

TENNESSEE

LAND *life & Science*

VOL. 8/NO. 1/2011 | UT INSTITUTE OF AGRICULTURE

Reinventing a Community

IN SMITH COUNTY, RENEWAL EFFORTS SPAN
BEAUTIFICATION, TOURISM AND SUSTAINABILITY.

THE UNIVERSITY of
TENNESSEE 
INSTITUTE of
AGRICULTURE

Editor's note: The following message from Interim Chancellor Buddy Mitchell was published this spring in our employee newsletter. It met with such a positive response that we reprint it here in the hope that you, as an alumnus, alumna or supporter, will share this message with all the decision-makers in your area.

Dear friends,

In my travels across the state I frequently hear people say we must “cut government.” That certainly seems a logical response in relation to what most people would view as runaway deficits. While I agree with that logic, it’s important to make a clear distinction between cutting government in general and UT Institute of Agriculture programs that are not government, but education, research and outreach. These programs in the College of Veterinary Medicine, College of Agricultural Sciences and Natural Resources, Extension and AgResearch offer an exceptional return on investment and are the foundation of greater economic growth, which is absolutely essential if we are to balance the budget in the years ahead.

Nothing empowers a young person’s life more than a college degree, as it moves them from very limited opportunity to unlimited opportunity. A college degree may be even more important today in our information-driven society, which relies on technology skills and a highly educated workforce. The job growth of the future that can help control our deficit will be driven by a college-educated workforce. There is no better investment.

More than 50 economic analysis studies, including ones conducted by land-grant universities and other public universities, have looked at the rate of economic return on investment in agricultural research and Extension. The average of all these studies shows that society gains an approximate 50 percent annual return, or a more than 8-to-1 return, over the life of an investment in these programs. New technology and research findings are generated in our research laboratories and delivered through the Extension pipeline to farmers, homemakers, citizens and communities throughout Tennessee and the nation.

You don’t have to look far to find programs at UTIA with that high rate of economic return on investment. Think about the impact of a 4-bushel-per-acre increase from a new soybean variety developed at UT. Now, multiply that 4 bushel increase times the hundreds of thousands of acres of soybeans grown in Tennessee and the region. These high returns translate into economic growth and income generation in rural communities across Tennessee where the unemployment rate is often double what it is in the urban areas. Achieving a high productivity in agriculture also benefits all our citizens because plentiful supplies of food products are essential to keeping food costs low.

Tennessee LAND Life & Science

Vol. 8/No.1/2011
A Publication of The University of Tennessee Institute of Agriculture
101 Morgan Hall, Knoxville, TN 37996-4505
E11-1101-00-007-11 11-0145

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Everyone benefits when the UT Institute of Agriculture seeks the highest sustainable utility for every acre of farm and forestland in Tennessee. That is not just a worthy but an essential mission, and I urge our friends in state and federal government to select carefully when they “cut government” and continue to invest in research and education that will lead to long-term sustainable prosperity for our nation.

Best wishes,



Buddy Mitchell
Interim Chancellor

*Buddy Mitchell, left, with
Tennessee Commissioner of
Agriculture Julius Johnson and
UT President Joe DiPietro*



Bob Longmire

On the cover **Kneeling** left to right: Jonathan Binkley, Krissy Berryman, Chyna Cain, Kristen Dillon **Standing** left to right: Evan Penfield, Jackson Penfield, Hannah Byrnes, Jennifer Arnold, Kelsey Bush, Vivian Reynolds, Barbara Kanapple, Janie Monday (UT Extension FCS Agent) and Amanda Whittaker (Chair of the Keep Smith County Beautiful Committee) Photo by Rich Maxey



10



8

TENNESSEE LAND life & Science

- 6** Master Gardeners Plant a Garden of Hope for Cancer Patients
- 8** New Path Leads UT Students to Careers in Construction
- 9** Growth in Organic Products Means Opportunities for Students
- 10** In Smith County, a Community Reinvents Itself
- 12** Radiation Therapy in UT College of Vet Med Offers Cancer-Stricken Pets a Beam of Hope
- 13** UT Vet School Graduate Starts Nonprofit for Conservation of African Animals
- 14** CASNR Ambassadors—Recruiters and Mentors with an Important Role
- 15** Memories, Affection Abound for 'Prof' Lidvall
- 16** Ties That Bind: Tennessee Junior Livestock Expo Participants Span Generations
- 18** Unwelcome, Unwanted, Bed Bugs Continue to Draw Attention
- 19** In Profile: Dr. Dan Ward
- 20** Advancing Tennessee Through Strategic Extension: New 10-Year Plan Outlines Mission, Goals for Statewide Unit
- 22** Center for Renewable Carbon Opens 'BeST' Research Lab
- 23** Alpha Gamma Rho Fraternity Celebrates Its Impacts Across 60 Years
- 24** At this Tennessee 4-H Camp, Learning is Electric
- 26** In Knox County, Ash and Eastern Black Walnut Trees Under Attack
- 27** Standout Achievements by Institute Faculty
- 28** Henry County 4-H'ers Light Their Grills
- 29** A Legacy for 4-H in Cheatham County
- 30** Alumni Dream Jobs—Read About Theirs, Tell Us About Yours
- 32** Tarantulas, Crickets and More! Join Us for Ag Day 2011



13



19

News around the Institute

NATIONAL HONOR FOR 4-H'S SUTTON

Of the four H's, it was his heart that Steve Sutton gave way so willingly years ago to the youth of Tennessee. Nearly four decades later, he is being recog-



Steve Sutton

nized for his caring and committed effort to educate and serve thousands of young people throughout Tennessee. The National Association of Extension 4-H Agents has presented Sutton, Tennessee's 4-H leader, with the U.S. Air Force Recruiting Salute Award. He was

chosen as the national winner among the 50 states. The award is based on professional accomplishments and recognizes individuals who create a positive image through leadership and citizenship as it relates to the 4-H program.

EXTENSION'S RAY BURDEN TO PROVIDE LEADERSHIP IN HOMELAND SECURITY

Homeland Security and Emergency Preparedness are crucial issues. UT's leadership in these areas has led to a career change for a seasoned Extension agent and county director. Dr. Ray Burden of Hamilton County has been promoted to research associate professor with UT Extension and associate director of the UT Center for Agriculture and Food Security and Preparedness, which resides in the College of Veterinary Medicine.



Ray Burden

His shift in titles will see him transition from regional responsibilities to state and national leadership.

"Previously my program area of work was focused primarily in East Tennessee with Extension. Now it is statewide, working with Tennessee Office of Homeland Security, the Tennessee Fusion Center, Tennessee Emergency Management Agency, Tennessee Department of Agriculture and FBI. I'll also be working with the Department of Homeland Security and Federal Emergency Management Agency on the national level."

The joint Extension-Center appointment is unusual and speaks to the emphasis both units are placing on homeland security and disaster preparation and response. In his new capacity, Burden will continue to work with the Extension Disaster Education Network program working to implement a comprehensive emergency response program, and other multistate projects such as the recipient of a national USDA radiological grant through EDEN.

MONEY MANAGEMENT TRAINING CAPTURES ATTENTION OF JAPAN ASSOCIATION FOR FINANCIAL PLANNERS

UT Extension's Family and Consumer Sciences Department is receiving international attention for its efforts in the area of money management. FCS agents train Tennessee's high school teachers in a curriculum about money management from the National Endowment for Financial Education. UT Extension has trained 900 teachers in 76 counties since 2006, and those teachers have reached more than 70,000 students with messages about saving, investing, taxes and credit.

Recently Suzue Sato of the Japan Association for Financial Planners visited Gibbs High School in Knox County to learn about the training. UT Extension's program was selected from across the nation as one of the best, and Sato chose to come to see it firsthand.



Financial educators, from left, UT Extension Specialist Ann Berry, visitor Suzue Sato, Teri Branam of UT Federal Credit Union and Agents Jane Gault and Christopher Sneed.

"Tennessee has such a great program and is very active," she says. "I wanted to see how they are implementing their programs, and I wanted to see how the students responded."

Dr. Ann Berry with FCS coordinates the teacher training statewide and says the department was honored to be chosen to host Sato on her visit. "It speaks well for our education team. They've worked on this program for the past five years and have done an outstanding job. We've been recognized as a model program," she says.

JOIN US FOR 2011 FIELD DAYS

UT AgResearch will continue outreach efforts in 2011 with a long list of field days and other special events that mirror the diverse agricultural landscape of Tennessee. From beef cattle, row crops and forestry to gardening, turf management and

organic crop production, UT AgResearch field days cover topics important to our state's farmers, landowners, and lawn and gardening enthusiasts alike. You can find a listing of field days and special events at www.agriculture.utk.edu.

SENIOR BULL TEST ADDS VALUE TO PRODUCERS

In January at UT's Middle Tennessee AgResearch and Education Center in Spring Hill, Tennessee, leading Tennessee beef cattle producers gathered to view and participate in the culmination of the 2010-11 UT Senior Bull Test and Genetic Evaluation. The senior class of bulls was consigned by Tennessee herd sire breeders to vast numbers of commercial cow-calf producers located throughout Tennessee.

This unique testing program operated by UT AgResearch and UT Extension is a valuable tool that provides Tennessee producers a venue to compare their programs to industry contemporaries. Not only does the program offer the opportunity to glean measurable productivity data, it also allows producers to evaluate their breeding program's potential. This year, the breeders and the Senior Bull Test program received a true compliment as an all-time high was achieved in average selling price of \$3,326 per individual.

The first and second highest selling Angus bulls were consigned by Mathis Angus Farm of Duck River, and went for \$6,000 and \$5,000 respectively. Third highest, consigned by Kenneth Kelly of Waynesboro, sold for \$4,700 and the fourth highest, consigned by J.D. Lunn Angus of Dickson, brought \$4,500.

Very few herd sire sales achieve the \$3,000 benchmark. The success of UT's sale is a testament to the

rich information gathered, quality of care and management and the genetic potential of these Tennessee produced herd sires. Dr. David Kirkpatrick of UT Extension, coordinator of the program, also organizes a Junior Bull Test Station each spring. This event offers another set of superior genetics for commercial beef producers.



Clark Garland

GARLAND RECEIVES 2010 EXTENSION SOUTHERN REGION AWARD

Agricultural and Resource Economics Professor Clark Garland received a National Award for Excellence in Extension for the Southern

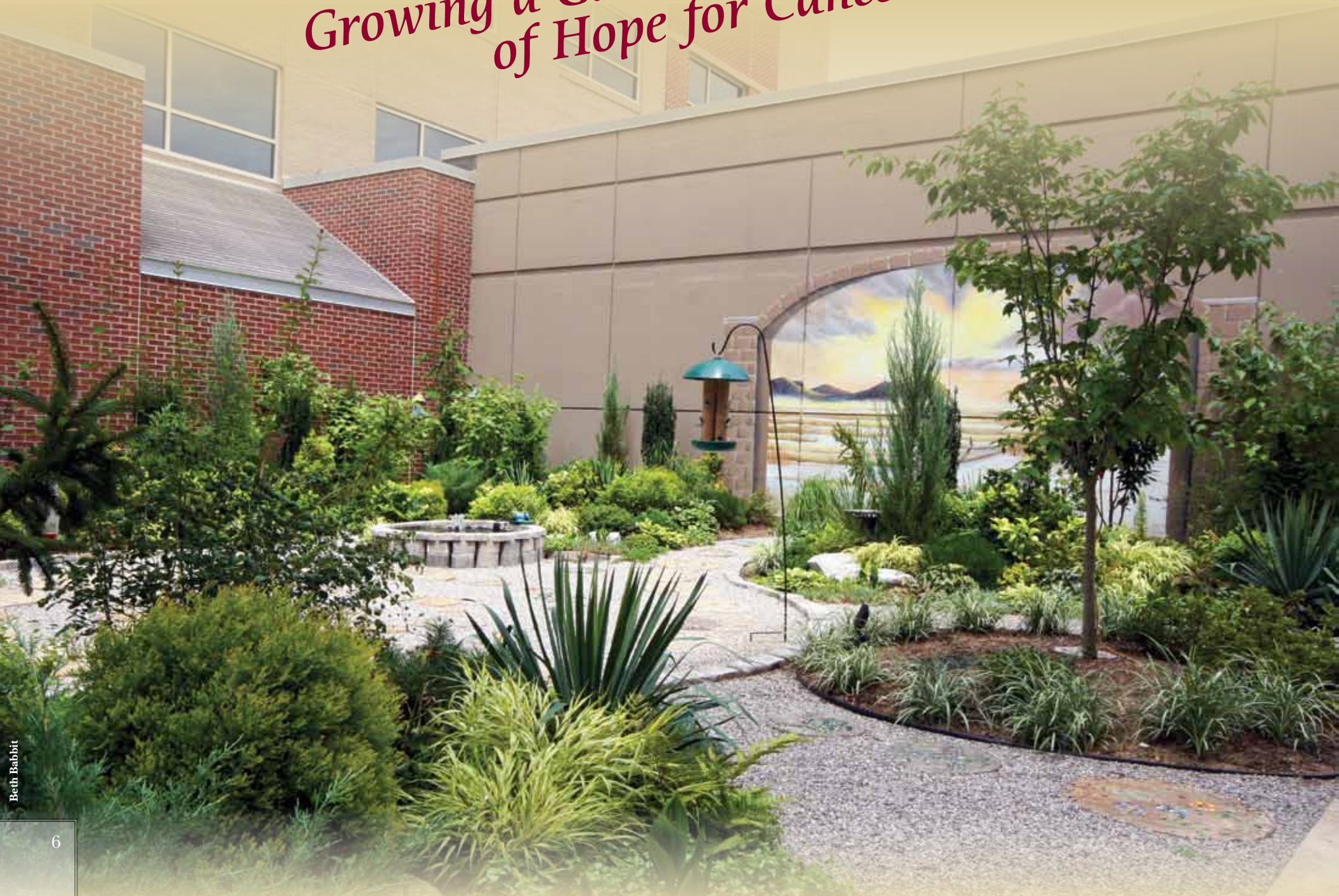
Region from the Association of Public and Land-grant Universities. This award is presented to an individual who has strived throughout his or her career to make significant impacts on those who are served by Extension.

"It is an honor to receive this award," Garland says. "The award is given to an individual, but it is a recognition of UT Extension as a whole. I give credit to Extension agents and area farm management specialists. They do a great job with Tennessee's farm families."

Garland's signature career achievement is developing and leading the highly successful MANAGE program. The program provides specialists who work directly with Extension agents and farm families to improve farmers' economic, social and environmental conditions. More than 18,000 farm families in Tennessee have benefited from the program.



Growing a Garden of Hope for Cancer Patients



In Cookeville, Tennessee, there is a garden with a very special purpose. This garden heals lives.

Many hands and hearts came together to shape the Healing Garden at the Cookeville Regional Medical Center. In 2007, hospital foundation executive director Gary Curto invited Putnam County Master Gardener volunteers trained by UT Extension to implement a healing garden in an area overlooked by the hospital's Cancer Center and new wing. At that point the space was a barren drainage area. The Master Gardeners loved the idea of planting a healing garden there and quickly got to work.

They found willing partners among the hospital staff and community, 4-H Club members, area businesses and the general public. Ultimately close to 200 people took part.

"This Master Gardener project took more time, work, resources and networking than any of our other projects to date," says Putnam County UT Extension Agent Scott Chadwell. "And, without a doubt, it was worth it. This was definitely a feel-good project."

Master Gardeners identified plants for the garden, and the hospital foundation provided funds for them and for soil and amendments. While care was taken to select plants attractive for four seasons and to choose ones with soft, soothing shapes, the garden's most special areas are found in handmade elements, ones with strongly uplifting, spiritual messages.

"We wanted the garden to be a light that leads the way to a place of comfort and hope for patients," says Master Gardener MaryDell Sommers. "We wanted it to be a positive message that there is, rain or shine, day or night, the feeling that patients are not alone and that they are comforted by knowing that there are other forces that are with them and helping them to get through these stressful times."

Delivering that message is a spiral circle of steps and a 12-by-26-foot mural that shows footsteps on the sand, a serene ocean vista and, across the water, mist-covered mountains.

"You can see a magnificent ocean sunrise or sunset," said artist Teresa Bostic, who oversaw the mural's creation. "The water is either shimmering or crashing in waves. The footsteps may represent the Bible story in Matthew or simply steps in a journey. We wanted to be spiritual in our messages, yet leave everything open for interpretation by the viewer."

On the ground, the spiral of hand-created pavers tells the stories of cancer patients and others in the hospital and community.

"We call that our circle of life," Sommers says. "When you're walking in that garden, you're looking at all of these memories. Some are incredibly touching, and some just make you smile. All of them represent and are in honor of someone."

Nearby is a sculpture donated by nationally renowned metal artist Robert Coogan and his students at the Joe L. Evins Appalachian Center for Crafts. The metal tree and copper animals add whimsy to the garden.

"We had naming opportunities at the hospital," foundation director Curto says, "and everyone wanted to support our gardens. The capping touch was that our hospital CEO and his wife, Bernie and Barbara Mattingly, gave a very generous gift to name the healing garden in honor of his parents, John and Lelia Rose Mattingly."

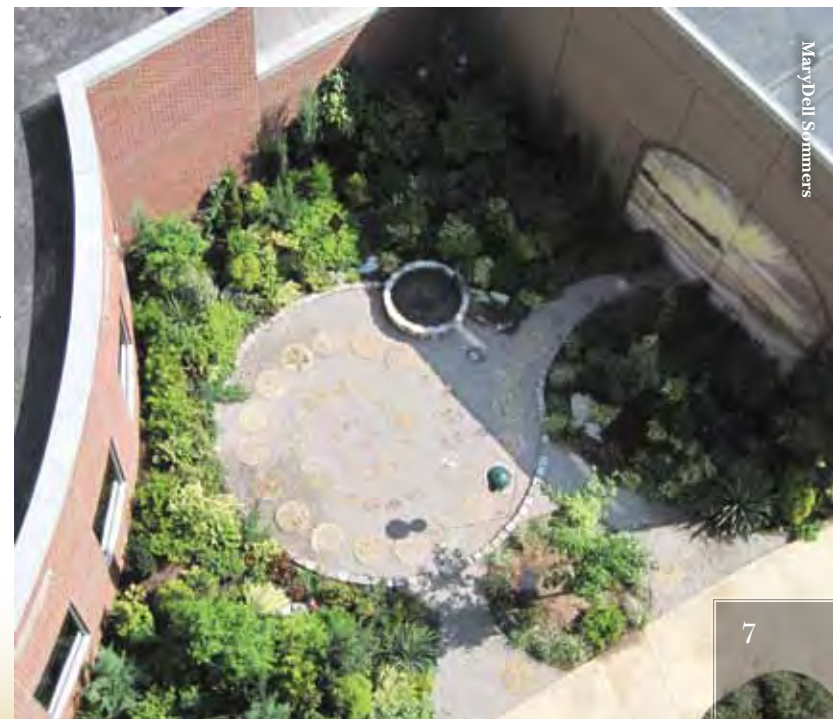
Master Gardeners are told to consider the impact that a project will have on a community. Bostic says, "Even though we tried to consider the impact that a healing

garden would have on patients, we didn't realize the feedback that we'd get from family members who were so thankful that their loved one had this at that time. We hear a lot of stories, such as, 'Oh, my mother-in-law or my sister-in-law was there.'

"It's those twice- and thrice-removed stories that really let us know how much the garden does mean, and not only to the patients. That's been overwhelming. Even though we imagined the impacts, it's beyond our hopes."

UT Extension Master Gardener programs are active in many counties across the state. Visit <http://mastergardener.tennessee.edu> to learn more about this program. —Margot Emery

A view of the garden from the hospital's new wing. A security officer with Cookeville Regional Medical Center told the Master Gardeners that he considered this God's view of their work.



MaryDell Sommers

New Path Leads UT Students to Careers in Construction

Students at UT Knoxville who are interested in construction as a career have a new opportunity to prepare themselves for the field. They can pursue a concentration in construction science in the College of Agricultural Sciences and Natural Resources' Department of Biosystems Engineering and Soil Science. The new program uses current offerings in agriculture, business, engineering and science with new construction science courses to prepare students for a future in the construction industry.

"Not all students with an interest in construction want to be engineers," says Dr. Eric Drumm, department head. "But before we started this program in construction science, the only option at UT was a construction concentration within the civil engineering degree. I'm excited for the opportunity to grow this program at UT. My hope is that this will serve the regional construction industry, and we will be producing graduates when the construction segment of the economy turns around."

The program will evolve over time to include aspects of both vertical construction, such as buildings, and horizontal construction, such as roads, bridges and earthwork. Five students enrolled in the concentration last fall, with five more joining this spring. Drumm predicts additional growth due to the current level of interest and plans for an articulation agreement with Pellissippi State Community College in Knoxville.



Support to develop the program is needed, according to Development Director Tom Looney. "Over the next year, the Department of Biosystems Engineering and Soil Science seeks to raise \$500,000 in immediate support to grow the construction science program as it seeks accreditation."

To date more than \$150,000 has been raised. Support from construction companies in all three divisions of the state will ensure the programs long-term success. The initiative initially focused on fundraising in East Tennessee and now seeks supporters and volunteers from Middle and West Tennessee.

"This fundraising effort would not be possible without volunteers like Gordon Heins of A.G. Heins Company Inc. and Jim Wakefield of The Wakefield Corporation," Looney says. "They have been

championing the cause by promoting the benefits of the program to the industry. Others in the industry are currently considering support and are willing to help shape the program so that graduates will be marketable upon graduation.

"The long-term goal is to raise \$6 million to build lab and classroom facilities and to attract qualified faculty and instructors."

A construction science advocacy board is being formed to solicit input from industry friends to discuss the curriculum and future program accreditation and assessment measures. —Doug Edlund

For more information on the program visit http://bioenr.ag.utk.edu/students/tech_options.asp

Undergraduates at UT can now prepare for careers in construction through a concentration in the Department of Biosystems Engineering and Soil Science.



Growth in Organic Products Means Opportunities for Students

The next time you visit to the grocery store, take a few minutes to notice how many items are labeled organic. You won't have to look very hard. What once was considered a niche market has now become mainstream. Often, you'll find entire sections of grocery stores now set aside for organic products. In fact, there are even grocery store chains devoted to selling organic and natural foods. So, with an ever-growing market for organics, it seems only natural that the Institute of Agriculture will help fill the need for future organic producers.

Starting this fall, the Department of Plant Sciences will offer an undergraduate organic production concentration. Students will be able to integrate plant sciences with soil science, agricultural economics, entomology, ecology and plant pathology to attain the knowledge and skills to manage organic cropping systems.

"Student interest in organic crop production was the key driver in the creation of this concentration," says Dr. David Butler, assistant professor of organic, sustainable and alternative crop production. "At the same time students trained in organic production are needed to help continue the successes occurring on the state level, where we have seen a steady increase

in the number of certified organic growers and processors."

Students enrolled in the concentration will have the opportunity to gain practical knowledge at the nearby Organic Crops Unit. The unit covers 90 acres and takes classroom instruction beyond the traditional four walls, giving students valuable hands-on experience. "This concentration is enhanced by the close proximity of the UT East Tennessee AgResearch and Education Center's Organic Crops Unit, which allows students to gain hands-on experience in field laboratory activities as a part of their course work," says Butler. "There is also the potential to work on the farm through internships or as student employees in faculty research programs," he notes.

The Organic Production Concentration is for men and women who are interested in managing or owning organic farms, international agricultural development efforts, consulting or working with agricultural organizations.

The organics industry is evolving rapidly and there is a growing need

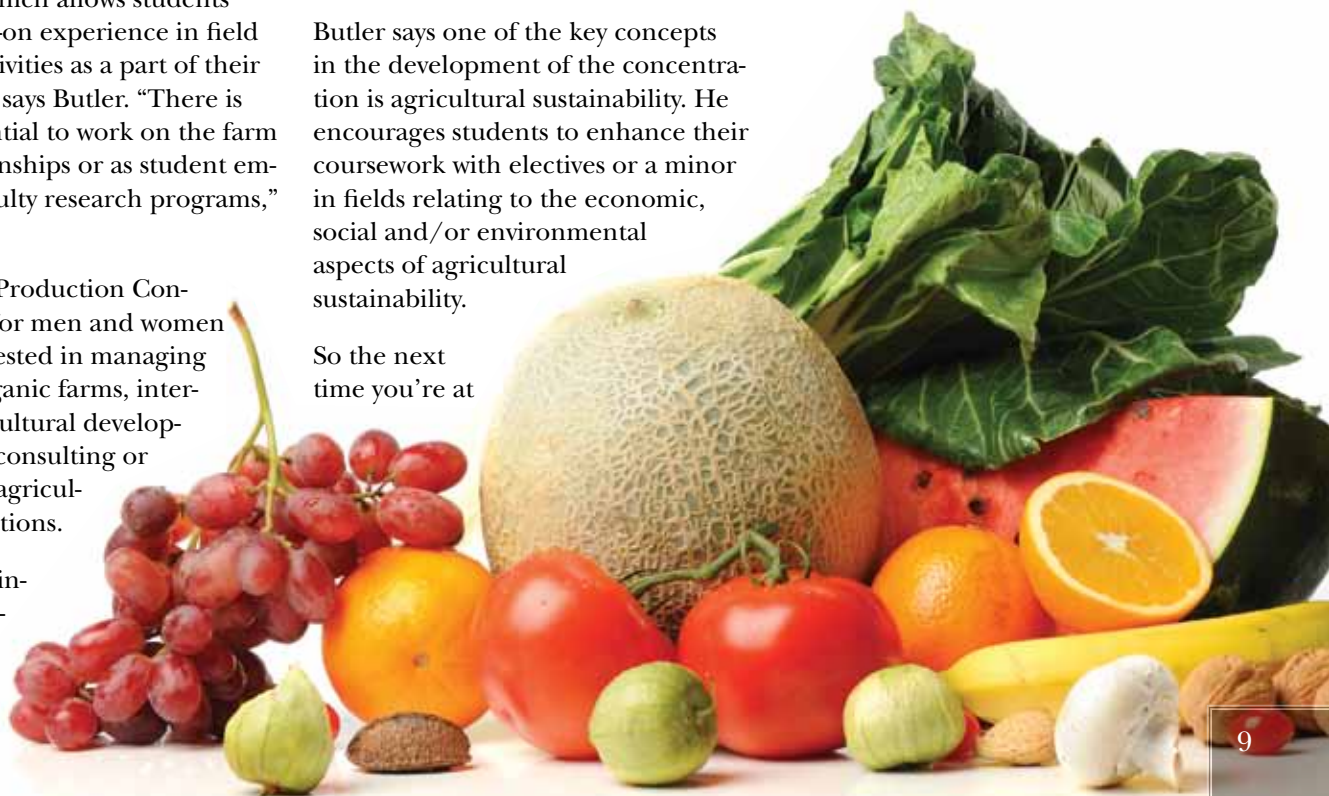
for well-trained professionals. Some of the careers include organic horticulturists and agronomists, orchardists, teachers, sales representatives, researchers, extension professionals and entrepreneurs. "With continued growth in sales of organic products, there are numerous career opportunities for students in this area of study," says Butler. For those students who decide to go on to graduate studies, this concentration prepares them for advanced degrees in horticulture, agronomy or related fields.

Butler says one of the key concepts in the development of the concentration is agricultural sustainability. He encourages students to enhance their coursework with electives or a minor in fields relating to the economic, social and/or environmental aspects of agricultural sustainability.

So the next time you're at

the grocery store or your local farmers' market, take a minute to check out the wide array of organic products available. In the not too distant future, you may be helping support a new entrepreneur and a recent graduate gain success in an ever-growing business.

Visit <http://plantsciences.utk.edu/organic> for more information and a detailed curriculum for this concentration. —Doug Edlund



In Smith County, a Community Reinvents Itself

Situated among the rolling hills of Middle Tennessee, rural Smith County possesses plenty of scenic beauty. It's home to one of the state's most visited parks, Defeated Creek Recreation Area, and it's known for the charm of its two larger towns, Carthage and Gordonsville.

Until recently, though, it was known for something else, too: illegal dumpsites, roadside litter, and derelict yards and property.

"Those who live here were so used to seeing it that it was next to normal," says Smith County UT Extension Agent Janie Pedigo Monday. "But one day, I was driving in the county with Amanda Whittaker, who then worked with the Solid Waste Department, and we realized what our area must look like to outsiders, and it wasn't good."

Two years ago, their conversation planted the seed of an idea, one that was not without controversy. Monday and Whittaker took photos of problem areas, and they developed a presentation. Monday started giving it to civic groups. "I asked audiences to pretend they were visitors to our county," she says. "Then I began, 'I want to welcome you to Smith County. We have lots to offer here. We have things for your children and for your home. We're a good place for your business to relocate.'" As she spoke, disturbing images of dumpsites, trashed yards and discarded toys and appliances flashed by.

At one airing, the county mayor watched without comment. But he was on board when Monday showed the presentation to the county court. He told the group that the presentation made him angry at first, but then he realized that it had opened his eyes to what residents took to be normal, and that something needed to be done.

Ultimately about 700 of the county's residents saw the slide show, and they began to take action. Several business sites were cleaned up; teams of volunteers, aided by grants, began removing trash



from dump sites; and youth engaged in recycling programs spanning first through 12th grades.

But that wasn't all. An anti-trash-themed float became a regular participant in Christmas parades. The first year, it was chosen as a winner based on its novelty, Monday thinks. "We had a canoe with two boys paddling, and a stream filled with the trash you'd expect to see in the water and then some."

Youth in the county decorated 45-gallon aluminum can collection barrels that were placed around the county. Whittaker and Monday gave presentations to children about the importance of stopping litter by "hitting the can and not the land."

The county has three litter clean-up days a year. A ton of trash was gathered on a recent one. Much more, though, has been removed since this program began. One illegal dump site was cleared, producing 11,300 pounds of litter—enough trash to fill a 40-yard dumpster. More than 1,700 tires were picked up. And much of the trash was recycled: more than 11,600 pounds of newspaper, 500 pounds of aluminum, 25,100 pounds of cardboard (recycled by local schools), and 2,380 pounds of plastic.

"What impresses me most," Whittaker says, "is that the youth took the recycling idea and ran with it. They're now engaged on their own, continuing with these efforts, and they're having an impact."

At the outset, Monday, a Family and Consumer Sciences agent, conducted a countywide needs assessment for Smith County involving the FCS Advisory Committee, local government, civic groups and the Chamber of Commerce. The biggest issues identified through the assessment were dumps along

roadways; dump sites that were situated too close to waterways and springs used for water supply and recreation; and a lack of education regarding recycling and the new litter law that went into effect July 1, 2007. Another factor that concerned the group was the economic downturn experienced in downtown Gordonsville. Even the courthouse was leaving the square, and businesses had closed as a result of an arrival of a national superstore in the area.

"Our working group found that everything was connected," Monday says. "By cleaning up the area, we created a community that attracted people, but what would they do once they got here? We wanted to invite tourists into our area." With the help of Whittaker, Regina Brooks of the Chamber of Commerce, Leadership Smith County, and a number of civic groups and businesses, a "Welcome to Historic Smith County" sign was erected at the interstate. Whittaker's husband, Clay Bane, laid the stacked stone that adds beauty to the sign. And the idea of a quilt trail was born to highlight places of scenic beauty and tourist interest. Senior and junior high students helped

paint many of the quilt paintings. Funding from the Emma Ree Crooks Oates Stimulus Grant paid for them to be mounted on buildings and covered the cost of printing for 5,000 brochures to be placed in travel centers and other locations.

Whittaker, who is now with the Smith County Mayor's office and serves as chair of the Keep Smith County Beautiful Committee, explains that the grassroots effort she helped launch isn't just about tourism and cleaning up litter. It's about sustaining a community.

"We have had impacts in more areas than we realize. There's a rippling effect, and when people see these efforts going on, they get excited."



"We're getting the impact that we've wanted in beautification," she says. "I'm grateful that it took off the way it did, and that people recognized what Keep Smith County Beautiful is about, and that there's a lot of support for that."

"Longer term, what I would really love to accomplish is to get the kids more involved with community projects and help them understand what their impact is – on the environment, on tourism and on economic issues. Everything is connected. Once they understand that, they'll be more apt to be involved in the community, and that will make a difference for everyone. Those connections will lead to overall improvement." –Margot Emery

PROGRAM PARTNERS

Chamber of Commerce, Smith County Government, Leadership Opportunity Smith County, Smith County Solid Waste Department, Tennessee Department of Transportation, Smith County Historical Society, Hull York Lakeland RCD, Smith County School Board, U.S. Army Corps of Engineers and others



Dezi Gage improved her Carthage home (also featured on the cover) and won it a 2010 Community Initiative Award.



Radiation Therapy at UT Veterinary Medical Center Offers Cancer-Stricken Pets a Beam of Hope

Phil Snow



Dr. Nathan Lee with the high-energy linear accelerator that delivers radiation treatment to tumors in seconds rather than minutes.

It's the "C" word, cancer, and in pets, its incidence increases with age. Cancer accounts for almost half of the deaths of pets over 10 years of age, and according to the Morris Animal Foundation, 1 in 4 dogs will die of cancer. While cats get fewer cancers, dogs get cancer at about the same rate as humans.

In veterinary medicine, three primary options exist to treat cancer: chemotherapy, radiation and surgery. Depending on the type of cancer and its location, a combination of the three may be used to treat the animal.

Radiation therapy is a critical component in the arsenal to fight cancer, and the UT Veterinary Medical Center is the only program in Tennessee that offers radiation therapy as well as the only program on the East Coast to offer radioactive iodine I-131 treatment for thyroid carcinomas in cats and dogs.

The goal of radiation therapy is to provide effective treatment while maintaining quality of life for the patient and family. In some instances, radiation therapy can shrink a tumor, making it easier for surgeons to remove. In other cases, radiation therapy can shrink inoperable tumors, reducing their effects on the body. Dr. Nathan Lee, a UT Veterinary Medical Center radiation oncologist, is seeing more clients who are looking for palliative treatment for their pets.

"Sometimes when we are unable to cure or slow the progression of the cancer, we want to be able to concentrate on reducing the pain the cancer causes," says Lee. He and fellow radiation oncologist Dr. Bill Adams use the veterinary medical center's linear accelerator to deliver doses of radiation therapy. "In most cases, we can significantly improve the quality of life of our patients by eliminating or reducing pain and inflammation with radiation therapy."

Radiation therapy is customized to each patient. Using a CT scan of the tumor area, UT's radiation oncologists analyze the exact size, shape and location of the tumor. Using this information, a 3D image of the tumor is created to aid in designing an individualized treatment plan where small radiation beams are configured to mimic that particular tumor's irregular shape. This technology allows the doctors to treat the entire tumor and spare the surrounding normal tissues. With the high-energy linear accelerator, radiation treatment time is a matter of seconds rather than minutes, reducing the amount of time a patient is under anesthesia.

Lee adds, "Our clients are grateful to have access to this service. Our clients want to give their pets every opportunity they can to live a happy, pain-free life, and we strive to take away as much stress as possible for them."

—Sandra Harbison

*D*r. Hayley Adams first visited Africa as a young lady pursuing a dream of working with wildlife, and has revisited Africa many times to pursue that passion. During her veterinary training she traveled to Uganda for a summer research project on great ape conservation, and was partnered with a Ugandan veterinary student, Innocent Rwego. It was a pivotal meeting that paved the way to the inception of the Silent Heroes Foundation, a nonprofit organization dedicated to promoting the health and conservation of Africa's wildlife, including its rare and endangered species.

Dr. Adams graduated from UT's College of Veterinary Medicine, and after spending time in clinical practice, went on to earn her PhD in veterinary virology and epidemiology. Her PhD research on lentiviruses in free-ranging lions gave her the opportunity to live in South Africa for six months. Her research and time in Africa inspired her to make a difference in veterinary medicine and wildlife conservation.

In 2010 Adams and Rwego partnered once again to create the Silent Heroes Foundation, to support veterinary medicine in Africa. With 10 projects underway in eight African countries, Silent Heroes is off to a busy start and continues to search for new projects in 2011. The foundation supports a variety of issues ranging from mountain gorilla and rhino conservation efforts to raptor rehabilitation and village poultry projects. Funds raised by Silent Heroes finance critically important medical supplies and resources necessary for their conservation projects throughout Africa.

One of the nonprofit's recent endeavors has been to partner with the Umutara Polytechnic veterinary faculty in Rwanda. The school's veterinary program is relatively new, founded in 2006, and Silent Heroes is committed to providing much-needed supplies to the program to assist in building the department from the ground up. The veterinary students are in need of binoculars, stethoscopes and basic supplies to complete their training.

Another project on board for 2011 is the Wild Horizons Wildlife Trust in Victoria Falls, Zimbabwe. The trust is a non-profit organization whose mission is to advance and promote environmental conservation in Southern Africa through wildlife research, management of a wildlife clinic and orphanage and community outreach. They are in need of medical and laboratory supplies for their newly established wildlife clinic. The trust is active in caring for young elephants orphaned due to the poaching of their mothers.

Silent Heroes also offers veterinary students nationwide the opportunity to experience Africa first-hand, with summer internships possible for most all of their sponsored projects. This summer two students will travel to Africa; one will work at an animal clinic in Uganda, and another on a village poultry project in Zambia. A scholarship program for African veterinary students with an interest in wildlife medicine is also in the works. —*Erica Jenkins*

UT Graduate Starts Nonprofit for Conservation of African Animals



As a registered 501(c)3 nonprofit, Silent Heroes Foundation depends on donations from the general public to keep their projects running. To learn more about Silent Heroes and the conservation work they are doing, or to donate, visit www.thesilentheroes.org.

CASNR Ambassadors—Recruiters and Mentors with an Important Role

When you take on the role of an ambassador, you become the main emissary of your country to a foreign land. To many, whether rightly or wrongly, you are that country in persona and represent everything that it stands for. Good ambassadors spread goodwill, bad ambassadors ... well let's not go there.

Now when you're an ambassador for CASNR, UT's College of Agricultural Sciences and Natural Resources, you may often find yourself in a similar position. OK, so you're not in Kazakhstan trying to win over the local population, but there are times when it might feel like that's exactly what you're trying to do. You find yourself in a suburban high school and the kids may have never heard of a college at UT Knoxville called CASNR.

So they ask you, "What does CASNR stand for?" You reply, "It's the College of Agricultural Sciences and Natural Resources." Now at this point, some of those kids will hang on that one word ... agriculture. "But I don't want to be a farmer," they say, not realizing the importance of agriculture to our economy and society. As a CASNR ambassador, it's your chance to win them over.

"Did you know that you can study pre-pharmacy at CASNR?" you ask. "How about biosystems engineering or environmental science, do those sound interesting to you? Oh, you're not the outdoorsy type? Then how about economics, communications, leadership or education?" You start to see some interest in their eyes.

"You mean that I can do all that at an agricultural college?" they ask. "I thought it was all about becoming a farmer. Tell me some more."

It takes a special person to represent the academic diversity that is CASNR. Not everyone realizes how many different areas of study the college offers. There are 33, by the way, ranging from animal science to engineering to pre-professional.

CASNR has 18 ambassadors, and they come from all across Tennessee and represent many fields of study. In addition to helping to recruit prospective students, they also conduct campus tours, work as a resource for CASNR and its students, and help to promote a positive image of the college.

"As student recruiters, they are able to relate to prospective students on a higher level and provide the personalized touch that makes our college so unique," says Anna Adams, program coordinator for recruitment at CASNR. "Without them, we wouldn't be able to serve our prospective and current students as effectively as we do now."

But the ambassadors do more than recruit prospective students. Once a student decides on CASNR, the ambassadors try to help him or her get the most out of the college experience after the student arrives on campus.

"We do community outreach projects, we plan the CASNR mixer, we help prospective students make life decisions and so much more," says Sarah Boggess, CASNR ambassador president. "I felt it was a



great way for me to give back to a college that has given so much to me."

After spending some time with the CASNR ambassadors, one gets the feeling that with all that hard work comes a lot of rewards. "It's a very rewarding experience when I see students I talked with while they were in high school who are now CASNR students and enjoying our campus as much as I do," says Sarah McDonald, CASNR ambassador vice president. "Being a part of the CASNR ambassador program has enriched my college experience by giving me greater meaning and purpose as to what it means to be a college student."

When one becomes an ambassador for their country, it's usually the capstone to a lifelong career of service. For CASNR Ambassador Sarah Boggess, this experience may lead to a successful and rewarding career. "It's a great résumé booster, it helps you talk professionally to people, it helps you manage your time and, above all, it helps you network," she says. —Doug Edlund

Memories, Affection Abound for 'Prof' Lidvall



Ed "Prof" Lidvall passed away peacefully December 26, 2010, after a period of declining health. "Prof" or "Lid," as he was known by his students, was a fixture of the Department of Animal Science for more than 39 years.

He served as a bomber pilot and instructor

during World War II and earned a degree in animal science from Iowa State University. It was there that he met his wife Dorothy (Dee), and they were married for more than 60 years. He earned a master's in animal science at UT and remained to teach—and teach he did. Over the years, he received multiple teaching honors, including the 1978 UT National Alumni Association Outstanding Teacher Award.

"Prof was an encourager and forward thinker, always looking to see where the livestock industry was headed," says Dr. Emmitt Rawls, retired professor of Agriculture Economics. "He prepared his students to meet the world and change the industry." Retired faculty member Frank Masincupp said students were No. 1 with Lidvall. "They all looked forward to his classes."

He also inspired fellow faculty. "Prof was the best classroom teacher I ever taught with, and I probably copied

him more than I realized," says Bill Backus, retired Animal Science professor. "He was very knowledgeable and confident in that knowledge."

Lidvall was recognized nationally for his ability as a livestock judge. He coached the 1962 national champion livestock judging team for UT.

He served as the national president of his fraternity, Alpha Gamma Rho, and Progressive Farmer magazine named him Man of the Year in 1988. In that honor, they characterized him as "the kind of teacher no student ever forgot; thorough, demanding, and tough; yet always sensitive and 100 percent interested in every student. The professor's affection for each young scholar was as genuine as his stern look or his warm, ready smile." Dr. Gordon Jones, '70, professor of Animal Science at Western Kentucky University, says, "Prof had the unique ability to weave animal science and husbandry in a manner to prepare students to become lifelong animal breeders, producers or scientists."

Since Lidvall's retirement in 1988, many friends and former students have honored him with gifts to the UT Institute of Agriculture that continue his legacy. The E.R. "Prof" Lidvall Outstanding Teaching Award was established in 2001 by Don E. Williams, '61, to honor him as a professor and mentor. The award is given annually to recognize faculty members who exemplify Lidvall's commitment to excellence in the

classroom and commitment to the needs and interest of students.

"Prof was such an inspiration in my life by teaching me basic life skills and citizenship," Williams says. "He worked hard to connect with students—he was a teacher's teacher." Williams says he established the award because of what Lidvall meant to so many people in their lives. "I wanted to ring the bell for Prof, and this was my way to do that."

Also, the Professors Lidvall and Cole Judging Teams Association Endowment was established in 1988 by a group of former students to recognize the work of Lidvall as livestock judging team coach from 1949 to 1988 and the late Professor William "Bill" Cole as the meats judging team coach

from 1947 to 1968. The endowment was established to support students participating on the livestock and meats judging teams and improve the level of support for all judging team activities.

Since Lidvall's death last year, gifts have continued to arrive to support these and other funds. In remembering the legacy of Ed "Prof" Lidvall, friends, former students and family are encouraged to consider a gift to one or more of the funds mentioned above to maintain his legacy as a professor, mentor, colleague and friend. Gifts may be sent to 107 Morgan Hall, 2621 Morgan Circle, Knoxville, Tennessee 37996-4502. Or for information on planned gifts, contact Rhodes Logan at 865-974-1928 or by e-mail to wlogan@tennessee.edu. —Tom Looney



TIES THAT BIND

TENNESSEE JUNIOR LIVESTOCK EXPO PARTICIPANTS STAY CONNECTED

They number in the thousands. Young Tennesseans who, over the course of 40 years, have anxiously brushed, primped and attended to the hundreds of details necessary to show their cattle, sheep and, years ago, hogs in the Tennessee Junior Livestock Expo. Along the way the adult leaders overseeing the Expo hope the young participants managed to also build personal confidence while building their character. And the leaders hope the kids had fun, too.

At least that has been the goal, says Dr. Jim Neel, a UT Extension professor of animal science and beef specialist who has worked with the program for 39 of its 40 years. “The expo helps participants develop a sense of responsibility for their animal, a work ethic in regards to caring for that animal, and a sense of accomplishment when they achieve their goals of proper animal husbandry and best management practices,” Neel says. He adds, “It all comes together at the expo, but it doesn’t stop there. The young people who compete learn valuable life skills that can serve them well in all their future endeavors.”

Expo participants range in age from fourth-graders to high school seniors, and past participants have hailed from every county in the state—mirroring the state’s actual production practices for beef cattle. In 2010 youth from 65 of Tennessee’s 95 counties participated in the expo, and organizers hope that when the dust has settled from this year’s event even more counties will be counted.

Whether a participant is from the FFA (Future Farmers of America) or wears the clover-shaped

emblem of 4-H, often his or her whole family—parents, grandparents and siblings—will come out in support of the exhibitor. Dr. David Kirkpatrick, one of the original expo organizers and also a professor in the Department of Animal Science, believes family support to be one of the strengths of the program. For many, he says, expo is a family affair and that just serves to reinforce a young person’s confidence and abilities.

Neel agrees. “This year many of our participants will be the second or third generation to exhibit. One or both of their parents and, in some cases a grandparent, probably participated in some of the early expos,” Neel recounts. “We may even have a fourth-generation participant,” he said.

Organizers prepared a big “show” for the 40th anniversary event. Planning began in earnest as early as December 2010 for the July shows: the Beef Expo in Murfreesboro and the Sheep Expo in Cookeville. The idea was to honor alumni participants.

Tennessee 4-H state specialist Amy Powell Williams is an expo alumna and is an example of how the expo is very much a family affair. She is the daughter of Ben Powell, former state 4-H leader and another of the original expo organizers. Powell Williams is enthusiastic about a new element of the 40th anniversary event: social networking. Shortly after the 39th expo, she and others worked with Bryan Bastin, an information technology assistant in the Department of Animal Science, to set up a Facebook page for the expo. The idea was to give alumni

the opportunity to share stories of their expo encounters and a way to reconnect with friends.

“The page allows us to live again an exciting time from our youth,” she said. “If you haven’t visited us online yet, you still can.” Powell Williams says you can find the 4-H Tennessee Junior Livestock Expo 40th Anniversary page on Facebook at <http://www.facebook.com/group.php?gid=136184546404021>. Timely updates will be available on Twitter at <http://twitter.com/TJLE40Years>.

Neel recognizes how valuable the popular social networks might prove to the future of expo. Social networking is just another way to reach out to the expo community and tap into the experiences that made the expo a successful program for the past 40 years, he says. The real ties that bind, say organizers and participants alike, are the lessons learned in common about self-confidence, responsibility and animal stewardship. —Patricia McDaniels



1951 Wayne Brooks - Claiborne



Unwelcome, Unwanted, Bed Bugs Continue to Draw Attention

“Good night. Sleep tight. And don’t let the bed bugs bite.”

Many of us thought that was once a harmless nursery rhyme, but now it’s anything but a laughing matter.

“Bed bugs are kind of a scary thing to think about, because now they’re showing up here and there and places you might stay at night,” says David Cook with UT Extension.

UT’s Soil, Plant and Pest Center in Nashville, Tennessee, has been getting lots of calls about the insects. Cook says there’s no question that bed bugs have increased in population in recent years. Their numbers are growing for several reasons. We no longer use certain pesticides that used to kill them, and a number of the pests are

being accidentally imported from other countries by unknowing tourists. “Bed bugs are great little hitchhikers, and they like suitcases,” he says.

But Cook says there’s no need to panic about bed bugs. Yes, they do really bite, but they are not a serious health hazard. “Even though they are capable of retaining a pathogen in their system, for some reason they cannot spread a disease much like a mosquito. I’d be much more fearful of a mosquito bite or a tick bite,” Cook says.

So what about Tennessee? Is the Volunteer State part of the national bed bug resurgence? Bed bugs have been found in all three grand divisions of the state—East, Middle and West. But so far, the pests have been reported in less than 20 percent of Tennessee’s 95 counties.

However, Dr. Karen Vail, a UT entomologist, says even a few bed bugs is still a problem. Cleanliness is usually

not a cause for an infestation, but clutter can be. “Reducing clutter will speed up the control process. We want to take away all those hiding places,” she says.

Vail recommends that you be aware of the possibility of bed bugs when you travel. “When you go to a hotel room, you want to inspect before you unpack your bags. You want to get behind the headboard, and look for bed bugs. Take the bedding off. Look at the mattress seams. Make sure high populations aren’t present,” she says.

Her final piece of advice: if you do discover bed bugs, call a professional exterminator. And mostly, says with a laugh, “Stop letting this little bug push us around and become more empowered!”

UT maintains a list of bed bug resources at <http://www.agriculture.utk.edu/news/releases/2010/10-09-bed-bugs.html>. —Chuck Denney



David Cook of UT Extension in Davidson County says people need to be aware of bed bugs but not be overly alarmed about them.

In profile:

Dr. Dan Ward

AS A VETERINARY STUDENT, WARD ENVISIONED HIMSELF TEACHING. IN THE BLINK OF AN EYE, IT BECAME A REALITY. THE ASSISTANT DEPARTMENT HEAD IN SMALL ANIMAL CLINICAL SCIENCES DIDN'T GO INTO TEACHING BECAUSE HE ENJOYED OPHTHALMOLOGY—HE WENT INTO OPHTHALMOLOGY SO HE COULD TEACH.

AFTER GRADUATING AND A TWO-YEAR STINT IN PRIVATE PRACTICE, YOU SET YOUR SIGHTS ON TEACHING AND ABSOLUTELY LOVE IT. WHY?

It's intangible. Watching a student's reaction, seeing that light bulb go on really does it for me. I can start a class with a room full of tired students who would rather be anywhere at that particular moment and 30 minutes into class it starts rocking—they're yelling out answers and are excited about learning. I'm having all this fun and at the same time I'm training tomorrow's veterinarians.

OPHTHALMOLOGY WASN'T YOUR FIRST LOVE.

No, teaching was first. When I was in vet school (UTCVM '85), we didn't have an ophthalmologist (several veterinary colleges still don't), so I had very little exposure to it, but what I did have exposure to was really good teachers: Sims, Krahwinkel, Brace, Legendre, DeNovo, Gompf, Weigel, Dorn, Hopkins ... all storied

names in teaching at UT, and all had a tremendous influence on me. I was interested in farm animal, but there weren't any opportunities in the teaching arena. So, I guess I did it backwards. Veterinary ophthalmologists don't typically go into academics, they go into private practice. I wanted to teach and found where there were opportunities, and it turned out I like ophthalmology.

WHAT CHALLENGES DO YOU FACE TEACHING OPHTHALMOLOGY?

Not to be "punny," but it's a very visual discipline. We diagnose and teach by sight. More animals equal more opportunities to show the students what corneal cholesterol, cataracts and ulcers are.

WHAT IS YOUR FAVORITE SURGERY?

Cataract surgery never gets old. It is a pretty surgery, resembling the golden colors of galaxies in deep space. The technology has evolved to keep it exciting. I guess I've done a thousand or

so cataract surgeries and it, along with corneal reconstruction on horses, are my favorite procedures. We've been unbelievably blessed with a supportive administration. We're using the best operating scopes and cataract machines on the market—not just in veterinary medicine, but in the market period.

YOU WERE ABLE TO TACKLE A DREAM CHALLENGE IN 2010.

I've done four marathons and dozens of half marathons. Turning 50 last year prompted me to do something special. I'd had my sights on the New York Marathon for some time. The Multiple Sclerosis Society uses the race as a fundraiser, and since my wife has MS, I joined the MS team,

being too slow to qualify on my own! Let's just say one of the Chilean coal miners finished eight minutes ahead of me. But my group raised the third most amount of money of any group in the country for MS, almost \$11,000.

BESIDES TEACHING VETERINARY STUDENTS, WHAT MAKES YOUR JOB REWARDING?

Our varied caseload. We work on dogs, cats, horses, raptors and the ruminants that I call healing machines: cattle, sheep and goats. A dog comes in blind from cataracts in the morning and that evening he can see. That's gotten to be so commonplace that we don't think about it anymore, but I guess we should never take it for granted. That's a cool thing.



Advancing Tennessee

Through Strategic Extension

This spring Chuck Denney sat down with UT Extension Dean Tim Cross to discuss the impact that Extension's new Strategic Plan is having on this statewide organization

Denney: Extension went to great lengths to hear from a number of people statewide in gathering input for the Strategic Plan. What was the process in coming up with the plan?

Cross: A leadership team was established representing all Extension program areas and regions across the state. The team's goal was to give everyone a voice. The leadership team managed an open and transparent process with surveys, group meetings, opinion polling and focus groups.

More than 400 individuals responded to our online employee survey. Employees provided feedback about how to improve the organization, including staffing and operating procedures.

The leadership team facilitated 10 area meetings in which nearly 1,000 Tennesseans discussed the future of UT Extension and the needs of their communities. These meetings included opinion polling regarding current issues that Extension should address.

About 2,000 Tennesseans responded to our online survey. They provided feedback regarding Extension's teaching/learning methods and program priorities.

Based on the results of these studies, the Strategic Plan Leadership team drafted five strategies and action plans as well as new statements to

detail the organization's mission, vision, values and principles.

The draft plan was reviewed through focus groups with 25 of the state's most outstanding leaders in state government and other statewide organizations. The draft plan was also posted with an online suggestion box. All of the feedback was considered in finalizing the 2010-2020 Strategic Plan, Advancing Tennessee.

Denney: Why the need for Extension to have a new Strategic Plan now?

Cross: It has been 10 years since our last plan. UT Extension is a dynamic organization, and we need to periodically assess our mission, vision and values to remain relevant, efficient and responsive to the needs of our clientele. Furthermore, we have had some changes in several key leadership positions over the past few years. We are faced with a \$5 million decrease in our state appropriation beginning July 2011. We felt it was time to build on the achievements of the last plan and to make sure we identify strategies to position the organization for the future.

Denney: What was the significance of the timing of this plan, coming after Extension's Centennial in 2010?

Cross: Extension in Tennessee has a 100-year history of evolving to meet changing needs of the state. As we

celebrated this rich heritage and looked back on our accomplishments, it seemed an appropriate time to take an active role in planning our future.

Denney: We speak often of the need for Extension to maintain its traditions, but also adapt to modern times. How does this need fit into the Strategic Plan?

Cross: Tennessee is changing. Based on the input we received, we have identified the trends that UT Extension will address, specifically:

- increasing urbanization, including loss of farmland;
- advancing technology in all aspects of Tennesseans' lives;
- rising rate of obesity for adults and children;
- increasing population and diversity;
- declining economy, including job loss; and
- increasing concern for environmental sustainability.

The strategic planning process confirmed that UT Extension's tradition of county-based educational programs is the best way to address the present and future needs of the state. Our educational programs will continue to use research- and evidence-based information.

Denney: What are the key components of the plan?

Cross: The five goals are:

- preparing for future growth,
- advancing Tennessee through innovative programs,
- investing in UT Extension's human capital,
- maximizing organizational efficiency, and
- increasing the visibility of UT Extension.

Our strategic plan includes action steps that will guide us to achieve these goals over the next 10 years.

Denney: How will the plan impact Extension programming for the people of Tennessee?

Cross: We believe that the strategic plan will improve Extension programming. As one illustration, we plan to enhance some programs and make programs more accessible through the use of innovative technologies, while maintaining both expertise and education from university specialists and county-based personnel.

Denney: A number of states are moving away from county-based programs to more regional Extension work. Why do you believe it's important for Tennessee to continue with county-based programs?

Cross: Tennessee has historically enjoyed strong partnerships with county

governments throughout the state that have resulted in meaningful programs for Tennesseans. It is our belief that the synergy created in the county among the county government, Extension and other agencies at the local level is significant and might be weakened in a different structure.

Even before embarking on the strategic planning process, we knew that the people of our state felt strongly about maintaining an Extension office in every county of the state. They have confirmed this with continuing support of UT Extension through annual county government funding. People want access to university resources and expertise, and they believe the best avenue for them is a local Extension educator based in a county Extension office.

Denney: Extension is now implementing a new staffing plan. Is that a part of the Strategic Plan?

Cross: Yes, the staffing plan is one of more than 50 action steps in the strategic plan. During the strategic planning process, we identified the most critical issues to consider in the development and implementation of a new staffing plan. We also discussed the concerns that employees expressed about staffing. We reviewed the current staffing plan along with our detailed revenue, expenses and expected budget reductions.

We are implementing a staffing plan that balances needs and funding across the state. In the short term, we've had to tighten our belts to accommodate budget reductions of \$5.4 million since 2008. As a result of the new plan, 48 agents and area specialists and 12 state specialists will be eliminated for a total reduction of 60 positions. We were able to use a combination of vacancies created by retirements and attrition to minimize job loss, but these cuts have very real impacts on our personnel statewide. Many county Extension offices will have reduced agent staffing and there will be fewer state Extension specialists to provide research-based information, curriculum and other resources.

Despite the current budget reductions, it is important to note that the first goal in our plan is to prepare for future growth. We fully expect Extension's future to be one of growth in partnerships, funding and facilities that will equip Extension to meet the changing educational needs of our communities.

Extension's Strategic Plan is online at <https://utextension.tennessee.edu/strategicplanning>.

Center for Renewable Carbon Opens New Research Lab

BeST EXPECTED TO ADVANCE BIOBASED RESEARCH FOR ENERGY, FUELS, CHEMICALS AND MATERIALS

The UT Institute of Agriculture has opened a comprehensive research facility to accommodate faculty and industry initiatives through the new Center for Renewable Carbon. Called the Bioenergy Science and Technology Laboratory—participating faculty affectionately refer to it as the BeST Lab—the facility is expected to enhance America’s emerging biobased economy through advances in bioenergy and biofuel production economies as well as the development of new chemicals and materials from renewable carbon (biomass) sources.

Both the CRC and the BeST Lab developed as a result of the institute-wide Bioenergy Task Force commissioned by then-UTIA Chancellor Joe DiPietro. Now serving as UT president, DiPietro, Interim Chancellor Buddy Mitchell, CRC Director Tim Rials and CRC faculty welcomed other UT officials and representatives from the Oak Ridge National Laboratory and state and local government to a ribbon-cutting and tour of the facilities on February 4. Peter Muller, a representative from PerkinElmer Inc., a partner in the instrumentation of the facilities, also participated.

The CRC will advance existing bioenergy and biomaterials research in four major program areas. The UT Biofuels Initiative will continue working to demonstrate the technical and economic feasibility of cellulosic fuels. This effort involves the well-known collaboration between UT and Genera Energy, the state of Tennessee, and DuPont Danisco Cellulosic Ethanol (DDCE). The SunGrant Initiative, a federal effort that predates the Biofuels Initiative, will continue to coordinate research into

the development of alternative energy from renewable carbon resources.

Through a wood utilization program, the CRC will continue the work of the former UT Forest Products Center in support of wood and related materials systems to enhance the competitiveness of the forest products industry. Also, the CRC’s bioenergy production and carbon cycling program will research environmental topics including the relationships between land use, bioenergy crops and carbon sequestration.

The growing faculty, with wide-ranging expertise in areas from transportation economics to plant genetics, microbiology and chemistry, is already collaborating on numerous projects. Their collective expertise gives the center a powerful advantage in exploring all avenues of materials development from a feedstock or product’s fundamental nature to how new products might be produced on an industrial scale and how that production might impact the environment. The scientists come from across the institute and within the UT system as well as from other research institutions and government agencies.

Rials believes the CRC has enormous potential. “Our scientists are working to solve some fundamental questions, to break down some fundamental barriers, to propel renewable carbon sources to the forefront of the next industrial revolution. The CRC’s express purpose is collaborative research and education associated with converting renewable carbon into energy, fuels and useful industrial chemicals and materials,” he said.

These influences are obvious in the CRC’s upbeat logo. Referring to the logo’s icons, Rials says, “We’re not doing push-button research. Our intent is to advance scientific knowledge in these areas to benefit the nation’s economy and quality of life.”

—Patricia McDaniels



Bob Longmire



Bob Longmire



Center for Renewable Carbon
The University of Tennessee Institute of Agriculture

AGR Fraternity Celebrates its Impacts Across 60 Years

*F*or the past 60 years, Alpha Gamma Rho Fraternity has been a part of the University of Tennessee community and a bigger part of the UT College of Agricultural Sciences and Natural Resources. Since its charting on January 27, 1951, the Alpha Kappa Chapter of AGR has initiated 1,122 members. The organization may be CASNR's largest single alumni group with more than 900 living alumni.



The Alpha Kappa Chapter of AGR is one of 68 AGR chapters across the nation. Alpha Gamma Rho is the nation's oldest and largest social-professional agriculture fraternity, founded in 1904 at the Ohio State University.

AGR has long been a source of leadership and participation in activities on UT's agricultural campus as well as on The Hill. AGRs have been and continue to be involved in CASNR activities such as Alpha Zeta, Block and Bridle, CASNR Student Council, departmental clubs, ambassadors and judging teams. Many AGR members excel in the classroom, as well.

AGR collegiate membership at UT totals 78 men with 19 members graduating during the 2009-10 school year. Of those 19, one entered UT's College of Veterinary Medicine, four joined other graduate programs at UT, three were accepted into law school, and the others entered professional careers ranging from production agriculture to engineering. UT Knoxville mascot Smokey has two AGRs as his handlers, a UT and AGR tradition since the 1970s.

Once AGRs graduate and leave UT they move onto a variety of careers not only in Tennessee and U.S. agriculture, but also in such varied careers as insurance, medicine, education, government and business. Seven AGRs have served as Tennessee commissioners of agriculture, in addition to one serving as a U.S. congressman and another, Tennessee governor. UT AGR alum Vance Dennis presently serves in the Tennessee House of Representatives. Tennessee AGRs have served in leadership positions in state and national livestock, dairy and crop organizations as well as positions in Tennessee agribusinesses such as Tennessee Farm Bureau Federation and Tennessee



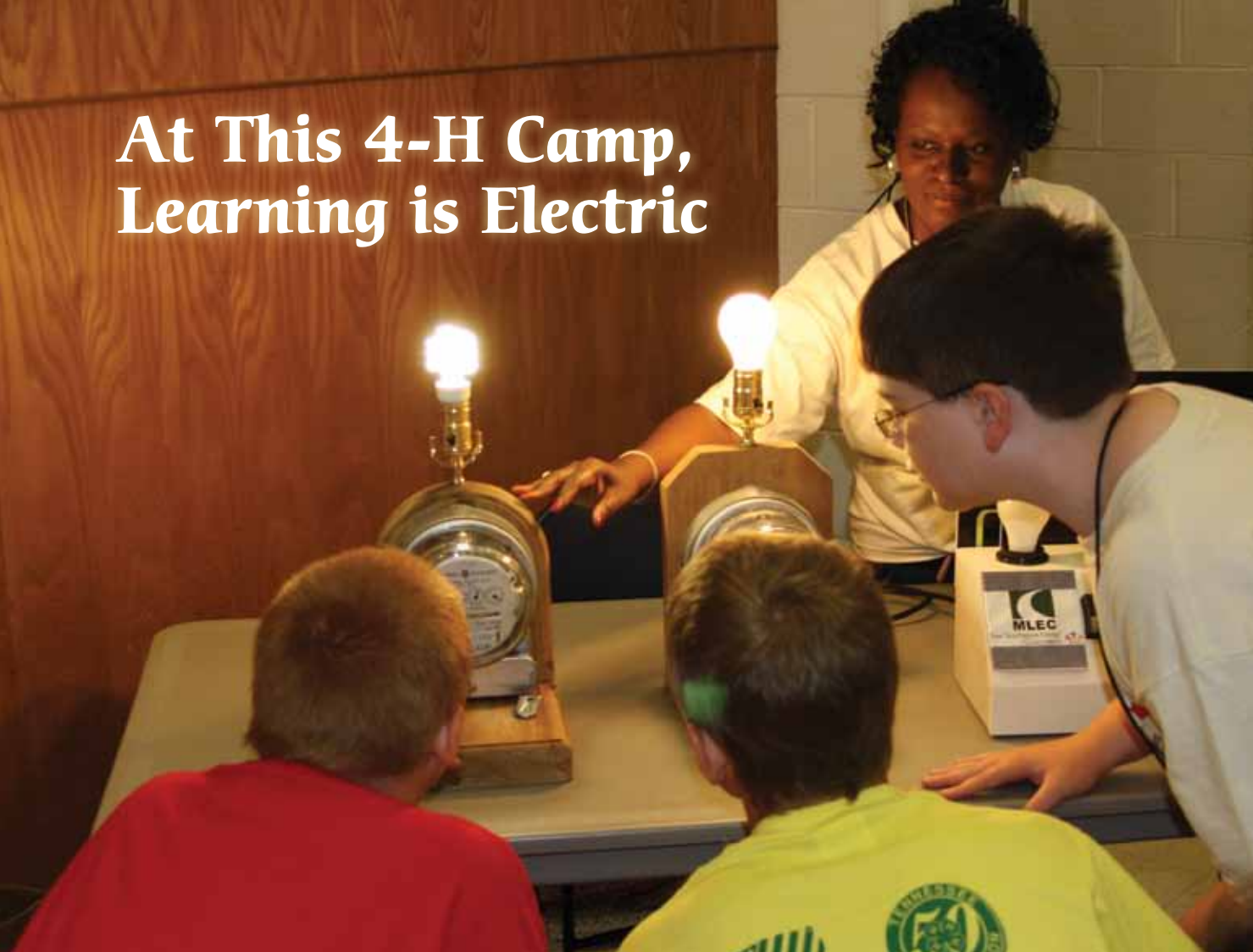
Following an AGR tradition since the mid-1970s, Michael Culley of Paris and Robert Moser of Lenoir City, Tennessee, served as Smokey's handlers for 2010.

Farmers Cooperative. UT AGRs have served UT as deans of Extension and CASNR. Alumni are also operating farms from Tiptonville in West Tennessee to the Smoky Mountains in East Tennessee and all parts in between.

In 2010, AGR alumni began an ambitious \$1 million capital campaign, The Campaign for AGR—Make a Difference. Since this campaign began, more than \$650,000 has been raised in just a few months. The goal is to raise \$750,000 for scholarships with the remainder going to future house renovations and needs. Currently, AGR awards approximately \$17,000 annually in scholarships and awards to its members as well as \$2,000 to incoming students accepted into CASNR.

Alpha Gamma Rho is celebrating its diamond anniversary in 2011. A celebration was held this spring in honor of the fraternity's 60 years on the UT campus. As AGR marks its 60th anniversary at UT, its goal remains to "Make better men, and through them, a broader and better agriculture." —Jim Nunn

At This 4-H Camp, Learning is Electric



What happens when you flip a light switch or turn on a TV? Why is electricity so dangerous, and how can we be safe as we use it? Tennessee's 4-H youth are finding answers to these questions by participating in UT Extension's 4-H Electric Camp, one of many enrichment activities UT 4-H offers to Tennessee youth.

This summer marks the 20th year of the program, which has opened the eyes of 6,000 sixth- and seventh-graders from across Tennessee to the importance of the power industry in our lives.

While the need to prepare youth for careers in science, technology, engineering and mathematics (STEM) has been widely discussed in recent years, Tennessee's 4-H Youth Development Program has emphasized those subjects throughout its 101-year history. Electric Camp, in particular, stresses those areas by improving young 4-H members' understanding of electricity, energy conservation, alternative energy sources, electronics, computer applications, robotics, electrical safety, engineering and other basic sciences.

Students come to Knoxville for the four-day event. They participate in six hands-on learning centers led by power industry professionals, faculty and 4-H leaders. "The youth learn about wiring. We've made extension cords and clocks, electric lamps and other projects," says Dr. Mike Buschermohle, the camp coordinator. "We also have special guest speakers and some classroom experiences.

Other states have visited Tennessee's 4-H Electric Camp, hoping to establish their own programs. State 4-H Specialist Daniel Sarver says the future continues to look bright for UT's Electric Camp due, in part, to a new state-level energy education program called Energizing Tennessee.



“We try to do two building projects a year,” he says. “We always have something on electrical safety, and recently we’ve placed a lot of emphasis on energy conservation, from home insulation and double-paned windows to the cost and impact of phantom loads caused by consumer electronics that are left plugged in, such as big-screen TVs and cell phone chargers.”

To capture the students’ attention linemen bring in a bucket truck, increase the energy load on power lines and pull an arc to show how the energy can fry a hot dog in an instant.

“I thought that the wires that are along the road and to my house were completely insulated, and I learned that they’re not,” says camp participant Hunter Arrowood of Lyles, Tennessee.

“That means if you’re climbing a tree and lose your balance and touch one, it could really hurt you. I also learned that it’s important to stay in your car if a power line falls on it, or if you’re on a bus and have to exit, to jump out away from the bus and land on both feet. Camp was really interesting for me. My favorite memory was getting to build stuff and swim a lot.”

It’s that blend of subject-matter learning and social activity that makes Electric Camp a winner. “For youth, the opportunity to learn new things while having a chance to interact and make new friends is what 4-H is all about,” says Steve Sutton, director and state 4-H leader.

Buschermohle says the program would not be possible without the strong support of the power industry, from monetary contributions that help make the camp affordable to youth to manpower at the actual event. Last year, for instance, 75 power industry members helped teach at the event.

Supporting the endeavor are strong partnerships between UT Extension, the Tennessee Electric Cooperative Association and its statewide member cooperatives, the Tennessee Municipal Electric Power Association and its statewide member municipal systems, TVA, and allied industry donors. Their in-kind gifts and donations of time are vital to the program and are a testament to the importance they see in its mission.

Joe Jackson, director of youth and member services for the Tennessee Electric Cooperative Association, has been with the program since its inception. “What rewards me is to see these students’ eyes light up about all they can do—that they can wire electric lamps, that they can make motors, that they can understand some electric theory that they’ve never really thought about before. I’m also rewarded by the camaraderie I see as our industry members come together to volunteer and teach these students and the joy they get out of doing that.

“The camp is science-based and it’s electric-based, and we’re pleased with it,” Jackson says. Learn more about 4-H opportunities by contacting your county’s Extension office.

—Margot Emery



For 20 years, Tennessee 4-H youth have been gaining insight into energy science and wise and safe use of electricity at UT Extension's 4-H Electric Camp. Each year campers participate in hands-on learning activities where they build projects such as extension cords and meter lamps. The youth interact with volunteer leaders from the state's power distributors, and they learn about important steps to take when power lines fall on roads or crash down on school buses.



In Knox County, Ash and Eastern Black Walnut Trees Under Attack

It was a one-two punch last summer for Knox County that scientists, nature lovers and homeowners didn't want to see happen, but happen it did. First, emerald ash borer, which has been devastating ash trees in the Midwest, was discovered in six trees in West Knox County and in Loudon County.

Then, in a span of a week, came worse news. An outbreak of thousand cankers disease had been found in eastern black walnut trees—the first such outbreak east of the Mississippi River.

Each outbreak has deadly implications for important tree species. The emerald ash borer insects lay their eggs on tree bark, these hatch and the larvae tunnel into the wood and kill the ash trees. Thousand cankers disease, borne by insects as small as pin heads that carry a fungus, wipes out species of walnut. Entomologists believe each invasive pest arrived in firewood or logs carried into the area.

Scientists from UT quickly converged for tactical meetings and survey work with researchers from institutions with experience with the new pests, with support from the Tennessee Department of Agriculture and its Division of Forestry and the USDA Animal and Plant Health Inspection Service. Trees infested with emerald ash borer were quickly burned, but thousand cankers disease was found in hundreds of black walnut trees across several counties. As a result, quarantines were put in place to

ban the movement of firewood and timber outside of the affected areas.

“Each of these invasive pests has been found to be difficult, if not impossible, to contain,” says UT Extension Area Specialist Beth Long. “While we only discovered emerald ash borer in six trees and those trees were destroyed, we won't be surprised to find it in more trees this summer. And in Knox and surrounding counties, we have hundreds, perhaps many hundreds of trees, already infested with thousand cankers disease. In the western United States where this pest came from, there are other species of walnut trees, and some appear to have resistance to this disease. Our eastern black walnuts have no resistance, and they are a valuable species for us, as a source of lumber and nut meat, both for humans and wildlife, and for shade and scenic beauty.”

One issue the scientists are struggling with is what to do with wood harvested from dying and dead walnut and ash trees. With ash, you can use the lumber, and if you chop the bark and limbs of the trees up into mulch, it's sufficient to kill the emerald ash borer. The ash mulch can be sold and transported with a permit outside of the quarantined region. The situation is not so simple for black walnuts because the beetle that transmits thousand cankers disease is so small. “We're researching whether composting the chipped wood will kill the beetle. Otherwise the only thing to do will be to burn the wood or the remnants of trimmed bark

and limbs after trees are harvested for timber or veneer, and harvesting for timber isn't usually an option for homeowners,” Long says.

Scientists are urging homeowners to wait before chopping down ash or black walnut trees that may, at this moment, be healthy. Everyone involved is striving to educate campers to avoid bringing in firewood from other regions, an action that may have been the way these new pests were established, and if they do bring it in, to burn it all before leaving.

“We want to try, as much as possible, to contain these pests here and not spread them to other areas. It's bad enough that they will probably devastate our populations of ash and walnut,” Long says. “We don't want to spread these new pests to other areas of the country.” —*Margot Emery*

Visit <http://tn.gov/agriculture/regulatory/tcd.html> and <http://tn.gov/agriculture/regulatory/eab.html> to learn more.



Photos by Beth Long

STANDOUT ACHIEVEMENTS



Joe Bozell

UT TAPS TWO FOR NEW DOCTORAL PROGRAM

Professor Joe Bozell of the Center for Renewable Carbon and Neal Stewart, professor of Plant Sciences and Ivan Racheff Chair of Excellence, are part of an elite group of 38 researchers participating in an interdisciplinary program designed to produce scientists prepared to tackle a diverse range of domestic energy issues. The new doctoral program offered by UT and ORNL is called the Center for Interdisciplinary Research and Graduate Education. Bozell and Stewart are two of 38 CIRE faculty members. Details on this new collaboration are available at <http://cire.utk.edu>.

UT TURFGRASS TEAM RECEIVES TWO HIGH HONORS



John Sorochan

Department of Plant Sciences' Associate Professor John Sorochan was selected as the 2011 recipient of the Dr. William H. Daniel Founders Award by the Sports Turf Managers Association. The Founders Award, STMA's highest honor, recognizes an individual who has made significant contributions to STMA and the sports turf industry through his or her research, teaching or extension outreach. Jim Brosnan, assistant



Jim Brosnan

professor of turfgrass weed science, was named Tennessee Turfgrass Professional of the Year by the Tennessee Turfgrass Association. TTA's highest honor, the award recognizes individuals who have made noteworthy contributions to the turfgrass industry in Tennessee.

ENTOMOLOGY AND PLANT PATHOLOGY'S STEWART RECOGNIZED FOR MULTI-STATE WORK



Scott Stewart

Extension Associate Professor Scott Stewart is one of nine Midsouth entomologists on a five-state team who earned the Friends of IPM—Pulling Together award from the Southern Region Integrated Pest Management Center. Stewart, who is based in Jackson, and his colleagues received the recognition for approaching regional pest management issues and developing solutions that are applicable across state lines to growers throughout the Midsouth region.

UT FACULTY MEMBERS RECEIVE FUNDS FROM UT RESEARCH FOUNDATION TO DRIVE FURTHER DEVELOPMENT OF TECHNOLOGIES

The UT Research Foundation has selected nine researchers or research teams to receive technology development grants for 2011. Grant funds will allow researchers to further develop or "mature" their technologies so that

they are better positioned for licensing and commercialization.

Researchers were invited to propose work on inventions and discoveries that had been previously disclosed to UTRF or to propose work on new inventions and discoveries. A total of 41 proposals were submitted from UT's four campuses and three institutes. The foundation funded eight proposals for a total of \$117,750. Funding for one additional program for \$15,000 was provided by UT AgResearch.

UT Institute of Agriculture UTRF grants:

- Raul Almeida, Doug Luther and Maria Prado (Department of Animal Science) for developing a vaccine for several strep-based illnesses.
- Muthu Balasubramaniam, Blake Joyce and Neal Stewart (Department of Plant Sciences) for developing plants that can sense arsenic and other pathogens.
- Zong-Ming (Max) Cheng (Department of Plant Sciences) for work that allows crops to withstand multiple environmental stresses such as drought and heat.

UT Knoxville—UT Institute of Agriculture (joint proposal):

- Jayne Wu (Department of Electrical Engineering and Computer Science, UT Knoxville) and Shige Eda (Department of Forestry, Wildlife and Fisheries, UTIA) for development of a bacterial diagnostic device based on lab-on-a-chip technology.

Henry County 4-H'ers Light Their Grills

When they fire up the grills at the Henry County fairgrounds, there are the three S's: sight, smell and sizzle.

That's where you'll find young chefs who are genuine grill masters, part of the local 4-H Meat Cookery Team. Once a month or so, they get together to practice and then eat the results. These kids learn everything involved in preparing a mouth-watering, grilled delight, from the start of the meal to the finish.

"They learn how to build a fire. How to properly cook meat. How to season meat. How to work as a team. How to set the table," says UT Extension Agent Michele Atkins, who coaches the group, along with her husband.

The kids learn that grilling takes patience. Meat must be slowly cooked, both for safety and taste. Each young chef has his or her specialty. Myron Milliken marinates some mean meat. "I use water, soy sauce, Worcestershire sauce, and I use peppers," Milliken says.

Jade Hayes does poultry—sort of a family tradition. "My dad helped me a lot. He used to work at KFC. He was like the head chef there," she says.

Other kids cook lamb, and Shelly Beecham does pork. Does her family want her to cook at home often? "All the time," she says. "All the time."

Henry County is the two-time defending state champion in Tennessee's 4-H Meat Cookery team competition. They're judged on the taste and quality of their food, but also safety and efficiency, appearance, and imagination.

"They may pick a theme for their tabletop. We've seen things such as tailgating, Big Orange barbecue, maybe an Italian theme or a country theme," says Dwight Loveday of the State 4-H Office, who helps to judge the event.

After a short while, supper is ready. "You want a taste?" Hayes asks.

That would be a yeah. Steak, pork, lamb and chicken: at the team's meetings, one can try them all.

And after tasting, we can add three more S's: scrumptious, succulent and satisfying. —Chuck Denney



Henry County 4-H'er Myron Milliken shows his talent at grilling steak. Watch this story and more on UTIA's video channel at YouTube (www.youtube.com) by searching UT Meat Cookery Team.

One of the constant challenges faced by UT Extension agents is finding funding to enable young men and women to participate in 4-H camp and other 4-H activities. In 2001, Nancy Rucker, director the Cheatham County Extension office, asked a few of her volunteer leaders for recommendations of individuals in their county who might

volunteer leader awards, programming efforts and leadership opportunities in Cheatham County.

Mayfield was also concerned about the declining number of young men and women participating in high school-level 4-H activities in the county, so as an incentive for youth to stay in 4-H, he created the Mayfield 4-H Scholarship. This endowment awards college scholarships to selected 4-H members in

youth of Cheatham County needed his assistance in the future, as well. He recently committed one-seventh of his estate to the Tennessee 4-H Foundation to support the funds he established in Cheatham County. This is the largest private commitment that the foundation has received. We thank John Mayfield for his generosity and look forward to his contributions as a volunteer and leader for years to come. —Rhodes Logan



be interested in supporting 4-H projects. One person recommended was local businessman John Mayfield, the owner of an Ashland City bookstore. Rucker approached him to ask if he would support a program that assisted families who couldn't afford to send their kids to 4-H camp, and he quickly wrote a check to support one 4-H camper.

Soon after that visit, Mayfield called Rucker to ask if she had all of the scholarships that were needed that year. She replied that it would be a struggle to raise enough to assist every family that needed help. He told her that if she wasn't successful in getting enough commitments that he would do more to assist. The very next year, Mayfield donated \$25,000 to the Tennessee 4-H Foundation to establish the Cheatham County 4-H Endowment. The county endowment supports 4-H youth and

In 2004, he established the Cheatham County 4-H Camp Endowment, and he receives letters from 4-H'ers assisted by this fund with stories of new skills gained throughout the week and memories of their experience.

The 4-H Foundation board of directors welcomed Mayfield as a member in 2008. He has been a great asset to the group in working with the foundation's investments and laying plans for the future. He said, "While I am a newcomer to 4-H, I have been thrilled to work with a great team of dedicated individuals. This dedication is contagious, and I am very proud to serve the young people of 4-H."

Mayfield has invested more than \$110,000 in Cheatham County 4-H programs, and as he considered his estate plans, he knew that the

A Legacy for 4-H in Cheatham County

Cheatham County who continue their education. Today, 13 young men and women have earned this award, and attendance is up in the high school 4-H programs. As Mayfield learned more about the Cheatham County 4-H program, he invested more in it, as well.

Left: The 2010 recipients of the John E. Mayfield 4-H Scholarship share a moment with the award's creator. From left, Kelsie Penick, Phillip Adams, John E. Mayfield and Tyler Binkley, all of Cheatham County, Tennessee. Photo by Nancy Rucker.

Below: Participating in 4-H Camp – often a source of a lifetime of cherished memories – is now more accessible, thanks to support from John E. Mayfield. Photo by Sierra Ham.



Alumni Dream Jobs

Alumni Dream Jobs is a family affair this issue, from a rural Tennessee veterinarian, his wife and family, who care for patients and clients alike, to three sisters who made their mark at UT and now are finding success early in their careers.

**TELL US ABOUT YOUR DREAM JOB
AT AGALUMNI@TENNESSEE.EDU**



Dr. Lee Butler with his wife and two of his daughters.

LEE BUTLER, DVM, VETERINARIAN AND OWNER, HUNTINGDON ANIMAL CLINIC

Dr. Lee Butler (UT Martin '80, UTCVM '83) says he always wanted to be a veterinarian but jokingly adds, "I wasn't so sure during the first year or so of vet school!" Butler has been at the Huntingdon Animal Clinic in Huntingdon, Tennessee, for 28 years. He bought it in 1987 from the original owner who opened its doors in 1949. It's a mixed animal practice with four veterinarians. "If it walks, if it crawls, we see it!" Butler's emphasis is equine medicine. Lameness particularly intrigues him. "It can be challenging. I like the process of trying to figure out what's wrong without a patient's input."

Butler is not only working his dream job, but also living his dream life with his wife, Donna, a graduate of UT's pharmacy program. They have three daughters who have completed, or are about to complete, degrees from UT's colleges of pharmacy and law. He says living and working in a rural setting is a blessing. "We are connected to the community. We have more than a client-doctor relationship. It's a personal one. We go to church with them and see them at the football games. You become emotionally attached to their animals and are fulfilled when they do well. And now, I'm treating the animals of my original client's grandchildren."

Butler recently received the UTCVM Distinguished Alumni Award for Private Practice. He has served on the local school board, the utility board and a bank board, and is active in the Tennessee Relay for Life.

CAROL, LISA AND LYDIA WHITE, PHARMACIST AND SURGEONS

At first glance, a major in Food Science and Technology may not seem an obvious path to medical study. However, the department's pre-professional program prepares students for just that, offering curricula for medical, dental, pharmacy and veterinary medicine programs. Three sisters who chose FST as their major made their mark on the department and university. Lisa and Lydia White ('02 FST) and Carol White ('05 FST) all graduated summa cum laude and in the university's honors program, with each named Torchbearer, the highest honor the university bestows on students. During her senior year, Carol served as a student trustee of the UT Board of Trustees during a presidential search. Now all are embarking on exciting careers.

Carol received the doctor of pharmacy degree from the UT Health Science Center in 2009. She says, "The people in FST worked with me to develop a pre-pharmacy track that made me extremely competitive when I began applying for pharmacy schools. I'm often questioned on my choice of an undergraduate degree, but I always respond that the FST program was a true blessing for me." She is now at the Medical University of South Carolina Medical Center as the pharmacotherapy specialist resident and chief resident for the center's pharmacy residency program. She completes her training in June and hopes to return to Tennessee to establish her clinical practice.

Lydia, who graduated from Vanderbilt Medical School in 2006, is chief resident in orthopedic surgery at the University Hospital in Cincinnati. "I'll graduate from my residency in June and then I'll be doing a one-year fellowship with Dr. Jimmy Andrews, a surgeon who is famous for his work with

professional athletes. Eventually, I hope to return to Tennessee as a practicing orthopedic surgeon.

"The thing I love most about my job is that I get to fix people when they're broken. My work as an orthopedic surgeon allows me to specialize in injuries, and it's a great privilege to take care of patients during their painful, scary and often life-altering moments. Every day, I am captivated by the skill and art of solving a patient's problem in the operating room. While there's a lot about life in general that I cannot fix, reconstruct, or replace, my job allows me to do all of these things for a patient in need."

Lydia's identical twin, Lisa, also graduated from Vanderbilt University School of Medicine in 2006

and now is chief resident in general surgery at Vanderbilt. "I love my job! I chose a career in medicine because I wanted to make a difference in peoples' lives. I know it sounds clichéd, but I wanted to help heal the sick and save the dying. And that's what I get to do every day. Each day, I get to go to work and help patients navigate what is often the most challenging time in their lives. For me, helping patients usually means taking them to the operating room, where I am constantly awestruck by how unique and wonderful God has made us all. To be able to see my hands being used to help make someone better never fails to humble me and make me realize that I'm living my dream."



From left, Drs. Lisa, Carol and Lydia White

Tarantulas, & Much Crickets & More!

Join us for Ag Day October 29



Ever wanted to hold a tarantula in your hand or see just how far you could spit a frozen cricket? Well, perhaps not, but you can watch others do that and much more at Ag Day 2011. This spirited event serves as the annual street fair for alumni and friends of the Institute of Agriculture.

Held on a football Saturday on the agricultural campus in Knoxville, you'll see former classmates, current and retired faculty, and ag supporters of every age and stripe.

"To us, it's a chance to invite our friends and supporters to learn about all the great things happening at the institute," says Buddy Mitchell, interim UTIA chancellor.

The fun starts four hours before game time, as the Vols take on South Carolina Gamecocks. Highlights will include departmental displays and exhibits, the ever-popular insect petting zoo, live music and a visit from UT's mascot, Smokey. You'll also find free popcorn and ice cream and a meal available for purchase. For the young crowd, there's a moonwalk, face painting and balloon art.

Ag Day takes place on E. J. Chapman Drive, north of Joe Johnson Drive. Free parking is available for Ag Day participants, and a block of football tickets has been reserved. To purchase, visit www.UTtix.com. Scroll over VOLS TIX and click on GROUP TICKET. Follow the instructions from there. The sign-in ID is `agday11` and password is `agriculture`. Please note that the sign-in information is case sensitive.

For more information, contact the UTIA Development Office at 865-974-1928.