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

Mississippi State University
On the Cover
Shrimp boats still line the public dock on Biloxi’s Back Bay, but their numbers have been thinned by Katrina and low shrimp prices. The story beginning on page 6 examines some of the obstacles facing the shrimp industry and MSU’s work with Gulf fishermen. (Photo by Bob Ratliff)

Back Cover
Pat Rodrigue worked this summer on a mural showing rodeo events at the Pam Bell Adams Arena in the Yalobusha County Multipurpose Building. The individuals depicted in the drawing are Yalobusha County residents, most of whom have competed at the arena. In addition to being an accomplished artist, Rodrigue is a part-time employee at the Yalobusha County MSU Extension Service office and a 4-H volunteer.

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The opening sentence of the First Morrill Act of 1862 states, “An ACT Donating Public Lands to the several States and Territories which may provide Colleges for the Benefit of Agriculture and Mechanic Arts.”

The legislation introduced by U.S. Representative Justin Smith Morrill of Vermont granted each state 30,000 acres of public land for each member of Congress it was apportioned based on the 1860 census. The land grants were in the new U.S. territories in the West and were to be sold and the proceeds invested in a perpetual endowment fund to support colleges of agriculture and mechanical arts in each state.

A second Morrill Act in 1890 established additional land-grant schools.

Today there are 73 universities in the land-grant system. An additional 23 Native American tribal colleges also operate as land-grant institutions.

It’s good company to be in. The roster of land-grant schools includes the University of California, Purdue, the Massachusetts Institute of Technology, Rutgers, Cornell and Virginia Tech. Mississippi’s land-grant institutions are Mississippi State University and Alcorn State University.

The purpose of the land-grant system has always been to provide the education and research needed to move the nation forward and to make it secure in its ability to produce food and fiber and to build the cities, transportation systems and other infrastructure needed by a great nation.

The borders of a campus do not bind land-grant schools. The Smith-Lever Act of 1914 created the Extension system, which placed representatives of the land-grant institutions in every county to provide educational programs and research information at the grass-roots level.

Land-grant schools have always used the latest technology in their teaching, research and outreach missions. In the early days, they were researching and teaching ways to harness the power of steam, then gasoline and other energy sources. Today, Mississippi State University and other land-grant universities are leaders in communication technology.

The Internet and other communication tools are important in helping the Division of Agriculture, Forestry and Veterinary Medicine at MSU accomplish its mission of service to the people of Mississippi. The Division’s Web site, MSUcares.com, is a direct link to MSU for anyone looking for information about academic or continuing education opportunities, news from the units in the Division, research results and other information.

We use technology, however, only to supplement, not replace, people. Extension personnel are available in each county to provide educational programs and to assist with questions on a variety of topics. Beginning on page 4 of this issue of Landmarks, you can read about how young farmers in Yalobusha County are benefiting from support and encouragement from their county Extension director.

Work with Gulf Coast shrimp fishermen by MSU research scientists and Extension professionals at the Coastal Research and Extension Center in Biloxi is another example of how Division personnel adapt to meet the needs of individuals. Their story begins on page 6.

Keep these stories in mind when you hear that Mississippi State University is a land-grant school.

Vance H. Watson
RURAL SETTING
Maintains Hold on Winning Farmers

Coley Bailey has learned the benefits of planting cotton in wheat stubble, which helps the crop retain moisture during dry years.
Most farm children go to college seeking careers away from the hard work and uncertain futures their parents faced, but an elite group in Yalobusha County returned to their communities because they knew “there’s no place like home.”

Their efforts have earned state, regional and national recognition, but their greatest satisfaction comes from friendships formed in common toils and successful crops.

Steve Cummings, county director for the Mississippi State University Extension Service, said Yalobusha County has a talented group of young farmers. They include four state winners of the Farm Bureau Farmer of the Year awards, and three of those also have been state winners of the John Deere/Jaycees awards program.

“They are a close-knit group. They help each other. In most cases, the husbands and wives are teams in their agricultural businesses,” Cummings said. “They all work together to promote agriculture and community service.”

Three awarded farmers were students at MSU in the mid-1990s. John Ingram is the most recently recognized farmer, earning the 2005 Farm Bureau’s Farmer of the Year award. His classmates included Kevin Kimzey and Coley Little Bailey, who were also state winners of the Farm Bureau and John Deere/Jaycees competitions. Brad Brooks, who graduated from MSU in 1987, also brought both Farm Bureau and John Deere awards home to Yalobusha County.

A 1994 agricultural economics graduate, Bailey “never considered any other job” than following in his father and grandfather’s footsteps on the family farm that was started in the 1930s.

“When John, Kevin and I went to college, we knew then that we wanted to come home to farm,” said Bailey, who placed first nationally in the John Deere/Jaycees Young Farmer competition and top five nationally in the Farm Bureau competition.

A private pilot for 20 years, when in college Bailey would have breakfast on the farm with his mom, then fly to school in Starkville in time for morning classes. Today, he uses the airstrip across from his farm office to take him to meetings such as the National Cotton Council, the Mississippi Boll Weevil Management Corporation or the state Farm Bureau.

Cummings said all these winners are leaders in their communities as well as agriculture.

“I can’t teach them how to farm. They are just my friends. I do try to encourage them to use their leadership skills. That’s what Extension is all about,” he said.

Cummings also knows the value of bringing the farmers together.

“If weather gets us down in the dumps, we all get together, listen to a ballgame and talk about farming,” Bailey said. “Steve is the first person I call if something goes wrong. I talk to him about equipment purchases, flower beds or insect questions.”

Ingram, a 1993 agricultural business graduate, also believes in the benefits of listening to other farmers and his Extension agent.

“At Mississippi State, I learned different avenues for doing things. I made a lot of good friends, including the professors who I still enjoy talking to,” Ingram said. “As much as I dreaded economics, the information I learned then and the professors I had are what help me the most now.”

Ingram is a hands-on farmer. Also following in his father and grandfather’s footsteps, he works 1,300 acres of cotton, corn and soybeans. The Ingram farm also includes a herd of black angus cattle.

Brooks studied agricultural economics before becoming the third generation to grow cotton, corn and soybeans on his family’s farm.

“I learned about record keeping at college, but everything I’ve experienced since graduation has reinforced it,” Brooks said. “When I wanted to quit and come home, my dad made it clear that I needed to finish. College helped teach me discipline, and I learned how to take care of myself – to grow up.”

Brooks credits his county Extension director with helping area farmers continue learning.

“Steve is the glue that keeps us all together,” Brooks said. “He is the reason all of us are involved in MSU research and Farm Bureau activities.”

In addition to the farming foursome, Yalobusha County has produced two Farm Bureau queens, 10 Farm Bureau District 4 winners, two Farm Bureau farmer and rancher discussion state winners and two Farm Bureau talent winners. Cummings joined his farmers as an award winner in 2004 when he was named Extension Worker of the Year.

“These farmers make my job easier. I can know what farmers all across the county need based on what these guys request,” Cummings said. “I’ve had opportunities to work in other counties, but I don’t think I could ever find a better place to be.”
Milh Lu sat on the deck of his boat in Biloxi’s Back Bay amid a pile of mostly spoiled shrimp. Both Lu and his catch were victims of one of the many problems facing Gulf Coast shrimp fishermen this year.

“Not enough ice,” Lu said. “I did not have enough ice to keep part of the catch fresh enough to sell.”

Lu operates an “ice boat,” a ship that can spend several days harvesting shrimp while keeping its catch fresh in ice-filled compartments below the deck. The shrimp are sold to processing plants.

The few shrimp Lu manages to salvage will go to feed his family. The rest—several hundred pounds—are a complete loss.

A shortage of ice is just one of the problems Lu and other Gulf Coast shrimp fishermen, who are predominantly Vietnamese, are facing.

“Katrina destroyed a lot of the infrastructure that supports the shrimp industry, including ice plants and processing plants,” said Dave Burrage, Extension professor of marine resources with the Mississippi Coastal Research and Extension Center in Biloxi. “The docks and other facilities used by the shrimp boats in Biloxi and other ports along the Mississippi Gulf also were heavily damaged by the hurricane.”

Some shrimp boats were damaged or destroyed by the storm, and others have left the Mississippi coast for ports not severely damaged by Katrina.

“There were about 300 Mississippi-based boats at the opening of the shrimp season this year, down from more than 600 in 2005,” Burrage said. “Some are still under repair or won’t be repaired, and others have relocated to other areas like Bayou La Batre in Alabama.”

Not all the problems faced by the Gulf Coast shrimp industry are directly related to last year’s devastating hurricane season. The price of the diesel fuel needed to power shrimp boats has climbed in tandem with other energy prices. The boats can use up to 30 gallons of diesel an hour when dragging the heavy nets used in harvesting shrimp. This summer, that equals a cost of almost $100 an hour just for fuel.

Strong competition from imported shrimp and the resulting depressed prices are also causing lean times for Gulf Coast fishermen.

“Only about 8 percent of the shrimp sold in the U.S. comes from the Gulf Coast,” Burrage said. “The rest is imported, mostly from China, Thailand, India and other areas of Asia.”

A problem not faced by the fishermen this season is availability of shrimp. Conditions have been favorable this year in the bayous and inland waterways along the coast, where young shrimp mature. There’s also a good supply of adult shrimp in the Gulf because of the disruption of last year’s harvest.

“There is shrimp out there big and plentiful, but fishermen are facing an uphill battle to harvest them because of high operat-
ing costs and the lost infrastructure,” Burrage said. “Debris washed into the Gulf by Katrina is also still causing problems.”

The slim profit margins resulting from low prices and high operating costs have forced many long-time fishermen out of the shrimp business. One of those who found he could no longer make a profit in the shrimp business following Katrina is Peter Nguyen.

“Katrina put a lot of folks out of business,” he said. “Most of the boats had damage, and many had big mortgages on them that can’t be paid because of the cost of repairs, low prices for shrimp and the high cost of operating a boat.”

A 15-year veteran shrimper who speaks both English and Vietnamese, Nguyen recently began a second career as a fisheries technologist at the Coastal Research and Extension Center. He works with Burrage and other MSU Extension and research personnel to provide shrimp fishermen with information on new types of equipment and regulations affecting the shrimp industry. Nguyen’s knowledge of the Gulf Coast’s Vietnamese community and language also helps get fishermen’s input relayed back to agencies, organizations and researchers.

Educating shrimpers about new types of equipment is another part of the work done by Burrage and Nguyen. Among the new products on the market are replacements for the traditional wooden “doors” used to spread shrimp nets as they are pulled behind boats. The doors used by shrimp fishermen are large wooden panels made from 2-inch-thick lumber attached to each side of the front of the nets. New models constructed from cambered steel create less drag and can result in significant fuel savings.

“The new models can cut fuel consumption from about 30 gallons an hour during harvesting to about 19,” Burrage said.

New types of nets constructed with high-tech webbing that does not have knots also reduce drag and improve fuel efficiency.

“Sticker shock,” however, is a problem when it comes to getting fishermen to switch to the new equipment.

“It takes only about six months for nets with the new designs to pay for themselves, but it’s hard to convince fishermen to buy them when the old types cost less,” Burrage said.

The new, more efficient equipment is an example of a trend toward efficiency in the shrimp industry already under way before last year’s hurricane. That trend, Burrage said, could let just one-third the number of boats harvest the same amount of shrimp as the entire fleet operating in the Gulf before Katrina.

“We’ve known for years that there were too many shrimp boats working the entire Gulf, from Florida to Texas,” Burrage said. “Federal and state agencies that regulate commercial fishing have been considering buy-out programs and other incentives to help reduce the number of boats whose operators were just barely making a living. While Katrina certainly caused and is continuing to cause hardships for Mississippi’s shrimp fishermen, the long-term effects could include a better living for those who remain in the business.”

Two types of shrimp boats, Burrage added, will likely dominate the Gulf shrimp fleet in years to come—large, freezer-equipped vessels that can spend weeks far out in the Gulf and small ships that make overnight runs close to shore.

“The large boats will survive because their operating costs per pound of shrimp harvested are much lower than smaller vessels,” he said. “The small boats have an advantage because they can bring in their catch live and sell it to the public at the docks for a premium price.”

The vessels Burrage expects to see squeezed out of the business are the ice boats, such as the one operated by Milh Lu.

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**SHRIMP BY THE NUMBERS:**

**Boats on opening day of shrimp season in Mississippi waters**

<table>
<thead>
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<th>Year</th>
<th>Number</th>
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<tbody>
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</tr>
<tr>
<td>2006</td>
<td>306</td>
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**Pounds of shrimp landed in Biloxi during first two weeks of the season**

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<th>Pounds</th>
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<tr>
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**Price per gallon of diesel fuel**

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<tr>
<td>June 2006</td>
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**Dockside price per pound of shrimp paid by processors for 41 to 50 shrimp per pound count (most production is in this size class)**

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“The ice boats can spend several days in the Gulf, but they are competing with the larger, more efficient refrigerator ships for sales to processors,” he said. “Their operating costs are just too high to be competitive.”

For many of the shrimp fishermen forced out of the business, the transition to new jobs may be difficult, but they can find support.

“Federal and state assistance with job training is available, and there are other government and private programs to help coastal residents displaced by the hurricane,” Burrage said. “Workshops specifically for commercial fishermen are scheduled for this fall, after the shrimp season, and Peter and I will be helping with those.”
Floral Design: Labor of Love for MSU Students

By Bob Ratliff

They do it because they love flowers, but for two MSU students, floral design also has other rewards.

Junior Mariah Baird and senior Jena Oh are both horticulture/retail floristry management majors. Baird is from Starkville, and Oh grew up in Seoul, South Korea. Despite their diverse backgrounds, they share a passion for flowers.

"I grew up helping my grandpa do flowers for weddings and other events," Baird said. "He was a high school principal, but he worked with flower arrangements as a sideline."

Oh has been in the U.S. for four years and at MSU for one. For her, the retail floristry program is an opportunity to "do what I love," she said.

The two students both work at the University Florist on campus, and both were recognized by the American Institute of Floral Designers (AIFD) at the organization’s 2006 Symposium in Washington, D.C.

Baird and Oh collected the overall highest scores among a total of some 50 students from 15 universities and colleges taking part in the student challenge at the symposium.

Baird finished among the top three in the dried arrangements category, while Oh did the same in the sympathy category. They also were among the leaders in the remaining categories: flowers-to-wear, flowers-to-carry and centerpieces.

Preparation for the national competition included a dozen practice sessions with professional designer Jim DelPrince, an associate professor of plant and soil sciences and adviser for MSU’s AIFD chapter.

"Since students in the competition never know in advance what the specific design challenges will be, repeated practice in executing basic design principles is critical," DelPrince said. "As their honors indicate, Mariah and Jena practiced a great deal."

In addition to the preparatory session, Baird and Oh benefited from their part-time work at the University Florist, where their supervisor is business manager Lynette McDougald, also an AIFD-certified designer and student chapter coadvisor.

"Their consistent work in all five categories made the difference in bringing home the top honor," McDougald said. "Consistent design is what our retail teaching shop is all about."

MSU is among only a very few U.S. universities offering degrees in floristry retail management. The campus florist is a full-service commercial enterprise, but it serves primarily as a hands-on instructional laboratory for students in the Department of Plant and Soil Sciences seeking retail floristry training.

Baird and Oh agree that it provides training for a profession they want to be part of after graduation.

"There are so many opportunities, including product development, working for a floral wire service and operating your own shop," Baird said. "You just have to figure out what works best for what you want out of life and go in that direction."
A process conceived in Australia and refined at Mississippi State University to turn small-diameter trees into high-strength engineered lumber may soon bring new jobs to Mississippi.

Shuqualak Lumber Company has signed a license agreement to build a TimTek engineered wood products plant in Meridian. The Mississippi Legislature recently approved a $10 million appropriation to assist Lauderdale County with the purchase of the proposed site and the development of infrastructure necessary for the plant.

It is predicted the plant will provide 140 jobs directly and another 168 jobs indirectly in Lauderdale County and surrounding areas, said Anderson Thomas, vice president of Shuqualak Lumber Company.

“A pilot project in MSU’s Forest and Wildlife Research Center has demonstrated a viable market for small-diameter trees for use in the TimTek process,” said Walter Jarck, a director of TimTek Australia, Pty. Ltd. “The patented process makes high-strength engineered lumber from small-diameter trees thinned from pine plantations.”

The TimTek process separates the wood from the small-diameter trees into long strands. The strands are then coated with an exterior-type adhesive and dried before being formed to the desired shape in a specialized steam chamber hot press.

Conceived in Australia by the Commonwealth Scientific Industrial Research Organization and refined at MSU, TimTek’s product is a unique, long-fiber, structural-engineered lumber with uniform, stable and high-strength properties of select-grade sawn timber.

“It can be produced in lengths and cross sections greater than can be achieved from the largest logs available,” Jarck said. “The beams and timbers compete very favorably with engineered products now used in residential and commercial construction as joists, rafters and headers and for other uses where strength and quality are required.”

The pilot plant operation began on the MSU campus in 2003 and has been successful in producing several types and sizes of beams. Equipment has been purchased and installed to perform numerous tests on the TimTek product. This new test equipment will be used in the future to test all structural products, thus making MSU one of the leading test labs in the U.S.

The TimTek wood product recently passed the long beam or span portion of the code approval process with the APA - The Engineered Wood Association in Tacoma, Wash. When all code tests are completed, the code approvals will allow the TimTek product to carry a grade stamp for acceptance in the marketplace.

“The long beam test is the most difficult test to pass in the code approval process, which will test 1,229 individual specimens,” said Dan Seale, project investigator and professor. “Other tests include shorter spans, thickness swell, duration of load, shear and fastener.”

The pilot plant has also experimented with agricultural fibers, including cornstalks and kenaf to determine if other types of media can be made into marketable products using the TimTek process for raw material preparation. Kenaf is a woody plant from Asia that is related to both cotton and okra.

“The kenaf worked well, but we are still working with the cornstalks,” Seale said. “The cornstalks have a waxy surface that traditional resins cannot penetrate.”

Agricultural fibers would likely be processed using a combination of traditional pressing technologies combined with new raw material preparation techniques.

The TimTek plant is important for landowners, Seale added.

“Owners of timberland will see a new market for their pine trees in east-central Mississippi,” he said. “This comes after several years of depressed timber prices, particularly for pulpwood, and the closure of several mills in and around the state.”
Mississippi 4-H was well represented by “a cast of characters” at the 2006 Gold Congressional Award Program in Washington, D.C.

Normally, only the 15 Mississippi 4-H’ers earning the gold award are present for the program in Washington, but 17 additional members involved in the Congressional Awards program were able to attend to perform a one-hour play promoting literacy during the elite conference.

“Literacy is a focus of the 4-H Congressional Awards,” said Linda Mitchell, 4-H technology and creative programming specialist with Mississippi State University’s Extension Service. “I looked for existing and affordable plays that would promote reading but could not find any. That’s when I decided to write ‘Sarah and the Magical Mix-Up.”

Mitchell said some 4-H members were earning hours of community service in literacy for the Congressional Awards program by interactive reading on a local television station. When the opportunity to be involved in this play came up, they jumped at the chance. After almost 50 young people responded to the casting call for 16 acting spots, Mitchell added two more characters to the cast and understudies for each of the actors. Performers came from seven counties, including Attala, Itawamba, Lee, Pontotoc, Prentiss, Tishomingo and Union.

The storyline for “Sarah and the Magical Mix-Up” encourages children to read. When a young girl named Sarah throws a book of fairy tales against the wall, the characters fall out and get all mixed up. Suddenly the Giant from Jack and the Beanstalk is chasing Cinderella, two Big Bad Wolves are fighting over Little Red Riding Hood, the Wicked Witch is stirring up a batch of trouble and much, much more.
"Sarah discovers that reading can open a door to other worlds and to the people who live in them," Mitchell said. "The play is filled with laughter as Cinderella teaches the Giant how to ballroom dance, suspense as the Wicked Witch kidnaps a favorite character and tears as Sarah must say goodbye to her new friends.

"We have been very pleased with the response of the audience to the performances and to the message," Mitchell said. "The actors love hearing the children laugh and get involved with the production."

The U.S. Congress established the Congressional Award program in 1979 to encourage young people in leadership and personal development. Youth ages 14 to 24 work their way through three progressively more difficult levels of achievement. Personal goals are set in community service, personal development, expedition/exploration and physical fitness.

"Young people who get in the habit of performing community service and constantly improving themselves tend to continue this pattern for the rest of their lives," Mitchell said.

Lee County 4-H member Nick Simmons made his acting debut in the role of a wolf in the play.

"This seemed like a good opportunity to try something new and make new friends. I also wanted to support the literacy effort," Simmons said. "It seemed like a good way to inspire young children to read."

A recent graduate of Saltillo High School, Simmons is a Gold Medal Congressional Award winner and served as state 4-H president this year. Gold medals are given to youth who complete the top level in the Congressional Awards program. In Washington, Simmons addressed the audience at the Gold Medal Ceremony on behalf of all award recipients.

"The Congressional Awards program mirrors what 4-H is all about: community service, leadership, health and fitness," Simmons said.

Mitchell said the Congressional Award is the highest award the U.S. Congress presents to young Americans. While in Washington, the Mississippi delegation took part in the Gold Medal Ceremony with Rep. Roger Wicker and an additional ceremony for bronze and silver awards with Sen. Trent Lott. The delegation also toured the nation's capital and took part in activities arranged by the national Congressional Awards staff.

Wicker recognized the special effort Congressional Award recipients have put into their community service.

"It is a special honor for these young men and women to be selected to perform at the awards program in Washington, D.C. Using their talents in a play to highlight the need to improve literacy is a unique way of promoting the ideals of community service and leadership that are key elements of the Congressional Award program," Wicker said.

Following the activities in Washington, most of the group journeyed to New York City for their first time in an audience for a Broadway performance.

"The actors for the literacy play watched with more interest than most people because they wanted to see how Broadway actors performed," Mitchell said. "The trip served to inspire everyone involved in the Congressional Awards program. We expect interest to continue to grow as youth learn of the rewarding opportunities that come with this type of community service."

Nick Simmons, left, and John Paul Whitlock play wolves that are among the mixed-up fairy tale characters in "Sarah and the Magical Mix-Up."
The long-awaited, state-of-the-art Mississippi Veterinary Research and Diagnostic Laboratory in Pearl is open and providing quicker diagnostics on samples from a broad range of animal species.

The $18.5 million construction and equipping project started in 2002 with the groundbreaking of the 2,000-square-foot poultry lab with its estimated $500,000 cost. The second phase of the project started a year later when construction began on the 40,000-square-foot diagnostic facility for all animal species. The poultry unit became the first to enter the larger facility as the initial lab becomes the receiving office for samples from all species.

Dr. Lanny Pace, executive director for the Mississippi Veterinary Research and Diagnostic Laboratory System, said the project includes more than the building itself; it includes the latest in equipment needs for such a facility.

“One example of the new equipment is a robotic microscope that can be used to share microscopic slides with other labs all over the world, as well as with consultants from other universities and laboratories,” Pace said. “Rapid diagnoses and responses are the keys to preventing catastrophic losses when a major disease outbreak occurs in an animal industry. Four years ago, we could not have responded to high-path avian influenza. We would have had to send samples to another lab.”

The new building has biosecurity and biosafety measures in place, including separate, dedicated air handling systems for public areas and laboratory space, limited-access areas and numerous biological safety cabinets and fume hoods to protect lab personnel.

“Most routine diagnostic work can be done in biosafety level 2 laboratories, but biosafety level 3 is needed for work on disease agents that are more highly contagious to animals and humans and for agents that could be used as bioterrorism agents,” Pace said. “Part of the lab is designed as a biosafety level 3, but it has not been commissioned yet. Once approved for that level, the staff will be able to work on diseases, such as highly pathogenic avian influenza and eastern Equine encephalitis, in a secure and safe laboratory environment.”

Pace, a professor of veterinary pathology with Mississippi State University’s College of Veterinary Medicine, oversees the four-laboratory system. Accredited by the American Association of Veterinary Laboratory Diagnosticians, the MSU lab network includes the poultry lab in Pearl, the diagnostic lab in Jackson that will soon move to Pearl, the aquatic lab in the Thad Cochran National Warmwater Aquaculture Center in Stoneville and the veterinary college lab in Starkville.

Before the completion of the new diagnostic lab, most nonbird or nonfish samples were sent to the state-owned building on North West Street in Jackson. The building, which is more than 60 years old, lacked space, proper ventilation for adequate biosafety measures and some of the state-of-the-art equipment to meet future diagnostic needs.

“We could do our job, but now we can do it better,” Pace said.

Dr. Jim Watson, state veterinarian with the Mississippi Board of Animal Health, said access to the latest in diagnostic tests and the highly skilled and trained staff greatly improve the ability to provide quality animal health care within the state.
The new Mississippi Veterinary Research and Diagnostic Laboratory in Pearl has state-of-the-art facilities for routine procedures and for diagnosing new and emerging diseases in a variety of animals.

“Whether it is a beloved pet, a valuable breeding or performance animal, or food-producing animal, it is critical to have a diagnostic laboratory that can provide the support veterinary practitioners need to provide quality veterinary care for animal owners,” Watson said. “We need to have the diagnostic capability to rapidly diagnose new and emerging diseases, as well as the ability to screen for foreign animal diseases that do not normally occur in our country.”

Watson said with the emergence of new diseases and continued threats of diseases such as foot-and-mouth disease, it is vital to the economic interests of Mississippi to detect diseases if they enter the country.

Dr. Danny Magee, director of the Poultry Research and Diagnostic Laboratory in Pearl, said the timing for this new facility is very good.

“We started this process before the Sept. 11 terrorist attacks in 2001 and before fully recognizing the degree of the threat of bioterrorism and agroterrorism,” Magee said. “Events like the West Nile virus’s arriving in the state have emphasized the need for a facility like this to respond to health crises.”

Magee said poultry diagnostic services began to change in the mid-1990s, and the MSU poultry lab opened in November 2000. Increased concerns about avian influenza, foot-and-mouth disease and exotic Newcastle disease emphasize the need for this diagnostic lab.

“It has increased our ability to serve the industry in Mississippi. Improvements are being made continuously,” Magee said. “This will help us better protect agricultural industries and human health.”

The system is composed of four laboratories administratively housed within the Department of Pathobiology and Population Medicine, College of Veterinary Medicine, Mississippi State University.

The CVM Diagnostic Laboratory Services (CVM-DLS) is a full-service, all-species laboratory that provides diagnostic laboratory support to the college’s Animal Health Center, serves as the teaching laboratory for professional and graduate students, and serves as the research and development laboratory for the system.

The Mississippi Veterinary Research and Diagnostic Laboratory (MVRDL) in Pearl is a full-service, all-species laboratory and serves as the central reference laboratory for the system. The MVRDL provides regulatory tests to satisfy state and federal regulatory requirements in regard to animal health, animal health and export regulations.

The Poultry Research and Diagnostic Laboratory in Pearl provides diagnostic services including necropsy, microbiology and field services to the poultry industry of the state.

The Aquatic Research and Diagnostic Laboratory in Stoneville provides diagnostic service to the commercial catfish industry.

Through the network of these four laboratories, essential services in microbiology, pathology, clinical pathology, molecular diagnostics, serology, toxicology and virology are provided. All 82 counties in the state are served by the laboratory system. More than 70,000 case accessions requesting diagnostic services are received each year.
“Biodiesel is meeting with success in the marketplace. In our research here at MSU we are looking for ways to improve it so that success will continue.”

San Fernando

MSU biological engineer San Fernando, above, and entertainer Willie Nelson, opposite, share a passion for bringing biodiesel into the energy mainstream.
Country music legend Willie Nelson and biological engineer San Fernando have a lot in common.

The common link between the singer and the Mississippi State University professor is biodiesel, a fuel for diesel engines produced by blending petroleum diesel with refined vegetable oil. Nelson is promoting biodiesel as an alternative to pure petroleum-based diesel and as a way to support U.S. farmers. Fernando is researching ways to make production of the fuel easier and more cost-effective.

Fernando, who has been a member of the MSU faculty since 2003, said there are good reasons for focusing energy research on diesel engines.

“When you look at the large energy picture, you have to be concerned with energy efficiency,” he said. “The most energy-efficient engine in mass use right now is the diesel engine, and the best alternative fuel for that engine is biodiesel.”

The biodiesel available at the pump for consumers is a blend of refined vegetable oil and petroleum diesel. The blend most often found at retail outlets is 20 percent biodiesel, referred to as B20.

Fernando added that it has been proven in Europe and now in the U.S. that biodiesel is a good alternative to pure petroleum diesel and is here to stay. Its advantages over pure petroleum diesel, he said, include significantly lower emissions.

“Biodiesel is meeting with success in the marketplace,” he said. “In our research here at MSU we are looking for ways to improve it so that success will continue.”

The research Fernando is conducting in the Department of Agricultural and Biological Engineering is focused on ways to streamline the production process for biodiesel and uses for the byproducts of the process. He is using soybean oil in his research because it is the raw material most readily available for biodiesel plants in Mississippi.

“Most of the biodiesel plants in Mississippi are using soybean oil right now,” Fernando said. “That could change as more plants come online, because there might not be enough soybeans grown in the state to supply their needs if demand takes off.”

Creating strong demand for soybeans and other U.S. farm products is one of the goals of Earth Biofuels, Inc. The company sells the BioWillie brand of biodiesel fuel at about 20 locations, including one near Grenada, Miss. The company has other ties to Mississippi. Its board of directors includes Clarksdale businessman and attorney Bill Luckett and actor Morgan Freeman, who makes his home in Charleston.

“The demand for biodiesel is growing,” Luckett said. “Truckers are helping the American farmer and reducing dependence on foreign oil by embracing BioWillie biodiesel.”

The price, he said, is about the same as pure petroleum diesel and has even been selling for 3 to 4 cents a gallon less at some Texas BioWillie outlets this summer.

Earth Biofuels has manufacturing facilities in Meridian and Durant, Okla., and Luckett said the company plans to open other plants.

“We are studying development concepts for our facility in Greenville,” he said. “We need to locate plants where raw materials are available, and soy oil is available in the Mississippi Delta.”

Soybean producers stand to benefit from an upsurge in demand for soy oil by the biodiesel industry and are supporting efforts to increase acceptance of biodiesel by a variety of customers.

Farmers have been the biggest users of biodiesel since it came on the scene about 10 years ago, said Jerry Slocum of Coldwater, a soybean producer and director of the Mississippi Soybean Promotion Board. He expects farmers to remain the biggest customers, at least for the near term.

“It’s likely farmers will remain the biggest buyers of biodiesel for the next two years or so,” he said. “After then, we hope to see greater acceptance by the other major consumers of diesel fuel, including trucking companies.”

The key to acceptance of biodiesel by nonfarm customers, Slocum added, is assurance that engine manufacturers will warrant their products for use with the fuel. Soybean producers pay into a fund, called a checkoff, to support soybean research and promotion every time they sell their beans. At the national level, the United Soybean Board administers the funds raised by the checkoff.

“The board is using checkoff funds for engine testing and creation of standards for the use of biodiesel,” Slocum said. “This is the type of testing and standards the big users of diesel, including the major trucking and barge companies, must have before they will demand biodiesel.”

The giant tractor-maker John Deere already approves B5 biodiesel in its engines and last year began shipping tractors and combines from its factories with B2 biodiesel in their tanks.
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Instead of relaxing during the summer break, however, many Mississippi State students put their knowledge and skills to good use by interning or working on research projects. These students work with MSU professors through the Career Center on campus and with outside businesses and organizations to get real-world experience before graduation.

Students from the Division of Agriculture, Forestry and Veterinary Medicine take on some of the most challenging summer assignments. The 2006 summer break found these students putting their skills to work and learning new ones everywhere, from Mississippi Extension Service county offices to the mountains of Montana.

The extra work during the summer may have helped line their pockets for the upcoming school year, but more importantly, it gave them valuable experience in their chosen careers.

The following are examples of how students from the Division spent their summer “vacation.”

“How I Spent My Summer Vacation”

By Shoshana Brackett

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MSU Senior Gets Turf Experience in “Big Sky” Country

Senior Jordan Carlisle traveled nearly 30 hours and 2,000 miles from Starkville this summer to learn hands-on about turf in a different geographical region.

An agronomy major with an emphasis in golf and sports turf management, Carlisle interned this summer at The Club at Spanish Peaks Golf Course in Big Sky, Montana. Carlisle has already completed two three-month internships but said he couldn’t pass up the opportunity to work in Montana this summer. His housing is provided, and all his expenses are covered while there.

The golf course is under construction, and Carlisle is involved in what he calls the “grow-in” of the operation, which includes sodding, heavy equipment operation, shaping turf, mowing and pesticide and herbicide application.

Mark Bradford, Carlisle’s boss at The Club, said: “We like to get a variety of students from different schools. I like to get a few kids from southern states to get them experience with the northern grasses.”

With those northern grasses comes northern weather. Despite the 8 inches of snow that fell on Memorial Day, Carlisle said, “The atmosphere is just great. The weather has just been fantastic.”

“Jordan’s doing awesome.” Bradford said. “He’s a really big asset to us.”

When he returns to MSU in the fall, Carlisle will finish two semesters of classes and then complete a final eight-month internship before graduation.

Raised on a farm, Carlisle said he chose his major and emphasis because he wanted to combine his love of the outdoors with love of sports. “Turf management seemed like something that could keep me plugged in to both the agronomy and sports interests I have,” Carlisle said.

Gregg Munshaw, assistant professor in the Department of Plant and Soil Sciences, said the Golf and Sports Turf Management concentration trains students to work on golf courses, with sports turf, in lawn care and more.

With humor in his voice, Munshaw said, “Most students are training to be golf course superintendents or sports turf managers with, I think, aspirations of working for the Atlanta Braves.” But, Munshaw said those jobs are few and far between.

Like many MSU students, Carlisle said he sees himself staying in the South after graduation, though he is not opposed to moving outside of the region for a few years.

Carlisle said the MSU program helped him prepare for his internship through the three levels of training it provides. In the first level, he learned the basics such as mowing. The second level included knowledge of irrigation and pesticide and fertilizer application. The third level involved teaching the level 1 and two students.
Munshaw said he also encourages students to work on golf courses or sports fields to strengthen their knowledge, skills and experience.

Carlisle has worked at the MSU golf course part-time during school and said the work has been a helpful learning experience.

Munshaw noted that MSU’s program is so strong that companies seek out MSU students for internships. Like other employers, Bradford said he’d be willing to hire another MSU intern after working with Carlisle this summer.

“In terms of our students, Jordan’s as good as they come,” Munshaw said. “He has a leader’s personality, and his future is certainly bright in his profession.”

Carlisle was elected the 2006-07 president of the MSU Student Chapter of the Golf Course Superintendents Association of America, or Turf Club.

MSU’s program requires a minimum 2.5 GPA and three co-ops. Munshaw said the program is essentially 4 to 5 years long.
Brett Cates has known since childhood that he wanted to be a forester, from the first time he rode on a bulldozer at his grandfather’s logging company in Yazoo County.

However, recently Brett had been questioning his career choice. The senior forestry major co-oped for four semesters with the U.S. Army Corps of Engineers.

“After working for the corps and going through summer camp, I wasn’t sure if cruising timber is what I wanted to do; I wanted to explore all of my options,” Brett said.

The Strayhorn native discovered a different side to natural resources when he found an opportunity to work for the Land Bank of North Mississippi.

“I talked with graduates in forestry who worked for the Land Bank, and it seemed a natural fit,” Brett said. “My father was a businessman—the regional sales manager for CMA tire brokers—and it seemed maybe I had business in my blood as well as forestry.

“I sent a letter to the executive vice president for Land Bank, Craig Shideler, and asked him for an opportunity to intern with the company,” Brett added.

The initiative paid off for Brett. Shideler hired him as the first intern to work for the Land Bank.

“I have really enjoyed this opportunity,” Brett said. “I am in the office about 70 percent of the time and out in the field about 30 percent, which works great for me.”

The Land Bank of North Mississippi is part of the Farm Credit System established in 1916 by Congress. While primarily a financial resource to the agriculture industry, the Land Bank specializes in loans on farms, timberland, recreational properties and rural home sites.

“Foresters bring a wealth of knowledge of timber resources and wildlife habitat we need to fulfill our mission and meet the needs of our clients,” said James Kloac, vice president of the Tupelo branch of the Land Bank of North Mississippi.

The skills Brett developed while working for the corps has paid off in his new line of work.

“Working as a park ranger for the corps helped me build my people skills,” Brett said. “The ability to communicate with individuals from all walks of life plays a large role in working for the Land Bank. I have learned you wear many hats in this business, and you need to know how to relate to people and their needs.

Office and fieldwork both were included in Brett Cates’ summer internship with the Land Bank of North Mississippi. James Kloac, vice president of the Tupelo branch, helped the MSU senior forestry major learn the office responsibilities of working for the Land Bank.

“Whether it is purchasing land for a hunting club or investing in other recreational lands, I enjoy working with customers and helping them realize their dreams,” Brett added.

“Brett has done an outstanding job for us, and we hope to hire him after graduation,” Kloac said.
Summer Research Cultivates Wild Plants for Medical Use

Ganisher Abbasov spent his summer feeling the Mississippi heat while cultivating and harvesting plants for his Ph.D. research project on medicinal compounds found naturally in plants.

A native of Uzbekistan, Abbasov has been in the U.S. for five years and at Mississippi State University since March 2006. A Ph.D. student studying agronomy at MSU, he already holds a doctorate in agricultural chemistry from Russia.

Abbasov’s project involves the study of American mayapple, lemongrass and basil. Abbasov is studying how nutrients, location and soil type affect plant productivity and medicinal compounds in those plants. He said his data should allow him to develop a program of steps for farmers or commercial producers to follow to get higher quality and more product in a short period.

“I want a system to know what to use to get particular medicinal compounds from plants,” Abbasov said. “We are studying the effects of nitrogen and sulfur on crop productivity, on the synthesis and accumulation of essential oil in basil and lemongrass and on the anticancer compound podophyllo-toxin in mayapple.”

A research professor at the North Mississippi Research and Extension Center (NMREC) and Abbasov’s advisor, Valtcho Jeliazkov said pharmaceutical companies now get most of their mayapple from India. The MSU researchers and colleagues from the University of Mississippi, however, have demonstrated the American mayapple contains the same bioactives as the Indian mayapple and could be developed as a new cash crop.

“We’re trying here to shift things so U.S. farmers can benefit from the use of mayapple in pharmaceutical products,” Jeliazkov said. “We’re trying to introduce American mayapple as an alternative to Indian mayapple by providing a better consistency of supply.”

Abbasov is researching what conditions are prime for increasing the concentration of the natural anticancer compound podophyllo-toxin in mayapple.

Abbasov is conducting experiments with basil and lemongrass at the NMREC at Verona, the Delta Research and Extension Center at Stoneville and the South Mississippi Branch Experiment Station at Poplarville. The plants and treatments at each site are identical. It is the location and soil type that vary. His mayapple research is at the NMREC.

“We have a long way to go to take this wild plant and cultivate it,” Jeliazkov said.

Abbasov’s project is part of Jeliazkov’s larger project funded by the USDA to develop medicinal and aromatic plants as alternative crops for Mississippi growers. Both scientists are studying how plants develop in the Mississippi climate. They are also extracting secondary metabolites, such as essential oils, alkaloids and phenolic compounds. When the plants are harvested, they are analyzed for chemical profiles and evaluated for bioactivity.

“We want to see if medicinal and aromatic plants will grow and perform the same as in other places in the world,” Jeliazkov said. “Yields, chemical composition and bioactivity may be different based on location.”

Abbasov and Jeliazkov are working in collaboration with the University of Mississippi’s National Center for Natural Products Research.

“Ole Miss has one of the best laboratories for natural chemicals,” Abbasov said. “Together, I hope we can get interesting, good results that will benefit the industry.”
A native of Webster County, Craig Pittman participated in 4-H beef and land judging as a child, but this summer he has learned even more about the wider role of the Extension Service in his county.

An Agricultural Information Science major at Mississippi State University, Pittman interned this summer in the Webster County Extension office as part of a required class.

The mission of Extension includes providing information and educational programs to Mississippians. Pittman has learned more about these services and responsibilities of Extension firsthand this summer.

Pittman has participated in all aspects of the county’s Extension Service, including preparing news releases, planning programs, working in the field and organizing the cattlemen’s meeting.

Pittman said his activities varied from “4-H to out in the cotton fields to a jewelry making workshop.”

Of all his activities, Pittman said, “I like going out in the field the most. I’ve been farming all my life, so I know more about what’s going on out there.”

Pittman’s love of the outdoors and farming springs from his roots at his family farm. “There’s just cows, cotton and a little bit of corn,” he said. “My father and I have 2,800 acres of cotton with about 250 head of cattle.”

The tug of the land is calling Pittman back after graduation, and he plans to return to farming. “That’s all I know how to do,” he explained.

Pittman’s advisor and Webster County Extension Director Lisa Stewart said, “I try to show interns all aspects of Extension.”

This includes program planning, development, implementation and evaluation, among other duties, said Stewart.

“There’s so much in Extension we do that people don’t recognize,” Stewart said. “We help everything flow along. It’s grass roots—from the bottom up.”

This summer, she said they have been dealing with questions and worries about drought and high heat and the effect on crops.

“He’s getting to see the positive side of Extension—we’re getting information out,” Stewart said.
Diverse Partnerships Enhance CVM Experiences

Ashley Hill, a second-year vet student at Mississippi State University’s College of Veterinary Medicine, spent her summer testing horse skin samples.

Hill was one of 16 students participating in the CVM’s student summer research program. The Morris Animal Foundation and the Office of the Vice President for Research at Mississippi State University funded Hill’s project.

Dr. Jerald Ainsworth, associate dean of research and graduate studies at the CVM, said the 12-week summer program provides students with valuable insight into the work of scientists.

For the first week, students participate in training on ethics, research career opportunities, and poster and oral presentations. In the other 11 weeks, Ainsworth said, “The students are totally immersed in a research project, either on a new project or part of their advisor’s project.”

Under the direction of her advisor, Dr. Cyprianna Swiderski, assistant professor in the CVM Clinical Science Department, Hill gathered data to aid research on hyperelastosis cutis (HC), a skin disorder that affects quarter horses and horses with quarter horse lineage.

Hill said the disease is inherited and is prevalent in certain lines of Quarter Horses, particularly cutting horses.

“An innocuous event can cause great damage. Putting a saddle on a sick horse can cause open wounds and sloughing of skin,” Hill said.

The disease is usually discovered in 2-year-old foals, mainly because that is the age horses are introduced to tack, Hill said.

This connective tissue disorder is similar to a human disease called “EDSVI,” Hill said. “It’s so similar it’s astounding,” she said. Strangely enough, Hill is using the human disease as a model for her study of the disease in horses, when usually the animal model is used for study of humans.

“I’ve been looking at skin samples and examining their collagen crosslinks to determine if you see the same things as in humans,” Hill said.

This summer, Hill traveled twice to Salt Lake City, Utah, for a total of four weeks to work in cooperation with Associated Regional and University Pathologists, Inc. (ARUP Laboratories) at the University of Utah. ARUP does diagnostic testing for humans. Swiderski and Dr. Marzia Pasquali of ARUP and the Departments of Pediatrics and Pathology at U of U have been collaborating to study HC for two years. Working in Pasquali’s labs at ARUP, Hill took small skin samples from healthy and sick horses at the CVM and tested them in Utah.

“I was looking at skin samples of horses we knew to have the disease and that did not have the disease,” Hill said. “In the four weeks time, I was able to process and get an amazing amount of data.”

Hill’s findings have been extremely helpful in narrowing the list of possible genetic defects responsible for HC. Further, her work provides a strong link between HC and human EDSVI. The data gathered will help in the development of better diagnostic testing for HC. “It’s nice because it’s such a new disease, and anything we can get out there is a great help,” she said.

Hill presented her data at a Merck-Merial symposium for veterinary students in summer research programs. The symposium was held at Louisiana State University August 4 and 5.

Dr. Robert Cooper, associate dean of the CVM, and Hill said their goal is to gain understanding of the disease and be able to educate the horse industry further.

“It’s great we have so many professors who take us on for the summer research experience and take the time to teach us,” Hill said.
Landowners searching for ways to increase their income may need to look no further than their backyard. That is what Wade Henson of Montgomery County did.

Henson developed a successful fee-hunting business on his family’s farm near Kilmichael. He started Cypress Lodge Outfitters on a shoestring budget in 1994, offering just a few hunts a year.

“Now we stay booked most of the year,” Henson said. “We offer white-tailed deer, turkey and waterfowl hunts to Mississipians and visitors from around the world.”

By Karen Brasher
Photos by Katherine Jacobs
Bruce Leopold, head of Mississippi State University’s Natural Resource Enterprises program and Wildlife and Fisheries Department, said Henson’s business is an example of how landowners can tap into the demand for outdoor recreational opportunities.

“A survey by the U.S. Fish and Wildlife Service found that anglers and hunters spent $571 million in Mississippi on equipment and trip-related items in 2001,” Leopold said. “Wildlife watchers spent an additional $303 million.”

The Natural Resource Enterprises program provides landowners with training and other support they need to add natural resource businesses to their existing farm and timber operations.

The program is a collaborative effort of the MSU Forest and Wildlife Research Center, MSU’s Extension Service and the Mississippi Agricultural and Forestry Experiment Station.

“It takes research-based information and assistance to promote natural resource sustainability and wildlife economic development practices,” said Daryl Jones, assistant wildlife Extension professor. “The public’s demand for outdoor recreation and use of natural resources is increasing, and landowners can profit from the demand if they have the right information and training.”

There are challenges involved with establishing natural-resource-based enterprises. These include compatibility with ongoing agriculture and forestry operations, renewable resource management, marketing, customer service and business management.

“Monitoring and evaluating any business requires a sound knowledge base,” Jones said. “We are providing that knowledge base for Mississippi landowners through the Natural Resource Enterprises program.”

Currently, 90 percent of Mississippi’s natural resources are on privately owned land and are used primarily for agriculture or forestry production.

“These privately owned lands have tremendous potential for other compatible economic enterprises, but most have not been managed and marketed to attain their full economic potential,” Jones noted. “There are many opportunities for landowners to learn about natural resource enterprises, including MSU-sponsored workshops and demonstration areas.”

Workshops cover topics such as liability, cost-share programs, marketing and the development of a business plan. Demonstration areas provide hands-on learning opportunities.

“Through a partnership with Pennington Seed, Inc., landowners can view wildlife food plot plantings at MSU experiment stations throughout the state,” Jones said. “Other sites include the demonstration pond on the MSU campus, the Natural Resources Conservation Education Center in West Point and the Natural Resource Enterprises Demonstration Area in Newton.”

The program’s Web site, www.naturalresources.msstate.edu, also contains information developed by MSU’s GeoResources Institute. The site contains geospatial data for Mississippi and allows users to submit online requests for information and inquiries about leasing privately owned recreational properties.

The geospatial area of the Web site is being expanded to include information about the entire Southeast.

“The Natural Resource Enterprises program at MSU is now the premier program of its type in the region,” Jones said. “We have received requests from across the Southeast for information about our more than 15 research projects and 25 Extension programs that deal with outdoor recreational businesses.”
Machines most people never see unless they are in the timber business are on display at the Mid-South Forestry Equipment Show. The 2006 show included demonstrations by timber shredders and mechanized tree cutters.
More than 6,000 individuals from at least 20 states and a couple of Canadian provinces attended the 2006 edition of the largest, oldest show in the woods.

The Mid-South Forestry Equipment Show held June 2-3 near Starkville set attendance records for similar venues—both past and present—in the South. The largest segment of show visitors represented loggers and their employees.

Scores of manufacturers and dealers demonstrated equipment and supplies worth an estimated $26.5 million. Eighteen in-woods exhibits showcased skidders, loaders, trucks, grinders and forestland mulchers in a 40-acre block of forest.

“We were delighted with the turnout and feel like the show turned the corner as a strong, regional event,” said Charles Burkhardt, show manager and MSU school forester.

“I heard many favorable comments from exhibitors regarding the quality of logger participation and the overall quality of the site, timber and ground conditions.”

Now in its 22nd year, the biannual public event is cosponsored by the university’s College of Forest Resources and Montgomery, Ala.-based Hatton-Brown Publishers, Inc., in cooperation with the Mississippi Forestry and Mississippi Loggers associations.

Educational on-site sessions for loggers, foresters and landowners were filled to capacity, with more than 2,500 landowners, professional foresters and loggers receiving continuing education credits. This is the first time continuing education classes have been offered at the event.

The show, which is located in the John W. Starr Memorial Forest, included almost 200 commercial displays. Blount dealer B&G Equipment, headquartered in Philadelphia, hosted Blount’s Prentice Log Loader Championship, which drew 85 contestants. It was the competition’s first appearance at the show. The top three finishers will compete in Prentice’s first Grand National Championship in Green Bay, Wis.

A log skidder competition drew 88 individuals, 319 took part in several guessing contests, and 143 children entered the Southern Loggin’ Times coloring contest.

“I think the show went real well,” said Mark Lowe, John Deere South Central District Sales Manager. “My indication for that is how many deals we are working on at the moment. We are getting about four times the normal equipment inquiries compared to other dealers in the south central area.”

The Mid-South Forestry Equipment Show is a true community-backed, family-friendly event with several local businesses supplying needed services, equipment and sponsorships of various family activities, contests and competitions.

One logger described the show as his opportunity to compare several suppliers at one time and talk with some of the technical experts. He especially liked talking one-on-one with some of the engineers, who know the machines better than anyone.

“We are looking forward to making improvements and having a bigger and better show in 2008,” Burkhardt added.
New Poplarville Lab Supports Horticulture

By Bob Ratliff

Most people look at the new U.S. Department of Agriculture horticulture laboratory in Poplarville and see brick, concrete, glass and steel. Jim Spiers, however, sees something else—cooperation.

Spiers is the USDA-Agricultural Research Service research leader at the facility, which was dedicated in May as the Thad Cochran Southern Horticultural Laboratory in honor of U.S. Senator Thad Cochran (R-Miss.).

“The new building allows USDA and Mississippi State University scientists to cooperate on research much more closely than was possible in the past,” Spiers said.

The laboratory is located on the grounds of MSU’s South Mississippi Branch Experiment Station. USDA-ARS and MSU personnel with the Mississippi Agricultural and Forestry Experiment Station have worked together, but laboratory space and other facilities for cooperative research have been limited.

“In addition to office and meeting facilities, the new building contains laboratories for entomology, plant pathology, horticulture, genetics and other specific types of research,” Spiers said. “These are not USDA-ARS or MSU labs; they are shared by all the scientists doing work in a particular discipline.”

Work in the laboratories, research plots and greenhouses at the South Mississippi Branch is aimed at improving cultural and management practices for the production of small fruits, ornamental plants, vegetables, melons and other crops grown in the Gulf Coast region, which stretches from Florida to Texas.

“The blueberry industry in the region is a good example of the importance of research conducted at Poplarville,” said Patricia Knight, head of MSU’s Coastal Research and Extension Center, which includes the South Mississippi Branch. “When blueberry research began at Poplarville in the 1970s, there were no commercial blueberry plantings in Mississippi, Alabama, Louisiana or Texas. The research, combined with the education programs of the Extension Services in the Gulf states, helped producers develop an industry with a significant economic impact in the region.”

There also is a strong relationship between the research scientists and Extension personnel at the Poplarville facility and the diverse ornamental plant industry in the Gulf region.

“The mission of the ornamental plant group is to develop information and products that will benefit the region’s ornamental plant industry,” Knight said. “The facilities at the Southern Horticultural Laboratory will help our research and Extension personnel better serve the industry’s needs.”
The first publicly supported veterinary medical college in the U.S. was founded at Iowa State University in 1879. From the beginning, the mission of our veterinary colleges has been to serve the nation’s needs in both animal and public health. In public health, the emphasis has been on the prevention and control of zoonotic diseases, or those diseases that can be transmitted from animals to people. In these roles, veterinary medical colleges and veterinarians provide a critical link between agriculture and human medicine. While the overall mission of colleges of veterinary medicine encompasses the traditional range of teaching, research and public service, nothing is more important than training new veterinarians.

Following WWII, U.S. society changed from being predominantly rural to being largely urbanized, a trend that has accelerated in the past 30 years. Urbanization, coupled with affluence, has led to increased demand for companion animal veterinary medical care. The human-animal bond is real, and people often expect their pets will receive a level of medical care similar to their own. A challenge for the colleges is to meet the increasing demand for education in companion animal medicine while continuing to address critical needs for veterinary expertise in public health, food safety and security and biomedical research. The emergence of diseases such as avian influenza and the threat of biological and agro-terrorism has increased the need for additional veterinarians specialized in these areas.

From the viewpoint of societal demand, this is a very good time for veterinary medicine. Much of veterinary medical instruction is conducted on nearly an individual basis, which means that the 28 U.S. colleges of veterinary medicine (located in 26 states) are able to produce only about 2,500 new veterinarians each year. Available evidence suggests this number will not be enough to meet all the needs veterinarians are uniquely qualified to fill. For example, just to maintain current levels of veterinarians in either food animal or public practice, at least 500 of these new graduates must enter these fields each year.

Although the veterinary medical curriculum is demanding, career opportunities for those who receive the DVM degree are unprecedented. It’s been predicted the current shortage, coupled with a projected increase in need as our nation’s population continues to grow, will result in an overall shortage of 15,000 veterinarians over the next 20 years.

In the short time I’ve been in Mississippi, many things have impressed me. One is the foresight that the Legislature, commodity groups and the veterinary profession had in the 1970s when they led in establishing our college of veterinary medicine. As I travel in Mississippi, I’m struck by the uncommon level of support shown for Mississippi State University and its College of Veterinary Medicine. For my wife Connie and me, it’s both gratifying and humbling, and we’re honored to be part of it.

Students entering the College of Veterinary Medicine at MSU have the opportunity to study with faculty nationally recognized for their expertise. Completing our curriculum enables students to experience the breadth of veterinary medicine and graduate to enter an intellectually challenging and financially rewarding career, whether in private practice, research or in the public practice arena. Graduates of Mississippi State University’s College of Veterinary Medicine are in high demand.

Beginning now, and for the next several years, our college’s administration, faculty and staff are going to engage within Mississippi State University and across the state in telling young people of the tremendous opportunities in veterinary medicine and the wonderful resource available to them in their state.
A veteran Mississippi State administrator and teacher is receiving the highest honor bestowed upon a landscape architect by the field’s national professional association.

Cameron R.J. Man will receive the 2006 American Society of Landscape Architects Medal at the organization’s annual meeting in Minneapolis, Minn., in October.

Man has served as professor and head of the university’s landscape architecture department since joining the faculty in 1989. The programs he leads in landscape architecture and landscape contracting are the only ones of their kinds offered in the state.

The ASLA Medal recognizes lifetime achievements and contributions to the profession, the welfare of the public and the environment.

Man is being cited for his achievements in private practice, academic administration and instruction, and leadership in the profession. He also is recognized for the “remarkably high number of people within the profession he has helped to educate.”

Darren Hudson, an associate professor in MSU’s Department of Agricultural Economics, is a 2006 Farm Foundation Fellow. This is the program’s first year, and the MSU economist is one of three named to the initial class.

Founded in 1933, the Farm Foundation’s mission includes funding and promoting research to produce practical tools for improving the well-being of people in rural America.

As a Farm Foundation Fellow, Hudson will devote approximately one month during each of the next three years to the organization’s activities. He will help identify new programs and lend his expertise in agricultural economics to the management of existing Farm Foundation programs.

“A specific area I’ll be working with is strategies for dealing with globalization and the impact of globalization on U.S. agriculture,” Hudson said.

A forestry timber tax specialist at Mississippi State University is the Mississippi Forest Landowner Association’s Extension Forester of the Year.

Debbie Gaddis, associate Extension professor in the College of Forest Resources, received the honor at the organization’s 2006 annual meeting.

Gaddis has successfully developed a Timber Tax Fundamentals Short Course that has been presented to more than 1,000 people. Participants have estimated a tax savings of $12 million through deductions.

Additionally, Gaddis was instrumental in assisting with casualty loss information to southern landowners after Hurricane Katrina, speaking at 15 county meetings in six weeks.

“Dr. Gaddis understands the needs of forest landowners and professionals in managing timber resources in the state,” said Jim Shepard, head of the forestry department. “After Katrina, she set up a professional training workshop for foresters to manage partially destroyed pine and hardwood stands.”

Professor of wildlife and fisheries Rick Kaminski is the 2006 recipient of Ducks Unlimited’s (DU) Wetland Conservation Achievement Award.

The award recognizes his contributions to waterfowl management.

“Through his pioneering research, Kaminski has contributed immensely to waterfowl management as we know it today,” said Curtis Hopkins, DU’s director of conservation programs for the southern region. “His future research endeavors will continue to advance our knowledge of wetland and waterfowl management.”

Kaminski also helps recruit the next generation of waterfowl enthusiasts, said Tom Moorman, the organization’s director of conservation planning.

“He has helped organize numerous youth waterfowl workshops at Noxubee National Wildlife Refuge to provide kids a unique opportunity to hunt and to learn about and spark their interest in waterfowl,” Moorman added.

With more than a million supporters, Ducks Unlimited is the world’s largest wetland and waterfowl conservation organization.
H. Michael Barnes of Mississippi State is a new Fellow of the International Academy of Wood Science.

A professor in the university’s Forest and Wildlife Research Center, he is being honored by the professional organization for his work in wood preservation and durability, wood treatment and treatment effects on wood properties.

“Dr. Barnes’ work on the effect of various treatments on the properties and durability of wood and wood-based composites has been groundbreaking,” said Liam Leightley, MSU’s forest products department head.

The International Academy of Wood Science is a nonprofit assembly founded in 1966 to promote the concerted development of wood science.

Mississippi State’s student chapter of the Society of American Foresters (SAF) continues among the top organizations of its kind in the nation. The 39-member university organization recently placed first in the 2005-06 SAF Student Chapter Web site competition and tied for first overall as the outstanding student chapter.

The group has finished atop the overall chapter rankings for the past seven years, capturing first place in 1996-97, 2000-01 and 2003-04; second place in 2004-05, 1998-99 and 2001-02; and third place in 2002-03.

This is the fourth year the student chapter has won first place in the Web site competition. Designed and maintained by student members, www.cfr.msstate.edu/studentorgs/saf/index.htm was judged on design and content, among other criteria.

All senior forestry majors, the 2005-06 officers included president J. Tedrick Ratcliff of Brookhaven, vice president Jared Brett Cates of Sarah, secretary Katie L. Nelson of Fayette, Ala., and treasurer Roger Tankesly of Madison. Associate professor of forestry Donald L. Grebner is chapter adviser.

Founded in 1900, SAF is the world’s largest professional organization for foresters. Its 18,000 active members are engaged in a variety of programs to improve the health, productivity and use of the nation’s forestslands.

Awards recognizing outstanding service were presented at the annual Division of Agriculture, Forestry and Veterinary Medicine Summer Celebration.

Recipients of the 2006 Rosalind and Rodney Foil Teamwork awards were Blair McKinley, Extension professor of animal and dairy sciences, and Jane Parish, assistant Extension/research professor of animal and dairy sciences.

The 2006 Doris and Louis Wise Support Staff award winners were Marcia Cook, county secretary for the Tate County Extension Service, secretarial/clerical category; Scott Lanford, agricultural technician at the Delta Research and Extension Center, technical/paraprofessional category; and Anna Chromiak, manager of facilities and research in the Department of Animal and Dairy Sciences, professional nonfaculty category.

The Foil and Wise awards are presented each year in honor of the former DAFVM vice presidents and their wives.

Eight scientists received the 2006 William M. White Special Projects Awards. They were William Kingery, Robert Gonzalez, John Hodges, Andy Ezell, Tom Matney and Keri Paridon.

The White awards are presented on behalf of the late William M. White, an Oktibbeha County dairy farmer, agricultural leader and university supporter. The awards provide financial support for research projects that further the development of agriculture and agriculture business in Mississippi.
A couple who wish to remain anonymous has set aside $5 million of their $10 million estate to support the education of future veterinarians at Mississippi State University’s College of Veterinary Medicine. The other $5 million will go to MSU’s College of Business and Industry for scholarships.

“The education of first-rate veterinarians is the CVM’s number one priority,” said CVM Dean Kent Hoblet. “The cost of a quality veterinary education is not inexpensive, and it is our desire to assist, through scholarships, the outstanding individuals who plan to dedicate their lives to the betterment of animals and science.”

Currently, the CVM awards approximately $80,000 in scholarships to students each year.

“Once this endowment is in place, it will generate approximately $200,000 a year for scholarship support,” Hoblet added. “It is easy to see this generous gift will have a major impact on the College and our students for generations.”

Significant funding strengthens the College’s ability to support a talented and diverse student body and enables graduates to begin their missions of service with less debt. The typical CVM graduate currently leaves the program with debt exceeding $82,000. The average starting salary is around $50,000.

“The level of generosity of this gift is a huge boost to our campaign goals,” said CVM Director of Development Keith Gaskin. “We respect their wishes to remain anonymous, and the MSU Foundation goes to great lengths to make sure our donors’ private information remains just that—private.”

Most universities and colleges with large endowments built them over time with estate gifts such as this, as well as much smaller ones, Gaskin added.

“The importance of planned giving for a young program like ours cannot be overemphasized,” he said. “We need more donors to include the College in their estate plans so we can be the best stewards possible of these generous and life changing gifts.”

Established by the Mississippi Legislature in 1974, the CVM is the only academic program of its kind in the state. It is one of only 28 colleges of veterinary medicine in the country. CVM will have 264 doctor of medicine students this fall, with about half from Mississippi and the rest from across the country.

The college also has 55 students who are candidates for master’s or doctoral degrees in veterinary science.

To find out how you can make a planned gift to the CVM to help prepare the way for future veterinarians, contact Keith Gaskin at 662-325-3815.
**Love of Natural Resources a Starr Family Tradition**

Perhaps it is genetic or the result of years of listening to his father’s words of wisdom. Whatever the reason, there is no denying Walt Starr’s love for natural resources.

Walt is the son of beloved professor and the first Bulldog forester, John W. Starr. Starr began his 25-year career with MSU in 1948 as an assistant forester. In 1978, the school forest was renamed the John W. Starr Memorial Forest in his honor.

While Walt chose a different career path than his father chose—periodontics—his love for the College of Forest Resources is evident.

In 1991, Walt and wife Lee Ann funded the John and Caroline Starr Memorial Scholarship in Forest Management, making it the largest endowed scholarship in the College. In 1997, the Starrs donated a two-acre tract of land in Ridge Lakes, a subdivision in Starkville.

Most recently, the Starrs donated two lots in Prairie Waters, a subdivision in Lowndes County.

“I am so grateful for the time I spent walking in the woods and listening to my father teach me about the natural world,” Walt said. “My father left a legacy for me and my children; every time we drive down Highway 25 in Starkville and see the forest that bears his name, we are grateful for the lessons he left us.

“I want to leave a legacy, also. The gifts I leave, whether scholarships or property for the Bulldog Forest, will help educate our future leaders in the forestry industry,” Walt added.

To find out how you can create a legacy through the College of Forest Resources, contact Jeff Little at 662-325-8151.

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**Life Insurance Gift Creates a Lasting Legacy**

A South Carolina man is memorializing his parents through a unique gift to Mississippi State University.

Dr. Ansel Miller of Clemson has designated the proceeds from a life insurance policy for the creation of an endowed lecture series. The commitment of more than $250,000 will be used to establish the Keim and Ruby Miller Lecture Series in Plant and Soil Sciences in the College of Agriculture and Life Sciences.

Miller graduated with a bachelor’s degree in forestry from Mississippi State. He also earned a master’s in forestry from Clemson University and a doctorate in forest management from the University of Georgia.

Miller was employed for 28 years by Clemson University’s Forestry Department as a professor and researcher. It was there he was inspired to use insurance premiums to fund the lecture series after attending a planned giving seminar.

“I truly believe there is no better way to leave a gift if you don’t have a lot of money,” Miller said. “I simply make annual payments to keep the policy in force and have designated the Mississippi State University Foundation as the owner and beneficiary. Now I have a lasting legacy that will honor my parents in perpetuity.”

Miller fondly recalls how his father worked his way through then-Mississippi A&M with a job in the college greenhouses while pursuing an agriculture degree. It was there Keim Miller met his future wife, Ruby Byars, a Starkville resident and occasional customer at the horticultural floral sales store.

A native of Plymouth, Ind., who relocated to Sumrall, Keim Miller became a recognized authority for identifying foreign and domestic fruit and other plant material and insects, as well as a specialist in the quarantine laws. He held positions with the United States Border Patrol in McAllen, Texas, and with the United States Department of Agriculture Custom’s Service in New Orleans.

“The College of Agriculture and Life Sciences is very grateful to Dr. Miller for exploring life insurance—a simple, yet often overlooked way to make a significant charitable gift to the university,” said Jud Skelton, director of development for the College.
It’s all in the name. Check it out for news and information from the Division of Agriculture, Forestry and Veterinary Medicine.