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ON THE COVER: Nathan Reed, Lee County cotton farmer. The Reeds were named 2014 Arkansas Farm Family of the Year.
When it comes to farming, Nathan Reed’s career went full circle. Though he grew up on a farm, when he headed to Fayetteville to pursue a degree, he wasn’t sure that farming would be his life. He finished college, went on to law school, and in 2005, found his way back to the farm.

In a way, Reed’s life — outlined in Ryan McGeeney’s Farm Family of the Year story — is like the work done by the University of Arkansas System Division of Agriculture. The efforts of the Division’s research and extension programs never stray far from their deep roots in Arkansas agriculture.

In this issue, we showcase some of the Division’s work. Writer Dave Edmark looks at a research project whose goal is to make production of one of America’s favorite fruits more sustainable. Strawberries that now travel half the globe may one day take shorter trips to the produce aisle, thanks to findings from this project. Fred Miller’s story examines a project focused on more efficient milling of rice. It’s work that may eventually help drive down the consumer cost of this staple grain.

On the Cooperative Extension Service side of the Division, families and communities are at the forefront. The 4-H Youth Development program is introducing Arkansas youngsters to the people and agencies that make our government run — preparing them to be engaged citizens and perhaps our future elected officials. In the same vein, the Leadership Arkansas program gives adults the insights and tools to improve their communities. LeadAR is profiled is a second story by McGeeney.

We hope you’ll enjoy this issue of Arkansas Land and Life. As always, we welcome your feedback. Feel free to contact Mary Hightower at 501-671-2126 or email at mhightower@uaex.edu.

GUBERNATORIAL GIFT — Members of 4-H clubs around the state visit the Capitol Building in Little Rock during the March 18 “4-H Day at the Capitol.” Participants had the chance to meet legislators, hear a speech from Gov. Asa Hutchinson, and watch the houses of the State Congress in session.
Division of Agriculture releases two new soybean varieties

A new high-yield, high-protein conventional soybean variety from the University of Arkansas System Division of Agriculture makes an ideal choice for the animal feed market.

Division soybean breeder Pengyin Chen said the non-GMO soybean’s high protein content offers improved feed efficiency for poultry, beef and aquaculture producers. He added that the high yields and relatively low cost of a public variety will make the seed attractive to growers.

The new variety, called UA 5814HP, is a maturity group V soybean that averaged 58.8 bushels per acre over four years of testing in 12 locations around Arkansas, Chen said. It was also evaluated in seven southern region locations outside Arkansas where it averaged 64.8 bushels per acre.

The Division has also released its first soybean variety that features Roundup Ready® technology. Chen said the new variety, called UA 5414RR, offers the weed control advantages of Roundup Ready® soybeans without the added cost of technology fees. He said growers could also save seed from each harvest for planting the following year.

Monsanto’s patent on the first generation of Roundup Ready® products expired in March 2015, Chen said, and the company shared the breeding material with public breeding programs, including the Arkansas program directed by Chen. He said UA 5414RR fills a niche for growers who want to use the Roundup system of weed control but don’t want to pay the higher cost of the next generation Roundup Ready 2 Yield® technology.

New resource for cattle operations managing drought conditions

The harsh days of the 2011-2012 drought in Arkansas have given birth to a comprehensive publication aimed at helping cattle operations.

“The drought made a $128 million impact on the beef cattle industry in Arkansas,” said Tom Troxel, associate head–Animal Science for the University of Arkansas System Division of Agriculture. “We learned a lot from those hard times and have brought together an array of experts to give guidance should drought ever visit Arkansas again.”

As the drought intensified, teams of animal science experts from the University of Arkansas System Division of Agriculture held workshops and conferences across the state to reach affected livestock operations as quickly as possible.

The information offered at those meetings formed the basis of the book’s text. The team earned multiple awards for its emergency response, and the prize money from those awards helped fund the book’s printing.

_Drought Management and Recovery for Livestock Systems_, includes chapters from experts in climatology, agricultural economics, veterinary medicine, forages and livestock including cattle, goats and horses. The book offers a comprehensive look at tactics to manage through drought and recovery when the rain falls again.

MP330 is available for download online from [www.uaex.edu/publications/pdf/mp330.pdf](http://www.uaex.edu/publications/pdf/mp330.pdf), or a hard copy may be ordered through [www.uaex.edu](http://www.uaex.edu).

**DRY SPELL** — Arkansas’ livestock operations learned hard lessons during the drought of 2011-2012. A new drought publication (MP330) will help growers manage if the rains stop again.
Division licenses technology that substitutes for frying food

It looks, feels and tastes fried, but a baked coating developed by the University of Arkansas System Division of Agriculture may one day allow consumers to enjoy their favorites without all the fat, calories and guilt.

The Division has developed technology for the new patent-pending coating and licensed it to Tekcapital plc, a United Kingdom-based global university technology and intellectual property services company. Ya-Jane Wang, a professor of food science in the Division, is a co-inventor of the technology.

Tekcapital said the technology represents an important opportunity with potential adoption for mass marketing. “The Division of Agriculture is pleased to enter into this agreement with Tekcapital as a way of advancing our work for the public good,” said Dr. Mark Cochran, UA System vice president for agriculture. “Dr. Wang’s efforts can potentially make a significant dietary impact for consumers.”

“We developed this new food coating to provide a healthier alternative to fried foods that retains the taste and appeal of these popular products,” Wang said. “Initial studies have found that there is no significant difference in the taste of the baked food using the coating and fried food, which clearly has a much higher fat content. We are very excited about the potential for this new coating to improve health.”

The tests were run on chicken nuggets, but Wang noted the process can be applied to other foods that consumers like to eat fried such as chicken drumsticks and onion rings.

Our statewide research infrastructure supports the Arkansas agricultural sector.

Thank you, Arkansas farmers, for your support for us.

Arkansas Agricultural Experiment Station • aaes.uark.edu
It was a dark and stormy night on the Grand Prairie. Summer evenings fall like a sauna in Arkansas rice country. Hot. Steamy. Dripping with trouble. And all across the Delta, rice kernels were dropping like mosquitos sparking off bug zappers. This mystery was too big for the average flat foot. It was a job for detectives with whiplash wits and crack-shot credentials. Scientists, see? Men and women who know what makes a rice plant tick and aren’t afraid to get their hands dirty.
The scene of the crime was the rice mill. But there was more to this caper than we bargained for. Things weren’t adding up. To crack this case we needed to get a slant on where it began. Something this foul hides in the sewer. And we were going to lift the manhole cover.

“We began by quantifying physical and chemical properties of kernels throughout harvest,” Siebenmorgen said. The causes were suspected to be in the agricultural timeline. They investigated environmental influences, management practices, physiology of the plants. At one point, Siebenmorgen said they looked hard at variability in grain moisture content at harvest.

The investigation continued for a decade. Siebenmorgen said they began to see clues. “Milling and processing quality in cooler years was higher than in hotter years,” Siebenmorgen said. “That got us thinking about the effects of high temperatures.”

They began collecting data on temperatures and correlating them with processing quality trends. Nighttime temperatures in particular seemed to be having an impact.

Contrasting years began to paint the picture. A cooler than normal summer in 2004 produced uniformly high rice processing quality. Subsequent warmer years coincided with poorer quality.

Then Arkansas had a historically hot summer in 2010. Data from earlier years projected that the high temperatures in 2010 would cause widespread reductions in rice processing quality. “Rice quality was severely hurt in 2010, and it was a disastrous year for the industry,” Siebenmorgen said. “But it expanded our data set and helped us pin down the problem.”

Division rice physiologist Paul Counce had mapped out the growth cycle of rice plants in exacting detail. When his research with recorded nighttime temperatures was correlated with statistical data developed by Andy Mourtomostakis, professor of agricultural statistics, the problem began to be defined.

Texas-based RiceTec gave division scientists access to their Phytotrons — essentially huge growth chambers in which environmental variables, including nighttime air temperatures, could be controlled. The company also gave Nora Cooper, a master’s degree student in food science, an internship that allowed her to run the needed tests.

For many years, rice companies experienced unexplained variability in the processing quality of Mid-South rice. Head rice yield — the number of kernels that remain intact during milling — would vary from one year to the next.

In addition, processors found that in some years, rice had to be cooked at higher temperatures or for longer times during the manufacture of food products. This slowed production and drove up energy costs.

The inconsistencies occurred in almost all rice varieties grown in Arkansas and neighboring states. Variation was also noted between different regions.

Researchers at the University of Arkansas System Division of Agriculture’s Rice Processing Program set out to find answers.

“The Rice Processing Program employs basic and applied research to benefit the rice processing industry,” said Terry Siebenmorgen, program director and University professor of food science.

Siebenmorgen said the research team investigates a wide range of topics from kernel development to the consumer. Their expertise includes plant physiology, carbohydrate chemistry, process engineering, plant pathology and sensory analysis.

“When you look at post-harvest processing, you often have to go back to the field to see how management practices and environmental influences affect processing quality and consumer satisfaction,” he said.
The pieces of the puzzle were falling into place. The button man thought he’d made a clean sneak. But he tipped his mitt. We put the screws on and he began to sing.

The Phytotron test results clearly showed a dramatic impact from nighttime air temperatures during kernel development on milling yields and other properties, Siebenmorgen said. This early research laid the foundation for continuing field studies.

High temperatures during kernel development disrupt the formation of starch in the kernel. Starch becomes less densely packed in the seed, resulting in a chalky texture with an undesirable appearance and weaker kernels that tend to break during milling. The chalky structure also changes the way rice cooks.

Siebenmorgen said farmers sometimes could adjust management practices to try and beat the heat — planting earlier or using earlier-maturing varieties. But weather’s the culprit and no one can control it.

“I think the ultimate answer will be in improved varieties,” Siebenmorgen said. “We do see different degrees of heat tolerance between varieties.”

Division scientists Ken Korth and Andy Pereira are working on finding the genetic triggers that control kernel filling and response to high nighttime temperatures.

This guy was tough. Tough as a nickel steak. But I don’t like to see cheap hoods messing with a sweet kid. We didn’t start this thing, but it was up to us to finish it. No one plays us for a sucker and gets away with it.

Siebenmorgen said the Division of Agriculture’s relationship with rice processing companies was a valuable asset during their investigation and continues to be very important to all the program’s research endeavors.

“Not only do they support us with funding and equipment,” he said, “but they also provide us important end-user feedback.”

The annual Rice Processing Program Industry Alliance meetings bring Division scientists together with industry leaders to compare notes on important research issues, exchange information and share resources.

“This meeting is a signature event for the Rice Processing Program,” Siebenmorgen said.
MAJOR GIFT — (top) More than 100 people attended the announcement of a $5 million gift from Tyson Foods for a new Agricultural Research Center. (middle) John Tyson, chairman of the board of Tyson Foods, makes remarks during the ceremony. (below) From left, Dr. Mark Cochran, vice president for agriculture; Dr. Donald R. Bobbitt, president of the University of Arkansas System; Archie Schafer; and John Randall Tyson unveil a sign marking the future location of the Don Tyson Center for Agricultural Sciences.

($5 million Tyson Gift) Lifts State-of-the-Art Ag Research Center
The Tyson Family and Tyson Foods, Inc. have made a substantial gift toward creating a first-of-its-kind agricultural research center in Arkansas — one of the most consequential gifts to advance water quality and sustainability research in the state’s history.

A $5 million gift from Tyson to the University of Arkansas System Division of Agriculture will significantly finance the new $16.3 million Don Tyson Center for Agricultural Sciences, with construction scheduled to begin this year on the Division’s property off Arkansas 112. The 60,000 square-foot building will feature high-tech agriculture research laboratories that will advance plant and animal sustainability, along with water quality research.

“This gift and this facility will advance Arkansas agriculture into the distant future and help our state compete in the very competitive global world of agriculture research for many generations to come,” said Mark Cochran, the Division’s Vice President for Agriculture. “To have an iconic name like Don Tyson attached to it demonstrates what a significant facility this will become. It’s an outstanding legacy of an amazing family and company.”

Springdale-based Tyson Foods, one of the world’s largest producers of chicken, beef, pork and prepared foods, has a decades-long history of supporting agriculture and sustainability research, particularly in its home state. The company was founded in 1935 by John W. Tyson, whose family has continued to lead the business with his son, Don Tyson, guiding the company for many years and grandson, John H. Tyson, serving as the current chairman of the board of directors. Tyson Foods has approximately 124,000 team members employed at more than 400 facilities and offices in the United States and around the world.

This is the largest individual gift Tyson Foods has ever given to a University of Arkansas System division or campus.

“My dad’s involvement in and commitment to agriculture in Arkansas is legendary. To be able to formally recognize that with this building, in partnership with the UA System Division of Agriculture, is indeed an honor for our family and the company founded by my grandfather,” said John Tyson. “The research and other work that will take place in this building and on the farm surrounding it will, I’m sure, be vitally important in helping secure the future of agriculture and agri-business in our state for generations to come.”

The new multi-story facility will be the epicenter for agricultural research in Arkansas. Division scientists will operate numerous state-of-the-art agricultural laboratories that conduct and facilitate multi-disciplinary research, including a wide range of current and future agricultural issues facing Arkansans.

This facility will better help researchers create better, healthier and more efficient ways for growing crops, raising farm animals, producing food and protecting the state’s natural resources, Cochran said.

The complex will also be the new administrative home for the Division’s Agricultural Experiment Station, which has been based in Fayetteville for more than 125 years.

Facility approved by trustees

Last September, the University of Arkansas System Board of Trustees approved the Division’s request for the new facility and the hiring of WER Architects and Nabholz Construction to partner with the Division to construct the facility. The request for approval was made by UA System President Donald R. Bobbitt — a supporter of the facility since its conceptual phase — and Cochran, and received unanimous support from the trustees.

“The Division of Agriculture is unique among the System’s 18 campuses and units as the only one with a presence in all 75 counties, and it has specifically had a presence in Fayetteville and Northwest Arkansas for more than a century,” Bobbitt said. “This generous gift by Tyson Foods and the Tyson Family will solidify the division’s efforts for future generations and fully allow the division to continue its mission of advancing agriculture research in our state.”

Community-friendly facility

Along with its significant research capabilities, the building will also be a community-friendly venue, with the opportunity for citizens to utilize a 300-seat multipurpose room/exhibit hall — as well as the ability to be a part of public programs offered through the new facility. The building will also be unique in design, with its greenhouses potentially being on the top of the building rather than as stand-alone buildings.
2014 ARKANSAS
Farm Family
When Nathan Reed returned home to Marianna in 2005 after completing undergraduate and law degrees at the University of Arkansas in Fayetteville, his father, Stanley Reed, wasted no time in delegating major responsibilities on the family farm.

“I was very fortunate that my father did that,” Reed said. “He didn’t have any qualms about giving me major responsibilities the day I set foot back on the farm. There wasn’t a ‘wrestling of control’ issue, because he was ready to step back. He stayed very active, doing most of the office work and marketing of the crops. He was still out on the farm but mainly deferred to me.”
Nearly a decade later, Reed and his wife, Kristin, have been named the 2014 Arkansas Farm Family of the Year.

Deep roots

Reed is a third-generation cotton farmer, descended from his grandfather, Eldon Reed, who traveled to Lee County after World War II with next to nothing in his pockets.

“My grandfather moved here from Tennessee after the war,” Reed said. “He grew up dirt-poor in the Depression. All he ever wanted to do was farm. He scratched and clawed and saved up, and started farming in the early 1950s.”

Initially, Reed said, his grandfather and father hand-harvested the cotton grown on the family’s land. Although Eldon Reed leased various amounts of land from season to season, from several thousand acres to a few hundred, by the time Stanley Reed graduated from the University of Arkansas with a law degree in 1976, the farm was down to about 400 acres and had mostly gotten away from cotton.

Today, Reed and his employees farm about 5,300 acres of land, about half of which supports cotton production. In 2010, Nathan and Kristin married — she now manages payroll and administrative aspects of the operation. After his father died in 2011, Reed purchased the extant shares in the farm and its equipment from other family members, consolidating the operation under his and Kristin’s ownership.

Continuing the tradition

Bill Robertson, a cotton agronomist with the University of Arkansas System Division of Agriculture in Newport, said despite cotton’s foothold in eastern Arkansas, it’s unusual in the 21st century to see farms held within the same family for more than a few generations.

“Sometimes they move on, and other times there’s just not a lot of opportunity for multiple households to make a living on the family’s farm,” Robertson said.

The trend of farm families dissipating as newer generations seek their fortunes off the farm has increased steadily across the country for decades. In December, the Society for Range Management published academic research examining the demographic trends in Wyoming farms and ranches from 1920 to 2007. The research concluded, in part, that there might be no farmers under the age of 35 by 2033 — not only in Wyoming but in widespread areas of the United States as well.

Robertson said that the Reeds have countered that trend — not simply by continuing to farm but also by becoming heavily involved in associations that help promote the industry as a viable living.

“Sometimes it’s easy to get locked into what you’re doing and just stay on the farm and not give back to agriculture like [the Reeds] have,” Robertson said. “But I think Nathan is on track to be as much or more involved in the promotion of cotton and agriculture as his dad was. I think that says a lot for the individual.”

Keeping up with the times

Reed credits part of the operation’s continued success to the incorporation of GPS-based technology, which he uses for variable-rate application of fertilizer and pesticide as well as land-forming.
“We apply seed and fertilizer based on soil type, so each soil has the optimal environment to produce the most yield for the most economical cost. I have some fields (where) the soil will be completely different at one end from the other. And we’re seeing some returns from that, we really are,” Reed said.

Gregg Patterson, a spokesman for the Arkansas Farm Bureau and coordinator for the Farm Family of the Year program, said overall efficiency and the use of modern technology are two of the key components judges look for when evaluating farms for the annual award.

“They’re looking at things that make that farm unique in its day-to-day operations,” Patterson said. “The efficiency of the Reed farm was pretty phenomenal. It’s a big-time cotton operation. At a time when cotton has been on a significant downward trend, Nathan’s very committed to cotton, and the family has been, for generations.”

Reed said that although his family’s farming history has created a strong tie to cotton for him, he wasn’t blind to the realities of shifting prices in the commodities market.

“I’m a cotton farmer,” Reed said. “I know my expenses. I know how to grow it. And back when cotton had a reliably substantial return over other crops — 65- or 70-cent cotton when there were $6 soybeans — it made sense to grow all the cotton you could, if you had the soil for it. But the last few years, the grain crops have really taken off.”

“Don’t get me wrong — if cotton were $1 a pound, I’d be 100 percent cotton tomorrow,” Reed said.

Reed said he was hopeful that at least one of his children, twins Jane-Anne and Stanley Eldon, both 3, and Katherine, 1, will express interest in continuing the family farm, but that it would ultimately be up to each of them.

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Reed is hopeful that at least one of his children will continue the family farm but says it would ultimately be up to each of them.

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Every farmer wants their son to come back and farm with them, but you cross those bridges when you get there. A lot of that depends on whether a child expresses interest.”

Reed said that as far as his own future, he planned to farm the rest of his working life and be involved in agriculture in some fashion even after retirement.

“The great thing about farming is that every year is a fresh start,” Reed said. “Whatever happened the year before, when you plant those seeds, you’re starting fresh — if you’re able to stay in business. You can have a horrible crop one year and have the best year of your life the next.”

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Ripe for the Picking

Strawberry initiative seeks to expand nationwide production
Anyone who looked around Arkansas in recent years for strawberry production could find it only by looking hard enough. The state grew about 63 acres of strawberries in 2012, according to a federal agricultural census. The strawberries that Arkansas shoppers buy at the store are more likely to come from California, Florida or another country. Small wonder: California grew more than 40,000 acres and Florida grew more than 11,000 acres of the crop.

No other state comes close to those top two in strawberry production, but the gap may narrow a bit in coming years for Arkansas and several other states. Expanding production nationwide and bringing it closer to the consumers is the goal of a two-year effort by the National Strawberry Sustainability Initiative that wraps up in July 2015.

“We are net importers of strawberries in the U.S. We import strawberries from Mexico and other countries because we don’t meet the demand in the U.S.,” explained Curt Rom, a University of Arkansas System Division of Agriculture horticulture professor who is directing the strawberry initiative for the Division’s Center for Agricultural and Rural Sustainability. The initiative covers 26 projects by research and extension personnel in 13 states and has been supported by $4.05 million in grants from the Walmart Foundation.

“Right now, strawberry demand is exceeding the production capability of California and Florida,” Rom continued. “California and Florida produce 98 percent...
of the strawberries in the U.S. North Carolina produces 1 percent. All the other states combine for 1 percent.”

That means if Arkansas and many other states each increased their strawberry production tenfold, it still wouldn’t have a big impact on the volume nationally. But if production is expanded beyond the current primary production centers, the added output would complement the existing industry.

“Sustainability would be increased by reducing travel distance and time (thus reducing spoilage), using new technologies to extend the range of harvest dates and implementing new pest management and water-saving irrigation technologies,” said a report from the strawberry initiative summarizing its first year. Its goal “is to move science and technology for sustainable strawberry production out of laboratories and experiment stations and onto the farms of strawberry growers.”

**Longer growing seasons**

Through the first half of the 20th century, Arkansas had a bigger strawberry industry than in recent years and was a major producer nationally. But the appearance of two insects — the strawberry crown borer and the strawberry weevil — devastated crops. Meanwhile, slow rail and truck transport of strawberries to distant points resulted in the arrival of strawberries that had deteriorated in quality during the trip.

The crop fell victim to market timing and new varieties as the California and Florida berry industry was developing, Rom explained. “The Arkansas crop came right in the middle of the national crop. We weren’t early and we weren’t late, which meant that our crop was harvested at the time the market was flooded, so the price was low.”

The climate in California and Florida along with new varieties developed there allow for almost year-round production, something that hasn’t been possible in the rest of the country until lately. Along came high tunnels, unheated greenhouses covered with plastic that made growing strawberries something that could be done beyond springtime.

“If we put strawberries in a high tunnel, we can go from having a 30-day crop to a four- or five-month crop in Arkansas, going from 6,000 pounds per acre to 20,000 to 30,000 pounds an acre,” Rom said. The first phase of the strawberry initiative was designed to demonstrate the technology to farmers across the country.

The personnel at the 13 universities reached the people. They delivered their information in 100 workshops for the public and in 60 presentations to technical and scientific groups. They produced 56 demonstration videos for online viewing. Their effort reached 5,000 growers and industry representatives, 1,500 extension agents and consultants and more than 300,000 consumers, growers, advisors, educators, scientists and students.

Several research theses and dissertations have emerged and provided the impetus for other state and national grants. Several online resources and new apps were created to help growers in producing strawberries across the U.S. Additionally, the program produced an award-winning e-book, “Moving the Needle,” which provides project progress and complete links to resources.
Elena Garcia was among those who took her work to the high tunnels to show the people how it’s done. Garcia, an extension horticulture professor, led one of three strawberry initiative projects in Arkansas. Her group built high tunnels and field plots in Fayetteville and Clarksville and showed them to potential growers at strawberry production workshops.

“We have several small acreage producers in the area that are growing strawberries in tunnels,” Garcia said. “They are farmers’ market vendors. The farmers market opens in April when strawberries are scarce. It would be good if they were able to move the season up a month and start getting production in April from strawberries.”

After the initial investment in construction cost, a producer needs to replace the plastic once every five years. Low tunnels have less wasted space and lower construction costs. Garcia said the team is analyzing the costs of field production versus tunnel production. Team member Jennie Popp, professor of agricultural economics and agribusiness, has developed a decision-making tool to help growers evaluate costs of production and appropriate pricing.

Going local nationally

Commercial strawberry producers generally grow their crop in the ground or in field situations in beds. To help them extend their growing season, Division of Agriculture horticulture professor Mike Evans devoted his part of the strawberry initiative to demonstrating how to grow strawberries using hydroponic troughs in high tunnels and greenhouses. His team collaborated with University of Arizona horticulturists to produce 12 instruction videos showing how to build and use hydroponic systems and sponsored two field days in Fayetteville at the University of Arkansas.

The government doesn’t track specific information on the use of strawberry hydroponic systems and other specialty crops, but Evans said there is anecdotal evidence that interest is rising.

Local food producers who want to keep stores supplied with a product have realized that they need alternatives to traditional production methods if they want to keep products coming more than just a few months of the year. “A lot of our local producers have realized that they have to have that capacity so that in those off seasons they can grow greens, maybe strawberries, experiment with blackberries or tomatoes,” Evans said.

In eastern Arkansas, Leonard Githinji of the University of Arkansas at Pine Bluff agriculture faculty led the establishment of sites in Jefferson, Lee and Lonoke counties to demonstrate sustainable practices for strawberry production. The various workshops covered extending the season by using high tunnels, soil management, integrated pest management and practices to reduce contamination.

Rom said the information gathered for the strawberry initiative across the country shows that more research is needed on how to make the crop sustainable at site-specific locations. Project leaders met in Fayetteville in May 2014 after nearly a year of work to review progress and discuss the crop’s future nationally. The projects explored new production systems for local and regional markets, technologies for improved water conservation, new cultivars for alternative markets, the use of distribution management to reduce product loss and several other topics. Rom, who has made site visits to the projects across the U.S., said there is a growing “strawberry fever” in many states as farmers explore ways to save money for an increasingly popular crop among consumers looking for ways to live better.

Strawberry growers, according to the initiative’s summary report, now have tools to build systems that will provide a greater supply of the nutritious and healthy crop. But more work remains.

“Our hypothesis was we thought we knew enough to move it forward,” Rom said. “We have, but in that process we learned that there’s more to learn. We learned what we didn’t know. But we do know the strawberry business will grow.”
LeadAR Celebrates 30 Years of making connections

LeadAR, the premiere leadership program, is celebrating more than 30 years with the graduation of its 16th class.

Joe Waldrum, former director of the LeadAR program for the University of Arkansas System Division of Agriculture from 1993-2015, said the program was initially modeled after a leadership training program developed by the W.K. Kellogg Foundation. In 1980, administrators with the Arkansas Cooperative Extension Service sought funds from the Kellogg Foundation to establish the state’s own leadership program. With the inaugural Class 1 in 1984, LeadAR was born.

Waldrum, now the interim assistant director of Community and Economic Development
THREE DECADES OF LEADERSHIP — For more than 30 years, LeadAR has involved participants in each class in studying obstacles facing Arkansans, as well as meeting the people who are working to help others overcome those obstacles. Each class meets for about a dozen seminar weekends over the course of two years, in addition to a nine-day national study trip and a 10-day international study trip.

The program typically has two major impacts on its participants: a significant increase in their professional networks and a significant increase in their self-confidence.

Hall said that one of the essential challenges facing the program today is recruiting and outreach. “We can no longer depend on word-of-mouth to fill our classes,” Hall said, adding that Class 17 is the smallest LeadAR class in the program’s history. The course demands major time commitments from both the participants and their employers. In addition to 11 seminars over the course of two years, students also participate in a nine-day study tour within the United States and a 10-day study tour abroad.

Waldrum said another challenge the program faced was dealing with younger participants’ expectations with regard to the speed of the program. “A lot of younger adults seem to want everything quickly,” he said. “I’m not sure you can learn leadership quickly. There are some people who go through shorter leadership programs, and they think that’s all they need to know. LeadAR is much more intensive and in-depth than that.”

As of this writing, Robert Haines, a graduate of LeadAR Class 14 and current president of the Arkansas Association of LeadAR Alumni, said members of the association were working with the scheduling office of the Clinton Foundation in an effort to bring the former President to Little Rock to speak at the upcoming anniversary celebration for the LeadAR program. The association hopes to hold this event in conjunction with the Class 16 graduation dinner in April to celebrate more than 30 years of the LeadAR program.

at the University of Arkansas System Division of Agriculture, said the effects on the participants over the course of the two-year program are often profound — not just in the participants’ approach to work but in their personal outlook as well.

The program typically has two major impacts on its participants, Waldrum said: The first is a significant increase in individuals’ professional networks and their networking abilities.

“It becomes a huge network of increased connections [the participants] didn’t have before,” he said. “In order to get things done in this state, it’s all about having a network. Knowing where the resources are, knowing who can get things done and having that connection with them.”

The second major impact is typically a significant increase in their self-confidence, he said.

“The class participants sort of feed off each other,” Waldrum said. “As they do that, they build each other’s self-confidence. The program director does some of that, I guess — but it’s mostly their classmates that say, ‘you can do this.’”

LeadAR has a profound impact on some participants’ professional lives. During her time with Class 10 (2001-2003), Beverly Chapple helped establish a scholarship fund in a small local community. Within a few years, the fund had awarded $500 scholarships to 17 applicants and had about $20,000 in reserve, Chapple said.

Shortly after she graduated from the LeadAR program, Chapple was offered a position with the Arkansas Single Parent Scholarship Fund, where she is now the Southeast Arkansas Regional director.

“When I went to interview for a slot in a LeadAR class, I was scared to death,” Chapple said. “I’d never been through anything like it, with seven or eight people talking to me at one time. But once I was part of the program, it helped me to take a negative situation and turn it into a positive thing for me, and it’s been an excellent opportunity for the rest of my life.”

Class 17, which held its first seminar Feb. 5-7 in Little Rock, is the first class overseen by LeadAR’s new director, Bobby Hall.
Hundeds of Arkansas 4-H members from across the state filled the halls of the state Capitol on March 18th, learning about leadership from members of the Legislature, the state auditor and Gov. Asa Hutchinson.

Hutchinson proclaimed that day to be Arkansas 4-H Day and recognition of the work done by the 4-H Youth Development program was made in the House and Senate as 4-H members filled the galleries. Some 400 4-H members, volunteers, parents and staff took part in the day’s events.

In an address in the rotunda, Hutchinson, himself a 4-H alumnus from Benton County, told the group that “I’ve been there in your shoes. I grew up on a farm. I might not remember the 4-H pledge very well, but I do remember my 4-H project.”

The governor applauded 4-Hers for their commitment to the organization.

“4-Hers are so vital to the civic responsibilities of our state,” Hutchinson said. “4-Hers are twice as likely to be civically involved. 4-Hers are twice as likely to be engaged in STEM education. 4-Hers are twice as likely to do better in life in terms of education and contributions to our society.”

“Thank you for what you’re going to do for the future of Arkansas,” he said.

“We are grateful to the governor, our auditor and our legislators for taking time to visit with our 4-H members and to the secretary of state for allowing us to hold our 4-H Day at the Capitol event,” said Anne Sortor, who heads up the 4-H program in Arkansas. 4-H is part of the University of Arkansas System Division of Agriculture Cooperative Extension Service.

The 4-H group opened its day with an orientation hosted by the Arkansas Association of Counties. There, Auditor Andrea Lea addressed the youth, asking them to vote on a series of
CAPITOL IDEAS — 4-H members got up close and personal with the state’s elected officials who asked them questions, gave them an insider’s look into the House and Senate and offered advice and encouragement to the hundreds of youth present.

(photos by Ryan McGeeen.)
**FOOD CONSUMPTION AND LIGHTING**

How does lighting affect how people eat?

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Research shows that the color of light can affect how much people eat, but the effect differs between men and women. When compared to white and yellow lighting, blue lighting significantly decreased the amount of food men consumed but not women. However, the overall flavor intensity and overall impression of the food were not significantly different among the three lighting colors.

Based on these results, it’s possible that blue lighting could be used to reduce overeating for obese men, without making the meal seem less attractive.

Because obesity has become a global epidemic with significant health problems and economic burdens, it may be valuable to try this simple and cheap strategy to help decrease excessive food consumption. However, since the present research offers only a first step in understanding the effect of lighting color on food consumption, further studies should be conducted to confirm our findings.

The study was based on 62 men and 50 women who were asked to consume a breakfast meal of omelets and mini-pancakes under one of three different lighting colors: white, yellow and blue. During the test, the perception of the food’s appearance, willingness to eat, overall flavor intensity and overall impression of the food, and meal size (the amount of food consumed) were measured.

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**ASSESSING PERSONAL FINANCES**

**Q:** I want to make changes in the way I handle my finances. How do I start?

**A:** Start by giving yourself a financial checkup. There are three simple ways to benchmark financial well-being:

- **Net Worth** – Net worth is the total of all assets minus the total of all liabilities. It’s the dollar value of everything you own minus everything you owe or your total debts. Net worth should be positive and increasing each year. A form to calculate net worth can be found on my website at www.uaex.edu — type “net worth” into the search box.

- **Debt to Income Ratio** – This ratio represents monthly debt payments — excluding mortgage — divided by net monthly salary. Debt payments include credit card minimum payments, car payments or other monthly consumer debt. A lower ratio is better than a higher ratio. Less than 10 percent is best. More than 20 percent could be a sign of trouble. Use the online calculator at www.powerpay.org to explore repayment plan options.

- **Credit Score** – Credit scores usually range from 300-850. The best scores are in the mid-700s and higher. If you haven’t seen your score in a couple of years, it’s worth checking. Fees to check are usually less than $15. Companies may try to entice you to sign up for a fee-based credit monitoring service. Most consumers don’t need this, so be careful to only purchase the credit score. Some consumers may have a lower score because they haven’t used credit. This is often the case for young adults who are just starting their financially independent lives. The benefit of a higher credit score is that consumers can save thousands of dollars in interest because they qualify for lower interest loans.

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– **Han-Seok Seo**

– **Laura Connerly**
SYSTEM FOR AWARD MANAGEMENT

**Q:** What is SAM and what do I need to know about it?

**A:** SAM stands for “System for Award Management.” It’s a system that tracks money the federal government pays to individuals, farms, businesses, government agencies, nonprofit organizations or private sector firms. This money includes grants, subsidies or even federal disaster funds. Anyone who conducted business with the federal government was required to register in multiple databases to receive payment. Now, with SAM, there is just one.

Before registering with SAM, individuals or corporations must have a nine-digit DUNS, or Data Universal Numbering System identifier. DUNS numbers are a means of identifying business entities by specific location. The DUNS number can only be obtained through Dun & Bradstreet.

Although the registration requirement went in to effect in 2012, Hall said that it has taken until 2014 for agencies serving rural businesses and landowners to begin implementing the SAM registration requirement.

– Bobby Hall

STOCKER CALVES

**Q:** How can ranchers fight bovine respiratory disease in stocker cattle?

**A:** Bovine respiratory disease is estimated to cost the U.S. cattle industry more than $2 billion due to cattle deaths, poor performance and treatment costs.

Research shows that prevention may be the best medicine when it comes to calves at high risk for BRD. In four years of on-farm demonstrations in Nevada County, Division of Agriculture personnel showed that use of metaphylaxis — administration of medication to a whole group of livestock to minimize or eliminate an expected disease outbreak — held losses to low levels.

In 2011, 104 calves purchased at auction were treated on arrival at the farm. Only 3.8 percent of the calves were treated for BRD and there were no deaths reported. In subsequent tests involving 290 calves, researchers reported low loss rates again.

In fall, when calves are at higher risk, the pull rate for treatment ranged from 17.6 percent to 20 percent, with death losses held to between 0.9 and 3.7 percent when administered in fall when risks are higher. In spring, when the risk was lower, the pull rates were below 4 percent.

– Paul Beck
Federal agency renews support for Arkansas Water Resources Center

The Arkansas Water Resources Center passed its three-year evaluation and will be eligible to continue receiving federal funding. The AWRC, a unit of the University of Arkansas System Division of Agriculture, received its annual base grant of $92,355 from the U.S. Geological Survey.

The AWRC is one of 54 water resources research centers across the nation that the federal program funds to support its work. The AWRC and the other centers use the funding to train new scientists, disseminate research results to water managers and the public and cooperate with other institutions in their regions on water issues. The AWRC is part of the National Institutes for Water Resources, which is a nationwide network of water resources research centers.

The federal funds currently support eight projects at the AWRC. The center’s research projects have studied irrigation and runoff, innovative domestic wastewater disposal systems, groundwater modeling, land-use mapping, erosion and pollution, water quality and ecosystems. It operates a fee-based water quality laboratory, sponsors an annual water conference and monitors water quality in the important Illinois River and White River watersheds.

The center’s projects are determined with the participation of a technical advisory committee of professionals from educational institutions, environmental organizations, water supply districts and government agencies in Arkansas.

“This is a unique federal program which addresses state-defined water issues but also lays the foundation to address water issues of national focus,” said Brian Haggard, AWRC director and a professor of biological and agricultural engineering. “This federal program also requires that the state invest $2 for every federal dollar spent on research, so it is a joint effort between the federal government and the state of Arkansas. The next call for proposals will be going out soon, and we anticipate funding two faculty research proposals and up to six student research support proposals.”

Arkansas Procurement Assistance Center extends its reach

The Arkansas Procurement Assistance Center, or APAC, was expanding into one of the nation’s fastest growing economies – northwest Arkansas.

In April, Max Franks, program associate, joined officials from Northwest Arkansas Community College in Bentonville at a ribbon cutting for the first APAC satellite office since it relocated to Little Rock from Malvern.

“We see this alliance with NWACC as a means of extending the reach of our Community and Economic Development mission,” said Tony Windham, head of the Cooperative Extension Service. “APAC is just one of the channels the Cooperative Extension Service uses to help our neighbors and communities thrive, and we are excited to open a new chapter.”

APAC, headquartered in CED, teaches Arkansans to navigate the process to obtain government contract work. Between July 2013 and June 2014, APAC helped 672 clients and facilitated 674 contracts worth nearly $24 million.

APAC started in 1988 as an offshoot of the Entrepreneurial Services Center operated by the University of Arkansas. In 1993, the university entered into an agreement with the Department of Defense to take part in the nationwide Procurement Technical Assistance Program. Under this agreement, APAC serves Arkansas businesses and dozens of public agencies.
First 4-H stallion service auction a success

A stallion service online auction that benefited the 4-H equine program and the University of Arkansas horse judging team went so well that planning is underway for a second one.

“We brought in $17,400, and for our first year, we were pretty pleased with that,” said Mark Russell, assistant professor–equine for the University of Arkansas System Division of Agriculture.

“This is unique. We don’t know of any other 4-H program doing anything like this.”

At auction were stud services to top cutting, western pleasure and halter stallions, all donated by their owners. The proceeds from the auction will fund scholarships to 4-H equine camps, purchase camp equipment and help support travel for the University of Arkansas’ horse judging team.

“We’re looking to doing it again next year,” Russell said. “We have some of the same stallions committed and a few new ones too.”

The auction’s top bid of $4,250 went for a service to High Brow CD, a cutting horse stallion that sired 65 National Cutting Horse Association champions and reserve champs in 2014 alone. His foals have earned more than $2.5 million. The 10-year-old stallion was a champion himself, with more than a half-million dollars in lifetime earnings and a place in the NCHA hall of fame. High Brow CD stands at Grace Ranch in Jennings, Louisiana.

A 60-acre rice verification program field, grown fungicide- and insecticide-free due to thorough scouting, has produced record yields and record economic returns, researchers with the University of Arkansas System Division of Agriculture reported.

The Rice Research Verification Program is an on-farm demonstration of all the research-based recommendations developed by the University of Arkansas System Division of Agriculture for the purpose of increasing the profitability of rice production in Arkansas – the nation’s top rice grower.

Working with the Smiths during the 2014 growing season were Ralph Mazzanti, extension rice verification coordinator, and Gus Wilson, Chicot County Extension staff chair, both with the University of Arkansas System Division of Agriculture.

“The production cost of this field was about $600 an acre, which led to a return to the grower of $800 per acre,” Mazzanti said. “While a high yield number typically results in a positive outcome, the return per acre is the true measure of success.”

A big part of this success was linked to pest scouting, Wilson said.

The total herbicide cost for this field was only $54 an acre — $22 per acre less than the 2014 program average of $76,” Wilson said.

A good reason for this lower number was that herbicides with multiple modes of action were used for weed control and each herbicide was activated by a timely rainfall,” he said, adding that “there were no fungicide or insecticide applications, since none of the insect pests reached threshold levels that would have an economic impact.”

NOTHING BUT NET — Scouting for pests, in this case using a net, was a key factor in reaching a new record in rice verification yield.
WELL TESTED — The University of Arkansas System Division of Agriculture wheat breeding program conducts extensive field testing of wheat at different locations across Arkansas. (photo by Jason Kelley)