THE UNIVERSITY OF TENNESSEE INSTITUTE OF AGRICULTURE

LAND, LIFE & SCIENCE

FALL/WINTER 2016 MAGAZINE

NEW AMERICAN GOTHIC

FIND OUT HOW TODAY'S STUDENTS ARE REDEFINING AGRICULTURE AND IMPACTING THE FUTURE

Real. Life. Solutions.”
Farewell to a Friend

In 2011, Larry Arrington came to UTIA with a mission, a plan, and a promise to serve five years. A man of his word, Arrington retired in September with little fanfare, a long list of accomplishments, and many, many friends.
ON THE COVER

Jaime Ragos (food science, ’19) and Hayden Jordan (graduate student in biosystems engineering). UTIA is preparing the next generation of students to meet agricultural challenges in ways you may not expect. Meet a few of the students leading the way in an expanding field.

Photo credits: Saul Young

The New American Gothic
Fall is a time of transition, from the leaves starting to change color to the start of a new school year. We’ve had some transitions of our own here at the University of Tennessee Institute of Agriculture.

As many of you know, Dr. Larry Arrington retired in September after serving five years as chancellor of the Institute—the length of tenure he promised President Joe DiPietro upon his appointment before he headed into retirement. His legacy includes many achievements, among them, enhancing our commitment to Tennessee’s agricultural stakeholders through new services and programs. Another significant impact came when he joined with UT alums Donnie and Terry Smith to launch UTIA’s dynamic new international initiatives. Please read more about Larry and his impacts in an article in this issue.

Larry left big shoes to fill, and I am honored to have been asked to serve as interim chancellor while a search is conducted to find his replacement.

Exciting days lie ahead for UTIA. After many months of work, our faculty have presented a proposed set of priorities for future Institute programs and faculty positions that fulfill our land-grant mission. In addition, our academic programs are also transforming. In this issue, learn how our two colleges are preparing students for exciting new career opportunities—ones that address environmental sustainability, the world’s food supply, and other grand challenges facing our global society.

We appreciate your support of UTIA as alumni and friends. Please keep in touch.

Tim Cross
Interim Chancellor
For some UT College of Agricultural Sciences and Natural Resources students, the Battle at Bristol began long before the Tennessee Vols and the Virginia Tech Hokies took the field on September 10. And in this particular part of the battle, everyone is a winner.

This spring, students from CASNR and Virginia Tech built playhouses to be raffled off in the Battle of the Habitat Playhouses. Proceeds benefit Holston Habitat for Humanity in Kingsport, Tennessee.

“This project brings some unique opportunities to our students,” says Charlie Parker, director of the construction science program and faculty leader of this project. “We’re putting together skills on the project that we have learned about in the classroom, and we’re putting those to use.”

“We’re getting a lot of hands-on experience, getting to learn how to build rafters and walls and putting doors together and different things like that,” says Ethan Greer, a senior in construction science.

The CASNR students’ entry, Smokey’s Doghouse, is an impressive eight feet by five feet and includes a front porch, arched doorway, windows, and of course, some UT orange for color.

The construction science program is part of the Department of Biosystems Engineering and Soil Science and is the fastest-growing academic program in the UT system. Leaders say graduates are in high demand in the construction job market.

“We’ve been placing 100 percent of our students,” says Parker.

To learn more about the Battle of the Habitat Playhouses, visit tiny.utk.edu/ag/HolstonHabitat.

CASNR students this spring unveiled Smokey’s Doghouse on the UT Institute of Agriculture campus. Representatives of Holston Habitat for Humanity, which benefits from the students’ work, were on hand for the unveiling as part of the Battle of the Habitat Playhouses. The group also came to the UTIA campus earlier this spring to present donations from Eastman Chemical Company for $3,000 and Lowe’s for $1,500.
Two familiar faces and one new one are taking on leadership positions in AgResearch.

Barry Sims will guide UT AgResearch’s ten centers across the state as an associate director. For the past eighteen years, Sims served as the director of the Highland Rim AgResearch and Education Center in Springfield, Tennessee.

Tim Rials and David White have accepted positions as associate deans for research and associate directors of UT AgResearch. Rials has been with UTIA since 2001, first as director of the Tennessee Forest Products Center, then as director of the Center for Renewable Carbon with the shift in focus and name change in 2010. White comes to UTIA from the US Food and Drug Administration where he served as chief science officer and research director in the Office of Foods and Veterinary Medicine. Rials and White will work with UTIA, UT Knoxville, and other institutions to facilitate responses to federal, state, and local opportunities.

Farmers markets offer a host of healthy food choices. Thanks to funding from the USDA Supplemental Nutrition Assistance Program—SNAP—and a partnership with the state of Tennessee, UT Extension’s Family and Consumer Sciences is helping more people gain access to the markets through a program called Farmers’ Market Fresh.

While the goal is to help all Tennesseans incorporate healthy food choices into their diets, the program particularly focuses on families with limited resources. The project, which last year launched on a pilot basis in twelve counties, is already showing promising results. SNAP funding redemption rose $3,000 across five farmers markets reporting. Of participants who responded to surveys, 19 percent increased consumption of locally grown vegetables, and 11 percent increased consumption of locally grown fruits.

In 2016, thirty-nine farmers markets will be participating in Farmers’ Market Fresh. To learn more about the program, visit tiny.utk.edu/FMFresh.
In Shelby County, Memphis-area Tennessee Extension Master Gardeners pass on the joys of gardening and UT Extension horticultural knowledge at the Collierville Victory Garden and Butterfly Haven. Through the generosity of the Collierville Christian Church and the Master Gardener program, this Plant-A-Row for the Hungry garden donates its vegetables to the Collierville Food Pantry, Resurrection Catholic School, and Fayette County Project Outreach, and its flowers to Page Robbins Adult Day Center and Habitat for Humanity.

Since the year began, donations from the garden have totaled 2,927 pounds of mustard and collard greens, sweet potatoes, turnips, red romaine lettuce, mini bok choy, radishes, strawberries, and a bunch of other enticing veggies. The Collierville Victory Garden assisted by Tennessee Master Gardeners has been educating the public with gardening information for close to a decade. UT Extension agent Chris Cooper, in blue shirt, above left, is coordinator of the Shelby County Master Gardener program.

CREDITS TO AGRICULTURE

The 2016-2017 Farm Credit Scholars at the UT College of Agricultural Sciences and Natural Resources are (left to right) Ty Wolaver, a freshman from Fayetteville; Haley Webb, a freshman from Rogersville; Jade Ellis, a sophomore from Lafayette; Sam Daniel, a freshman from Covington; Jeb Beasley, a freshman from Hendersonville; and Catherine Moore, a freshman from Dyersburg.
UTIA has awarded its first set of international seed grants to five teams from across the Institute for collaborations that address global food security. The faculty-led teams integrate personnel from eight departments at UTIA from both colleges—CASNR and CVM—as well as AgResearch and UT Extension. The seed grants will build collaborations in six countries on three continents and will be implemented over eighteen months. The grants will develop new teaching, research, and extension collaborations, materials, and trainings. These will extend UTIA’s opportunities to build future global food security programming with partners around the world.

The seed grants vary in location and scope, with faculty interests ranging from improving dairy animal health and hygiene in southern Ethiopia to assessing barriers of using biodegradable mulch in the European Union to establishing an international partnership with the Panamerican Agriculture University, Zamorano, in Honduras, pictured above. Read more at tiny.utk.edu/ag/seedgrants.

Have you ever considered the science behind archery? The energy involved in ziplining? The ecology of the world around you? This summer, junior 4-H campers across Tennessee pondered these questions as part of a series of hands-on activities.

UT Extension was awarded one of four $10,000 sponsorships from HughesNet to implement a Summer Camp STEM (Science, Technology, Engineering, Mathematics) Experience during Junior 4-H Camp last summer in Columbia, Crossville, and Greeneville. The Summer Camp STEM Experiences are part of a national effort to spark youth interest in STEM education. The other states selected to receive a Summer Camp STEM grant include Colorado, Kentucky, and Missouri.

National 4-H Council and HughesNet are dedicated to sparking an interest in STEM topics early, through hands-on, community-based STEM learning. In Tennessee some 4,500 youth from across the state were estimated to attend 4-H Camp last summer.
When Neogen CEO and animal science alumnus Jim Herbert (BS ’63) took the stage May 12 at the CASNR spring commencement ceremony, he shared three key steps to leadership.

“With young people coming in to our company, some say, ‘I don’t know anything about that,’ ‘That’s not my job,’ while others say, ‘What can I do?’ ‘How can I help?’ The second group is beginning their path of leadership.” Neogen is a publicly held company located in Lansing, Michigan, focused on the development, manufacturing, and marketing of products for food and animal safety. Herbert cofounded Neogen in 1982.

Central to leadership is to listen, Herbert told the graduates. “Most people really just want to be listened to, respected, and understood. Once you get that reputation, all of a sudden you have become a leader.” The final step? Focus on changing the word “can” to “will.”

“As you go forward search for the things you ‘can do’ and then convert that finding to a ‘will do.’” Excellent advice for us all.
The Department of Biosystems Engineering and Soil Science and the Department of Entomology and Plant Pathology welcomed new leadership this year.

Julie Carrier joined UTIA April 1 as the BESS department head. Carrier most recently served as a professor in the College of Engineering’s Department of Biological and Agricultural Engineering at the University of Arkansas. Her research interests include biofuels and biochemical production from cellulosic biomass.

DeWayne Shoemaker joined the Institute August 15 as the new head of the Department of Entomology and Plant Pathology. He came to UTIA after ten years as a scientist with the USDA-ARS Center for Medical, Agricultural and Veterinary Entomology in Gainesville, Florida. He previously served as a faculty member at the University of Wisconsin-Madison and at Western Michigan University.

UTCVM is home to a new biosafety level 3 (BSL-3) laboratory, the only one of its kind on campus. The new lab opens up opportunities for special accreditation, new funding opportunities, and has the potential for future collaborations, bringing professionals in various disciplines together for essential research that impacts human and animal health.

While there are several BSL-2 labs on campus, seventy-four to be exact, CVM’s new BSL-3 lab will help scientists complete more work on disease research. BSL-3 laboratories have the same safety equipment used in BSL-2 labs with the added advantage of special air processing and procedures for increased safety.
Through bright palettes of colors, enticing aromas, and foods that satisfy a savory craving, plants enrich our lives. At the UT Gardens, the State Botanical Garden of Tennessee, you can find more than 4,000 plants expertly displayed and demonstrated. Annuals, perennials, herbs, tropical plants, trees, shrubs, vegetables, and ornamental grasses are evaluated by members of the UT Department of Plant Sciences. For the more than 100,000 people who visit each year, the Gardens locations in Knoxville, Jackson, and Crossville are living spaces that provide a place to encounter nature, learn, and enjoy.

Faculty, staff, and students in the department comprise one of the largest and broadest groups of experts in UTIA. Across Tennessee, their work and study are improving crops, enhancing nutrition, and yielding designs for environmentally friendly, safe, and functional landscapes.

Learn about research in the department and how UT Extension and outreach programs are adding profit to Tennessee producers, improving environmental sustainability, and helping home gardeners. Also see how undergraduate and graduate students are preparing to solve future challenges, including feeding a growing population. Find this and more in a feature article by department head Scott Senseman at tiny.utk.edu/plantsci.
OUR FRIEND
LARRY ARRINGTON

A Heartfelt ‘Thank You’ For Your Service to UTIA

Dr. Arrington and his wife Candy at their home.
When Larry Arrington accepted the position of chancellor of the Institute of Agriculture in 2011, he said he would guarantee five years of service. And, as always, he was true to his word. Arrington retired in September, five years to the day, leaving a legacy of listening, collaboration, and enthusiasm for the Institute.

“I feel good that the Institute is in a strong position and am honored to have served alongside some wonderful faculty and staff,” Arrington says. “I know the future is bright.”

Arrington came to Tennessee from the University of Florida where he served as dean of Extension and interim vice president of agriculture and natural resources. When he arrived at UTIA, he had some big challenges to tackle including funding issues and an aging infrastructure. His ability to build relationships and truly listen quickly gained him trust and respect from constituents within the University and across the state. Says UT System President Joe DiPietro, who hired Arrington, “Larry is a skilled leader who has very effectively guided the Institute in its service to its extremely large and wide-ranging group of stakeholders and clients. He has facilitated its great success in delivering real-life solutions to people across the state every day. He understands the great pride and attachment Tennesseans feel toward the Institute, and he has done an excellent job of connecting with them and with elected officials.”

During his time as chancellor, Arrington established a statewide advisory group of agriculture and veterinary stakeholders that has provided the Institute with valuable feedback and enhanced advocacy with policymakers.

He also oversaw a $20.9 million renovation—half funded with private donations—of animal hospital facilities at the UT College of Veterinary Medicine’s Medical Center, required to maintain full accreditation by the American Veterinary Medical Association’s Council on Education.

Enrollment in the College of Agricultural Sciences and Natural Resources has increased 40 percent over the past five years, with much of that growth coming from honor and other high-achieving students. In 2015, legislative appropriations were secured to acquire Lone Oaks Farm, a 1,200-acre site in Hardeman County that will be home to a 4-H camp and conference center to serve West Tennessee.

Having been raised in rural Plant City, Florida, Arrington has many memories of a childhood immersed in agriculture. His father was a high school agriculture teacher. Arrington was proud to follow in his father’s footsteps as a teacher along with his daughter, Kelly, making it three generations of agricultural educators. He vividly remembers picking strawberries as a child from Thanksgiving to Easter along with many classmates. In fact, the schools operated on a “strawberry schedule” to allow for harvesting.

As an active 4-H and FFA member, he was a part of the winning state livestock judging team in ninth grade, an experience that gave him an opportunity to learn more about land-grant universities and the positive impact they provide.

“I encourage everyone associated with the UT Institute of Agriculture to never lose the heart of the land-grant mission I have witnessed daily in our organization,” says Arrington. “Your dedicated service to the people of Tennessee truly makes a difference. Please know that I will miss my everyday interaction with my UTIA friends and colleagues.”

Arrington and his wife Candy will split their time between homes in Tennessee and Florida. Many of their family members live in Florida, including his parents and three grandchildren. His agenda looks a little different these days.

“I look forward to projects I have long postponed, trips I have planned to make, days to spend the way I please, and special times with my family,” says Arrington. “I plan to teach all the grandchildren how to water ski. There will be time for fishing, woodworking, and a little golf. Hopefully, we will travel throughout Europe. But most importantly, I look forward to having more time to be Mrs. Arrington’s Mr. Arrington.”
TUNE IN

AT HOME OR ON THE GO, THE LATEST UTIA NEWS & INFORMATION IS AT YOUR FINGERTIPS.
Launching hot air balloons skyward, harvesting poplar trees, and a singing professor who’s also a whiz at biotechnology—from fields to forests to 4-H—UTIA tells its story through multiple channels.

With a click of your TV remote, computer mouse, or a quick scroll through your phone, you can find information about the impacts UTIA is having in Tennessee and around the globe. In addition to television, the web, and social media, the Institute recently launched two new podcast channels. So no matter where you reside, you can tune in to UTIA.
A Fulbright Scholar with the opportunity to pursue an advanced degree anywhere in the world. A researcher distinguished in biofuels and related coproducts who led her to UT. And a department with two majors that consistently place students among the highest beginning salaries for new graduates. Maria Celeste De Matteis and Dr. T. Edward Yu (below) are just two examples of the academic excellence to be found in the UT Agricultural and Resource Economics program. The department will soon celebrate a century of providing teaching, research, and Extension programs that are relevant and effective for a changing world. Read about the department, its rich history, and future of preparing students and benefiting Tennesseans in a feature article by Tina M. Johnson. Find it at tiny.utk.edu/AREC.
You’ve probably seen the iconic painting. The recognizable, stoic faces of the subjects are part of American pop culture.

American Gothic captures a moment in agriculture—a snippet, a portrait of an entire profession as old as time. What it doesn’t depict are the years of innovation that led to that moment. Or the years of building time-honored traditions that have followed.

The growth of agriculture is as constant as the spirit of the profession, moving forward, expanding when needed, and relying on the strong foundations that brought us this far. As we face global agricultural challenges like never before, the UT Institute of Agriculture is preparing students to meet those challenges head on, merging proven methods with advances in our field, and expanding agricultural boundaries to meet the needs of future generations.

Meet today’s American Gothic.
People from all over the world come to the hills of East Tennessee to explore the biodiversity of our mountains and play in our streams. On any given Saturday, the Ocoee River is covered in a rainbow of colors as kayakers take to the water to play in holes and conquer the river’s mighty rapids.

Hayden Jordan also enjoys kayaking, but when he takes to the water he is not there to play. The rivers of East Tennessee provide him with the opportunity for research that aims to make resources on our planet more sustainable.

“Our new method of measuring water quality parameters can be used to identify overall stream health as it relates to aquatic and riparian ecosystems,” says Hayden, a first-year graduate student in the Biosystems Engineering Program at the University of Tennessee College of Agricultural Sciences and Natural Resources (CASNR).

As an undergraduate, Hayden and his professor, Paul Ayers, developed an onboard kayak monitor designed to spatially measure water quality parameters of streams, such as temperature, pH, turbidity, and dissolved oxygen. In the past, water quality was determined by tests from a specific point and did not take into account how water quality can vary across a stream or river.

“I think this project can be used to help regulate the pollution of streams and rivers on a more accurate scale,” says Hayden. “It also addressed the need for a compact and easily transportable system that could be mounted to the hull of a kayak.”

In addition to solving problems of water quality, Hayden worked on a project to develop a milk bottle holder that could collect the feeding attributes of dairy calves. This became his senior design project.

AN EXPANDING (AGRI)CULTURE

You might say Hayden is one of the new faces of agriculture: Students who seek to make a difference in the world, often through routes that vary from traditional agricultural study expectations. He’s applying his experiences growing up in an agriculturally based family in Tennessee to address big challenges in natural resources and animal health.

Hayden’s grandfather operated a dairy farm in Williamson County and his dad runs a beef cattle farm in Montgomery County. Needless to say, he understands the importance of having healthy calves.

“Feeding attributes of dairy calves are indicators of overall calf health,” says Hayden. “Currently, there are no methods that can pre-clinically detect when a dairy calf is showing signs of being sick. Our project addressed that problem.”

The ability to detect problems with calf health early can save farmers a substantial amount of money whether they are raising cattle in Tennessee or Tunisia. Hayden’s method also can function as a model for many other areas of agriculture.

“Biosystems engineering interested me because of its purpose of researching and developing new methods to make the resources on our planet more sustainable,” Hayden says. “I see my field at the forefront of solving issues surrounding sustainability, whether those issues relate to natural resources, food, or renewable energy.”

LOGGING THE BENEFITS

Master’s student Larry Cyprian’s inspiration comes from three years spent as a forester trainee with a ranger district in Virginia’s George Washington and Jefferson National Forests. During that time, he visited logging sites with the district’s timber sale administrator, speaking with loggers and learning about their day-to-day operations.

“There are so many people connected to the logging industry,” Larry (pictured on previous page) says. In Tennessee alone, forests cover 14 million acres, just over half the state. Tennessee’s forest industry, which includes logging, accounts for tens of thousands of jobs and billions of the state’s economy.

“With so many mills across the southern region opening and closing, my research will focus on the state of the logging industry, including factors that potentially could help stabilize the industry and employment of people whose livelihood depends upon it.” Larry plans to stay in Knoxville working with the Southern Research Station after graduation.

UP FOR GLOBAL CHALLENGES

Agriculture has always been vital to our world. As the global population expands and resources become limited, students interested in solving some of the biggest challenges facing the future of our existence are drawn to agricultural science.

For food science and technology major Shelby Kalisch, that challenge is to feed a growing world.

Because of the need to sustainably increase global food production, Shelby decided to focus her research on the antimicrobial properties of bioenergy crops, such as switchgrass and pine, to explore whether they could be effective in controlling harmful (continued on page 22)

“The UT Institute of Agriculture caught my attention because it focuses on agriculture, an integral part of our world.”

—SHELBY KALISCH

(pictured right)
Jasmine Morrissette came to CASNR to study animal science on a path to be a veterinarian, a goal she’s held since childhood, yet at UT she has also found plenty of opportunities to grow as a leader. As a CASNR Ambassador, she travels throughout the state to recruit high school students. As a rising officer, now president, of the University’s chapter of Minorities in Agriculture, Natural Resources and Related Sciences (MANRRS), she helps students thrive in college and develop professional skills, such as writing résumés and preparing for job interviews. In these positions and as a part of the Science, Technology, Engineering, Agriculture, and Mathematics (S.T.E.A.M.) Minority Mentoring Program, she says she finds plenty of opportunities to expand students’ views of agriculture.

“People ask ‘what majors do you even have?’ because they think agriculture must be one thing. I sit them down and tell them about opportunities, because there are so many in the field.”

Jasmine says her experiences as a leader have broadened her goals. “The role model piece has shown me something I never would have thought I’d want, which is to enter the academic side of veterinary medicine and teach, because I find it rewarding to work with people and know there’s a need for teachers in all fields, including veterinary medicine. I see my job not only to be a veterinarian, but also a leader in the community.”

Jasmine’s feathered friend is a Barred Rock hen. This past summer Jasmine received valuable hands-on experience with poultry when she was selected for an eight-week internship with Tyson’s Vienna, Georgia, facility. The experience gave her a firsthand look at a broad range of career specialties, from live production to food safety and quality assurance.
WANT A JOB?

CHOOSE AGRICULTURE!

When it comes time to graduate, most students want that first job. However, landing one can be difficult—unless you’ve chosen the fields of agriculture, natural resources, or the environment.

According to the USDA, between 2015 and 2020 there are expected to be:

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<th>Category</th>
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<tr>
<td>AVAILABLE AGRICULTURE JOBS</td>
<td>57,900</td>
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<tr>
<td>QUALIFIED GRADUATES</td>
<td>35,400</td>
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And the jobs are not only on the farm:

- **46% MANAGEMENT OR BUSINESS**
- **27% STEM**
- **15% FOOD OR BIOMATERIALS PRODUCTION**
- **12% EDUCATION, COMMUNICATION, GOVERNMENT**

*Released by USDA: Employment Opportunities for College Graduates in Food, Agriculture, Renewable Natural Resources, and the Environment, United States, © 2015-2020 Purdue University*
BreeAnna Dell, a fourth-year student in the College of Veterinary Medicine, completed her MS in public health in August 2015 and did her senior year rotation in Uganda. Her research assessed the contamination of water and fish eaten by locals in the region around Queen Elizabeth National Park.

“I investigated levels of heavy metals, specifically copper and cobalt, in the tissues of fish in Lakes George and Edward,” says BreeAnna. “There were operational mines for many years and no protections for the ecosystem or the people enforced to control effluent of waste from the mines just north of Lake George.”

BreeAnna’s research illustrates the importance of understanding the intersection between healthy ecosystems and healthy populations. Her experience in Uganda also provided her with valuable skills necessary for a career in a globally connected world.

“A veterinary degree from UT is a union card that will open a lot of doors,” Denovo says. “Many people are unaware of how many professions are available for people with this degree.”

The public health sector is one example. Epidemiology and the study of zoonotic diseases—ones that can spread between animals and humans—provide valuable information that impacts public health from a local to an international scale.

UTCVM alumna Hayley Adams (BS zoology ’97, DVM ’01, PhD comparative and experimental medicine ’07) created the Silent Heroes Foundation, which works to enhance animal and human health in Africa, as well as the protection and conservation of its wildlife and endangered species. Adams put BreeAnna in touch with a global health nonprofit, EcoHealth Alliance, and she teamed with an EcoHealth committee chair to conduct her research. One Health Central and Eastern Africa, an alliance of fourteen

(continued from page 19) bacteria that constrain crop production. Turns out extractives derived from switchgrass look promising as possible alternatives to traditional bactericides and fungicides.

Shelby says, “I want to be a part of the effort to help understand our food from a microbiological standpoint and specifically how to keep it safe from destructive pathogens in a sustainable way.

“The UT Institute of Agriculture caught my attention because it focuses on agriculture, an integral part of our world.” She says the potentials of food science drew her to her major. “The field of food science and technology will undoubtedly aid in creating safe, sustainable food options for the future.”

Students here are not limited to the study of natural resources, food science, and agriculture; they also have the opportunity to study veterinary medicine, which can have a dramatic impact on global public health.

A degree from the College of Veterinary Medicine has the potential to open up the world for students, according to Dr. Robert Denovo, professor and associate dean.
higher education institutions in the region, facilitated her sample collections within the country.

“The science is pretty much the same wherever you go, but learning to step back and depend on others who have vastly more experience and credibility in some areas of the research is crucial to success and something that will be a recurring theme in my career in international public health,” says BreeAnna.

Veterinary medicine students also have the opportunity to make an impact locally. Amy Webb, a rising third-year student, spent her summer as an intern with the USDA Wildlife Service’s rabies prevention program. An average of 60,000 people worldwide die from rabies, but it is not as pressing an issue here in the United States because of robust prevention and surveillance. During her internship, Amy worked in the Appalachians to see how much of the raccoon population has antibodies that carry rabies. Ultimately, this and other research will help prevent the spread of raccoon variant rabies west of the Appalachian Mountains.

FIELDS OF OPPORTUNITY

Today, the study of natural resources and agricultural sciences also does not stop with the food we eat or the water we drink. Agricultural studies also impact the recreational sports we enjoy, including football, golf, and tennis.

Careers in managing turf on a variety of fields from golf courses and ballparks to soccer fields and stadiums around the world are open to students in the turfgrass science and management program, a concentration of study in the Department of Plant Sciences.

Starting last spring, sophomore Ryan Hammitt had a dynamic internship that merged his studies with his love for tennis. This six-month, hands-on learning experience took him to London to work at the All England Lawn and Tennis Club at Wimbledon. He is the first UT undergraduate student from the turfgrass science program to earn this prominent internship.

“As a kid, I was an avid tennis player, and I always dreamed of going to Wimbledon,” says Ryan. “Receiving this opportunity

“I never could have imagined that I would be at Wimbledon, working with the grounds crew. And I certainly never thought agriculture would be my route there.” —RYAN HAMMITT
through the turfgrass science program at the University of Tennessee has meant the world to me. I never could have imagined that I would be at Wimbledon, working with the grounds crew. And I certainly never thought agriculture would be my route there.”

A degree in turfgrass science is not limited to recreation. It also impacts the health and safety of the athletes who take to the field on any given day to play a sport they enjoy and ones we as a culture enjoy watching—whether it’s children and youth on school teams, college athletes, or the pros.

In addition to new advances in agricultural science, students in CASNR can learn leadership skills and gain experiences through internships that are vital for the global marketplace and prepare for specialized fields through the college’s pre-professional programs that lead to medical, dental, and pharmacy schools, as well as veterinary medicine.

Sophomore Jaime Ragos has been engaged in both. As a food science and technology major, she is enrolled in that department’s pre-professional program and is on course to be a doctor, a goal she says she has held since she was two. Also majoring in language and world business, she spent ten-and-a-half weeks in a summer internship in San Juan and other areas of Costa Rica. During her time, she deepened her mastery of Spanish, took part in sensory evaluation and tours of two coffee plantations, and also had an immersive experience as a volunteer at a local hospital.

“My time abroad has helped me understand other people’s cultures,” Jaime says. “It was a priority of mine to choose a university where I could have international experiences.” The honors student, who ranked fifteenth in her high school class of 463, is a testament to the top-performing students the Institute is drawing. She also says she never thought she’d be an agriculture student.

“As a freshman I considered a pre-professional program in the College of Arts and Sciences, but I found I preferred what CASNR offered—the research opportunities available to me, access to faculty, and the many connections they have to employers because of their research and teaching joint appointments to employers. My friends have been surprised to find out my major, but I tell them the Cliff Notes’ version and one has switched to my department because of it. I feel like I’m an ambassador for agriculture.”

CULTIVATING A BRIGHTER FUTURE

The global challenge facing our students is how to feed 9 billion people by the year 2050 and sustain this population on the confines of our planet. At UTIA, our students are developing the methods to solve these problems and many more. Today’s opportunities for study in the fields of agricultural sciences, natural resources, and veterinary medicine are incredibly varied and focused on empowering students to discover their passions and fulfill their destinies.
Faculty, staff, and students at the Institute are changing the way the world thinks about obtaining degrees in these fields. Through a strong commitment to experiential learning, including outstanding internship opportunities at home and abroad, hands-on research, and the ongoing development of long-term relationships with employers, graduates of the College of Agricultural Sciences and Natural Resources and the College of Veterinary Medicine are ready to tackle the world’s problems and provide solutions that contribute to a healthier global society.

“We as a society need solutions for safe, sustainable agriculture now, not later,” says Shelby Kalisch. “UT’s Institute of Agriculture will be an essential part of this, and I feel confident that I will too from the education I receive here.”

Amanda Womac is a science writer and director of communications for the UT College of Arts and Sciences.

The arrows indicate what rabies viral inclusions look like after performing the Direct Rapid Immunohistochemistry Test (DRIT). The test pictured was from an animal found in East Tennessee this summer by Amy Webb.
**100 YEARS of BESS**

When the Department of Agricultural and Biosystems Engineering merged with Soil Science, the University of Tennessee not only distinguished itself as having the only combination of these specialties in the United States. It also

**1876**
The first class is introduced that includes either field crops or soils.

**1890s**
Major Charles Vanderford, professor, department chair, and Experiment Station secretary, posthumously received an award at the 1899 Agricultural Exposition in Paris, France, for his work, which began the soil survey program in Tennessee.

**1887**
Soil chemist Charles Dabney is named president of the University and director of the Agricultural Experiment Station.

**1900s**
The agricultural curriculum put considerable emphasis on soil physics, including a study of soil moisture and texture.

**1901**
The University presented its first fertilizer recommendations.

**1915**
Experiments on no-till began at the Jackson Experiment Station to aid farmers, whose agricultural production was severely impaired due to soil loss.

**1916**
Rural Engineering listed as a major in the College of Engineering.

**1937**
Agricultural Engineering switched from College of Engineering to the College of Agriculture. First department head: professor Marlay A. Sharp (pictured above).

**1940**
ASAE student chapter chartered.

**1942**
Harold A. Arnold and Marlay A. Sharp developed a new castor bean huller that could speed up production of castor oil, a needed lubricant for aircraft engines, hydraulic brakes, shock absorbers, and other mechanisms. This discovery aided America and her allies during World War II.

**1938**
Ag Engineering graduate and Vol football player Bob Woodruff (pictured above) served as UT athletic director from 1963-1985.

**1940s**
Students were required to work on experimental plots.
Deedie Bise Luttrell becomes the first woman awarded a BS in agricultural engineering at UT.

Max E. Springer and J.A. Elder publish *Soils of Tennessee*, with an accompanying soil map that summarized surveys and information on state soils.

Bobby Bledsoe developed solar drying for high-volume/high-quality mechanized hay baling.

The Department of Agricultural Engineering purchased the first microcomputer at UT and is first to have a computer-based data acquisition system for evaluating tractor performance.

Instrumentation and sensor research is translated into commercial applications, such as the cotton yield monitor.

Department of Agricultural and Biosystems Engineering and Department of Soil Science merge forming the current Department of Biosystems Engineering and Soil Science.

White House names Don Tyler a Champion of Change for Agriculture for his achievements in sustainable production.

Research activity increases on the role of climate change/carbon sequestration on agricultural productivity.

BESS Learning and Innovation HUB moves forward thanks to a substantial gift. Visit bioengr.ag.utk.edu/hub to learn more.

<table>
<thead>
<tr>
<th>1970s</th>
<th>1980s and 90s</th>
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<tr>
<td><strong>1977</strong></td>
<td>Deedie Bise Luttrell becomes the first woman awarded a BS in agricultural engineering at UT.</td>
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<td><strong>1978</strong></td>
<td>The image shows the results of a rainfall simulation experiment. The conventionally tilled field on the right lost ten tons per acre more soil than the no-till field on the left.</td>
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<td><strong>1974</strong></td>
<td>Max E. Springer and J.A. Elder publish <em>Soils of Tennessee</em>, with an accompanying soil map that summarized surveys and information on state soils.</td>
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<tr>
<td><strong>1970s</strong></td>
<td>Ag Engineering’s first computer was a TR-20 analog computer purchased for $3,500.</td>
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<tr>
<td><strong>1983</strong></td>
<td>Bobby Bledsoe developed solar drying for high-volume/high-quality mechanized hay baling.</td>
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The Department of Agriculture and Environmental Engineering, Department of Agriculture and Environmental Engineering, and Department of Agriculture and Environmental Engineering merge forming the current Department of Biosystems Engineering and Soil Science.

We have a fabulous opportunity to become the destination for engineering solutions for soil health and environmental issues,” says the new head of BESS, Julie Carrier. She joined the University this spring after serving as professor of biological and agricultural engineering at the University of Arkansas for sixteen years.

As technology and predictive modeling improve, farmers and agriculturists can benefit from more targeted solutions. The future lies in the judicious use of resources to best solve agriculture problems in the most environmentally and economically friendly way.

As for BESS, the most pressing limited resource is student scholarships to help qualified students cover tuition costs. To help make an undergraduate or graduate student’s college study possible, please visit AdvanceUTIA.com/BESSScholars.
IN PROFILE

Tom Gill was hired as the Institute’s Smith Chair in International Sustainable Agriculture and director of International Programs on July 1, 2015, a position funded through an endowed gift from Donald and Terry Smith. Working with the Smiths and administrators, faculty, staff, and students here in Knoxville, across the state, and all over the world, this specialist in international agriculture is successfully bringing people together to find solutions to the most pressing agricultural issues.
YOU JOINED UTIA AS THE SMITH CHAIR ONE YEAR AGO. WHAT HAVE YOU LEARNED SO FAR?

I’ve met with eighty faculty and a lot of the administration. We have faculty who are working across the world in more than fifty countries. My role, as I see it, is to generate sustainable solutions for challenges facing international agriculture. These challenges center around how we are going to sustainably feed the world’s growing population while simultaneously conserving the planet we depend upon for survival. We are trying to bring folks who are aligned with CASNR, UTCVM, AgResearch, and Extension together to address these issues. It’s bringing people together to be able to do bigger things.

IF YOU HAD TO CHOOSE ONE, WHAT’S YOUR FAVORITE COUNTRY YOU’VE BEEN TO SO FAR?

I consider Uganda to be my “third home.” It’s where I met my wife, so it will always be a special place. It was also where my interest in agricultural development on an international scale began. Living in rural Africa, you quickly realize that agriculture is pivotal to everything; communities revolve around agriculture and food.

WHEN DID YOUR INTEREST IN TRAVEL BEGIN?

It started in high school with my geography teacher. He traveled all over the world to places as far flung as Iceland and Ethiopia, and showed us slides from the places he’d been. It was fascinating and gave me a sense of intrigue about the wide world “out there.” I was also very blessed growing up in southeast England. Where I grew up is just twelve miles from the coast of France. We would often take family vacations to different countries in Europe. Being exposed to diverse cultures from an early age gave me an understanding and appreciation that the world was much more than my hometown or own country. That’s the perspective I hope we at UTIA can open to our students and young people through our international opportunities.

“...we do here at UTIA also are so much more significant than simply for our state and nation. Finding ways to take the solutions we discover here beyond our borders to have impacts around the globe is the goal of the Institute’s International Programs.”

WHICH PROJECT HAS BEEN A PRIORITY FOR YOU?

We’re working on creating a project in the East African country of Rwanda that will focus on increasing smallholder production of broilers for the dual purpose of increasing household incomes and improving nutrition by increasing the accessibility and affordability of chicken meat as a diet staple. It’s a very integrated, interdisciplinary project. We’re involving poultry scientists who are going to deliver training, rural sociologists to understand household issues around producing and consuming chickens, and agricultural economists to help us understand markets and questions, such as where chickens might be sold, who might buy them, process them, and eat them.

UT HAS SET A GOAL TO FOSTER RESEARCH, EDUCATION, AND INTERNATIONAL COLLABORATION THROUGH ITS CHINA SCHOLARS PROGRAM. HOW KEY IS THIS TO UTIA’S GOAL IN ADVANCING GLOBAL AGRICULTURAL SOLUTIONS?

The draw for our faculty is twofold: building prolific research partnerships and bringing highly qualified graduate students to UT who can then be potential long-term partners when they go back to China. It’s about building connections with graduate students’ home institutions. There are a lot of lessons that we can provide to and at the same time learn from our Chinese partners. Chinese agricultural universities are set up very similarly to UTIA in terms of their departments, so we can easily connect colleagues for research and collaboration. China is the biggest agricultural economy in the world. When you’re connecting with China, you’re linking the major players in agriculture around the world—this can lead to transformative change.

WHAT’S YOUR FAVORITE COUNTRY YOU’VE BEEN TO SO FAR?

The research and Extension we do here at UTIA also are so much more significant than simply for our state and nation. Finding ways to take the solutions we discover here beyond our borders to have impacts around the globe is the goal of the Institute’s International Programs. And through these efforts, we will be opening doors for our students and young people, too, for international opportunities that broaden their perspectives.
ALUMNI PROFILES
DR. NEAL VALK (animal science ’86, UTCVM ’89) says if you had told him he was going to be an equine practitioner the day he graduated, he would have laughed. Valk was committed to being a small- and large-animal practitioner in Small Town America until he found out that while he was OK at everything, he wasn’t really gifted at anything. So, in 1994, he returned to UTCVM for an equine surgical residency. He then focused on that area as an emergency equine surgeon at the University of Florida, later returning to his hometown of Greeneville, Tennessee, to launch his own equine practice. But a love of teaching—the hands-on, one-on-one kind—prompted a second homecoming. Last year he returned to UTCVM to become a clinical assistant professor in the college’s Equine Field Service. “I feel I have a mission here and was given this opportunity for a reason. I’m deathly afraid we are losing the art of veterinary medicine.” Valk focuses on that with his students, telling them that even if they have no desire to work on horses, he can help them think logically and question the status quo. It’s a lesson, he says, that translates into every aspect of veterinary medicine, as well as their personal life. That holistic approach resonates with UTCVM’s college-wide focus on both veterinary care and the health and well-being of the caregivers who provide it.

Becoming a veterinarian and attending UT were always in DR. KATHY KUNKEL’S (UTCVM ’89) future. “While living in Florida, I declared in a second grade essay that I was going to attend the UT veterinary school, which didn’t exist at the time!” Encouraged by her grandfather, Jimmy Reeder (law ’22), and his friends, including UT’s legendary sixteenth president Andy Holt, the young Kunkel made a commitment then and there to her lifelong dream—one that also included turning a farmhouse into an animal hospital and making house calls “so my patients wouldn’t be frightened.” Today, her veterinary practice, Little House Animal Hospital, is located in a transformed circa 1836 farmhouse in Franklin, Tennessee, and yes, she makes house calls.

But Kunkel does more than tend to the medical needs of animal patients; she also works to serve children and youth. Learning that foster children often move quickly and must pack their belongings in garbage bags, she founded “Love On Wheels.” This nonprofit provides a piece of luggage filled with necessities that the children can claim as their own. Kunkel mentors high school and college students who are interested in veterinary medicine, and she visits K-12 schools to discuss animal care, veterinary career opportunities, and disaster preparedness. Passionate about her university, too, she chairs the UTCVM Alumni Council and serves on three other UT boards.
On a damp Friday in July, members of the Cotton Incorporated State Support Committee trudged through plots at the AgResearch and Education Center at Milan as UTIA scientists explained the progress and direction of their research programs. These programs were at least partially funded by the committee and Tennessee cotton growers. “The world we live in is constantly changing; thus, research for unknowns must continue and accelerate to stay ahead. I look forward to pursuing my agriculture degree and seeing what the future holds.”

Each year, commodities account for $4.27 billion in agricultural sales for the state of Tennessee. Defined as any product of agricultural activities, some of the state’s top commodities include beef, soybeans, corn, hay and haylage, wheat, tobacco, cotton, and tomatoes. In Tennessee, soybean, cotton, and tobacco are three products that are

Trey Clark inspects burley tobacco at the AgResearch and Education Center at Greeneville for blue mold, frogeye leaf spot, and other foliar diseases. As an Altria/Phillip Morris International intern, Trey says he learned not only to work harder but expanded his knowledge of agriculture in every way possible. “The world we live in is constantly changing, thus research for unknowns must continue and accelerate to stay ahead. I look forward to pursuing my agriculture degree and seeing what the future holds.”
supported through commodity groups. Cotton Incorporated and the Tennessee Soybean Promotion Board oversee cotton and soybean research and promotion activities, and tobacco research and promotion activities are maintained through industry support.

Commodity groups are supported by farmers and industry. Soybean producers contribute based on each bushel sold; cotton farmers contribute based on each bale sold; and tobacco research is backed through industry support. Money is used to provide grower education, offer Extension agent training, fund a student internship program, and support agricultural research.

“As soybean farmers, we support UTIA research and Extension programs that encourage advances in farming practices. From ways to get rid of plant pests and diseases to new soybean variety development, we benefit from this research by implementing the results on our farms to grow a healthier crop and increase our yields,” says Gina Thompson, a West Tennessee farmer and communications director of the Tennessee Soybean Promotion Board.

The commodity groups put out an annual call for research proposals through the UT AgResearch dean’s office. The ideas included in the proposals vary as widely as the department of the researcher. Past funded projects include evaluation of greenhouse equipment, use of unmanned aerial systems, and herbicide resistant weed management. “In order to accomplish our research objectives, UTIA scientists have the opportunity to work with commodity groups to support their research production. We could not discover and develop cutting-edge technologies to help Tennessee producers without these commodity and industry relationships,” says Barry Sims, associate director for AgResearch.

Support extends beyond funding research. Through an internship program, students are provided hands-on experience in an agricultural research environment. Funded by Altria Corporation and Phillip Morris International, undergraduate agriculture students are invited to apply to the program where they work on specific projects with research staff. An average of two interns are selected each year for both the AgResearch and Education Center at Greeneville and the Highland Rim AgResearch and Education Center in Springfield. For many interns, this experience solidifies their decision to work in agriculture, and many have gone on to pursue graduate degrees and/or work in the agribusiness industry.

Ryan Kurtz, director of agricultural research for Cotton Incorporated, says change is what drives the continued need to fund research—whether it’s the ever-changing array of pests, crops protection products, varieties, and equipment, or diversity of grower practices.

“The research expertise provided by the University scientists brings value to growers and impacts production practices by directly addressing current regional and state specific management needs, spurring innovations, anticipating future needs, as well as training the next generation of cotton scientists,” Kurtz says. “All of this is necessary to continually improve profitable and responsible production practices.”
LACY UPCHURCH (BS animal science '67 MS animal science '77) will be remembered not only for his passion for the Tennessee Farm Bureau Federation, but also for his incredible dedication to his family, faith, and agriculture. For ten years, he served as president of the nation’s largest state Farm Bureau and made impacts that will be a part of that organization for years to come. His humble beginnings in the north end of Fentress County as the youngest of six helped to mold him into the leader he is today. And it was his involvement in 4-H and FFA that introduced him to Farm Bureau.

After graduating from UT, Upchurch went to work for UT Extension in Madison County, where he and his wife Kay became active with Tennessee’s Young Farmers and Homemakers. He moved his young family to Cumberland County and continued his work with Extension for a few more years before going to work full time on the farm with his former 4-H agent, Edd Lanquist, where they raised beef cattle and hogs. It was in 1980 that he was first elected to the Cumberland County Farm Bureau board of directors. He served as president from 1984 until 1991. And he was elected as District 4 director on the state Farm Bureau board in 1995. In 2000, he was elected vice president at the state level and in 2005, Upchurch became only the seventh president in the Tennessee Farm Bureau’s ninety-four-year history, a tenure that continued through December 2015.

Upchurch’s leadership has taken the Farm Bureau to new heights. His knowledge and common sense approach to agricultural and rural issues has garnered respect from colleagues throughout Tennessee, the nation, and the world. With his position on the American Farm Bureau board of directors, he’s been a constant advocate for Tennessee agriculture, serving on numerous committees including the international trade advisory committee. Upchurch has spent most of his life working to help educate others about the state’s most important industry. This passion, so generously shared, will be his legacy for generations to come.

“Tennessee farmers have been fortunate to have Lacy Upchurch right beside them, leading the nation’s largest state farm bureau with wisdom and humility for a decade,” US Senator Lamar Alexander (R-TN) said, upon Upchurch’s retirement. “His conservative leadership has benefited all of the state’s farms, and his expertise will be sorely missed.”

Now, his retirement from the presidency behind him, he and Miss Kay are enjoying time on the farm, in their church, and with their family. We wish them well!

– Lee Maddox
Our alumni are achievers, and there is no better example than newly retired Tennessee Department of Agriculture Commissioner JULIUS JOHNSON (BS animal science ’70). He was appointed commissioner in 2011 by Governor Bill Haslam and retired earlier this year. Today he is enjoying time with his family, especially his three grandchildren.

During Johnson’s tenure with TDA, he was instrumental in development of the Governor’s Rural Challenge: A 10-Year Strategic Plan to grow Tennessee’s agricultural and forest industries. Many of those goals are already being met, with the foundations laid for other projects to carry our state into the future.

Education is close to Johnson’s heart. He has been a strong advocate for the governor’s education initiatives, including Drive to 55 and Tennessee Promise. Farming today is not like it was a generation ago. More than ever, education is critical in achieving success, and Johnson recognizes the importance of skilled and educated workers on our farms and managing our forests.

Interagency cooperation was also a priority for Johnson. When agencies work together, Tennessee’s citizens are best served. The strength of those relationships became clear as TDA joined with other state departments to prepare for a potential outbreak of high path avian influenza. Although Tennessee has not yet been affected by HPAI, the risk remains. Johnson made it a top priority for the state to be ready to respond quickly and efficiently to protect the poultry industry that is so important to our farming families and our economy.

Johnson has also been a great supporter of the TN Magic Moments campaign, a statewide partnership to bring greater awareness of the significant role agriculture plays in all citizens’ lives. Johnson made this the theme of many speeches he gave across the state.

As commissioner he directed the work of more than 800 full- and part-time employees with responsibilities ranging from farm and market development, food safety and pesticide regulation, to animal and plant health protection, and forest and water resources management. He also served on the University of Tennessee Board of Trustees and Tennessee Board of Regents.

Sizing up the impact the University of Tennessee had on his career, Johnson says, “What could be more satisfying than working for those who use God’s gifts of water, soil, and sunshine to convert those gifts into food, fiber, energy, and other products that benefit the world’s population? The University gave me the tools to be successful representing these great agriculture producers.”

Johnson’s impact and service will be felt across our state for many years to come.

—Corinne Gould

ROBERT BAILEY ELLIOTT’s agricultural roots run as deep and rich as the soil of the 700 acres across Robertson and Montgomery counties his family first cultivated in 1807.

“He believes in his fellow man and constantly works to educate those less knowledgeable about our safe and affordable food supply, both locally and across the state,” says Barry Sims, UT AgResearch associate director.

In doing so, he carries on the tradition of supporting the land, a life he loves, and a profession that sustains us all. Elliott (BS agricultural economics and business ’05, MS agricultural leadership and education ’08) also carries on his family’s tradition of learning at the UT Institute of Agriculture. In less than a decade out of college, he is making an impact.

Elliott currently serves as the chair of the Tennessee Farm Bureau’s Young Farmers and Ranchers and, as such, sits on the state Farm Bureau board of directors. He divides his time between the multigenerational, diversified family farm named for family patriarch Robert Elliott and Reliance Ag LLC, where he works as a precision ag specialist. He and four others started the company in November 2014.

Elliott and his wife Lindsay, a financial services officer with Farm Credit Mid-America, have one daughter, Meredith.
SOLID TEAMWORK

Cattle producer Rob Walker, center, says two groundbreaking UT Extension programs have been “a tremendous help” to his operation in Friendsville, Tennessee. Extension agents like John Wilson, right, tailor the Tennessee Master Beef Producer Program and the Advanced Master Beef Producer Program to local producers’ needs. “John keeps us informed on what’s going on in the industry and what’s going on at UT,” Walker says. The programs have achieved steady improvement in the quality and health of Tennessee feeder calves—the product of Tennessee’s most economically important agricultural industry. Extension beef cattle specialist Justin Rhinehart, left, guided development of the Advanced program. More than 23,700 completion certificates have been issued to producers, many of whom return yearly to deepen their knowledge.
UTIA has gone social! And for good reason. Social media has become one of the most influential ways to communicate and engage with people almost instantaneously. A Pew Research Center study found that 62 percent of US adults get their news from social media sites such as Facebook, Twitter, and Instagram. And it doesn't really matter who you are or where you live, whether it’s in a rural, suburban, or urban area, the numbers are almost all the same. We understand the impact of this revolutionary communications tool and we’d love for you to join our growing social networks. It’s another way to learn about the great work being done at UTIA. Check out below how you can watch, follow, friend, or link us in!

**FACEBOOK**
@UTInstituteofAgriculture @TNMagicMoments

**TWITTER**
@UTIAg
@UTIACHancellor @TNMagicMoments
@UTCASNR
@UTExtension @UTAgResearch @UTCASNR
@UTCVM

**LINKEDIN**
University of Tennessee Institute of Agriculture

**INSTAGRAM**
@UTIAg
@TNMagicMoments
@UTCASNR

**YOUTUBE**
youtube.com/UTIAcomm

**HASHTAGS**
#UTIAg #RealLifeSolutions #TNMagicMoments

JEAN HULSEY @jeanhulsey
Getting the arena prepped for #UTIAgday on Saturday!

DAVID PEASE @MrDavidPease
Looking inside a Zinnia @utgardens @UTIAg #flowerparts

CIRCLE J RANCH @CircleJRanch
Enjoying a Fall afternoon with a delicious round bale. #tnmagicmoments

TIM CROSS @UTIAChancellor
Beautiful day to hold our Open Tree House event @utgardens! Congrats on the winning design Sanders Page. @AIAETN #tnmagicmoments

ALAN WINDHAM @UTPlantDoc
@UTIAg Frank Hale, Prof of Entomology, pointing out insect pests at the Oak Disease & Insect Conf in Murfreesboro.

TYSON RAPER @TysonRaper
Kentucky #wheat left. Tennessee #cotton right. Field name? State Line. Can't grow cotton any farther north in TN
On September 24, UTIA welcomed nearly 1,500 friends to campus for its annual Ag Day festival. Held before the Volunteers took on the Florida Gators, guests enjoyed great food, festivities, and spending time with furry creatures big and small. The celebrations continued after the game, too, when the Vols overcame an eleven-year losing streak for a 38-28 win.