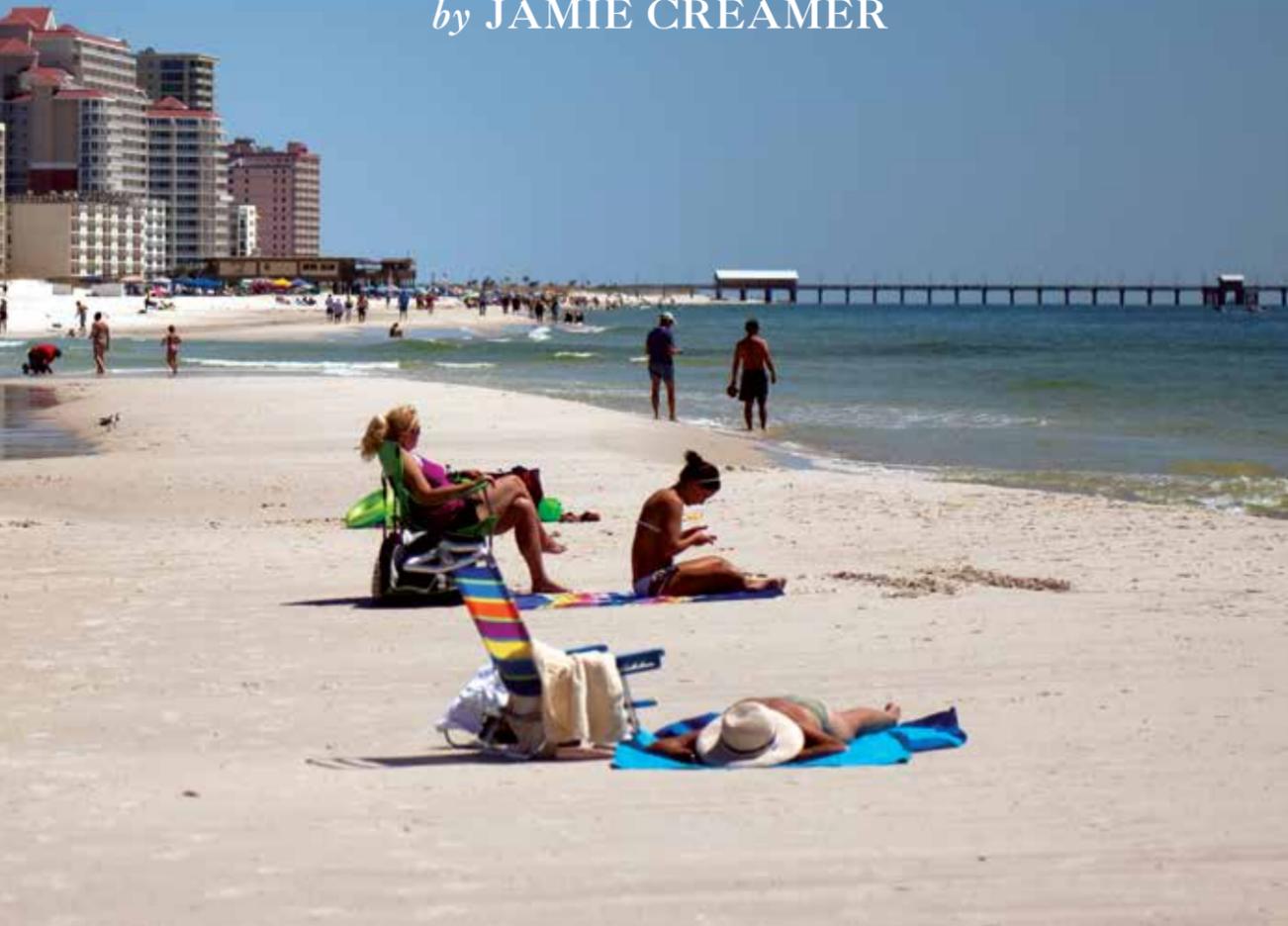


Beyond the Horizon

Post-Spill Study Shows Coastal Tourism Rebounds, Seafood Sector Struggles

by JAMIE CREAMER



BY THE NUMBERS Auburn aquacultural economist Terry Hanson's just-completed study of the Deepwater Horizon oil spill's short-term impact on the Gulf-dependent tourism, seafood processing and commercial fishing industries in Baldwin and Mobile counties indicates that, in the tourism sector, lodging revenues hit an all-time high in 2011. Hanson, above, says Gulf Coast tourism's recovery began in late summer 2010 with a couple of free, star-studded concerts on the beach that drew estimated crowds of 30,000 each.

But tourism's economic rebound from the BP gusher has not carried over to the two remaining marine-based sectors—commercial fishing and seafood processing—which Hanson says were on the downhill slide, in terms of job numbers, in both Mobile and Baldwin counties throughout the first decade of the 21st century.

"They were still trying to recover from natural and man-made disasters—hurricanes Katrina and Rita, a significant increase in seafood imports, higher fuel prices and the 'Great Recession,'" Hanson says. "The oil spill event hastened the long-term trend of declining sales in seafood processing and wholesaling and in commercial fishing."

According to the Hanson-Baker study:

- The number of jobs in fresh and frozen seafood processing/wholesaling fell from 959 in 2009 to 770 last year, representing a \$3.5 million drop in earnings and a \$21.2 million decline in sales associated with lost jobs.

- The commercial finfish and shellfish fishing industry lost 13 total jobs and \$700,000 in earnings from 2009 through 2011, and sales generated per employee dropped \$1.1 million.

The processing numbers come as no surprise to Chris Nelson, whose family has owned and operated Bon Secour Fisheries for 100-plus years. He says Alabama's seafood industry is up against a multitude of monumental spill-related hurdles, from overcoming unnecessary but lingering consumer and wholesale buyer concerns about the safety of Gulf seafood to regaining

(continued on page 2)

A GAINST A BEAUTIFUL BACKDROP of blue skies and Alabama's trademark white-sand beaches, the somber network news reporter delivered the grim forecast: By this time tomorrow, he assured his viewers, this pristine beach will be covered by six inches of oil.

That dire prediction out of Orange Beach in early June 2010 never came to pass, but that part of the story didn't make the news. And in the meantime, a whole lot of damage had been done.

"What you had was round-the-clock reporting, much of which was based on nothing more than speculation," says Auburn University associate professor Terry Hanson. "That kind of thing had a serious psychological effect."

It did on him, anyway. As an aquacultural economist, Hanson is aware of the dramatic impact public perception can have on consumer demand, bottom lines and economic survival, and he admits that as days turned into weeks and oil continued to flow unabatedly from the Deepwater Horizon wellhead, he, too, developed a fatalistic outlook.

"As devastating as a hurricane can be, it comes, and, just that quickly, it goes, and you start rebuilding," Hanson says. "But this was an absolute unknown. Nobody knew when it would end or what kind of impact it was going to have, not only on the environment but on the economy as well."

"I started thinking, 'OK, this is the end.'"

An economic analysis of the Gulf oil spill's impact on marine-based industries in Mobile and Baldwin counties that he and research assistant

Jeana Baker published in May has eased that fear, at least as far as one major sector of Alabama's coastal economy—tourism—is concerned.

In the two-year study funded by the Mississippi-Alabama Sea Grant Consortium, Hanson and Baker focused on three sectors of the coastal economy that are dependent on the Gulf of Mexico: commercial fishing, seafood processing and tourism. Specifically, they were examining each sector in terms of job numbers, employee earnings and sales per employee, comparing data from the year before, the year of and the year after the BP spill.

"Tourism has made a remarkable rebound," Hanson says. "In 2011, overall tourism on the Gulf Coast was the highest ever in terms of jobs, employee earnings and sales generated off of job numbers."

Led by hotels and full-service restaurants, the tourism industry on the coast added 746 jobs from 2009 to 2011, bringing

the total to 27,257 jobs. Total earnings jumped \$29.7 million, to \$498 million, and sales associated with employee earnings topped \$1.54 billion, an increase of \$83 million from the year before the oil spill.

Hotels had the highest sales gain, at \$32.8 million, followed by full-service restaurants, which boosted sales by \$26.6 million and limited-service eateries, where sales increased by \$13.7 million over the three-year period. The biggest losses of sales were in residential property management, down \$7 million; drinking establishments, down \$2 million; and marinas, posting a drop of \$1.2 million.

"The major challenge for coastal Alabama communities lies in economic diversification," Hanson says. "Ultimately, community resiliency strengthens, stabilizes and protects economies from epic shocks, be they natural or human-made."

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View from AGhill

Alabama agricultural industries account for more than 20 percent of the state's total economic output and 21 percent of the state's jobs. Each of the state's approximately 70,000 on-farm jobs creates an additional five jobs in farm-related industries. The state invests in future growth of the agricultural sector through appropriations that support the Auburn University College of Agriculture, the Alabama Agricultural Experiment Station and the Alabama Cooperative Extension System and also fund agricultural programs at Tuskegee and Alabama A&M universities. The Alabama land-grant system has formed various partnerships to promote agricultural economic development in order to make efficient use of state and federal funding.

One such partnership is the Alabama Irrigation Initiative, which recently completed a multiyear study of the impact of irrigation on economic development in Alabama. The research initiative—a joint program involving the University of Alabama and Auburn, Alabama A&M and Tuskegee universities—determined that irrigating an additional 500,000 acres of corn in Alabama would be the economic equivalent of opening a new automobile manufacturing plant in the state. This year, member institutions worked with Alabama legislators to develop a program that provides incentives for farmers to invest in irrigation equipment and water sources, and members of the initiative will be providing programmatic support to farmers interested in irrigation this year.

The agriculture colleges at Auburn, Tuskegee and Alabama A&M universities also partner in the Alabama Agricultural Land Grant Alliance. One of the alliance's primary projects is to support economic development of farmers in the state's Black Belt region. Led by Tuskegee University, approximately 20

farmers in west Alabama have organized a network to provide watermelons, peas and greens to Walmart. This is the second year of the project, which Walmart has used as a model to expand to other regions of the U.S. To assist farmers in marketing their products more efficiently, the three land-grant universities are building a vegetable processing plant near Selma. This facility represents an investment by the state in the development of a vegetable production industry in the Black Belt.

At Auburn, the College of Ag, the AAES and Extension often collaborate to promote economic development and projects to improve net farm income. The National Poultry Technology Center, for instance, is a partnership that encourages the use of energy-efficient technologies in poultry houses, and estimates are that the NPTC helps Alabama poultry producers save more than \$30 million annually on energy bills. That translates into more income for the farmers and more tax revenue for Alabama and also helps sustain the largest industry in Alabama during these difficult times of high energy and feed prices. Other college-AAES-Extension partnerships include the Alabama Precision Agriculture Program, which saves crop farmers an estimated \$10 million annually; the Alabama Fish Farming Center in Greenville, which supports the catfish industry; and the Auburn University Marine Extension and Research Center in Mobile, which works to ensure that Alabama's seafood industry and coastal resources remain sustainable.

Public investment in agriculture is a key to future economic growth in Alabama, and partnerships are a key to ensuring that we make the most efficient use of public funding.

Follow me on Twitter @AuburnAgDean to get updates on the College of Agriculture and our partnerships throughout the state.



Bill Batchelor

DEAN, COLLEGE OF AGRICULTURE
DIRECTOR, ALABAMA AGRICULTURAL EXPERIMENT STATION

(BEYOND THE HORIZON, from page 1)

market share that was lost to imports when Alabama's off-shore waters were closed to commercial fishing in the spill's aftermath.

Throughout its decades in existence, Bon Secour Fisheries has weathered probably too many hurricanes and other natural disasters to count. But Nelson says those pale in comparison to the 2010 oil spill. This, he says, has been and continues to be "far more detrimental and long-lasting than hurricanes."

Meanwhile, Hanson has teamed with Auburn agricultural economics professor Diane Hite, rural sociology assistant professor Michelle Worosz and geography professor Luke Marzen in a broad Sea Grant-sponsored research project to analyze the socioeconomic impacts that threats and disturbances—whether meteorological, technological or economic in nature—have on waterfront-related businesses, tourism and the seafood supply chain,



CASTING NETS Shrimp fishing on Alabama's coast has remained relatively stable post-oil spill. The 2005-2010 annual mean for processed shrimp in Alabama was 23.9 pounds, valued at \$70.8 million.

not only in Alabama's Baldwin and Mobile counties but in Mississippi's coastal counties of Jackson, Harrison and Hancock as well.

The researchers' goal in the two-year investigation is to find ways to ensure that the social, cultural and economic fabric of the coastal communities remains strong and resilient.

"The major challenge for coastal Alabama communities lies in economic diversification," Hanson says. "Ultimately, community resiliency strengthens, stabilizes and protects economies from epic shocks, be they natural or human-made."

The new project's seafood supply chain research component, led by Worosz, began in June and involves confidential face-to-face interviews with as many people as possible at all levels of the shellfish supply chain, from commercial shrimpers to seafood restaurant chefs, to learn how the oil spill and other disasters affected these businesses, how they are faring post-oil spill and how they view the effectiveness of food safety testing procedures and regulations in helping improve consumer confidence in Gulf Coast seafood.

"This data is critical to putting a face to the economic data," Worosz says. "It will provide a detailed case study that represents the lived experiences of individuals who are central to working waterfronts."

To participate in the survey, contact graduate research associate Stefanie Christensen at skc0014@auburn.edu.

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Research Strong Basis for New Irrigation Tax Credit Legislation

A bill the Alabama Legislature approved in May to provide tax incentives to farmers who adopt irrigation technology is expected ultimately to increase crop yields and quality, boost farm income, energize the state's economy and create jobs, Auburn University research has indicated.

The Agricultural Irrigation Systems Tax Credit legislation that Alabama Gov. Robert Bentley signed into law May 14 was sponsored by House Agriculture and Forestry Committee Chairman Chad Fincher, R-Semmes, with Senate Agriculture, Conservation and Forestry Committee Chairman Tom Whatley, R-Auburn, putting forth a companion bill in the Senate.

The new law provides that farmers who install new or improve existing on-farm irrigation systems to take advantage of Alabama's abundant groundwater, surface water and rainfall resources can receive a one-time state income tax credit totaling up to 20 percent of the cost, to a maximum of \$10,000.

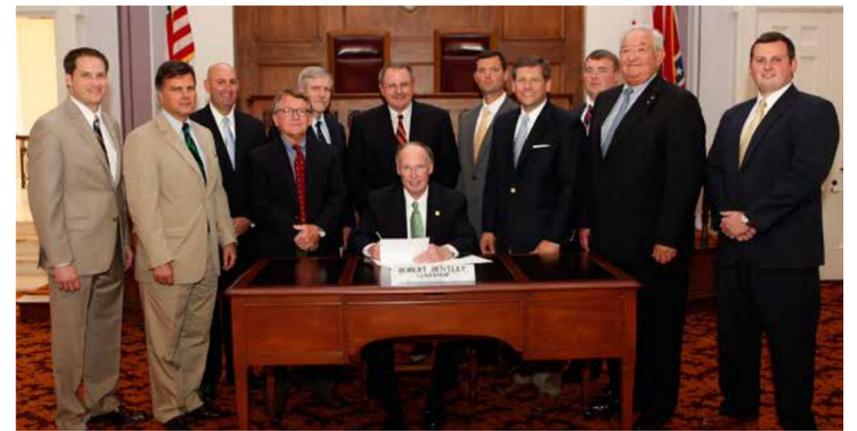
Behind the legislation is a decade of collaborative and comprehensive research conducted through the Alabama Agricultural Experiment Station at Auburn University in cooperation with the Alabama Cooperative Extension System, the University of Alabama in Huntsville, the University of Alabama and Alabama A&M and Tuskegee universities. Those studies have shown the economic benefits of using irrigation on Alabama crops, said Sam Fowler, director of the Auburn University Water Resources Center.

"We feel confident, based on those years of research, that we have the potential to do a lot more irrigation in Alabama," Fowler says. "We have 2.5 million acres of prime farmland in Alabama that could be irrigated, but less than 120,000 acres of that land is actually irrigated."

Compare that to Mississippi and Georgia, each of which reports about 1.5 million acres of crops under irrigation.

A major increase in irrigated acreage here in the next few years would have a tremendous fiscal payoff, the bills' sponsors say.

"Studies have shown that 1 million acres of irrigated land in Alabama could provide a boost



IRRIGATION LEGISLATION A new bill designed to encourage and support the use of irrigation in Alabama was signed into law in May. On hand for the official signing by Gov. Robert Bentley was, from left: Brian Hardin, assistant director of governmental and agricultural programs with the Alabama Farmers Federation; Sen. Arthur Orr, R-Decatur; Jason Davis, Alabama Power Company; Dick McNider, state climatologist; John Christy, climate scientist at the University of Alabama in Huntsville; Sam Fowler, director of Auburn's Water Resources Center; Bentley; David Cole, director for agricultural legislation with the Alabama Farmers Federation; Rep. Chad Fincher, R-Semmes; Patrick Moody with the Alabama Department of Agriculture and Industries; Rep. Alan Boothe, R-Troy; and Willis McKee, an intern with the Alabama Farmers Federation.

in our agriculture industry equal to the same economic impact as two auto plants, or 26,000 jobs," Fincher says. "This bill, which was a direct product of the Joint Legislative Committee on Water Policy, should encourage more farmers to tap into the state's bountiful water resources in an effort to boost farm production."

The Senate's Whatley agreed.

"This tax credit will enable agriculture producers to invest in infrastructure that will increase production, and in turn, increase economic output," Whatley said. "That is what we are doing: making the economic environment friendlier to job creation and economic growth."

Co-sponsors of the House bill included Alan Boothe, R-Troy; David Sessions, R-Grand Bay; Phil Williams, D-Huntsville; A.J. McCampbell, D-Linden; Richard Laird, D-Roanoke; Mark Tuggle, R-Alex City; and Elaine Beech, D-Chatom. The Senate version was co-sponsored by Arthur Orr, R-Decatur; Gerald Dial, R-Lineville; Clay Scofield, R-Guntersville; Paul Bussman, R-Cullman; Dick Brewbaker, R-Montgomery; Billy Beasley, D-Clayton; and Jerry Fielding, D-Sylacauga.

In a survey AAES researchers conducted in 2011 to determine the major barriers to irrigation in Alabama, the top obstacle was concern that

the steep investment required to install, operate and maintain an irrigation system would not be cost-effective. Six out of 10 farmers surveyed, however, said they would be more likely to add irrigation if a cost-share program were available.

Studies have shown that irrigation can significantly increase yields of all row crops and horticultural crops as well as hay and forages. Alabama imports \$1.4 billion worth of grain a year—120 million bushels of corn and 60 million bushels of soybeans—to support the state's poultry and other animal agriculture industries. Thus, higher soybean and corn yields could lower production costs for those producers.

Bill Batchelor, Auburn College of Agriculture dean and AAES director, says the incentive program is a win-win for farmers and citizens of Alabama because it will help producers increase their income and spark rural economic growth across the state.

Farmers considering irrigation under the new incentive program are urged to talk with their local Alabama Cooperative Extension System representatives, who can provide research-based information that can help them decide if irrigation is right for them and what type systems will enhance the sustainability of their farm operations, ACES Director Gary Lemme says.

Poultry Technology Center Helps Growers Boost Profits by JAMIE CREAMER



An Auburn University technology center created five years ago to help Alabama poultry producers operate more efficiently and profitably is impacting the state's economy to the tune of almost \$30 million a year.

Jim Donald, National Poultry Technology Center co-founder and interim director, says applied research that Alabama Agricultural Experiment Station biosystems engineers, ag economists and poultry scientists at Auburn

have conducted through the center in the areas of poultry house insulation and structural design, lighting, energy use and environmental control is saving poultry farmers an estimated \$10 million a year on energy bills, another \$10 million on feed costs and \$9.6 million on facility repairs that structural design improvements averted.

Donald, a biosystems engineering professor whose expertise is in poultry housing design, and Auburn poultry economics professor Gene Simpson established the NPTC with the mission of improving the bottom-line profitability of Alabama's 3,500 poultry growers in an increasingly difficult economy.

"The prices of production inputs—fuel, electricity, water and feed—have exploded over the past eight years, with increases of anywhere from 60 to 300 percent," says Donald, who, like Simpson, is also a specialist with the Alabama Cooperative Extension System. "The center is providing timely applied research and Extension education that are leading to improved efficiencies in housing, equipment, energy and environmental control.

"Profitability can be greatly improved by applying and adopting new technologies," he says.

The NPTC's targeted efforts to provide unbiased engineering and economic analyses to poultry growers have impacted the cash flow and profitability not only of poultry growers in Alabama and beyond but of integrators as well.

"In Alabama, the poultry industry generates \$10 billion or more annually," he says. "For the industry to survive, poultry growers' profitability is essential."

The center's applied research thus far in the areas of poultry house insulation, lighting and retrofitting have brought significant energy and feed savings to the estimated 30 percent of producers who have adopted NPTC recommendations. Future applied research on solar energy, attic-air extraction, colony housing designs and rainwater harvesting technology "could be game-changers," Donald says.

For more about the NPTC, go to www.poultrytechnologycenter.com.

Faces of Ag

Cultivating the Cream of the Crop

Ag Ambassadors Represent the College of Ag's Best Assets—Its People

by LISA SWIATENKO

Masanobu Fukuoka from the best-selling book, "The One-Straw Revolution," once said that the ultimate goal of farming is not the growing of crops, but the cultivation and perfection of human beings. What better place to cultivate and perfect people than the College of Agriculture at Auburn University.

No one knows the story quite like the young men and women who live it, and that is why, in 1983, the College of Agriculture established a program to choose some of the best students to be representatives of the college and agriculture. Those students became known as Ag Ambassadors.

The Ag Ambassadors program was the brainchild of the late Robert Voitle, the College of Agriculture's dean from 1981 to 1985. Voitle wanted a way to inform high school students about the many agricultural programs offered at Auburn University and recruit them to the college.

The program became a success in improving the image of agriculture, and interest among prospective students increased. The Ag Ambassadors soon became official student representatives of the College of Agriculture.

Today the Ag Ambassadors are running strong. They can be found recruiting at War Eagle Days, Career Day and student visits. They tailgate with the dean, hang out with alumni at Ag Roundup and participate in student social events such as graduation breakfasts. The ambassadors can also be found speaking on subjects such as science, agriculture and natural resources to school assemblies, at banquets and to agriculture-minded groups.

You only have to talk to a couple of the ambassadors to get the feeling of closeness they have with the College of Agriculture and agriculture itself. Kira Chaloupka, this year's president, says, "I wanted to be an Ag Ambassador because I love our college and wanted to give back any way I could. It's all about family here in the College of Ag, and as an Ag Ambassador I have the opportunity to promote that to future students."

"Being an Ag Ambassador is definitely an honor and a responsibility, but the experiences I've had as one, meeting alumni who have loved Auburn for many years and students who are excited to join the family," says last year's President Emily Brennan, "are what have made me understand why it is such an amazing place to call home."

While the college uses Ag Ambassadors to recruit new students and get the word out about agriculture, the Ag Ambassadors get much more in

return. Brennan says that being an Ag Ambassador helped her communicate and present herself well in many different situations.

One of her favorite accomplishments as an Ag Ambassador was being asked to present information about Café Citadelle, a coffee grown in Haiti, to an Academic Affairs gathering. Profits from the coffee, which was sold by Ag Ambassadors last year, are returned to Haiti to help the country rebuild following the earthquake of 2011. Not only was she able to talk about the coffee, Brennan was also able to visit Haiti and see the co-op where it was grown and meet the people who were benefiting from the coffee's sales.

"It really changed my life, and now I might even be able to teach as a volunteer at one of the schools this year," Brennan says. "This all happened as a result of being an Ag Ambassador."

And it is not easy to become an Ag Ambassador. The late Bill Hardy, former professor of agriculture economics who served as Ag Ambassador adviser for several years, described the Ag Ambassadors as being the "cream of the crop."

"I love working as a team with some of the best and brightest the College of Ag has to offer," says Ashley Culpepper. "My fellow Ag Ambassadors really are amazing people."

To be considered, students must have a 2.75 or higher grade-point average at Auburn. When applying, they must include letters of recommendation, background information and an interest essay.



CULTIVATING CONNECTIONS Ag Ambassadors Riley Shugg, Bailey Blankenship, and Kira Chaloupka interact with new and returning students at the College of Agriculture's O-Night. The event seeks to help students get involved with one of the 21 organizations, including Ag Ambassadors, which call the College of Agriculture home.

Students selected for an interview must give a five- to 10-minute presentation on the College of Agriculture and Auburn University and then answer questions from a panel of faculty and Ag Ambassadors.

Megan Ross, student services adviser to the Ag Ambassadors, sums it up nicely.

"These students truly exemplify what it means to be a part of the Auburn University family," Ross says. "We are fortunate to have them representing the College of Agriculture, Auburn University and the agriculture industry."

Being an Ag Ambassador is the perfect way to put down roots in the College of Agriculture and be cultivated into a fundamental leader who is full of character, strength, courage and confidence. **CS**

College Announcements

New Hires

The College of Agriculture and AAES hired or promoted several staff members in July and August. The newest hires include: **Bob Britton**, director of the animal sciences beef, horse and swine teaching units located on the Auburn campus; **Jonathan Brown**, research technician at E.V.

Smith Research Center; **Andrew Gunnoe**, post-doctoral fellow in the Department of Agricultural Economics and Rural Sociology; and **Meaghan Bloodworth**, laboratory technician in the Department of Entomology and Plant Pathology. **Amanda Martin** rejoined the College of Ag staff in July as student services coordinator in the college's Office of Student Services. Martin served as the recruitment coordinator for the Department of Poultry Science from 2008 to 2011.

Scott Parsons was promoted from assistant director to director of the College of Agriculture and Alabama Agricultural Experiment Station Fiscal and Business Administration, replacing Lane Sauser, who retired at the end of June.

Retirements

Recent retirees include **Katie Jackson**, chief editor and head of the college and AAES Office of Ag

Communications and Marketing, and **Linda Bankston**, financial services associate in the Department of Agronomy and Soils, both of whom retired effective Sept. 1. **Linda Newton**, lead administrative assistant in the Department of Biosystems Engineering, will retire effective Oct. 1. Congratulations to them all.

Show Me the College Money

College of Agriculture Scholarship Program Helps Pay Your Way

One of the many perks of being a student in the College of Agriculture is the exceptional scholarship opportunities provided within the college, a fact illustrated recently during the college's annual Scholarship Recognition Program that honors students and donors.

The College of Agriculture Scholarship Program, which is one of the largest scholarship programs on the Auburn campus, awarded over one-half million dollars in scholarship awards to 225 students. This provides scholarship awards to approximately 25 percent of the undergraduate students in the college.

These scholarships are awarded based on academics, financial need and leadership to in-state and out-of-state residents and are awarded to incoming freshmen and transfer students. And they are funded by the generosity of many donors.

"The College of Agriculture is proud of the legacy represented by the scholarships bearing the names of many friends and supporters, some from

very long ago," says Paul Patterson, the College of Agriculture's Associate Dean for Instruction. "These scholarships are named in honor of alumni, faculty, companies, organizations, families, former students and friends and represent an enduring testament to the faith our donors placed in the College of Agriculture and their hope for the future."

"The scholarships provide much-needed financial support for our students, particularly in these difficult financial times," he continues. "More importantly, however, they are a way of recognizing academic excellence. The future potential contributions of the students who receive our scholarships gives me much hope for the future—hope that we will be able to address the global challenges facing agriculture and all of society today related to food production, the environment, health and energy."

To see a list of all the College of Agriculture scholarships, their donors and the 2012/13 recipients go to www.ag.auburn.edu/scholarships. The deadline for College of Agriculture scholarship application is January 15.

Agronomy and Soils Alum's Passion for Teaching Earns Her Honors as Top Young Achiever

by JAMIE CREAMER

Teaching was nowhere near Rebecca Balkcom's radar screen in 1990 when she, then a Birdsong, left the south Alabama town of Hartford for Auburn University. It wasn't there four years later, either, when she graduated with a bachelor's in agronomy and soils, or in '97, when she was awarded her master's degree in the same.

Affairs created last year to recognize Auburn graduates 40 and under for professional and civic achievements.

Now in her fifth year as a ninth-grade biology teacher at Auburn Junior High School, Balkcom admits she took a roundabout path to the education profession. After completing her

master's at Auburn, she began her career as a research associate at Iowa State University while her husband and fellow Auburn agronomy and soils alum Kip pursued his Ph.D. there.

Along the way, she took a few computer programming classes at a community college in the area, and with those skills landed a position as a computer support specialist for Pioneer Hybrid. That's where she, in her words, "stumbled into teaching."

"My job was to train the scientists on computer programs that would help them track their research, and that's where I began to realize that everybody learns differently," she says, "Most of my clients had master's and doctorate degrees in genomic research, but some could hear it once and be good to go, some were hands-on learners and others needed a step-by-step cheat sheet to complete a task.

"They all learned the programs, but they all processed information differently," she says. "I was fascinated at the concept."

So much so that today, as a ninth-grade biology teacher at Auburn Junior High School, Balkcom considers helping every

student figure out how they learn best a priority. "Once you discover how you learn, life and learning become so much more powerful," Balkcom says. "It builds confidence. If you're good at learning, you want to learn more; if you struggle, you're more likely to give up."

From Iowa, the Balkcoms moved to Dawson, Ga., where Kip, doctorate completed, went to work as a research agronomist with USDA's National Peanut Research Lab and she worked for The Peanut Institute in Albany,

educating consumers about the legume's health benefits. In 2002, though, Kip accepted a position at USDA's National Soil Dynamics Lab in Auburn and the missis immediately enrolled at Auburn in the fifth-year-degree program, one the College of Education offered at the time that allowed individuals who held bachelor's degrees to earn teacher certification in one year.

Her first classroom job was as a physical science teacher in the Lee County Schools system's Wacoochee Junior High, where she was selected the school's 2006-07 Teacher of the Year. She began her job at Auburn Junior High in 2008, and for the 2010-11 school year, she was named that school's Teacher of the Year and went on to win the Auburn City Schools Teacher of the Year honors.

She's about more than teaching students, too; she's coordinator of the junior high's teacher mentoring program and she organizes and conducts the entire Auburn City Schools system's secondary new teacher induction program each summer.

Shannon Pignato, Auburn Junior High principal, describes Balkcom as "extremely passionate about her profession and the students whose lives she touches daily." And Auburn agronomy and soils professor David Weaver seconds that.

"At Wacoochee, Rebecca was a role model, surrogate parent and teacher for all of her students," Weaver, a former professor of Balkcom's at Auburn, wrote in a letter earlier this year nominating her for the young alumni award. "At Auburn Junior High, she teaches science to some of the struggling students, and to talk with her about those students is to hear her passion and fire about how those students matter, too. Because of her, those students figure out that they can succeed, and Rebecca gives them the science training to do so."

Balkcom says it all goes back to knowing how you learn.

"Young minds need to understand how they learn best, because when they do, the world truly does open up to them," she says.



OUTSTANDING IN HER FIELD Agronomy and soils alum Rebecca Balkcom, a ninth-grade science teacher at Auburn Junior High School, was named a 2012 Young Alumni Achievement Award winner by the Office of Alumni Affairs. She and her husband, Kip, met in an introduction to soil science class at Auburn.

But one day out in Iowa, a tiny blip appeared, and next thing Balkcom knew—Bam!—there it was, dead center.

"I got the teaching bug," she says, and she got it good, too.

In fact, her exceptional performance as a schoolteacher since becoming certified in secondary science education at Auburn in 2004 has led to her selection as one of 16 recipients of the 2012 Young Alumni Achievement Award, an honor the university's Office of Alumni

Relevant Research

In a Flash AU Technology Could Revolutionize Rendering Industry

by JAMIE CREAMER

A patented Auburn University-developed process that cleanly converts inedible waste from the slaughter of animals into marketable products made its commercial debut this summer with the opening of Alabama Protein Products LLC at Kyser Family Farms, a catfish operation in Hale County.

Alabama Protein, which will ultimately employ five to 10 people and is expected to give the state's catfish industry an economic boost, is the first private venture ever to use the trademarked Agricultural Byproduct Value Recovery System, or ABVRS, a quick, energy-efficient and environmentally sound rendering process that, as opposed to conventional rendering methods, creates no foul odors, toxic emissions or wastewater as it recycles animal tissue from food processing plants and other agricultural byproducts into both high-protein fish meal for use in poultry, livestock and fish feed and heart-healthy omega 3 fish oil.

"As it is now, it costs the Alabama catfish industry about \$1 million a year to haul catfish offal from processors here to the catfish rendering plant in west Mississippi," says Bill Kyser, College of Agriculture alumnus and patriarch of Kyser Farms. "The renderer pays the processor for the raw offal, but sometimes the freight is more than the offal is worth. If we keep the offal and process it here and make it more valuable, then our fish will be more valuable."

The ABVRS differs significantly from the conventional rendering process, said Jesse Chappell, associate professor of fisheries and allied aquacultures at Auburn and lead researcher on the system.

"In traditional rendering, offal goes into giant vessels, where it's basically cooked like a stew for a while to remove the water and separate the solids and the fats, and that's where you get the strong smell that's associated with rendering plants and the large volume of odorous, high-strength wastewater," Chappell says. "The ABVRS uses high heat and relatively simple drying technologies that eliminate that whole cooking process and the environmental problems that come with it."

In the new flash-dehydrating rendering system, high-fat, high-moisture slaughterhouse byproducts are ground and mixed with a compatible meal and loaded into the central processing unit, where air of 800 degrees Fahrenheit instantly evaporates 90 percent of the moisture and releases it into the atmosphere as clean, odor-free steam. From start to finish, the entire process of converting the inedible animal byproducts into valuable meal takes about 60 seconds.

The concept that would become the ABVRS originated in the mid-2000s with Birmingham businessman Ken Mosley, a 1971 Auburn business administration alumnus and a designer and manufacturer of wastewater treatment equipment. It was while working with west Alabama catfish processors to improve the methods for removing pollutants from the wastewater they produced that the idea of producing fish meal, not by cooking offal but by dehydrating it, came about. Mosley and his business partner, Rick Renninger, built a prototype of the basic system and contacted Chappell, whose research at Auburn focuses on improving efficiency and profitability in Alabama's aquaculture industry and who accepted Mosley's invitation to see the process firsthand.



"It was a novel idea and was, in my opinion, a workable technology that held a great deal of potential as an alternative to the conventional process," Chappell says. "The process just needed to be refined and scientifically tested."

Mosley released his invention to Auburn, and, funded in large part by a grant from Alabama catfish producers, Chappell initiated research at Auburn's E.W. Shell Fisheries Center north of campus that would prove the system effective and efficient for rendering not only catfish offal but also whole fish, poultry offal, whole birds, hatchery waste, shrimp and crab shells and manure.

In 2010, Auburn was awarded a patent on the ABVRS and licensed the technology to Birmingham-based Falcon Protein Products Inc., a company Mosley and Renninger established to build, market and install the ABVRS process and equipment. A year later, Kyser, a leader in the catfish producers' organization that funded Auburn's research, bought exclusive rights to use the system for freshwater catfish in the U.S.

Kyser has agreements with two processors, Heartland Catfish and SouthFresh Catfish, to buy offal generated at their west Alabama plants. Given Alabama Protein's proximity to the processing facilities, the raw materials will be fresh and the resulting fish meal will be top quality.

In recent months, the price for quality, high-protein fish meal has jumped from \$250 per ton to more than \$1,000 per ton.

That Alabama Protein is located adjacent to the Kyser family's catfish farm is significant, Mosley says, in that ABVRS facilities can be built on farms, or catfish or poultry processors can build them on site.

"That means they retain ownership of the resulting meal and oil, which allows the offal to become a profit center instead of a costly disposal problem," he says.

Chappell predicted the Kyser's Alabama Protein Products, could "revolutionize how byproducts from catfish and other meat processing plants are handled, in Alabama and the world."

In mid-June, Falcon Protein officially partnered with a Grafton, Ill.-based plant that by year's end will be processing invasive Asian carp culled from the Mississippi and Illinois rivers. Using the ABVRS technology, Falcon will recycle the waste products into fish meal and fish oil. **CS**



STRONG RESEMBLANCE Top photo, the Agricultural Byproducts Value Recovery System equipment at Kyser Family Farms' newly opened Alabama Protein Products in Greensboro is a much-refined version of the 2007 model, inset, that Auburn fisheries researchers used to develop the flash-dehydration rendering process.

Scientist Takes Mouse Research to the Field

For two decades, Auburn molecular ecologist Michael Wooten has been part of a research team using lab mice to study Alzheimer's and other neurological diseases in humans.

Now, the Alabama Agricultural Experiment Station scientist is moving those trials from the lab to real-world settings in a study that not only will determine how data from inbred lab mice tests translate to natural populations but also could provide clues to the ecological mysteries surrounding population cycling in wildlife habitats.

"Among laboratory scientists, there is a growing appreciation for the need to move experiments outside of tightly controlled conditions into more realistic settings," Wooten says. "While traditional research organisms, such as fruit flies and lab mice, will always be the cornerstone of basic research in agriculture, biology and medicine, an emerging view is that the value of these models can be greatly enhanced by direct comparison to data obtained under natural conditions."

Wooten is focusing on two common mice native to the Southeast: the

oldfield mouse, which lives underground and is nocturnal, and the cotton mouse, a larger, related species that lives above ground. He and his research collaborators have established the study at the Joseph W. Jones Ecological Research Center, a 29,000-acre outdoor laboratory in southwest Georgia.

Thus far, Wooten has found that the surface-dwelling cotton mouse has significantly more cell-killing oxidative damage and lower levels of a cell-regulating protein molecule, p62, than the burrowing, oldfield species. To test his theory that such epigenetic differences are key to whether a species responds to various forms of stress effectively, he's concentrating on how stress brought on by food shortages might genetically impact the two species, particularly in the areas of behavior and reproduction.

"This work should provide clues to the ecological mysteries surrounding population cycling in wildlife habitats while at the same time allowing a direct link between on-going laboratory studies of neurodegenerative diseases," Wooten says. "Studying the mice in their natural environments also will produce information that more accurately reflects the range of responses expected in real-world situations, and that will better translate to human health questions."

Study Examines Impacts of Timber Industry's Land Sales

by JAMIE CREAMER

In the past decade, major corporations in Alabama's forest products industry, looking to pay down debt and raise the price of shares, have sold off 3.5 million acres of commercial timberland, primarily to outside investment firms and trusts that may or may not keep the land in timber.

With the new owners comes the possibility that forest management practices and land-use patterns will shift, and that could have major implications for rural communities, local governments and family-owned forests in timber-dependent areas of the state as well as for the future of the forest products industry itself in a state that has the third most timberland acreage in the 48 contiguous states.

In an investigation under way at Auburn University, Alabama Agricultural Experiment Station scientists aim to document all corporate forested-land ownership transfers in the state in recent years, analyze the social and economic impacts the land sales are having and identify ways rural communities can not only reduce the negative consequences of the changing landscape but maximize the benefits as well.

Auburn rural sociology professor Conner Bailey, director of the five-year project funded by USDA's Agriculture and Food Research Initiative, says current tax policies have made timberland an extremely attractive venture for investors, particularly real estate investment trusts, most of whom contract with companies known as timber investment management organizations to make decisions about the land and its use.

These new owners and overseers will shape the future of the forest products industry and the larger rural economy of Alabama, based on their management objectives for this land, says Bailey, who is joined in the project by Auburn forest economist Larry Teeter and Extension forest management specialist Rebecca Barlow.

"The forest products company that has owned timberland for decades has a vested interest in managing the land so that it will remain highly productive and is concerned with the community in terms of workers, mills, equipment dealers and so forth," Bailey says. "When that company sells the land, the new owner may not be anchored to the community; its main interest is going to be the return it gets on its investment."

In some parts of the state, Bailey says, the new owners are likely to keep the land in commercial timber production, mainly because of the lack of alternative uses for the land. This is particularly true in west-central Alabama.

"But in other parts of the state, especially near urban-growth centers or major transportation arteries, where there's a demand for rural residential property or where it's a prime area for manufacturing, investors are going to evaluate what the highest and best use of their land is, and that could prompt them to take the land out of timber production," Bailey says.



CHANGING LANDSCAPE Auburn University researchers are analyzing the economic and societal impacts that the sale of 3.5 million commercial forestland acres to outside investors is having and will have on rural communities and the state as a whole.

Such moves could have a positive impact on some communities and counties.

"If timberland is bringing \$5,000 an acre but dividing it up and selling off parcels for subdivisions would raise the value to \$15,000 an acre, obviously the landscape is going to change," Bailey says. "But that could be to a county's advantage because even if the homestead exemption applies, the increase in land value will generate increased property tax revenue."

Bailey and team will amass much of their data through examining county property tax records to identify the sellers and buyers in all forestland real estate transactions in Alabama in recent years, conducting surveys and interviewing a range of stakeholders, from forest industry executives to local equipment dealers. In the final phase of the project, the researchers' objective will be outreach designed to help rural Alabama communities adapt to change brought about by restructuring of forestland ownership.

Collaborating with the Alabama Ag Experiment Station research team at Auburn is John Bliss in the College of Forestry at Oregon State University. Bliss is a former Auburn faculty member who has conducted similar research in Oregon and with whom Bailey and Teeter have worked on other social and economic forestry issues.



LOSING GAS A researcher lowers a 3-gallon dwarf yaupon holly into a flux chamber to measure the volume of greenhouse gas the plant is emitting. The study compared the gas emissions from four commonly used container sizes.

Scientists Measure Horticulture Industry's Environmental Footprint

by JAMIE CREAMER

Concerns over agriculture's impact on global environmental change have prompted extensive research aimed at reducing greenhouse gas emissions and increasing carbon sequestration in row-crop, forest and livestock production systems, but a study under way at Auburn University is the first to zero in on one of the fastest-growing components of the nation's agricultural sector: horticulture.

Three years into the project, Auburn horticulturalists, including professor Charles Gilliam and graduate research assistant Chris Marble, and federal researchers at the USDA National Soil Dynamics Lab in Auburn are collecting data to determine what effects—both positively and negatively—ornamental horticulture has on climate change.

"What we're doing is establishing baseline data on ornamental horticulture's greenhouse gas emission and carbon storage levels, because right now, those are unknown," Gilliam says. "But we're also going to use that data to develop best management practices that will help producers operate more productively, profitably and sustainably."

The researchers' findings to date indicate that the size of containers nursery growers use and how they apply fertilizer both make a difference in the levels of carbon dioxide, methane and nitrous oxide released into the atmosphere.

Comparing trade-gallon and true-gallon containers that are standard in the nursery industry, they have found that greenhouse gas emissions increase right along with container size. But Marble says that doesn't necessarily mean the industry should make a wholesale switch to the smaller sizes.

"On a per-acre basis, emissions from a field of 3-gallon containers would be lower than from a field of 1-gallons, because there would be a lot more of them," Marble says. "Our work also shows that regardless of container size, production of most nursery crops would likely result a net carbon gain, even while still in production, because of the carbon being stored in growing biomass."

On the fertilization side, of three fertilizer placement practices—topdressing, incorporation into the potting media and dibbling—scientists say carbon dioxide emissions are lowest when the latter method is used, while nitrous oxide levels are highest when fertilizer is incorporated. Methane losses are negligible regardless of fertilization technique or container size.

Also as part of the project, researchers are investigating whether plant species and potting media affect carbon sequestration. Though pine bark is the standard substrate used in the industry, Gilliam and others at Auburn have developed two pine-bark alternatives in recent years—clean chip residual and whole-tree substrate. In the aspect of the study, the team is growing various common shrubs in the differing media, then planting the shrubs in a test field and monitoring carbon lost through soil respiration.

Early results indicate that the type of plant and the potting media it is grown in have significant effects on carbon sequestration in the landscape.

The study is funded by the USDA, the Alabama Ag Experiment Station and the Horticulture Research Institute.

School of Forestry and Wildlife Sciences

New Fungicide To Treat Pine Seedling Diseases

School of Forestry and Wildlife Sciences Professor Scott Enebak and research fellow Tom Starkey recently spearheaded the registration of a fungicide that could revolutionize the forest nursery industry.

The fungicide is Proline, a compound commonly used to control soybean rust. Through lab experiments, Enebak and Starkey showed that Proline not only controls fusiform rust—one of the most costly diseases in loblolly pine—but is also effective for two other diseases that affect pine seedlings, pitch canker and rhizoctonia foliar blight.

“Proline’s effectiveness in controlling pitch canker and rhizoctonia foliar blight is particularly exciting because rhizoctonia was only partially controlled with the only available treatment, and there was absolutely nothing to help growers if their seedlings got pitch canker,” says Enebak.

Previously, only one compound was available to control fusiform rust. When that compound came under review from the EPA, Enebak and Starkey worked with the manufacturer and EPA to keep the compound available for forest nurseries while they searched for an alternative.

“With Proline’s labeling for use in forest nurseries, growers now have access to one of the most effective tools the industry has ever seen,” says Enebak.

College of Sciences and Mathematics

Gulf Oil Spill Harms Microscopic Creatures



BEACH-BUMMED Repercussions of the Deepwater Horizon oil spill continue on beaches that appeared to be superficially clean. Microscopic creatures that live in coastal sands indicate that dramatic shifts occurred after the spill. Overall organismal diversity has declined, and fungal species that indicate the presence of a significant amount of oil have increased.

Analysis of five sites along the Alabama Coast before and several months after the Deepwater Horizon oil spill indicates massive harm to microscopic creatures in coastal sands, lasting months after beaches appeared superficially clean. The research, conducted by the College of Sciences and Mathematics’ Molete Biology Laboratory for Environmental and Climate Change Studies, shows that small organisms that live in the sediment and between sand grains on the Gulf Coast beaches underwent dramatic shifts after the spill.

Typically these communities are filled with a variety of small organisms, including various bacteria and nematodes, that are important at the base of the food chain. However, post-oil spill samples collected in September 2010 demonstrated less overall organismal diversity and were dominated by fungi, organisms often associated with decomposition. The particular fungal species found had previously been associated with hydrocarbons, suggesting that a significant amount of oil had been present.

“Because these environments looked relatively normal after the spill, the data suggest that many impacts of the spill were potentially hidden from plain view,” says Ken Halanych, professor of biological sciences at Auburn University and co-author of the study.

Research for this multi-institutional project was funded through the National Science Foundation’s RAPID program for quick-response research. The collaborative effort included researchers from the University of California–Davis Genome Center, the University of New Hampshire and the University of Texas at San Antonio.

The team is continuing research on these sites to assess potential ecological impacts of hydrocarbons over a longer time period.



SAVING EMMA Born with a severe hind limb deformity, miniature donkey foal Emma was fitted with a prosthesis at the AU College of Veterinary medicine, working with Hanger Clinic, provider of prosthetics and orthotics. Emma’s case has implication in the treatment and rehabilitation of other equines with congenital deformities or injuries.

College of Veterinary Medicine

Miniature Donkey Foal Fitted With Prosthetic Limb

Auburn’s College of Veterinary Medicine and the New York–based Hanger Clinic are working together on a case that could have implications in the treatment and rehabilitation of horses, donkeys and other equines with congenital deformities or injuries.

Emma, a miniature donkey foal, was just 2 days old when she arrived at the John Thomas Vaughan Large Animal Teaching Hospital in April with a severe hind limb deformity, one that required amputation of the limb and the placement of a prosthesis.

Fred Caldwell, an assistant professor and equine surgeon, performed the procedure and is working with clinician Billy Fletcher from Hanger Clinic—the same company that made the prosthetic tail for Winter, the amputee dolphin and star of the film “Dolphin Tale”—to develop a prosthesis for her limb.

The prosthesis is made of strong and extremely light carbon fiber, Kevlar and fiberglass, the same materials used for prostheses for Paralympic athletes. The materials are also flexible and adjustable to allow for growth and progression in Emma’s gait.

“Every opportunity we have with a case like this, I think we get a little closer to being able to consider this a viable option,” Caldwell says. “It’s been very educational for me as an equine surgeon to learn; this has certainly been my first case. I think we have a long way to go before we get to this being a procedure that’s routinely an option for our larger patients, but for a prosthetic limb to be an option in horses is something that’s pretty exciting.”

Visit wireeagle.auburn.edu for more on Emma and other featured stories.

College of Human Sciences

Tan Recognized by Center for Health Design



Lindsay Tan

Auburn University interior design assistant professor Lindsay Tan has been awarded the Center for Health Design’s Evidence-Based Design Accreditation and Certification, or EDAC, credential. The credential is awarded to individuals who demonstrate a thorough understanding of how to apply an evidence-based process to the design and development of healthcare settings.

Tan, who joined the faculty in Auburn’s College of Human Sciences and its top-ranked interior design program in 2011, is the first Auburn University faculty member and one of only a handful of professionals in Alabama to earn the credential. She says evidence-based design,

or EBD, is about basing design decisions on credible research to achieve the best possible outcomes.

“Studies reveal how the design of a health care environment can relieve patient stress and pain, promote healing and improve overall well-being,” she says. “Evidence-based design decisions can also reduce medical errors, infections and patient falls in the health care setting.”

Tan says EBD is expected to be a major influence in the future of the health care design industry as it focuses on improving clinical outcomes.

“Credible research shows us just what a big impact our environment, both built and natural, has on our physical health and mental, even spiritual, wellness,” she says.

Editor’s Note: In this and future issues of Ag Illustrated, we will highlight each of the College of Agriculture’s eight academic departments. For this installment, the Department of Agronomy and Soils is in the spotlight.

Spotlight

Agronomy and Soils
Vital to the Future

Here From the Beginning

Protecting Alabama’s soil and water resources and finding better ways to grow and manage crops have been priorities since Auburn University’s earliest days as an agricultural college. Today the Auburn University Department of Agronomy and Soils continues to honor its commitment to helping farmers and landowners, but it is also emerging as a leader in environmental science, an area of study that affects every man, woman and child in the state and beyond.

Agronomic and soil studies were among the first projects tackled as far back as the 1860s by agricultural scientists at what was to become Auburn University. It was not until 1911, however, when the Alabama Legislature set aside funds for cooperative field experiments, that a structure began to develop for the future department. By 1916, agronomy was listed as a teaching unit in what was then the College of Agricultural Sciences, and it became an official department in 1919.

During those early years, faculty focused much of their work on fertilizer management research that helped establish methods for testing fertilizers and soils. The soils program then expanded to include work in the areas of classification and mineralogy, physics and productivity.

Crop research also was a principal focus from the department’s beginning and, through the years, Auburn built strong programs in the areas of plant breeding and crop management and production. During the 1960s, the department further expanded its programs—and reputation—in turfgrass and weed science.

Areas of Excellence

“Turf, weed and soil/environmental science are the areas that our department is probably best known for,” says Joe Touchton, department head and professor of soil science who joined the Auburn faculty in 1980. Conservation tillage and biofuel production research have also been areas of particular strength for his department.

In more recent years the department has established a strong and growing reputation in environmental sciences, which Touchton says touches on a wide array of issues, from waste management to water quality to nutrient recommendations to conservation tillage.

With these many areas of strength come a number of opportunities for undergraduate and graduate students in agronomy and soils, who can pick options ranging from traditional agronomic production and science to turfgrass management and golf course construction to environmental sciences, which is now a multidisciplinary undergraduate major offered to students campus-wide but administered by Wes Wood, a faculty member in the Department of Agronomy and Soils.

In his own 30-plus years at Auburn, Touchton has seen lots of changes in agriculture and academia and says his department has always been flexible enough to respond to the trends in agriculture and society. A prime example is the department’s leadership in establishing online and distance education degree and certification options at Auburn, which expand opportunities for nontraditional students to advance their educations in the sciences.

Department Head - Joe Touchton

60 undergraduates

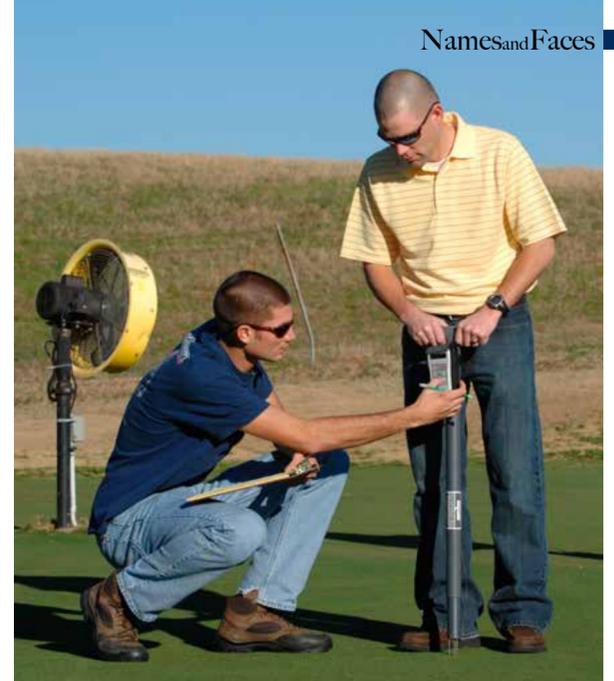
43 graduate students

23 faculty members

Undergraduate Degree Majors:
Production
Science
Turfgrass
Soil, Water and Land Use

Undergraduate Degree Minors:
Agronomy and Soils

Graduate Degree Programs
Master of Science
Master of Agriculture
Ph.D.



GROWTH ON THE HORIZON From managing turfgrass to soil judging, students gain technical experience in the Agronomy and Soils program. This experience will help graduates meet the growing demands for environmental protection as well as food and fiber production.



Partners and the Future

According to Touchton, the department is fortunate to have a productive and cooperative relationship with the U.S. Department of Agriculture’s National Soil Dynamics Laboratory, which is located in Auburn. It is also home to one of Auburn’s most valuable services—the Auburn University Soil Testing Laboratory, which helps everyone from farmers to homeowners be better stewards of their land.

To keep up with the needs of today and tomorrow, Touchton says further growth will be needed in Auburn’s plant breeding, turf and environmental soil sciences programs, all of which he says are vital to the future of food and fiber production and environmental protection. “Forage production is an area that we need major growth in because we have a lot of cows in Alabama,” he adds.

While there are still unmet needs and probably new ones on the horizon, Touchton feels the Department of Agronomy and Soils is poised to address those needs and, with agricultural crop prices rising and the need for effective environmental science growing, the department’s role at Auburn is perhaps more vital than ever before.

“The future for our department looks great,” says Touchton.

Environmental Science—A Growing Major

The Auburn University environmental science program, an interdisciplinary major administered through the College of Agriculture’s Department of Agronomy and Soils in partnership with Auburn’s Samuel Ginn College of Engineering and College of Sciences and Mathematics, has become a magnet for students interested in careers ranging from environmental consulting, law, planning, education and management to soil science, air and water quality and waste management.

With a current enrollment of 53 students, this major utilizes faculty in all three colleges to provide students a broad-based general education; a solid background in mathematics, physical science and biological science; and a deeper understanding of the social and political issues that affect the environment and public interest, health and safety.

Students can select a general environmental science track or specialize their degree through professional tracks that emphasize the environmental applications of biological science, physical science, soil science or engineering science.

For more information on the degree contact Wes Wood, environmental science major coordinator, at 334-844-3997 or woodwes@auburn.edu.

Consumers To Meet Agriculture at Ag Discovery Adventure

Mark your calendars for Saturday, Sept. 29, when the E.V. Smith Research Center in Shorter will host "Ag Discovery Adventure: A Window to the Future," an event that will highlight agricultural technology and illustrate the key role agriculture plays in every aspect of our lives. The free event, with the theme "Consumers meet agriculture," will start at 9 a.m. and wrap up at 1 p.m.

Ag Discovery Adventure is a collaboration among the Alabama Cooperative Extension System, the Alabama Agricultural Experiment Station and Auburn's College of Agriculture. It is co-sponsored by industry groups



including the Alabama Cotton Producers, Alabama Soybean Producers and Alabama Wheat and Field Grain Producers.

The idea for Ag Discovery Adventure originated from a survey the Alabama Cooperative Extension System conducted last year of commodity group leaders across the state. Paul Mask, assistant director of agriculture, forestry and natural resources for ACES, says survey results indicated producers believe that educating children and their parents about Alabama agriculture would generate a better understanding of the processes involved in bringing products to the market.

With that in mind, several faculty and staff members within ACES and the AAES began brainstorming for ways to educate the public about agriculture. Lisa Kriese-Anderson, Extension specialist and associate professor

in the Department of Animal Sciences, and biosystems engineering associate professor and Extension specialist John Fulton, proposed what would become Ag Discovery Adventure.

The event will be an excellent outreach venue, says Paul Patterson, associate dean for instruction in the College of Agriculture.

"ACES and the AAES organize various events for producers throughout the year, and the College of Agriculture invites prospective high school students for field days to see the progress we've made in agriculture," he says. "Now we are aiming for the broader public. Our objective is to reach the soccer mom who wants to know where her food is coming from."

Numerous College of Ag and Extension faculty, staff and students have become involved in helping with the event, which Kriese-Anderson and Fulton say will offer hands-on experiences that will help attendees understand various facets of agricultural production and the modern technology used in farming.

"This is where we begin to have an honest dialog with consumers about where their food comes from and where they need to go to find factual information," Kriese-Anderson says.

Exhibits and demonstrations will feature information on topics ranging from insect scouting to precision farming technology. Activities will include a corn maze, hay rides, high-tech treasure hunts and a milking demonstration. And it is all

designed to introduce folks of all ages and walks of life to the wide world of agriculture in the United States.

"We hope to excite the public about agriculture along with educating them on the science and technology used to produce food, fiber, feed and energy today in this world," co-creator Fulton says. "The plan is that it will become an annual event and move around the state after a few years."

The 3,816-acre E.V. Smith Research Center, located on Interstate 85 between Auburn and Montgomery, is one of 15 Alabama Ag Experiment Station research facilities located the state. The rain date for Ag Discovery Adventure is Saturday, Oct. 13

To learn more, go to www.AgDiscoveryAdventure.com or email agcomm@auburn.edu.

Student Accomplishments

Charles Stephen, a former master's student in the Department of Entomology and Plant Pathology who earned his degree in May under the direction of entomology professor Xing Ping Hu, won third place in the student paper competition at the National Conference on Urban Entomology in Atlanta. Stephen is now a Ph.D. student at Auburn working under the direction of Jason Bond in the Department of Biological Sciences.

Michael Chislock, a Ph.D. student working under the direction of fisheries and allied aquacultures assistant professor Alan Wilson, won the top prize for talks given during the 21st annual Southeastern Lake and Watershed Management Conference held earlier this month in Columbus, Ga.

Shikai Liu and **Ting Yang** are recipients of two graduate student awards for the academic year. Liu, a graduate research assistant in the Department of Fisheries and Allied Aquacultures, was among the recipients of the Outstanding Graduate Student Award on April 26. Yang, a graduate research assistant in the Department of Entomology and Plant Pathology, was named the Outstanding International Graduate Student for the College of Agriculture at the April 24 OIGS event.

Judson LeCompte, a master's student in horticulture at Auburn, is one of two recipients nationally of a \$5,000 Young Leaders Scholarship from Lawn & Landscape magazine and its parent company, GIE Media. Earlier this year, LeCompte received the Garden Club of America's Catherine H. Beattie Fellowship for Conservation Horticulture.

Staci DeGeer, a graduate student in the Department of Animal Sciences, was elected to a one-year term on the American Meat Science Association Student Board of Directors during the Reciprocal Meat Conference held at North Dakota State University in June. Auburn will host the 2013 Reciprocal Meat Conference in June.

Nathan Warner, a May 2012 biosystems engineering graduate, was recently awarded the 2012 R.E. Stewart Engineering – Humanities Award by the American Society of Agricultural and Biological Engineers.

Faculty and Staff Accomplishments

Ed Sikora, professor of entomology and plant pathology and Extension plant pathologist, received the 2012 International Award of Excellence presented at the seventh International IPM Symposium in Memphis recently.

Alan Wilson, assistant professor in the Department of Fisheries and Allied Aquacultures, was featured in a news story concerning fish kills in the Ogeechee River. To view the full story, including video, visit www.ag.auburn.edu/go/265.

Steve Szedlmayer, professor of fisheries and allied aquacultures and Extension marine specialist, was quoted recently in an article concerning the status of red snapper born during the BP oil spill two years ago. For the full article, go to www.ag.auburn.edu/go/264.

Oladiran Fasina, associate professor in biosystems engineering, received the 2012 Standards De-

veloper Award at the 2012 ASABE International Meeting in July.

Glenn Davis, construction and heavy machine operator with the Agricultural Land and Resource Management group, was honored as an Auburn University Employee of the Year during the university's annual Employee Recognition Program.

Tingting Wu, **R.R. Sharpe** and **Kathy Glass**, all of the Department of Agronomy and Soils, participated in the Earth Day Celebration at the Montgomery Zoo in April.

Ayanava Majumdar is the recipient of the 2012 Friends of Southern IPM Future Leader Award presented by the Southern IPM Center, North Carolina. Majumdar also will receive the National Association of County Agricultural Agents/Alabama Agricultural Extension Agents and Specialists award.

Animal Sciences assistant professor **Christy Bratcher** and **Leonard Bell**, food science professor in the Department of Poultry Science, were featured recently in a segment on WAFF-TV News in Huntsville about lean finely textured beef. View it at www.ag.auburn.edu/go/263.

In Memoriam

John C. "Cas" Williams, Jr., 85, of Auburn passed away on June 3 at Columbus Hospice in Columbus. Williams, a professor of discrete and statistical sciences, retired in 1994 after years of teaching statistics to students in agriculture, forestry and beyond. Donations in his memory can be made to Columbus Hospice, 7020 Moon Road Columbus, GA 31909 or www.columbushospice.com

Mike Lisano, 69, of Opelika passed away June 15. Lisano was a retired professor of zoology and physiology and former associate dean of Auburn's Graduate School who taught many College of Agriculture students during his tenure at Auburn. Donations in his honor may be made to Bethany House, 1171 Gatewood Drive, Auburn, AL 36830; Four Paws Rescue, 1027 Opelika Road, Auburn, AL 36830; the American Cancer Society, 3054 McGehee Rd., Montgomery, AL 36111; and Holy Trinity Episcopal Church, 100 Church Drive, Auburn, AL 36830.

Harry James Amling, 81, of Opelika, passed away July 30 at his home after an extended illness. Amling was a professor in the Department of Horticulture for 30 years, where he was actively involved in pecan research. He retired from the university in 1987. Donations in his memory can be made to Hospice Advantage or the Alabama Chapter of the Nature Conservancy.

Howard Francis Tucker, 92, of Auburn passed away in early August. Tucker was a faculty member in the Department of Animal Sciences until his retirement in the early 1980s. He received his bachelor's and master's degrees at Auburn, then became the first candidate to complete Ph.D. work at Auburn and with four others, was in the first class awarded doctoral degrees at Auburn. Memorial contributions in Tucker's honor can be made to a church or charity of choice.

Colombia-born Extension Agronomist Makes Her Mark on Alabama Agriculture

by JIM LANGCUSTER, SPECIALIST, EXTENSION COMMUNICATIONS & MARKETING

Of all the challenges Brenda Ortiz encountered upon her arrival in the United States a decade ago, it was American views on lunch that she found most flustering.

In her native Colombia, lunch is typically characterized by bountiful helpings of rice, meat, vegetables and soups and is the principal meal of the day, so she admits she has yet to become fully acclimated to the paltry American midday fare of sandwiches and salads.

But as with everything else, Ortiz has adapted. That's what she does—what she's always done.

Her unusually adept command of English perhaps affords the clearest insight into this finely honed skill. A decade ago, English language mastery was the biggest obstacle standing between her and her long-term goal of completing a doctorate in agricultural engineering at an American university.

"I knew that if I was coming to the United States to pursue a Ph.D., I would have to understand everything and communicate effectively," recalls Ortiz, now an Alabama Cooperative Extension System agronomist and assistant professor in the Department of Agronomy and Soils at Auburn University.

So it was that in 2002, five years earning her bachelor's degree in agricultural engineering in Colombia, she left her homeland for the first time ever and came to the U.S. as an international student in a semester-long intensive English program at the University of Missouri at Columbia.

"I chose Middle America because I wanted to be exposed to a clear American accent, but I also wanted to be as far removed as possible from Latin American culture," she says. "Otherwise, I feared I wouldn't master English as quickly."

At semester's end, she returned to Colombia and her job as a research assistant at the Colombian Sugarcane Research Center. But in 2004, a life-long, all-consuming passion for scientific investigation and discovery led her back to the U.S., to pursue her doctorate at the University of Georgia.

Growing up in Cali, a large city nestled in a fertile valley bracketed by two mountain ranges in

western Colombia, Ortiz couldn't ignore the region's awesome natural splendor or the thriving and highly diversified farming sector that had sprung out of its rich soils. Equally fascinating to Ortiz was all the machinery used to process sugarcane.

"I always was so intrigued with the steps involved, and that's part of the reason why I'm working in agriculture right now," she says.

Her maternal grandmother's coffee farm and her paternal grandmother's sprawling backyard also served as formative influences.

"I can remember digging holes in my grandmother's backyard and closely observing the different soil colors that turned up," Ortiz says. "Why is the soil different colors, and why does it feel so different?" I began asking those kinds of questions even then."

She credits her parents, particularly her technical-drawing professor father, with helping cultivate her passion for discovery.

"I got a lot of things from my father," she says. "He was always intrigued with little details and always trying to explain the principles that account for why something is happening."

A handful of undergraduate professors also encouraged her. Early in her undergraduate career, Ortiz exposed herself to research in several different disciplines, often volunteering to help professors and researchers gather their data for free so she could gain a deeper insight into how scientific research was conducted.

"Sometimes this field work took all day, but that was fine because I was learning," she says.

Her prime motivation for gaining fluency in English and pursuing graduate study in the U.S. came from Oscar Daza, a senior scientist she worked with at the sugarcane research center.

"He was always pushing me and asking questions—'How is your English?' and 'What are your plans for the next six months?'" Ortiz recalls. "He was always giving me advice and encouragement."



EXTENDING THE KNOWLEDGE
Extension agronomist Brenda Ortiz, an assistant professor of agronomy and soils in the College of Ag at Auburn, talks with farmers during a field day at the Wiregrass Research and Extension Center in Headland. Ortiz says her goal is to provide real-life solutions to Alabama farmers.

This sort of applied, practical research and knowledge transfer associated with Extension work is one of the reasons why Ortiz is so enthusiastic about her work.

"I have a real passion for applied research," she says. "It makes me happy to see farmers making changes in their farming practices based on the findings we present."

"I could fill the cabinets in my office full of research papers, but my overriding goal is to ensure my team findings are providing real-life solutions to farmers."

Extension Helps Create Outdoor Classrooms in Calhoun County

Anniston's Wellborn Elementary School and Cane Creek Community Gardens have been awarded certification as official Nature Explore Classrooms by the Arbor Day Foundation and Dimensions Educational Research Foundation.

Nature Explore Classrooms are part of the two nonprofit foundations' Nature Explore program, which was developed in response to the growing disconnect between children and nature. Nature Explore Classrooms are designed to help fill that void by educating young children using research-based principles for integrating nature into their daily learning.

The Alabama Cooperative Extension System was a major partner in the effort to create the two newly certified outdoor classrooms, which are only the second and third Nature Explore Classrooms in Alabama, joining the J.D. & Annie S. Hays Nature Preserve in Huntsville. Calhoun County Extension Coordinator David West says these classrooms provide well-crafted and effective outdoor learning spaces for children.

The Wellborn site is an outdoor classroom space enclosed by school buildings. While connecting children with nature, such unstructured, nature-based play and learning are shown to enhance concentration, develop creativity and problem-solving, relieve stress and improve skills in many areas.

"The certification is a portal to an expansion of ideas and projects currently under way in our school," says Douglas O'Dell, Wellborn Elementary principal.

O'Dell sees the project as a cooperative effort among the community, Extension and the school to improve the lives of all stakeholders in the community. The school's 625 students will spend time in the outdoor classroom learning science, math and music.

West says Wellborn Elementary School's commitment to the project was impressive.

"I value their trust in ACES professionals and our trained 4-H and Master Gardener volunteers to help them complete the project," West says. "They took a site that was unattractive and transformed it into the most attractive, enjoyable setting on campus."

The Nature Explore Classroom at Cane Creek Community Gardens, meanwhile, was funded largely by the Calhoun County Commission and the Coosa Valley Resource Conservation and Development Council, and the Calhoun County Master Gardeners made significant contributions to its development.

Both Nature Explore sites were designed with the assistance of students and faculty from the Auburn University Department of Horticulture. Professor Gary Keever worked with the Wellborn group, and assistant professor Carolyn Robinson helped with the Cane Creek project. Sponsors who provided design and construction at the sites included Legacy, the Community Foundation of Northeast Alabama, the county resource conservation council and Master Gardeners, the Calhoun County Beautification Board, the Calhoun County Commission and Wellborn faculty and students.

West says the Calhoun County sites will serve as examples for other schools to begin or expand their opportunities for outdoor education. He notes that not every class has to be about the outdoors, but almost every class can be conducted outdoors.

"Children need the opportunity to be outside and experience their natural environment," West says. "I am hopeful that other schools will begin outdoor classroom projects and that they will seek certifications for those sites."



2012 Ag Roundup Planned for Nov. 3

Corn dogs, sausage, catfish, rabbit, goat, turnip greens and sweet potato fries are just a few of the goodies that will be available at this year's Fall Roundup and Taste of Alabama Agriculture, set for Saturday, Nov. 3, at Ag Heritage Park.

The 2012 edition will get under way four hours before kickoff of the Auburn-New Mexico State homecoming game and wrap up an hour before game time.

Ag Roundup features a wide variety of Alabama-grown and -made foods as well as live and silent auctions to raise money for College of Agriculture scholarships, informative displays from Auburn University departments and organizations and various commodity groups, children's activities and a visit from the AU Pep Band.

The College of Agriculture and the Auburn University Agricultural Alumni Association co-sponsor Ag Roundup, with corporate partners Milo's Tea, John Deere, SunSouth, Snead Ag, TriGreen and KMG Chemicals. Admission is \$5; children 6 and under are admitted free. Tickets will be available at the gate.

Ag-related businesses and organizations are invited to set up exhibits at Ag Roundup free of charge. Each exhibitor will have about 15 feet of setup space, a table and chairs. Exhibitors may also bring their own small tents (8- by 8-foot or 10- by 10-foot). No product sales are allowed, but samples of products may be offered. Donations of auction items are also welcome.

For more information on Ag Roundup, or to donate auction items, call 334 844 3204 or 334-844-3596 or email rollome@auburn.edu.

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Recipe File

Sweet Treat

Creamy Rice Pudding a Taste of Home for Colombia Native

Sweets lovers, rejoice—and thank Auburn agronomy and soils assistant professor Brenda Ortiz (see story, page 11) for sharing this recipe for one of her favorite authentic Colombian desserts. In Ortiz's homeland of Colombia, this rich and creamy rice pudding would be served at lunch, which is by far the heartiest meal of the day.

Arroz con Leche (Rice Pudding)

- 2 cups water
- 4 cinnamon sticks
- 1 cup long-grain white rice, washed
- Pinch of salt
- 2 tablespoons butter
- 1 ½ tablespoons vanilla extract
- 1 ½ cups sugar
- 4 cups whole milk, divided
- 1 (14-ounce) can sweetened condensed milk

Combine water and cinnamon sticks in a large saucepan; bring to a boil and boil for 10 minutes. Remove from heat and discard cinnamon sticks. Stir rice into cinnamon water and cook over medium heat for 5 minutes. Add salt, butter, vanilla extract, sugar and 2 cups of the milk, stirring well. Cook, uncovered, for about 15 minutes. Reduce heat to medium-low. Add sweetened condensed milk and remaining 2 cups whole milk, stirring with a wooden spoon. Simmer for 1 hour and 15 minutes, or until the mixture thickens to desired consistency,* adding more milk if needed to prevent sticking. Stir well; remove from heat, and let cool to room temperature. Refrigerate at least 1 hour or overnight before serving. Makes 6 to 8 servings.

* Pudding will thicken some as it cools.

