



**UTIA**

**INSTITUTE OF  
AGRICULTURE**

THE UNIVERSITY OF TENNESSEE

Real. Life. Solutions.™

**2024** YEAR IN REVIEW



**7** New Agriculture and Natural Resources Building Opens



**9** Creating a Circular Bioeconomy

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## Greetings from the University of Tennessee Institute of Agriculture

Dear Fellow Tennesseans and Friends Worldwide,

From Memphis to Mountain City and Tiptonville to Turtletown, our UTIA faculty, staff, and students serve our neighbors in Tennessee and around the globe by creating and providing Real. Life. Solutions. to challenges we face every day. That's not just our tagline; it's our mission.

In this report about our 2024 accomplishments, you will see how our teaching, research, and outreach allow us to make a positive difference. From providing immediate and long-term relief in the aftermath of Hurricane Helene to growing the field of precision agriculture, I am so proud of the work we do here, and I hope you are, too.

Keith Carver  
UTIA Senior Vice Chancellor and Senior Vice President

### About the Cover

*A highlight of 2024 was opening our bold, new Agriculture and Natural Resources Building in Knoxville. The new space provides faculty, staff, and students across UTIA with a state-of-the-art space to teach, research, and grow.*



Learn more at  
**TINY.UTK.EDU/  
ANRBUILDINGOPENS**



- Herbert College of Agriculture
- UT AgResearch and Education Centers
- College of Veterinary Medicine
- UT Extension Offices
- UT Gardens
- 4-H Youth Development Centers
- Smith Center for International Sustainable Agriculture

# STATEWIDE IMPACT

The University of Tennessee Institute of Agriculture (UTIA) has a presence in all ninety-five counties in Tennessee. Through our land-grant mission of teaching, research, and outreach, we provide Real. Life. Solutions. every day to residents of our state and beyond. UTIA is composed of the Herbert College of Agriculture, UT AgResearch, UT Extension, and the UT College of Veterinary Medicine and includes the UT Gardens, whose three locations are named the State Botanical Garden of Tennessee. Our designation as an institute is unique among universities in the United States and demonstrates the importance of agriculture and partnering industries in Tennessee.

# Herbert College of Agriculture

**1,680** + **233** + **109** = **2,022**

Undergraduate  
Students

Master's  
Students

PhD  
Students

The **largest total enrollment**  
in the college's history.

**505** DEGREES

**370 undergraduate** and **135 graduate**  
**degrees** were awarded in 2023-24.

## UT AgResearch

**\$33.2** MILLION

in sponsored programs, which  
includes external funding such  
as grants and contracts.

## College of Veterinary Medicine

**368**

DVM  
Students

**24**

Master's Students,  
Including **7 Dual**  
**DVM/MS**

**40**

PhD Students,  
Including **6 Dual**  
**DVM/PhD**

**37,930** PATIENTS

Patient caseload of small, exotic, large,  
and field service animals in 2023-24.  
Total since opening in 1974: **1,558,946**.

## UT Extension

**195,442**

On-Site Visits

**34.6** MILLION

Digital Contacts

**151,449**

4-H Club Members

**\$1 : \$8.29**

For every \$1 of public funds invested, a value of \$8.29 was  
returned to the people of Tennessee through UT Extension.

## UT Gardens

**3** LOCATIONS

Knoxville, Crossville, and Jackson

**100,000+** Visitors Each Year

# TEACHING





### **Enrollment Climbs**

Fall enrollment in the Herbert College of Agriculture increased to 2,022 undergraduate and graduate students, its highest level ever. Five years ago, enrollment was 1,400. Student recruitment and admissions in the college have ramped up. First-year enrollment for the UT College of Veterinary Medicine was 106 in fall 2024, the largest class in its fifty-year history.

### **New Agriculture and Natural Resources Building Opens**

The new Agriculture and Natural Resources Building in the center of the ag campus in Knoxville serves as a hub for students, faculty, and staff of all UTIA units. Its mission-centric name reflects its integral role in supporting teaching, research, and outreach across multiple departments. The five-story building includes classrooms, a 500-seat auditorium, advanced research labs, collaboration spaces, and a living green roof.

### **Outdoor Concentration Available**

Students aiming for careers with the National Park Service and similar organizations can now enroll in the new outdoor recreation and park management concentration, which debuted in fall 2024. The curriculum, within the forestry major in the School of Natural Resources, covers recreation ecology, visitor use management, interpretation, and leadership.



# RESEARCH

UT AgResearch's 700 faculty and students conduct both basic and applied research in partnership with UT Knoxville and Oak Ridge National Laboratory. This research takes place in labs, fields, forests, and streams, often at one or more of the ten UT AgResearch and Education Centers across the state.







### **Creating a Circular Bioeconomy**

UT AgResearch scientists are working to develop sustainable alternatives to using petroleum in manufacturing. Niki Labbé, director of the Center for Renewable Carbon, pictured left, is leading a collaboration that received \$1 million to develop a model for the technology and workforce needed for a green, circular bioeconomy for building materials and consumer goods manufactured in the Southeast. Labbé, along with Herbert College of Agriculture graduate Erin Webb, is also overseeing a parallel effort funded by \$20 million from the UT-Oak Ridge Innovation Institute to create a circular bioeconomy testbed that will produce materials from sustainable carbon sources.

### **Modernization of AgResearch Centers**

UT AgResearch bought new equipment and updated infrastructure at its ten AgResearch and Education Centers using \$50 million in American Rescue Funds from the state. To better model today's farming methods, UT AgResearch purchased 104 pieces of field research equipment such as a new lateral irrigation system at the West Tennessee center, a new sprayer with mapping technology at Milan, and a straw baler at the Plateau center.

### **Bioengineered Switchgrass and Microbes Clean Soil**

Researchers within the UT Center for Agricultural Synthetic Biology secured a \$12 million Defense Advanced Research Projects Agency contract to bioengineer plant-microbe communities to clean soil contaminated by trinitrotoluene (TNT). The four-year project, conducted in collaboration with the Massachusetts Institute of Technology and Penn State University, turns to plants and their associated microbes to help remediate contaminated soil without the high costs of current machine-based methods.



*Left to right: Scott Lenaghan, Neal Stewart, and Jennifer DeBruyn are working alongside researchers from across the nation to develop natural solutions for improving soil health.*

UT Extension has an office in every county and nearly 900 employees throughout the state, including 295 agents with specialties in agriculture and natural resources, family and consumer sciences, 4-H youth development, and community and economic development.

*Head brewer at Yee-Haw Knoxville Trevor Daniels and lead researcher of the UT Hopyard project Mitchell Richmond present Hopyard Pilsner.*

# OUTREACH & EXTENSION



*Amanda Mathenia, county director of UT Extension Perry County, leads the Buffalo River Blue Way Project.*

### **Buffalo River Markers**

UT Extension Perry County and partner organizations created the Buffalo River Blue Way Project, adding GPS mile markers along all forty-two miles of the Perry County section of the river to assist first responders in accessing emergency situations. More than 130 markers have been installed on riverbanks and on all thirteen bridges.

### **Hopyard Partnership**

Yee-Haw Brewing Company's Hopyard Pilsner, introduced in 2024, featured hops grown at the UT Hopyard in the release batch of the new brew. Yee-Haw announced the company created a new fund to support UTIA and hops research. The hopyard is located at the East Tennessee AgResearch and Education Center in Knoxville and is overseen by UT Extension specialists working to assist specialty crop farmers with data and hands-on training.

### **Turfgrass Award**

The UT Turfgrass Team won the national Excellence in Extension Team Award for its global impact and industry innovations. Presented by the US Department of Agriculture National Institute of Food and Agriculture (USDA NIFA), Cooperative Extension, and the Association of Public and Land-Grant Universities (APLU), the award honors the team's excellence in research, technical assistance, and outreach education. The team's initiatives include a certified lawn care professional program, mobile weed identification manual, and the TN Turf Tuesday series that provides continuing education during the growing season.



*John Sorochan, lead researcher of the UT Turfgrass Team, shares insights on cutting-edge sports turf research at a field day.*



# FLOOD RELIEF EFFORTS

Damage to agriculture, forestry, and associated industries in Tennessee counties from Hurricane Helene is estimated to be more than \$1 billion, and recovery will likely take many years. UTIA faculty, staff, and students were on the ground immediately to help with donation collection and coordination. UT Extension provided online resources and in-person assistance to farmers and residents with county agents going door-to-door with emergency workers in the aftermath.

The UT College of Veterinary Medicine was designated by the state of Tennessee to coordinate donations for animals. Veterinarians, technicians, and students from the college treated nearly 200 animals in the mobile unit and ambulatory truck. UT AgResearch made available a site for environmentally sound disposal of debris at its Northeast AgResearch and Education Center in Greeneville. Soil scientists analyzed the thick layer of sediment and silt that covered farmland to help farmers make plans for their spring crops and published a fact sheet as guidance for farmers and producers.





# STRATEGIC PLAN



*Growing Greatness*, our strategic plan for the next five years, was approved in October 2024 at the UT Board of Trustees meeting. In the year and a half leading up to approval, we engaged with faculty, staff, students, alumni, and stakeholders across the state and beyond. This plan builds on our mission of teaching, research, and outreach and pushes the institute forward to serve at a very high level.

For more information, visit [UTIA.TENNESSEE.EDU/STRATEGIC-PLAN](https://UTIA.TENNESSEE.EDU/STRATEGIC-PLAN)

## Strategic Goals

### **1. Expand Educational Opportunities**

We will expand access to online learning and residential and face-to-face engagement, provide quality and relevant learning experiences, and build connections with new audiences.

### **2. Foster Innovation and Discovery**

We will explore alternative production systems for viable economic opportunities, continue to invest in facilities and scientific infrastructure, and continue to grow grants and contract expenditures.

### **3. Encourage and Increase Collaboration**

We will strengthen partnerships, enhance and foster meaningful internal communication, and reduce barriers and duplication of work.

### **4. Share Our Collective Success**

We will develop strategies to reach newly identified key audiences to increase awareness, codify our visual branding, and create and launch an internal campaign for brand ambassadors.

### **5. Nurture Our Talent**

We will provide the needed infrastructure to attract quality candidates and establish opportunities for faculty and staff growth.



# FIELD DAYS

UTIA invites the public to learn more about the research and outreach happening at the UT AgResearch and Education Centers and other locations throughout the state. In 2024, there were twenty in-person field days and several online events attended by more than 37,000 agricultural producers, industry representatives, government officials, and more from across the world. Field day topics included climate-smart agriculture, precision livestock, forestry management, natural resource conservation, equine science, and residential and commercial horticulture.

This year's events included the highly anticipated thirty-third Milan No-Till Field Day held at the AgResearch and Education Center at Milan in July. UTIA experts talked about soil health and row-crop agriculture, the latest production strategies, industry regulations, research trial results, pest management solutions, and more. The event attracted more than 1,250 attendees from forty-four Tennessee counties, twelve states, and six African countries.



*Above Left: UT President Randy Boyd speaks to the crowd at the 33rd Milan No-Till Field Day as Tennessee Commissioner of Agriculture Charlie Hatcher, Milan Center Director Blake Brown, and UT AgResearch Dean Hongwei Xin look on.*



For a schedule of 2025 events,  
visit [\*\*AGRESEARCH.TENNESSEE.EDU/\*\*](https://AGRESEARCH.TENNESSEE.EDU/)  
**FIELD-DAYS**

# UTIA RECOGNITIONS



## **Veterinary Medicine Dean Joins UTIA**

**Paul Plummer** returned to the university in summer 2024 as the sixth dean in the fifty-year history of the College of Veterinary Medicine. Plummer earned his bachelor's degree and his DVM from UT. As a youth, he spent summers working cattle and goats on his family's farm in Sevierville. He comes to UT after serving as the associate dean of research and graduate studies for the College of Veterinary Medicine at Iowa State University.



## **Plant Geneticist Is Top Professor**

**Vince Pantalone**, professor in the Department of Plant Sciences, received the Institute Professor Award at the annual UTIA awards ceremony. The award is for faculty who have served as a professor for at least seven years and have demonstrated consistent outstanding performance. Pantalone has been at UTIA for twenty-six years and oversees the internationally recognized soybean breeding and genetics program.





Ownley

### Faculty Named Chancellor's Professors

**Bonnie Ownley**, professor, graduate director, and assistant head of the Department of Entomology and Plant Pathology, and **David Anderson**, associate dean for research and graduate studies in the College of Veterinary Medicine, were named UT Knoxville Chancellor's Professors. Honorees receive a research stipend and meet throughout the year with campus leaders.



Anderson



Tobias



Ng



Lane

### National Veterinary Honors

In a first for the College of Veterinary Medicine, three faculty have received national awards from the American Veterinary Medical Association (AVMA). **David Anderson** was named the recipient of the 2024 AVMA Lifetime Excellence in Research Award, **Karen Tobias** was recognized with the 2024 AVMA Clinical Research Award, and **Zenithson Ng** received the 2024 Bustad Companion Animal Veterinarian of the Year Award. In addition, **India Lane**, associate dean for academic and student affairs, won the 2024 Billy E. Hooper Award for Distinguished Service from the American Association of Veterinary Medical Colleges. Lane has helped transform academic veterinary medical education not only at the college but throughout the profession.

# LOOKING AHEAD TO 2025

**MIDDLE TENNESSEE**  
AgResearch and Education Center  
at Spring Hill

**UTAGRESEARCH**  
INSTITUTE OF AGRICULTURE  
THE UNIVERSITY OF TENNESSEE

## Growing Precision Agriculture

Precision agriculture helps row-crop farmers increase efficiency through better planting and harvest techniques, pest control, irrigation, and genetics. Now, researchers have turned to more efficient poultry, beef, and dairy production through precision livestock farming that focuses on the individual animal's health and well-being. Researchers are studying and evaluating the use of robotic milkers and supporting precision beef production and genetics. Two new facilities will move forward this research.

Groundbreaking of the next-generation smart broiler research facility at the Middle Tennessee AgResearch and Education Center at Spring Hill took place in May 2024 and construction continues in 2025. This facility includes four commercial-scale broiler houses and a research laboratory.

Planning continues for the 15,000-square-foot Center for Protein Innovation that will be located at the East Tennessee AgResearch and Education Center, Blount Unit, near the UT Knoxville campus. Research and training there will focus on meat processing, meat quality and safety, and meat products development.

## New Hires for Herbert and Extension

Dave White has been named dean of the Herbert College of Agriculture. White is responsible for the comprehensive administration of the teaching component of undergraduate and graduate education in the fields of agriculture and natural resources. The search process for the dean of UT Extension started with listening sessions across the state, and candidates will be assembled for interviews in 2025.

## New PhD Program

The Herbert College of Agriculture will offer Tennessee's first PhD program in agricultural leadership, education and communications. With both online and on-campus options, this program is designed to tackle complex issues and prepare the next generation of leaders. Applications open in spring 2025.





UT Extension Hickman County Director Donna Bradley, right, worked with Centerville Mayor Gary Jacob, second from the right, to make the city's park pavilion part of the "Everywhere You Look, UT" mural campaign. On the left are Troy Dugger, program coordinator for the UT Center for Profitable Agriculture, and Holden Cornett, Hickman County agriculture and natural resources agent. Learn more at [everywhere.tennessee.edu](http://everywhere.tennessee.edu).

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