular opening around which scans are made, limits the size of animal that can be examined by CT. Most animals will fit on the standard table made for humans, but this scanner came with a large, three-position table capable of holding animals up to 4,000 pounds for scanning. Technicians can use this table to scan an anesthetized horse’s head, legs and other parts.

Smith said the CT unit has averaged 24 patients a month. The method is noninvasive and reveals the specific location of certain problems, making treatment or surgery more precise.

CT images, as well as those created by X-ray and ultrasound, are stored digitally. Smith said digital technology provides tremendous benefits over traditional imagery, such as the ability to change the exposure setting or contrast on screen without shooting another image to transmit an image file to a colleague at CVM or across the country, and to store all of an animal’s records in one digital location.

CVM’s X-ray facilities are state-of-the-art and accessible to large and small animals. The table in the small animal room can tip to almost 90 degrees, making it possible to make x-ray images of a prone subject as if it were standing. The large animal X-ray room was built for flexibility. An image plate is suspended from the ceiling, and the X-ray image is made through the standing animal. The equipment slides readily on overhead tracks as needed.

Using X-ray technology, CVM staffers can perform digital fluoroscopy, or streaming video of a procedure, using a contrast medium such as barium sulfate. These images, too, are stored electronically, and can be transmitted and manipulated for interpretation and review.

Smith said students spend four weeks in the radiology rotation. When she works with them, she stresses the importance of safety, as regulations limit how much radiation a person can safely be exposed to in a year. Smith also helps students learn correct procedures to produce diagnostic quality images.

The third piece of equipment is the ultrasound machine, now used routinely for diagnosing trauma and disease conditions. Ultrasonography aids with the examination of bones, tendons, ligaments and organs. CVM’s machine is cardiac-capable and can be used to examine the heart on many species.

Dr. Erica Baravik, one of the CVM’s sonographers, said the clinic’s ultrasound machine is used daily and has become a standard part of many procedures.

“Ultrasound complements X-ray and CT,” Baravik said. “Radiography examines the contours of organs, while CT allows examiners to evaluate organs using one cross-sectional slice at a time. Ultrasound shows interior organ architecture and function on a real-time basis, unlike X-ray and CT.”

Dr. Andy Shores, associate clinical professor of surgery and neurology, is a board-certified neurologist and is responsible for the CT scanner. He said with CVM’s acquisition of this equipment, “we are catching up with where we should have been years ago. We’re able to plug in an area of deficiency that has hampered us or forced us to refer cases to LSU or Auburn.”

Shores said the CT technology opens up avenues to explore problems and will one day allow CVM to perform interventional radiography.

“We’ll now be able to very accurately and safely biopsy tumors, perform minor surgical procedures and allow ourselves to do more work with less invasiveness,” Shores said. “We’re at a stage now that as we continue to grow, we’ll be able to do a lot with this unit, and it’s going to be an attraction to additional faculty, as well interns, residents and students.”

The chief of diagnostic imaging services said MSU’s veterinary college was “behind the curve” before getting the CT scanner, but it is now on equal footing with other teaching hospitals. CVM interns, residents, faculty, and third- and fourth-year veterinary students benefit from the information provided. Cantwell hopes the CT scanner will soon generate grants for the college as researchers at CVM and the rest of the university begin to take advantage of its capabilities.

At MSU’s veterinary college, the three technologies of X-ray, CT and ultrasound work together to offer top-notch care for patients. They also provide veterinary students a chance to gain experience in imagery technology they will need as they begin their careers.
Lean production may help eliminate lean times for Mississippi’s furniture manufacturers.

Lean production is an engineering term for the ability to produce more with less, and scientists in Mississippi State University’s Institute of Furniture Manufacturing and Management are helping implement lean systems in the state’s furniture manufacturing plants.

Elimination of waste—especially in the areas of time and materials—is the key component of lean manufacturing. Conversion to a lean system begins with an analysis of the number of steps it takes to produce furniture components. Those steps are then consolidated to create a smoother flow through an assembly-line approach.

“Lean production uses cellular manufacturing for one-piece flow wherever possible in the system,” said Steve Hunter, associate professor in the Department of Forest Products. “Lean production uses less of everything when compared to the archaic functional manufacturing system—less labor effort, less manufacturing space, less investment in tools and less design engineering hours to develop a new product.”

Hunter and Duane Motsenbocker, interim director in MSU’s Industrial Outreach, have implemented lean production in 24 of Mississippi’s 200 furniture manufacturing plants. Furniture manufacturers provide 27,000 jobs and contribute $4.1 billion to Mississippi’s economy. The state produces about 70 percent of the nation’s upholstered furniture.

Judy Dunaway, president of Airline Manufacturing Company, has adopted lean processes in her Columbus wood furniture component manufacturing facility, successfully reducing inventory, improving cash flow, decreasing costs, cutting lead times and making the overall operation more flexible.

“We first selected one of our most frequently manufactured components and tracked every movement of that component,” Dunaway said. “We discovered it took us five days to produce 1,000 parts, and each part traveled more than 50 man-miles in the process.”

On the first run with the new lean processes, the company produced 1,000 parts in three-and-a-half hours.
“That was our first success story, and there have been many since,” Dunaway said.

The implementation of lean production typically means keeping less than half the regularly needed inventory on hand. In addition, the implementation and adoption of lean production by a manufacturer results in better quality because of fewer defects.

Hassell Franklin, founder, president and chief executive officer of the Houston-based Franklin Corporation, has implemented lean processes throughout his upholstered furniture manufacturing facility.

“The implementation of lean principles has given us major productivity gain throughout our operation,” Franklin said. “With MSU’s help, we are refining our mechanism assembly by taking out all non-value-added processes in our workflow.”

MSU’s Institute of Furniture Manufacturing and Management is an interdisciplinary unit that includes the College of Forest Resources, Forest and Wildlife Research Center, College of Business and Industry, Bagley College of Engineering, College of Architecture and the MSU Extension Service.

“The institute applies research that aids in the design, production, marketing and distribution of high-quality products that meet the changing needs of families and businesses here and abroad,” Hunter said. “It is estimated that furniture research at Mississippi State University is saving the state’s manufacturers around $3 million each year.”

The institute, in cooperation with the Division of Academic Outreach and Continuing Education, offers a Lean Production Certificate program to train furniture manufacturers in the process.

“If a company wants to compete in today’s marketplace, lean manufacturing is the key,” Hunter said. “Lean production system implementation is not turning a leaf, but rather it is growing a new tree.”
Research, Education Needs Focus of Producer Meeting

By Bob Ratliff

M.D. Phillips will celebrate his 90th birthday this year. For more than half of those years, he has been a member of the North Mississippi Producer Advisory Committee.

The committee meets annually to give input to the Mississippi State University Extension Service and the Mississippi Agricultural and Forestry Experiment Station on the research and education needs of agricultural producers in 27 north Mississippi counties.

Phillips was at the first committee meeting in 1953 and was one of about 160 producers attending the 2005 gathering.

“We started with about a dozen people meeting under a shade tree at the Holly Springs experiment station,” the Alcorn County cattleman said. “For lunch, we all went to the Wagon Wheel Restaurant in town.”

The setting has changed—this year’s group met in the comfort of the North Mississippi Research and Extension Center and the Lee County Agri-Center on a brisk February day and enjoyed a catered barbecue lunch—but the goals are still the same. Producers representing 12 commodities met to discuss their needs, with representatives of each group reporting to Extension and experiment station representatives at the end of the meeting.

Steve Koehn of Monroe County gave the aquaculture report. More research on ways to detect and prevent off-flavor, a problem caused by algae in ponds, was among the producers’ needs. They also requested help with marketing freshwater prawns.

Forage systems research, along with programs related to health and nutrition were among the needs expressed by the beef producers, according to Monroe County cattleman Bill Darnell.

Tippah County producer Keith Morton said the cotton group discussed the need for MSU to continue its conventional cotton seed breeding program. The cotton producers also asked for some basic consumer education.

“Too many of our neighbors are not aware of where their food and fiber products come from,” Morton said. “We need more of this type of consumer education.”

Heat stress research was the main thing on the minds of the committee’s dairy producers. Pontotoc County dairymen Jeremy Graham said producers would like to see more work to reduce heat stress, including research on the use of feed additives to reduce it internally.

Expanded education programs on horse ownership and care were among the requests from the equine group.

“We also need to increase public awareness of the economic impact of the equine industry in Mississippi,” said Prentiss County representative Dalton Garner.

The need for an energy policy that encourages the development and use of agricultural and forestry biomass fuel products was a major topic of discussion in the forestry group.

“We also would like university help with finding ways to capitalize on recreational and other multiuse opportunities for forestland,” said group representative Don Whitehead of Lafayette County.

The fruit and vegetable producers discussed the need for an information infrastructure to keep abreast of new varieties and production practices. Lowndes County producer Melvin Ellis said the group also wants continued vegetable variety trials at the university’s branch experiment stations.

The recent discovery of soybean rust was a major topic of discussion in the grain crops group. Doug Mitchell of Alcorn County said the producers also discussed the need for a map of the state showing recommended soybean varieties, planting dates and seeding rates.

More research with energy- and labor-saving techniques in commercial horticulture operations was requested by the ornamental group. Gene Penick of Noxubee County said the group also would like to see university involvement in making more information about recommended ornamental plant varieties available to the public.

Calhoun County producer Stephen Bailey said north Mississippi sweet potato growers need continuing help with obtaining approval for pesticides to use on their crops. The sweet potato group also requested university assistance with new recipe development.

The swine producers discussed the recent repairs made to the Wiley L. Bean Swine Unit at the Pontotoc Ridge-Flatwoods Branch Experiment Station. Byron Wilson of Chickasaw County said the group would like to see the unit maintained as a demonstration site for swine production.

Turf producers requested help from the university on educating the public about turf grass management. Representative Paul Wellborn of Union County said the group also discussed the need for additional research on shade tolerance and cold tolerance of warm-season grasses.

Alcorn County cattleman M.D. Phillips with county director Patrick Poindexter.
A new antibiotic has the potential to treat one of the most costly diseases in Mississippi’s $287 million catfish industry.

Pat Gaunt, a veterinary toxicologist with Mississippi State University’s College of Veterinary Medicine, began studying the use of florfenicol to treat enteric septicemia, or ESC, in U.S. catfish more than five years ago. That process is nearing an end as the Food and Drug Administration considers final approval of the drug.

“Schering-Plough also had to submit an environmental package showing that florfenicol would not harm the environment. That part also has been approved,” Gaunt said.

The idea for using florfenicol in U.S. catfish came to Gaunt when she began an internship at the Thad Cochran National Warmwater Aquaculture Center in Stoneville.

“I knew florfenicol was approved for use in beef cattle in the United States and in other countries for different types of fish,” Gaunt said. “Because it was effective in other species, I thought it could be applicable to catfish usage.”

Gaunt sought out Schering-Plough’s cooperation on pursuing the antibiotic’s use in U.S. channel catfish. An initial, relatively simple in-vitro study proved Gaunt’s suspicion: the ESC bacteria were very sensitive to florfenicol.

The subsequent years of research led Gaunt to believe this antibiotic will have a positive impact on the Mississippi catfish industry.

“We only have two other antibiotics for treating ESC in channel catfish currently on the market. Palatability problems have been reported with one, and the other is most often formulated as a sinking feed—it sinks to the bottom of the pond, and producers can’t tell if the fish are eating it or not,” Gaunt said. “Our studies show that this new antibiotic is very palatable to the catfish, and it is in a floating feed. It is also very effective against ESC.”

Extension catfish/aquaculture specialist Jimmy Avery said no one knows how farmers will incorporate this new antibiotic into their disease management plans because the cost of the drug is unknown. Despite the price uncertainty, Avery remains optimistic about the impact florfenicol could have on Mississippi catfish producers.

“It certainly will give us another tool to use in fighting bacterial diseases,” Avery said. “Bacterial diseases cause about 50 percent of our fish mortality each year, and ESC is one of the larger components of that fish mortality.”

The Catfish Journal recently reported that when the drug does receive final FDA approval, its use will require a veterinary feed directive order. Documentation by both the issuing veterinarian and the catfish producer will be required. The veterinarian must visually inspect one or more of the affected fish and keep copies of the necessary paperwork for a minimum of two years.

Gaunt’s studies determined the correct dosage to help control ESC in channel catfish is 10 milligrams per kilogram of body weight for 10 days. The withdrawal period is 12 days, as determined by an FDA formula.

ESC is sometimes referred to as “hole in the head” because in the chronic form, it erodes the frontal bone of a fish. In the more acute form, it can cause rapid mortalities in a pond, in some cases killing up to 50 percent of a pond’s fish in days. In the chronic form, it can occur over weeks, causing a loss of money because of slow weight gain.
The headline, “Mare produces three foals in one season,” reads like the front page of a grocery store tabloid, but one Mississippi State University mare actually accomplished this feat in 2005.

SUPER MOM...

Described by her former owner Buddy Wiggins as a star among cutting horses at the age of 3, Cal Señorita’s athletic efforts in the arena resulted in career-ending leg problems. Wiggins donated the American quarter horse with an outstanding pedigree and more than $16,000 in earnings to MSU in 2000.

“I wanted to give MSU the opportunity to improve the quality of its horse herd with a champion like Cal,” Wiggins said. “As the daughter of Señorita’s Playboy and Cal Gal, I knew she would be a great asset in their breeding program.”

Retiring to pasture at the young age of 6 might sound like the easy life for a hard-working athlete, but Cal’s contributions were not over. She delivered a foal in 2003 that sold for $3,000 in the annual sale to help support the university’s livestock program, but her biggest feat came in the spring of 2005. This beautiful, 11-year-old, sorrel-colored mare produced three foals in less than five weeks.

Cal had some help from two pasturemates whose offspring normally would bring less than a third of the price that a foal from a champion like Cal will bring. With the aid of embryo transfer technology, surrogate mothers delivered colts by Cal and two different sires (Blue Bayou Boon and Absolute Acres) on Feb. 12 and Feb. 21 before Cal herself delivered a filly on March 16 by a third sire (Cuttin Touch).

SURROGATE MOTHERS...

Cal’s offspring are indebted to those surrogate mothers that helped carry the load.

“Foaling is dangerous for mares because they can easily be injured in the process,” said Dr. David Christiansen, a clinical instructor in MSU’s College of Veterinary Medicine. “Pregnant mares may carry as much as 200 extra pounds, and that can be hard on their bodies.”
Christiansen said healthy donors and surrogates are important in the success rate of embryo transfers. He estimated the national success rate to be near 50 percent, but pregnancy rates will be much lower with older or problem mares and higher with young, healthy horses.

“Our surrogates are fully mature but not old—usually from 5 to 12 years of age,” Christiansen said. “Proven mares that have recently had healthy deliveries are among the best options. Their health is critical for the foal throughout its life.”

Dr. Richard Hopper, a professor in MSU’s College of Veterinary Medicine and diplomate of the American College of Theriogenologists, said synchronizing the reproductive cycles of both mares improves the environment in the surrogate for the embryo to survive.

“Another benefit is that if the mare does not become pregnant, she will be ready in the subsequent estrus cycle for another attempt,” Hopper said. “The fertilized egg needs to be mature enough by day 15 or 16 for the mare’s body to recognize the pregnancy and not go back into heat.”

INDUSTRY BENEFITS...

Suzy Barnett manages Ranche One, a cutting horse farm in Batesville. In the last few years, she has brought six mares to MSU for embryo transfer, including two of her top performers. Both champions—each with earnings approaching $300,000—experienced debilitating injuries that prevented future competition. One was sidelined after two years as a world champion and the other after a career that lasted just seven months.

“Embryo transfer gives us the opportunity to use their genes without endangering the health of the horse, especially when a mare is not capable of carrying a foal full term,” Barnett said.

All MSU clients have the option of providing their own surrogate or leasing one of the university’s broodmares. Barnett has done both in recent years. When MSU horses served as surrogates, Barnett brought them back to Ranche One until delivery.

“Transferring embryos gives us the opportunity to produce foals using surrogates while the donor mare is still competing. It also enables us to get more than one foal off of a champion in one year,” Barnett said. “Up to four foals can be registered from one mare in a single season.”

WHAT’S IN IT FOR US?

Peter Ryan, an animal and dairy science associate professor, said veterinary students as well as undergraduate students benefit from their experiences with the equine reproduction program.

“Embryo transfer is not easy or routine, but it’s doable. We have a very good success rate here because the veterinarians work so patiently with the animals,” Ryan said. “This is a good teaching opportunity for professors. The students get so much more experience than they would in most other places. That’s the biggest value in our equine breeding program.”

Many years ago, DVM students may only have had one opportunity to perform a reproductive exam on a mare. Ryan said today’s students may do 100 before they graduate.

“Practice builds their skill and confidence level. Because of the increased number of horses, our students get to see more problem cases as well,” Ryan said. “This is a win-win-win situation. The students win by seeing and learning from a wide variety of cases; the university wins by having more people involved to help work on a larger number of horses; and the equine industry wins by having access to a facility with lots of experience in reproduction.”

Ryan, who holds a joint appointment with the College of Veterinary Medicine, said MSU mares delivered nearly 50 foals in 2004 and should deliver close to that number in 2005.
A real, live horse “skeleton,” talented pups, donkeys and even a ferret or two were all on hand to entertain and inform visitors at the College of Veterinary Medicine’s 2005 Open House.

The April 1-2 event drew more than 2,000 visitors of every age to experience live animal demonstrations and to view numerous student exhibits. Area residents also brought their favorite canines to compete in the annual “Dog Trot.”
Healthy eating is becoming a goal of more and more Americans, and supermarkets are devoting an ever-increasing amount of shelf space to foods that are low fat, low carbohydrate, or otherwise deemed “healthy.”
While a proliferation of information has brought healthy eating into the national conscience, nutrition education is nothing new. Since the early days of the 20th century, the nation’s Land-Grant universities have worked to improve food products through experiment station research and to promote good nutrition through Extension service programs.

One of the early leaders in both nutrition research and education was a Mississippian who devoted her long career to improving eating habits.

Dorothy Dickins was born in 1898 in the small Mississippi Delta town of Money. She was delivered by her father, Dr. William B. Dickins, and weighed only about two pounds, the result of a premature birth possibly brought on because her mother suffered from malaria. She thrived as a child, however, and excelled in school.

Following high school in Greenwood, Dickins left the Delta to attend the Industrial Institute and College in Columbus, which soon became the Mississippi State College for Women and is today’s Mississippi University for Women. She received her bachelor’s in chemistry in 1920, a master’s in nutrition from Columbia University in 1921, and later, a doctorate in family economics from the University of Chicago.

Dickins began her career as a lunchroom supervisor for the Jackson city schools and then worked as a hospital dietitian in Massachusetts. She returned to Mississippi in 1924 as the first female scientist on the staff of the Mississippi Agricultural Experiment Station. Her first year of research was conducted on the campus of Mississippi State College for Women before laboratory space was found on the Mississippi A&M campus in 1925. During the 1920s, Dickins conducted pioneering research on the food habits of Mississippi farm families. Recognizing that food consumption patterns are deeply ingrained, she concluded that even in areas where adequate food was available, just instructing people to “eat more of this or eat more of that” could not solve nutritional problems.

Dickins and fellow scientist Olive Sheets, who joined the experiment station staff in 1926, sought to improve the health of all Mississippians by emphasizing the value of a balanced diet and demonstrating the conservation of food nutrients by proper preparation methods.

Writing in one of her early journal articles, Dickins noted “better food preparation is one way of raising the level of living of a family without raising its income.”

During the 1940s, Dickins conducted research showing the value of soybeans as a source of low-cost protein in the diet.

Through her research, Dickins noted that processing destroyed part of the nutrients in some foods. As a result, she promoted the passage of 1944 legislation requiring the addition of thiamine, niacin, riboflavin and iron to degerminated cornmeal, white bread and other food staples. Mississippi was one of the first states to pass such legislation.

In a 1945 research bulletin on changing patterns of food preparation by small town families, Dickins noted that sugar and fat rationing during World War II had resulted in increased use of fruits in desserts and less fried food. She urged home economists to use their influence to prevent a return to the former practices.

During the 1940s and 1950s, Dickins’ research was often published or cited in the journal Rural Sociology. In a 1950 article on changes in farm families due to new technology, she noted that home economists were playing an important part in helping farm families adjust to the changes brought about by the substitution of machine power for manpower.

Other national journals and government reports often cited her studies of rural and small-town lifestyles.

In 1957, Progressive Farmer magazine named Dickins Mississippi Woman of the Year.

She retired as head of Mississippi State University’s Department of Home Economics in 1964, but the research program she built helped pave the way for the establishment of a home economics teaching program in 1968.

In a publication chronicling her life and career, fellow Mississippi State home economists Betsy Starks and Lois Kilgore noted that Dickins believed it was often “hard to separate the so-called applied and basic research, because today’s idle curiosity may lead to tomorrow’s most useful discovery. Conversely, research designed to apply to a particular problem often results in basic new findings in a completely different field.”

Dorothy Dickins died in 1975, but her devotion to education continues through a scholarship established in her honor in MSU’s School of Human Sciences by friends and colleagues.
Whether it’s an individual with a home-based business or a senior citizen looking for personal improvement activities, the Mississippi State University Extension Service has a program that can benefit almost every Mississippian.

The following are stories of some of the people who have taken advantage of Extension programs to improve their businesses, their education or even their health.

**Family beef farm adapts to meet market demands**

Wayne Doler is a second-generation cattlemale in Calhoun County who has been successful in adapting the family business to meet the changing demands of the cattle market.

“We have a commercial beef cattle operation in the south end of the county, and my dad was in the same business,” he said. “I’ve been working with our county agent and the Extension specialists for years, and they have suggested ways to improve the quality of our cattle. They also have helped a lot with marketing.”

One of the Extension services he uses is the Mississippi Farm to Feedlot Program.

For the past 11 years, Farm to Feedlot has helped producers evaluate performance and carcass characteristics of their cattle and to make profitable changes in their breeding, health and overall management programs. The program also provides educational information to beef producers about marketing alternatives.

“I started with the Farm to Feedlot Program the year it started and am still involved,” Doler said. “Working with my county agent and Extension livestock specialists has helped me get my winter feed costs down. In fact, the Extension livestock specialists have helped with about everything I do, from soil fertility right on up to marketing.”

**Extension part of “total package” for Humphreys County farmer**

When Willard Jack moved from Ontario, Canada, to Humphreys County almost 25 years ago he had experience growing corn and soybeans and a determination to learn all he could about farming in the Mississippi Delta.

Today, the transplanted Canadian grows cotton, soybeans, rice and corn in both Humphreys and Holmes counties and was named the Lancaster/Sunbelt Expo Southeastern Farmer of the Year in 2001. His determination has been a big factor in his success. “Having my county agent on speed dial,” he said, also played a role.
“The scientists do a good job with the research, but someone has to help put everything together in a total package, and that's where Extension really fits in,” he said. “The county agent or the state crop specialists will come to the farm and make recommendations for a specific situation.”

Jack looks at his farming operation in its entirety, from soil fertility testing all the way through to marketing, said Humphreys County Extension Director Eddie Harris.

“He is a very conscientious farmer who takes care of his business from the start to the end,” the county director said. “Part of his management package is working closely with research-based information and Extension recommendations.”

Mississippi hair bow business booming on the Internet

“Before the workshop, I knew zero about e-commerce.”

DARLENE SEAL
Marshall County business owner

“Hair bows galore” is how Darlene Seals describes her business, CJ’s Place. CJ’s is the largest hair bow factory outlet in Mississippi, but its customer base is actually worldwide, thanks in part to the help of the Mississippi State University Extension Service.

Seals began selling hair bows from the trunk of her car in Holly Springs in 1991. Her monogrammed and other hair bows for children and ladies were excellent products, and the business grew.

By 2001, she needed to expand her business beyond her north Mississippi hometown, and the Internet was the logical tool to reach new customers. She had met Beth Duncan, small business specialist with MSU’ Extension Service, soon after starting CJ’s and she called on her for help with expanding to electronic commerce.

Duncan said Seals is a smart entrepreneur and sensitive to her customers’ needs, which is an important part of e-commerce.

“The Internet is customer-driven, but it can be very impersonal,” Duncan said. “Darlene, however, keeps in touch with her customers to ensure satisfaction.”

In fact, Seals said an emphasis on customer satisfaction is the first thing she learned when she attended an Extension e-commerce workshop.

“Before the workshop, I knew zero about e-commerce,” she explained. “The first thing I learned about this type of business is that you have to earn the trust of your customers by being prompt. When you e-mail a customer with a promise to do something you have to be prompt in doing it.”

Seals’ Internet site, www.cjsbows.com, has expanded her business 40 percent, but she finds time to help other Mississippians enter e-commerce by speaking at Extension-sponsored workshops.
Half a lifetime is a long time to commit to anything, but a 4-H horse program volunteer believes the program’s benefits to families make the time well spent.

“I’ve been involved with the 4-H horse program for 35 years, and I raised four children in the 4-H program. Now I have grandchildren in 4-H,” said Bobby Crawford of Indianola. “It’s a wonderful program. I’ve contributed time and effort for half my lifetime, and I’ve enjoyed it so much.”

Crawford said it would be difficult to count the number of hours he spends helping out with the program.

“Whatever time it takes is the time I spend helping, whether it be at night trying to get a judge for the state 4-H show or anything else that needs to be done,” he said. Crawford works directly with Gale Chrestman, Mississippi State University’s Extension 4-H livestock specialist.

The benefits to children and their families keep Crawford inspired to help out with the 4-H program.

“During 4-H programs at night or on weekends, we have these children and we know where they are and what they’re doing. We can keep the children involved with 4-H programs and keep them away from drugs, drinking and mischief,” Crawford said. “4-H is something we need to keep our children involved in—not only the horse program, but all 4-H programs.”

“Therapeutic riding works better for me than other types of therapies.”

Heather Bouchillon
Winston County teen

Beginning in her toddler years, Heather Bouchillon of Louisville found joy in riding horses. A potentially deadly car accident in 1993 not only threatened to sideline the 16-year-old from horseback riding, but also from walking or talking. Today, Heather not only walks and talks, she rides.

“I ride a horse every Tuesday for therapy. It’s helped me straighten up and walk better. I can see a big difference,” Heather said. “It’s fun, but it’s also a lot of work to keep my balance on the horse.”

The Mississippi State University Extension Service’s 4-H therapeutic riding program is conducted at the Mississippi Horse Park near Starkville. Under the supervision of a physical therapist and a certified therapeutic riding instructor, Heather’s horse moves through an obstacle course while she exercises various parts of her body. The therapy helps riders facing various physical, mental, language and emotional challenges.

“Therapeutic riding works better for me than other types of therapies,” Heather said. “I wish I could do it every day because it helps so much.”

Mississippi State 4-H TEAM, or Therapeutic Equine Activity Member, is nationally accredited by the North American Riding for the Handicapped Association. TEAM is the only such organization in the state to have this accreditation.
Newassa House recruited friends to join her in an Extension Service-sponsored program and as a side benefit, discovered her blood pressure was dangerously elevated.

House was a team leader for Weigh Down in West Point, a 12-week weight management program that saw its 98 teams lose a combined 5,613 pounds.

“We learned about nutrition, blood pressure, diabetes, body mass index, tobacco, portion size and food choices, and they gave us tips on how to cook food and do regular exercise,” House said.

At the initial weigh-in, program coordinators found House’s blood pressure to be high and referred her to her doctor. At her checkup, the doctor wouldn’t let her leave until they had her dangerously high blood pressure under control and a proper medication prescribed.

“If I had not been in the program, I would never have known my blood pressure was elevated,” House said.

House lost seven pounds and established new eating habits during the program.

“It’s a life change. Even if you don’t properly eat one day, you can always start over again the next day. The most important thing is that you feel better,” she said.
Paul Myrick learned with tomatoes that a business must change with the times or lose its market.

Each year, Myrick has 500-700 plants in commercial tomato production in Stringer. He and his wife have been in the business for about 12 years.

Several years ago, the Mississippi State University Extension Service helped Myrick and other growers get a grant and loan to build a tomato packing facility.

“We had a state-of-the-art packing shed designed to pack uniform tomatoes to ship to northern markets. The market changed, and consumers realized that the best homegrown tomatoes weren’t perfect,” Myrick said.

Myrick and fellow producers closed the packing shed after seven years, but they continued to produce tomatoes for markets closer to home.

“We’re growing varieties for taste. Everyone is looking for varieties that are resistant to disease. Out of those, we try to choose those that taste the best,” he said.

The Extension Service helps them find those varieties and learn new methods to fight insects and disease.

“We plan a tour for our growers every year. We’ve toured every tomato growing area in the Southeast,” Myrick said. “Extension also offers two or three meetings during the year on topics that are important to tomato production.”
4-H helped secure a college scholarship

“4-H has gotten me a lot of places…the biggest impact is the people who’ve been involved in 4-H.”

REBEKAH CARSON
Forrest County college freshman
(shown addressing the Mississippi Senate)

It takes more than grades to earn a college scholarship, and Rebekah Carson used her experiences with 4-H to earn one.

Carson, 18, is a freshman from Hattiesburg majoring in music education at the University of Southern Mississippi. The daughter of Alton and Alyne Carson, she joined 4-H when she was 10.

Every summer found her at 4-H Club Congress at Mississippi State University competing in subject-area contests and honing her leadership skills. She is finishing out her 4-H career as president of the State 4-H Council.

“4-H has gotten me a lot of places,” Carson said. “The biggest impact is the people who’ve been involved in 4-H.”

She said 4-H gave her the opportunity to learn how to be a leader and got her involved in the community.

“I’ve been able to go further in life because of 4-H. My scholarship at USM has a lot to do with 4-H,” she said. “It was partly based on some academics, but otherwise looks at leadership and community service. I probably wouldn’t have any community service and few leadership opportunities if I hadn’t been involved in 4-H.”

CAS gives invaluable training at local library

“The [computer] classes were a big hit here because [she] was able to break the information down so that students—particularly our senior citizens—could understand it.”

SUSAN ALSBURY
Wesson librarian

Tiny Wesson Public Library’s lack of funds didn’t stop it from getting much-needed computer education courses brought right to the Copiah County facility.

This success story began with a visit to the library from Doug Carter, a Mississippi State University Extension Service enterprise and community resource development agent based in Leake County. That meeting led to librarian Susan Alsbury’s meeting with Extension instructor Marty Brock.

“Doug came into town making contact with the different communities, letting us know what he had available, and he gave us Marty’s name,” Alsbury said. “I called Marty, and she came down with all the equipment for computer classes. The classes were a big hit here because Marty was able to break the information down so that students—particularly our senior citizens—could understand it.”

During 2004, the library offered nine computer classes, and Alsbury said she is still receiving calls from community members wondering when future classes will be offered. None have been scheduled due to a lack of funding in the Extension Service.

“The way this program was implemented was just wonderful. This was a tremendous hit because these are short courses with small enrollment, which allows for individual, hands-on help,” Alsbury said. “You have seniors who may not go to our local community college because they feel threatened, but they will come here to learn to use the computer.”
Exploring safer pesticides

Pyrethroids are a class of pesticides widely used in agriculture for control of insect pests.

Matt K. Ross of the College of Veterinary Medicine’s Center for Environmental Health Sciences is examining how specific proteins, carboxylesterases, are regulated in liver cells when confronted with pyrethroids.

“Because of their wide use, human exposure to pyrethroids can occur,” he said. “Since carboxylesterases are the primary defense enzyme in humans that detoxify pyrethroids, identifying the factors that regulate these proteins will help us understand how humans detoxify specific pyrethroid compounds.”

The understanding gained at the molecular level with carboxylesterases, Ross added, may also help in the development of insecticides that are selectively toxic to pests and not humans.

Producing straighter lumber

New technology under development by MSU associate professor of forest products Rubin Shmulsky may take the warp out of wood.

Warp causes significant loss in both grade and value of pine dimension lumber. For many reasons, two-by-fours are the most susceptible to warp and subsequent value loss. In Mississippi alone, it is estimated that warp costs the 14 largest sawmills more than $20 million a year.

Shmulsky’s research focuses on a restraint-based drying procedure. The procedure has shown initial success with respect to reducing warp in pine two-by-fours, four-by-fours, and thick dimension stock in MSU’s pilot-scale kiln.

“Warp is not only a cause for value loss, but it also is an obstacle to market acceptance,” Shmulsky said. “To bolster the markets for Mississippi and regional producers, there is a critical need for improving the straightness characteristics of local yellow pine lumber.”

Imports have increased throughout the country with many builders selecting Canadian lumber over southern yellow pine due to its dimensional stability and straightness characteristics. The development of a device that can produce straighter lumber will be of significant value to sawmills, forest landowners and consumers, Shmulsky added.

It is anticipated that commercially viable technology can be developed relatively quickly from this new restraint system.
Restoring prairie diversity

Sam Riffell, a new faculty member in the Department of Wildlife and Fisheries, is working with private landowners to monitor prairie restoration throughout Mississippi’s Blackland Prairie. The restoration areas will be planted in native grasses this spring.

“Our objective is to increase the probability that grassland restorations succeed,” Riffell said. “One of the monitoring techniques is the development of a butterfly-based indicator of restoration success.”

Butterflies are used as indicators because they are herbivores and their presence depends on a sufficiently developed plant community. Also, butterflies are easy to identify in the field, are widely distributed geographically, and often respond to human activities in the same fashion as other organisms like birds.

“Knowledge on how to accommodate both biodiversity (butterfly communities) and agricultural production (grazing cattle) on grassland tracts is important to conserving natural resources on privately owned land,” Riffell said.

Extracting natural insect control

The zonal geranium is one of the most frequently grown container plants in the U.S. It also has the potential to provide a natural control for insect pests.

Entomologist David Held of the Coastal Research and Extension Center in Biloxi is working to develop extract from geraniums into a botanical insecticide.

“In laboratory experiments, extracts of flower petals fed to or injected into insect pests were insecticidal,” he said. “I’m using liquid chromatography to chemically separate the flower extract into fractions so the components can be identified.”

In addition to testing the extract as insecticide, Held hopes to provide insight into how flowers can attract insects that provide pollination while defending themselves against those that feed on floral reproductive organs. Held is testing the various components of the geranium extract for toxicity on American cockroaches, but he also has shown their effectiveness against a range of other insects.

“The symptoms an insect shows when exposed to geranium extract suggests the toxin acts on nerve impulses at the muscle,” he said. “Most insecticides interfere with nerve to nerve communication.”

Taking the first step in virus protection

As a new faculty member in the Department of Entomology and Plant Pathology, Sead Sabanadzovic quickly noticed that there has been very little research conducted recently on the viruses infecting many of Mississippi’s crops.

To fill this void, Sabanadzovic is generating data on the viruses that attack soybeans and sweet potatoes, as well as many of the vegetable crops grown in the state. The project consists of field surveys and identification of viruses by laboratory methods.

“The collection of information about the viruses in these crops will provide the basis for more detailed research later on,” he said. “Once we have a clear idea of what’s present, then we will know which specific problems need more study.”

The current study, he added, will also aim at development of molecular diagnostic tools for early and reliable detection of plant viruses, and will provide information that may be used to give producers better guidelines for protecting their crops from viruses.
Bidding is furious as Jim Newsome walks onto the trading floor and pauses to watch the action. He’s greeted by one of the participants with a reference to the day’s prices, “Hey Jim, what do ya think about it?”

Newsome smiles, nods and moves to a better vantage point.

Just a few years ago, Newsome could have been in any one of dozens of small Mississippi towns where cattlemen and traders gather each week to buy and sell livestock at auction. At that time, he was executive vice president of the Mississippi Cattlemen’s Association, a job he seemed born into, having grown up on a family farm, been a member of his high school FFA livestock judging team, and educated at Mississippi State to manage a modern livestock operation.

On this particular blustery day in March 2005, however, the market is the New York Mercantile Exchange, or NYMEX, and the buyers and sellers are trading crude oil futures at record high prices. The traders easily recognize Newsome because he is the president of the exchange, ironically, another job for which he seemed destined.

The road to the heart of New York’s financial district began for Newsome on his family’s farm near Plant City, Fla. Strawberries were the primary crop on the family farm, but it was livestock that held the most interest for young Newsome.

Following high school graduation in 1977, he began to prepare for a career in livestock production.

“After two years at Abraham Baldwin College in Tifton, Ga., I went to the University of Florida as a food and resource economics major, which is basically agricultural economics,” he said. “I intended to come back to the family farm. My interest was in beef cattle, but I also wanted a business background.”

While at Florida, Newsome excelled on the livestock judging team, a pursuit that began when he was a member of Future Farmers of America during high school.

“The semester I was due to graduate, my livestock judging team coach, who was good friends with Dr. Howard Miller in the Department of Animal and Dairy Sciences at Mississippi State, told me that Dr. Miller was interested in slowing down as the judging team coach and was looking for a graduate student to help with the program,” Newsome said. “I hadn’t even considered graduate school, so I told him thanks, but I intended going back home. He then called my father, and they teamed up on me and sent me to Mississippi State, which was the best thing that ever happened to me.” The success of his MSU livestock judging teams, which during a six-year period won more than a dozen regional and national contests, remain a favorite accomplishment.

At MSU, Newsome worked on his master’s in animal science under the direction of professor Mike Boyd. He stayed on to work on a doctorate, in part because of his love of working with the livestock judging team.

“Jim was a self-starter,” said Boyd. “He had been in leadership roles, including serving as Florida FFA president, before coming here, and he soon became a leader among the graduate students.”

The next career move for Newsome came in 1989 as he was nearing completion of his doctorate. The Mississippi Cattlemen’s Association called with an offer.

“They offered me a job as their executive vice president, and I thought that would be a good fit for me,” he said. “It was, and I spent almost 10 years with the association, thinking I would retire from there.”

A former colleague at Mississippi State, however, had different plans. Mark Keenum had left MSU’s Department of Agricultural Economics for a position on the staff of Senator Thad Cochran (R-Miss.) and by 1998 was serving as the senator’s chief of staff. A Republican seat on the U.S. Commodity Futures Trading Commission was open, and as a senior member of the Senate Agriculture Committee, Senator Cochran would be instrumental in recommending a candidate.
The CFTC is the federal agency that regulates the nation’s commodities exchanges. The five-member commission is traditionally composed of two appointees from each party and a chairman, who is from the same party as the president. The agency employs a staff of about 500 in its Washington, D.C., headquarters and in cities where various commodity exchanges are located, including Chicago and New York.

“Mark called about the appointment, and I told him I was very familiar with the workings of the CFTC because of the importance of the futures markets to the cattle industry but needed time to think about it,” Newsome said. “When I called him back I explained that we were hesitant about the move because we were in Mississippi, but neither Mark nor Senator Cochran would take no for an answer.”

It was his leadership ability that prompted their enthusiasm about Newsome as a candidate for the post.

“When he was with the Cattlemen’s Association, I would frequently call on Jim about issues affecting the beef industry in Mississippi and nationally,” Keenum said. “He also was instrumental in forming and leading the Mississippi Agribusiness Council, which gave him insight into policy issues affecting soybeans, cotton and other areas of the agriculture industry.”

With the backing of both Senator Cochran and Senator Trent Lott (R-Miss.), who was then the Senate majority leader, Newsome was nominated for the CFTC seat by then-President Bill Clinton. Two years later he was nominated to chair the commission by President George W. Bush.

During his time at the CFTC, Newsome also served as a member of the President’s Working Group on Financial Markets, along with the Secretary of the Treasury, the chairman of the Federal Reserve Board, and the chairman of the Securities and Exchange Commission. The purpose of the working group was to coordinate U.S. economic policy and to cooperate during the times of financial crisis, which included the terrorist attacks on Sept. 11. Newsome was also appointed as a member of the U.S. Corporate Fraud Task Force to coordinate investigations of fraud after the collapse of Enron.

“I was at the CFTC for six years, and it was a great experience, expanding my knowledge base beyond agriculture into the financial and energy markets,” Newsome said. Especially valuable was the opportunity to meet regularly with Federal Reserve Chairman Alan Greenspan to discuss critical economic issues. “My wife and I had, however, started talking about what I was going to do after the CFTC, and at about the same time the NYMEX leadership called and asked if I would be interested in coming to New York. We came to terms rather quickly and I started here at the beginning of August 2004.”

Located in the World Financial Center in lower Manhattan, the NYMEX is the world’s largest physical commodities exchange. It brings together buyers and sellers to trade futures and options contracts on energy products such as crude oil, natural gas, gasoline, heating oil and coal, as well as gold, silver, platinum and palladium. The majority of the trading is still done through open outcry, which involves traders gathering on the steps of octagon-shaped trading rings and shouting out offers to buy or sell contracts for future delivery. The Exchange trades an average of more than 155 million contracts per year with a nominal value of $6.276 trillion.

In his position as president, Newsome is providing leadership as the exchange moves to expand its expertise in energy and metals to new overseas markets.

“We’re currently finalizing a joint venture with the government of Dubai to create what will be the first futures exchange to trade energy products in the Middle East,” he said. “In addition to the new exchange we are building in London, we have also opened a new office in Tokyo and are looking at the possibility of one in Singapore. Domestically, the Exchange has offices in Washington, D.C., as well as the energy hub in Houston.”

Escalating crude oil prices and the resulting jump by gasoline prices at the pump for consumers have put the exchange in the headlines. Although the futures markets provide the mechanism for price discovery, Newsome said energy prices, just like those for cattle and other agricultural products, are based on the fundamentals of supply and demand.

“What the exchanges try to do is make prices transparent, and lately they have been volatile,” he said. “We’re in such a period of tight supply for unleaded gasoline and other energy products that any little thing can trigger a major market response. If, for example, a refinery goes down for two days, supplies can be disrupted in certain regions of the country.”

While his days are spent in an office high above the Hudson River wrestling with the issues that drive the global economy, his roots are still small town. He commutes about an hour and a half each morning from a small town in New Jersey, where his young daughters, Molly and Riley, can enjoy horseback riding and other rural activities.

“Even though I’m from Florida and my wife, Mei Mei, also an MSU graduate, is from California, we still consider Mississippi home,” he said. “In fact, most of the people we know in Washington and New York are not aware we’re from other states because we talk so much about Mississippi.”
The whistle of the bobwhite quail—“bob-bob-white, bob-bob-white”—evokes fond memories of growing up in the South. Each spring the whistle can be heard throughout the countryside as male bobwhites use it to attract females. It’s a sound, however, that’s heard less and less often.

Bobwhite, along with certain sparrows, meadow larks, and other grassland birds, are declining in numbers because their habitat is shrinking.

“The reason they are in trouble is because we have converted virtually all of our native grasslands to agricultural use or to nonnative forage grasses,” said Wes Burger, professor and avian biologist in MSU’s Forest and Wildlife Research Center.

“Across most of the continental U.S., these birds are in danger, they are in decline.”

Burger has been studying bobwhite quail ecology for 15 years and is considered a national expert on increasing habitat for popular game birds in agricultural landscapes. His research began in the Missouri prairies and row crops that bobwhite call home.

“Most grasslands and prairie systems have been converted to agricultural production over the past few centuries, leaving just small populations of bobwhite remaining in the little idle corners and the strips of grass on the edge of crop land and pastures,” Burger said.

To address overproduction of commodities and soil erosion, Congress created the Conservation Reserve Program, or CRP, as part of the 1985 Farm Bill. A secondary benefit of the CRP was that it created grasslands that provide habitat for songbirds, including bobwhite. The CRP enables farmers to enter into contracts with the Department of Agriculture to take highly erodible land out of production and receive annual payments for returning the land to permanent vegetative cover and using management practices that lead to wildlife habitat development.

“Federal conservation programs are tools that we can use to create, in agricultural systems, habitats that birds are dependent on.”

WES BURGER

Reversing the Trend,

MSU Professor Works to Restore Bobwhite Quail

By Karen Brasher

“Federal conservation programs are tools that we can use to create, in agricultural systems, habitats that birds are dependent on.”

WES BURGER
ate, in agricultural systems, habitats that birds are dependent on,” Burger said.

Since 1989, the MSU professor has been involved in various research projects that have measured the habitat value of CRP fields for bobwhite quail and grassland birds.

“CRP fields require management, but one of the first things we noticed was that some of the management practices can have a negative effect,” Burger said. “For example, landowners were creating habitat and then destroying it by mowing the fields right during the nesting season.”

Part of Burger’s work is the study of how necessary disturbances, such as disk, prescribed fire and herbicide applications, can be planned to enhance habitat quality. However, management practices must be implemented in a way that will not compromise other objectives of CRP, like reducing soil erosion and improving water quality.

“The Natural Resources Conservation Service, which has the technical responsibility for conservation programs, was concerned about the effect of planned disturbances on soil erosion,” Burger said. “With the help of NRCS and state wildlife and fisheries agencies, we conducted a series of studies in Missouri and Mississippi that demonstrated that a planned disturbance had little effect on soil erosion but could substantially enhance wildlife habitat value.”

Because of this research and other similar studies, the USDA now cost-shares planned disturbances on CRP sites with landowners.

An additional benefit of the evaluation of CRP lands for wildlife habitat has been the identification of practices that can easily be added to a production agriculture system.

“Agricultural producers are the stewards of some of America’s most important natural resources and are often interested in enhancing wildlife habitat value if management practices can be implemented without compromising their agricultural production goals,” said Ed Hackett, wildlife biologist for the NRCS. “One practice is the use of field borders—a noncrop strip of native vegetation anywhere from 20 to 150 feet around the outside edges of fields that has soil erosion and water quality benefits, but also provides habitat for bobwhite and grassland birds.”

Burger and graduate students under his direction have documented the wildlife and agronomic benefits of field borders. In August of 2004, President Bush announced the availability of a new CRP practice called CP33 “Habitat Buffers for Upland Birds.” Burger is coordinating a national monitoring program to evaluate the wildlife benefits of this new practice.

In addition to research aimed at improving practices that increase wildlife habitat on CRP land, Burger and other scientists in the Forest and Wildlife Research Center are involved in the Northern Bobwhite Conservation Initiative. The initiative is a national restoration plan for bobwhite that uses a habitat-oriented approach to restore populations.

“Over the last two years, we have worked with state and federal agencies, as well as nongovernmental agencies, in three different bird conservation regions to identify suitable habitat for quail and grassland birds,” said Rick Hamrick, a research associate in the Department of Wildlife and Fisheries. “Through the use of land cover data and bird survey data, we have developed geospatial models that predict habitat quality across broad expanses of landscape.”

The MSU team has worked with agencies in the Southeastern Coastal plain, the Mississippi Alluvial valley, and the Central Hardwood region of the Midwest. These three conservation regions are connected and cover approximately a third of the total bobwhite range.

The key to restoring populations, Burger said, is to start with areas that have the likelihood of already supporting bobwhite and then do two things to enhance it: expand those areas and connect them to form large continuous patches of habitat.

“Bobwhite quail are a passion for me and they are an important species recreationally and economically,” Burger said. “I am fortunate to have the opportunity to work with the NRCS and state agencies on national initiatives that preserve this important species for future generations.”
Memorabilia sought for 4-H museum

By Bob Ratliff

The Pete Frierson Mississippi 4-H Museum, located on the grounds of the Mississippi Agriculture and Forestry Museum in Jackson, was dedicated just before Christmas 2004. The 2,000-square-foot facility is now ready for exhibits to be put into place.

“We have some materials, but we need help in collecting items that will tell the complete story of 4-H in Mississippi,” said 4-H Foundation Officer Morris Houston. “To do this, we need a variety of materials, especially those from significant events, such as the first state club congress or the first statewide livestock show.”

Collection of items for the 4-H Museum is being coordinated through Mississippi State University’s Mitchell Memorial Library as part of the Consortium for the History of Agricultural and Rural Mississippi (CHARM) project.

“Several of the collections that have been recently donated to the CHARM project contain photographs and other items related to 4-H,” said manuscripts librarian Mattie Sink. “We’re especially interested in correspondence related to significant events in 4-H history and photographs, especially those in which the persons and events pictured can be identified.”

For more than 100 years, 4-H has brought activities ranging from cattle to computers to Mississippi’s youth. There’s now a home for memorabilia associated with the organization.

Historic displays will be an important part of the museum, but the facility will be more than a place to see where 4-H has been.

“The museum will have interactive displays that will involve visitors in 4-H’s rich history and introduce them to today’s programs,” said Susan Holder, state 4-H leader with MSU’s Extension Service. “Today, the majority of 4-H’ers are involved with leadership projects and skill development activities, and these will be showcased at the museum.”

The museum is named in honor of Jackson businessman Pete Frierson, founder of Frierson Building Supply Co. In the 1930s, a 4-H livestock project earned him a scholarship to the University of Florida, and he was a strong supporter of the organization until his death in April 2005.

For additional information on the museum, contact your county Extension office or MSU’s Special Collections at (662) 325-3848.
Mississippi has abundant natural resources—from the $16 billion in economic value from forestry, forest products, wildlife, and fisheries industries and resources to the 18.6 million acres of forestland and 14,000 miles of streams, rivers and creeks. The forests, rivers, streams, and natural areas are a rich heritage and tradition, which we pass on to future generations.

The importance and prominence of natural resources has changed over the past 50 years. In 1954, when the School of Forest Resources was created, forest resources were studied as a commodity.

Over the years, we have seen a shift in the value and emphasis of natural resources. Throughout the past 50 years, scientists and exceptional students have brought national and international recognition to the College of Forest Resources. The college and center have boosted economic development of Mississippi’s natural resources—the commodity—but also promoted the state’s environmental integrity.

Because of these achievements, Mississippians appreciate that the state’s economic stability depends heavily on a healthy forest resource. However, like politics, economics can make for strange bedfellows.

When forestry research began at Mississippi State, the economic value of land was appraised primarily on its ability to produce timber. In those days, no one would believe that whitetail deer in the future could add $400 or more per acre to the value of land. Today the land’s ability to produce whitetail deer or turkeys may have greater weight than that of timber in determining its monetary value in many geographic areas. Other recreational values contribute significantly to its appraised value.

Consequently, today’s research includes an array of topics from timber production to recreation and environmental impacts. Accordingly, natural resources research has become multifaceted, with a team approach. Scientists in all three departments—forestry, forest products, and wildlife and fisheries—work together for the betterment of the environment and natural resource management. Scientists in the Forest and Wildlife Research Center are achieving breakthroughs on several fronts: rice fields for waterfowl, row crops and fence rows for quail, and forests for fiber, recreation and water quality.

Engineered wood holds great promise for utilization of small-diameter trees. Research in spatial technology has created county-level timber resource information that will attract new forestry-related industries and enhance existing ones. Research in agroforestry is attracting considerable attention from landowners who want to manage for multiple resources. The research program in the Forest and Wildlife Research Center represents a good balance in research needs for industry, private landowners and public agencies. Economics dictates full and responsible use of ecosystems.

Quality research and education have revealed landmarks that will continue to guide us as we go beyond the horizon.

Aldo Leopold, considered the father of wildlife ecology, once said, “Conservation is a state of harmony between men and land. Harmony with land is like harmony with a friend; you cannot cherish his right hand and chop off his left.” This land ethic is being embraced by society, and our culture is demanding strong input into the management of natural resources, like never before. Those who work in natural resources, have always had a love for the land and a desire to conserve our resources even in a commodity-driven world. For perhaps the first time in history, scientists are working together to determine how to grow the best trees, create habitat for wildlife, and get the highest value from the timber, all at the same time.

Funding will follow society’s demand for holistic solutions to environmental problems. Alternative land uses that emphasize optimization over maximization of land values will be increasingly in vogue. Multidisciplinary research opportunities and funding will follow Leopold’s land ethic. Yes, economics will make for nontraditional, if not strange, bedfellows. How do we prepare for future research and education in natural resources considering society’s demands? First, leadership in the university must have a clear, strong vision for natural resources. Natural resources are too important to this state and to future generations to not have a well-defined path. Secondly, natural resource research and education in the university must have focus. Quality research and education have revealed landmarks that will continue to guide us as we go beyond the horizon.

We have made great strides in natural resources conservation in the past 50 plus years of our history as a professional program at Mississippi State University. To address the challenges that face us in the decades ahead we must engage in communication as never before. We must tie our issues to the most pressing issues facing society. We must pass our natural resources on to future generations with pride in a job well done. We have a tremendous opportunity to become a world class leader in natural resource education and research. Let’s make a difference.

Bob Karr is interim dean of the College of Forest Resources and director of the Forest and Wildlife Research Center.
At Mississippi State’s College of Agriculture and Life Sciences, every day brings word of new successes—students who show themselves to be the best in competitions with other institutions, faculty members who achieve highest recognitions from professional organizations or garner major federal grants for research, staff and researchers who have helped increase productivity for Mississippi farms and businesses.

Never has there been a more exciting time to take part in all that is happening here, and I invite you to do so.

The university has initiated its largest-ever fundraising effort, State of the Future: The Mississippi State Campaign. This extraordinary campaign not only targets current needs resulting from static state funding, but also looks forward with ambitious goals to what MSU can become in the years ahead. It seeks at least $400 million in private gifts and commitments by December 2008.

For the College of Agriculture and Life Sciences to build upon its present heights and reach to meet its ever-growing potential, we have set a campaign goal of $23.4 million. Most of these funds will directly affect our primary mission of education through faculty and student support.

It is vital for us to maintain an exceptional faculty, so we have made endowed chairs and professorships one of our top priorities. In today’s competitive environment, endowed positions are crucial to retaining and attracting outstanding educators.

Likewise, endowed scholarships and fellowships help draw superior and deserving students, making them more likely to remain in the state after graduation. We want not only to add new endowments in this area, but also to bolster existing ones through our new Dean’s Endowment Fund.

Campaign funds will go toward enhanced facilities to improve and expand the educational experience as well. Further, annual fund and other kinds of support will provide students and faculty with the types of experience and professional interaction that enrich them and elevate the national reputation of the college.

Your involvement is key to making the vision a reality. I am confident that together we can reach our goal, for the pride and loyalty of our alumni and friends are unsurpassed. We are united in our desire for a College of Agriculture and Life Sciences that is second to none.

Jud H. Skelton
Director of Development
College of Agriculture and Life Sciences

Lulu Oncology Unit: expanding cancer treatment options for pets

Just mention “Lulu” to almost anyone on campus or to others throughout the state and most will have heard her name.

Malcolm H. Mabry, Jr., became set on establishing an oncology unit at Mississippi State’s College of Veterinary Medicine when a cancerous tumor appeared on his dog, Lulu. Since Mississippi had no place to treat cancer in animals, Mabry had to take long trips back and forth to Auburn University.

After Lulu died in 2004, Mabry made a generous bequest toward the establishment of an oncology unit at MSU. He continues to give annually to the cause and devotes much of his time to encouraging others to support the project as well. Efforts to make the unit a reality are proving successful as many other individuals—including companion animal owners, pet enthusiasts, health professionals, alumni and friends—are generously providing support in many forms.

The Tupelo Kennel Club is one group that has lent a helpful hand. The group contributed $2,500 to the Lulu Oncology Unit Fund at the Gum Tree Classic Dog Show on May 13, 2005. The Brandon Agility Running K-9’s (BARK) is coordinating an agility event in Brandon planned for Oct. 28-30, 2005. All profits from the event will be donated to Lulu’s fund.

With the support of others, the proposed state-of-the-art oncology section will allow for the research and treatment of tumors and cancerous cells in animals. The facility will be the first of its kind in Mississippi and will make cancer treatment a viable option for the state’s pet owners. In the past, Mississippi pet owners had to either deny their animals treatment or transport their companions to other states with oncology units. The new unit would serve not only Mississippi, but also parts of Arkansas, Tennessee and Alabama.

For more information on the oncology unit or giving to the College of Veterinary Medicine, please contact Jeff Little at 662-325-8151 or jlittle@foundation.msstate.edu or Melissa Montgomery at 662-325-5170 or mmontgomery@foundation.msstate.edu.
Many fall Saturdays, in the shadow of Davis Wade Stadium and nestled among some of the tallest pine trees on the Mississippi State University campus, you are likely to find the McCollough family enjoying the fellowship of family and old friends, greeting new friends, and welcoming all. MSU, pine trees, family and friends, in fact, make more than the perfect game day for the McColloughs—they make a way of life.

Skip McCollough left Starkville as a graduate of the MSU’s College of Forest Resources in 1979 with a B.S. degree in forestry and a minor in wildlife management. He and his wife Julie moved to Alabama and then back to Mississippi to eventually settle in Hattiesburg and raise a family. In 1990, the McColloughs created South Mississippi Forest Products and have enjoyed a career in the timber industry ever since.

Fortunately for MSU, Skip and Julie find time in their busy schedules to give back to the College of Forest Resources. Skip has previously served as both President and Vice-President of the College of Forest Resources Alumni Society. In 2000, Skip was honored as the CFR Alumnus of the Year. Skip has been a mentor for MSU forestry students and has had several students co-op with him. In addition to the personal time and energy Skip and Julie devote to the college, the McColloughs have done their best to make sure that others interested in forestry have a chance to pursue their dreams at MSU.

In 1998, the McColloughs established the South Mississippi Forest Products Annual Scholarship and in 2003 created the Skip and Julie McCollough Endowed Scholarship. They have also established the Skip and Julie McCollough Endowment for Excellence, which will be used to create additional scholarships.

“Skip and Julie are devoted to Mississippi State University, the students, and the future of forestry in Mississippi,” said Jeff Little, assistant director of development for the college. “The College of Forest Resources is extremely proud to have friends like the McColloughs, who are dedicated to the success of the college and its students.”

Skip and Julie McCollough are never more at home than when surrounded by pines, whether they be the thick longleaf pine stands of Hattiesburg or the tall loblolly scattered around the MSU campus. In either setting the McColloughs remain the most loyal of friends to MSU.

For more information about giving to the College of Forest Resources, contact Jeff Little at 662-325-8151.

ZonaDale Taylor attributes much of her success to a quality education. Through her deferred gift to Mississippi State University, she hopes to help students receive similar opportunities in the future. The gift, in the form of a significant bequest, will create an endowed scholarship to benefit students pursuing degrees at Mississippi State.

The ZonaDale Taylor Endowed Scholarship will be used to assist women majoring in programs within the School of Human Sciences in the College of Agriculture and Life Sciences.

“When I was in college, I benefited from the financial aid I received as a student worker. As a result, I want to provide an incentive to deserving MSU students,” ZonaDale said. “I feel that a quality education is a necessary part of becoming a productive member of the workforce.”

ZonaDale, a native of New Albany, began her career with Mississippi Power Co. in Meridian. She later became a member of the founding editorial staff of Southern Living magazine in Birmingham, Ala. After receiving her graduate degree, ZonaDale became an assistant professor in the Department of Home Economics at Mississippi State and later served as head of the Department of Home Economics at McNeese State University. When she and husband Charles moved to Pittsburgh, ZonaDale became manager of consumer and public affairs for Beecham Products USA.

The versatility of an education in the field of human sciences allowed ZonaDale to be qualified for a variety of job opportunities throughout her career. Through the scholarship, ZonaDale hopes to provide assistance and encouragement to women who have chosen to pursue a degree in the School of Human Sciences.

Despite living away from MSU for quite some time, ZonaDale Taylor has always had a special place in her heart for the university and has supported MSU with gifts through its foundation for many years.

To learn more about making a bequest or other deferred gift to Mississippi State, contact Jud Skelton at (662) 325-0643.