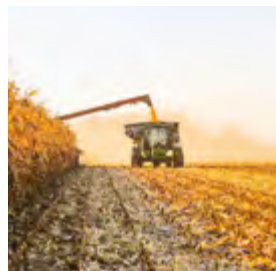


RISING TO THE CHALLENGE



Contents

- 3** Dean's Letter
- 4** Vision and Mission
- 6** Fiscal Summary
- 7** UT AgResearch Personnel and Expertise
- 8** Research Successes and Priorities
- 10** Our Bold New Building Opens
- 12** Upgrading Our Equipment
- 14** Rolling Toward a Circular Bioeconomy
- 16** Partners Across the State, Nation, and Globe
- 20** Not a Poem, Rather a Registry
- 23** Constructing Perfect Pitches
- 24** Using Plants as "Devices"
- 25** Field Days
- 27** Together is Better
- 28** Noteworthy Awards and Honors
- 30** 2024 New Hires



Colleagues, Friends, and Supporters of UT AgResearch,

As I look back on 2024, and also on my first five years with the University of Tennessee Institute of Agriculture and UT AgResearch, I marvel at how far we have come together. From 2020 to 2024 sponsored programs have grown an astounding 43 percent and our overall budget is up 22.5 percent. The total number of faculty has also grown by 3.4 percent, and more are expected to join our ranks in 2025.

The work has been challenging but rewarding, and the people and projects have been inspiring and impactful. I have encouraged everyone with UT AgResearch to dream big, and we have. Our successes have resulted in transformative upgrades to equipment and facilities, innovative proposals and collaborations for improving food taste and shelf life, growing microgreens in trucking trailers and outer space, leading research for FIFA 2026 World Cup pitches across North America, a circular bioeconomy for the Southeast, and broader collaborations across commodity groups and industrial or business interests like hops for craft brewers and oak for aging whiskey—just to name a few of the efforts.

Individual successes throughout 2024 are the focus of this report, but, when combined, these successes and the collective efforts of the last five years show how UT AgResearch is rising to meet the challenge of the modern land-grant university: to educate, to discover, and to share those discoveries for the benefit of society.

It has been my immense pleasure and incredible honor to serve as dean and director of UT AgResearch for these past five years, and I look forward to even more successes as we work together to find more **Real. Life. Solutions.**

Hongwei Xin
Dean and Director, UT AgResearch
University of Tennessee Institute of Agriculture

OUR VISION & MISSION

The University of Tennessee, including the UT Institute of Agriculture, is the state's 1862 land grant institution. Our charge is to provide postsecondary education to those seeking degrees, farmers, ranchers, and those seeking knowledge about agricultural and natural resources through research and outreach. While UT AgResearch still serves those traditional audiences, today's land grant mission has expanded to address basic and applied science to improve the quality of life for urban and rural families and communities, to improve environmental and animal health and well being, and to support sustainable business models focused on agriculture and natural resources inputs.

10 AgResearch and Education Centers

that represent the state's diverse agricultural and natural resource production as well as its soils, topographies, and climate

879 research faculty, staff, and graduate students

39,000-plus acres conducting more than **1,000** field trials annually

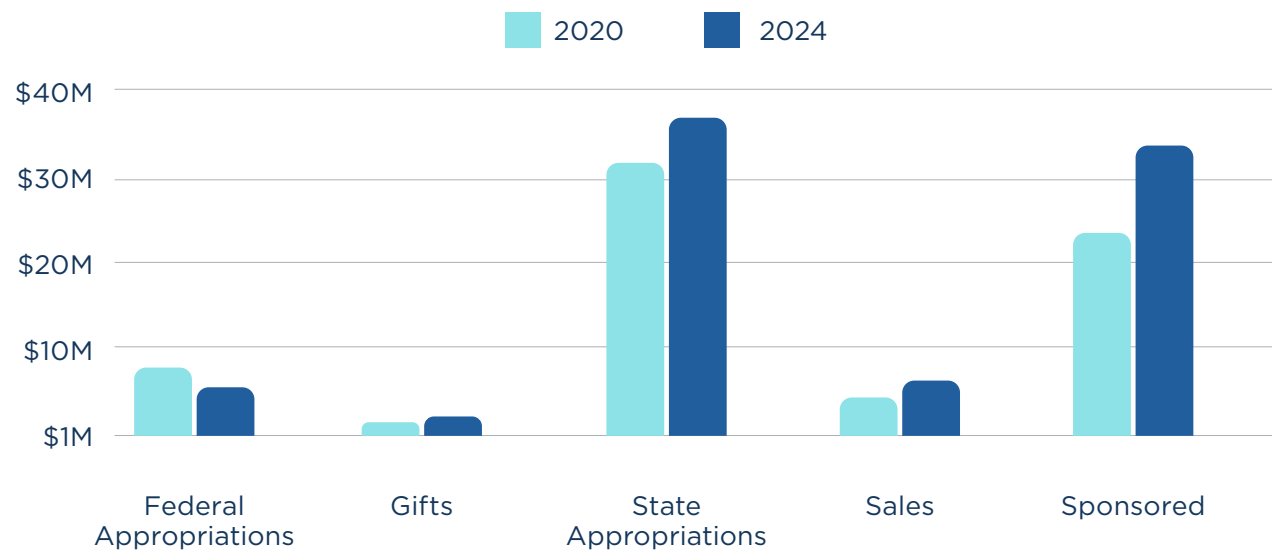
Hands-on experiential learning opportunities for students and practitioners

Annual field days across the state demonstrating **Real. Life. Solutions.** to farmers, land managers, citizens, and allied industries

Fiscal Summary

Fiscal year 2024 continued the five-year upward trend of fiscal improvements for the UT AgResearch budget. Federal and state appropriations, publicly and privately funded research grants and contracts, gifts, endowments, and sales of commodities produced on the AgResearch and Education Centers totaled **\$83,645,338**. That's an increase of 22.5 percent since the formal annual report tradition was revitalized in 2020.

Not surprisingly, over that period, UT AgResearch scientists have increased their success in garnering external funding. **From 2020 to 2024 sponsored programs have grown an outstanding 43 percent**, from \$23,186,680 to \$33,198,996. This is a clear indication that UT AgResearch is contributing to UT Knoxville's and the UT System's overall reputation.



FY20

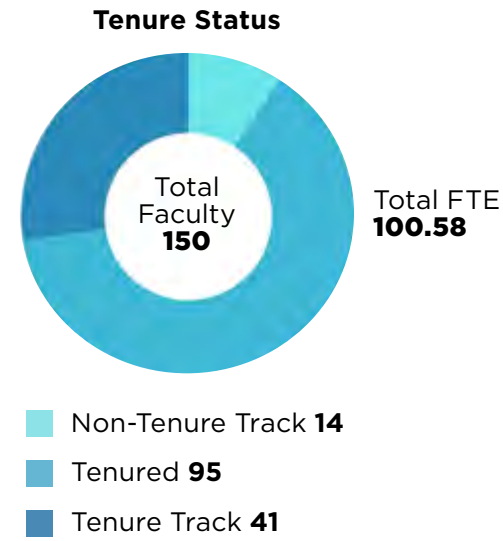
- FEDERAL APPROPRIATIONS**
\$7,928,329
- GIFTS**
\$1,576,081
- SALES**
\$4,357,394
- SPONSORED**
\$23,186,680
- STATE APPROPRIATIONS**
\$31,206,388
- TOTAL** \$68,254,872

FY24

- FEDERAL APPROPRIATIONS**
\$5,559,550
- GIFTS**
\$2,163,568
- SALES**
\$6,415,536
- SPONSORED**
\$33,198,996
- STATE APPROPRIATIONS**
\$36,307,688
- TOTAL** \$83,645,338

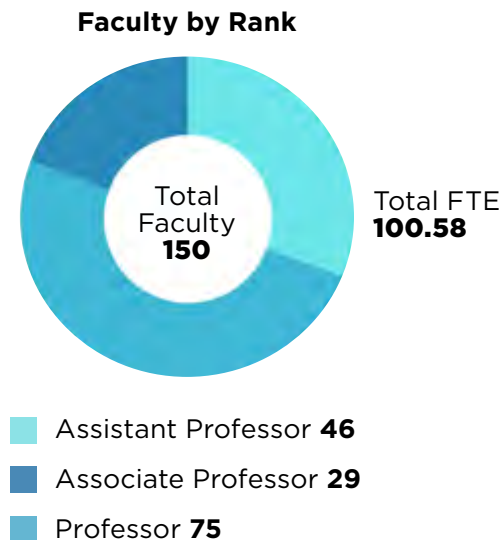
UT AgResearch Personnel and Expertise

Serving up Real. Life. Solutions. to the state's agricultural, forest, and ornamental industries, while improving the quality of rural life and conserving Tennessee's soil, water, air, and wildlife is a tall order. **To rise to this task, 879 PhD faculty, specialized staff, and gifted graduate students work to conduct basic and applied research across the state:**



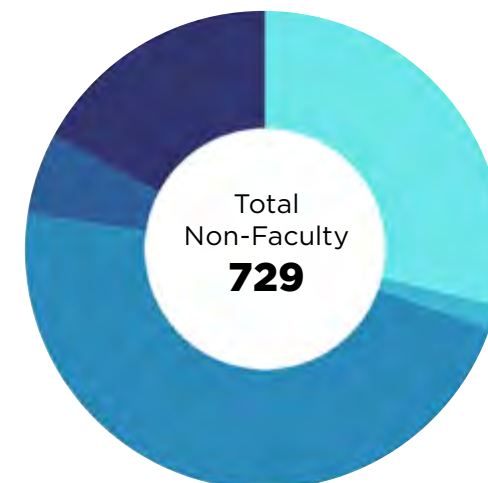
- **On the Institute of Agriculture campus in Knoxville**
- **In partnership with UT Knoxville and the Oak Ridge National Laboratory**
- **At ten AgResearch and Education Centers and on leased farm land**

Our programs include seven departments, one school, and multiple centers. Some of the research topics include:



- **Cattle genomics**
- **Precision livestock farming**
- **Forest and grasslands management**
- **One Health**
- **Food quality and security**
- **Biomass-based circular bioeconomy for manufacturing, construction, and packaging**
- **Climate-smart row crop, forage, and fiber production**

Economic development is also at the forefront of our efforts, including working to develop a viable circular bioeconomy for the state and region.



AgResearch Non-faculty Personnel/Professionals/Students as of September 16, 2024

- Grad Research Assistant **210**
- Grad Teaching Assistant **12**
- Other Research Professionals **342**
- Postdoctoral Research Associates **40**
- Graduate Students Otherwise Funded **125**

Research Successes & Priorities

Each year UT AgResearch scientists make classroom advances and conduct hundreds of experiments in laboratories, fields, forests, and streams. Often the work involves testing the ideas of students, industry or government partners. Most research is performed in Tennessee, though some research is spread across the nation and globe. While some of our research is administrative in nature, all of our research promotes the expansion of basic and applied science for the betterment of society.

Featured in the following pages are an assortment of projects representative of our 2024 efforts.

Alhagie K. Cham, postdoctoral researcher, prepares a sample for electrophoresis in the Pathogen and Pest Lab inside the Agriculture and Natural Resources Building on July 9, 2024. Photo by Steven Bridges/University of Tennessee, Knoxville.



Our **Bold** New Building Opens

The University of Tennessee Institute of Agriculture celebrated the opening of the new Agriculture and Natural Resources Building in August. A hub for students, faculty, and staff, its mission-centric name reflects its integral role in supporting teaching, research, and outreach across multiple departments.

The building's dramatic entrance features glass and metal panels, limestone, and boulders from Crab Orchard, Tennessee. The two-and-a-half-story "living room" space facilitates seamless movement between a 500-seat auditorium, three large classrooms, and, in the future, the Orange Acres Café, which will offer fresh-cooked meals including UT AgResearch farm-to-table beef.

The five-story structure spans 157,000

gross square feet. A living green roof supports research with trees and landscaped berms while providing event space. Passageways link each level to the Plant Biotechnology Building with a new outdoor classroom connecting them. Instructional spaces include classrooms dedicated to the College of Veterinary Medicine, which aid in expanding enrollment goals supported by Tennessee legislators.

Two UT construction science graduates contributed to the facility's development using advanced building information modeling techniques learned during their studies, which is a perfect example of turning classroom knowledge into real-world impact at the university.

The Basics at a Glance

- 66 Graduate Assistant and Postdoctoral Spaces
- 22 Research Wet Labs
- 48 Faculty Offices
- 4 Teaching Labs
- 69 Staff Offices
- 14 Classrooms

Disciplines Represented

- Smith Center for International Sustainable Agriculture
- Department of Plant Sciences
- Department of Entomology and Plant Pathology
- School of Natural Resources
- Department of Biosystems Engineering and Soil Science

Sustainable Design

The building incorporates eco friendly materials and energy efficient systems that emphasize sustainability, reduce environmental impact, and serve as a living laboratory for studying sustainable practices in construction and resource management.



Advanced Research Labs

Modern labs enable both basic and applied research in plant sciences, entomology, soil science, and more, facilitating studies that address pressing agricultural challenges.



Interdisciplinary Collaboration Spaces

Shared spaces encourage cross pollination of ideas among researchers from various disciplines, fostering innovative solutions to complex problems facing agriculture today.



Upgrading Our Equipment

Courtesy of funds from the American Rescue Plan, UT AgResearch has been busy upgrading capabilities with new equipment that models today's farming methods. One hundred four pieces of field research equipment have been acquired, and most

have been placed in operation and are already positively impacting the efficiency and scope of field research and data collection across all ten AgResearch and Education Centers.

At the West Tennessee AgResearch and Education Center alone, the funds enabled these acquisitions:

- **A state-of-the-art research plot combine to improve harvesting.**
- **Two plot planters with geographic information system computer guidance and precision seed placement technology to provide insight into how row spacing, plant populations, and other factors impact crop yield.**
- **A new lateral irrigation system with precision water placement capabilities that allows teams to analyze how irrigation can improve crop production while maximizing water use efficiency. This system will also help protect valuable on-site research in the event of severe drought during the growing season.**

American Rescue Plan funds also provided for multiple construction projects at the West Tennessee Center, including:

- **A new horticulture headhouse to support greenhouses and research at the UT Gardens, Jackson.**
- **A duplex for housing graduate students and visiting scientists.**
- **Two equipment sheds to store new machinery.**
- **An additional research greenhouse to study row crop pests and pesticide resistance in a controlled environment.**
- **Renovations to existing laboratories and housing.**

These additions, and similar ongoing upgrades across the state, will continue to enhance the research capabilities and reputation of UT AgResearch, improving the procurement of grants and the recruitment of new faculty and students to sustain on-site research for years to come.

Transforming Our Infrastructure

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. This modern facility will consist of four commercial scale broiler houses, a research laboratory, and relevant auxiliary components. The facility will be used to conduct problem solving research, training of future workforce, and demonstration of technologies for broiler industry producers and allied industries in Tennessee and beyond.

Planning continues to construct a state of the art 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. The facility will be used for workforce training, student experiential learning, and cutting edge research related to meat processing, meat quality and safety, and meat products development.

Rolling Toward a Circular Bioeconomy

UT AgResearch scientists are among the innovators working to develop sustainable alternatives for petroleum-based inputs used in manufacturing and industrial applications. In 2024, they made some significant advances in terms of partnerships and funding.

In early 2024, researchers with the Center for Renewable Carbon, Department of Agricultural and Resource Economics, and UT Knoxville faculty—all led by the center's Niki Labbé—partnered with HudsonAlpha Institute for Biotechnology, Auburn University, and other regional collaborators to spearhead a National Science Foundation (NSF) regional innovation engine. The partners 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. The group was among a select few invited to submit an additional proposal in 2025 for a larger \$160 million effort.

In a second, parallel effort, the UT-Oak Ridge Innovation Institute will invest \$20 million so UT AgResearch scientists along with researchers at UT Knoxville and



Niki Labbé



Erin Webb

Oak Ridge National Laboratory (ORNL) can leverage their strengths to create a circular bioeconomy systems testbed. The group will capitalize on emerging science to produce materials from sustainable carbon sources, pioneering the economic shift from manufacturers using petroleum-based inputs toward using low-energy and low-carbon-intensity biobased inputs. Erin Webb, a Herbert College of Agriculture graduate and lead for ORNL's Bioresource

Science and Engineering Group, and Niki Labbé will lead this effort. The program will bring twenty new scientists and twenty-five PhD students to the partner institutions, forming a solid foundation of an innovative research team.

A \$20 million investment will establish UT and ORNL as national leaders in circular bioeconomy research, reduce industry reliance on petroleum and environmentally costly fibers, support rural communities and regional industry in an environmentally sustainable way, and expand the opportunities for high-paying jobs in rural areas.



PhD student Yang Li looks at the data as a high school student drops poplar sawdust samples into a particle-sized 3D image analyzer in the Bioenergy and Biofuels Lab on May 8, 2024. Photo by Steven Bridges/University of Tennessee, Knoxville.

Partners Across the State, Nation, and Globe

Research does not exist in a vacuum. Scientists work to find solutions to challenges faced by all facets of society. In 2024, UT AgResearch is proud to have partnered with industry, government, community and commodity organizations to provide basic answers to scientific inquiries and Real. Life. Solutions. in teaching, research, and outreach for Tennessee, the nation, and the world. Our collaborators and funding organizations include:

- Tennessee Government and Organizations
- Federal Government and National Organizations
- Global Organizations and Efforts Industries

Across the region, UT AgResearch efforts support state and local governments, community groups, and industries.

The USPOULTRY Foundation's Industrial Education Recruitment Funding Program supported efforts by the Department of Animal Science to attract high school students to its poultry program, as well as enable current students to attend the International Production and Processing Expo (IPPE) to connect with potential employers in the poultry industry.

The UT Center for Renewable Carbon, in partnership with the Southeastern Regional Sun Grant Center, hosted the seventh international conference on Frontiers in Biorefining. The meeting provided a unique forum for scientists and engineers to discuss recent advances, as well as information gaps relevant to integrated biorefining and the circular bioeconomy. The discussions have consistently led to new collaborations and innovative projects.

With planning now complete, the Southern Forest Inventory and Analysis program of the USDA Forest Service is moving its operations to the new Innovation South Building on UT's Research Park at Cherokee Farm in January 2025. The program surveys and analyzes data on forest conditions and timber product output in the thirteen southern states. Fifty Forest Service employees will work on campus and enhance ongoing collaborations with the School of Natural Resources on timber product data and the school's new Data Science Institute, high precision GPS processing, project management, data visualization/web tool development, and opportunities for students.



UTIA is dedicated to creating Real. Life. Solutions. for the state's agricultural producers and natural resource based industries, so a brewery partnership is a natural fit with the mission. In 2024 Yee Haw Brewing Company announced a new partnership with UTIA. Yee Haw Brewing has crafted Hopyard Pilsner, a UTIA collaboration beer. The release batch of Hopyard Pilsner features hops grown at the newly developed UT Hopyard located at the East Tennessee AgResearch and Education Center Plant Sciences Unit, signaling a successful harvest from UT students and researchers. Yee Haw Brewing is committed to using local ingredients as they become in season and available. Hopyard Pilsner is available on draft at Yee Haw Knoxville, and a portion of the proceeds will directly support UTIA hops production research.





Image courtesy of Wolf River Conservancy

Roughly 5,500 acres of land managed by the Ames AgResearch and Education Center on behalf of the Hobart Ames Foundation is slated to be transformed into Tennessee’s newest state forest in late 2024. The land includes the longest continuous research tree nursery in the country and a major part of the upper fork of the Wolf River, which feeds the aquifer system supplying water to 2.8 million people downstream in Memphis and the surrounding counties. It’s also home to several species prioritized by Tennessee for protection and features an “outstanding” forest habitat. In a unique agreement with the Tennessee Division of Forestry, once the land transfer from the foundation to the state is complete, the land will be known as the Wolf River State Forest, and UT AgResearch will manage the property alongside the state. The longstanding tree nursery project will continue—as will its many benefits to the state’s forest ecosystems and wildlife as well as the vital forest products industry—and the region’s unique groundwater water filtering system will be preserved for perpetuity. Many potential future public recreational and educational opportunities are being discussed, including hunting, river access, hiking, and continued archaeological research on more than forty historical and culturally important sites on the property.

UT AgResearch on the World Stage

The Food, Energy, and Water for Sustainable Urban Systems (FEWSUS) 2024 International Symposium on “Food-Energy-Water Bioeconomies for Net-Zero Transition,” was held in March in Knoxville. Invited Scientists and industry leaders from sixteen countries and seven US states attended. The symposium explored the contributions of the food-energy-water nexus and circularity to net-zero economy systems that make both urban and rural communities healthy and resilient to the changes of climate, demography, and the degradation of natural resources.

UT AgResearch Dean Hongwei Xin delivered a keynote speech at the European Conference on Precision Livestock Farming in Bologna, Italy. The event, themed “Animal Welfare-Sustainability Nexus: Feeding the World and Protecting the Planet,” was attended by more than 500 participants from more than thirty countries. Xin emphasized the integration of advanced technologies like AI to improve animal welfare and promote sustainable farming practices, highlighting the need for global collaboration to address food security while reducing environmental impact. Shawn Hawkins, professor in biosystems engineering also attended.

UTIA led by the Department of Animal Science hosted the Beef Improvement Federation Research Symposium and Convention. The premier event in beef cattle genetic selection brought together 500 academia, breed associations, and industry leaders to help set new standards and best management practices for the beef cattle sector.

More than 200 people from across the US and eleven countries attended the International Oak Symposium hosted by the UT School of Natural Resources and the US Department of Agriculture Forest Service. Current issues and research on the management and ecology of economically and environmentally vital oak species and forests were explored.

The Smith Center Agriculture Leaders of Tomorrow (ALOFT) Farmer-to-Farmer team, conducted training with the ALOFT implementing partner staff from Cambodia, Thailand, and the Philippines.

David White is a voting member of the World Health Organization (WHO) Advisory Group that recently developed and published the WHO Medically Important Antimicrobial List. The list is intended to serve as a reference tool to support decision-making by national regulators and policymakers in ministries of health and agriculture; authorities responsible for regulating, monitoring, and assuring the responsible and prudent use of antimicrobials.

Not a Poem, Rather a Registry

Writer and poet Joyce Kilmer would likely approve. In January 2024, the School of Natural Resources was announced as the new home of the National Champion Tree Program, which identifies and records the largest tree of individual species across the US. The American Forests organization moved the eighty-three year old program to UTIA to establish a nationwide laboratory to study forestry and trees and to benefit from research capabilities found at our public land grant university.

The program worked with state coordinators, government agencies, universities, and conservation groups to

verify that some 561 former champion trees still stand. Plans are to update the previous registry of champion trees by the end of the year. Champion trees are identified based on a point system including the trunk circumference, height, and average crown spread. The program will begin accepting nominations for new champion trees in 2025. Along with programs to educate the public about tree ecosystems and their long ranging benefits, the National Champion Tree Program also aims to preserve genetics from champion trees. The program's vision can be found online at nationalchampiontree.org.



Constructing Perfect Pitches

Not long after the sixteen host cities for the 2026 FIFA World Cup were announced in June 2022, FIFA's Pitch Management Team implemented a five-year research and development project to produce the optimum pitches for the world's largest and most-viewed sporting event. FIFA is collaborating with the University of Tennessee and Michigan State University (MSU) to deliver the largest ever sports turf research program specifically for football (soccer). Both the UT and MSU turf programs specialize in pitch management and player welfare.

In April 2024, a FIFA delegation visited the UT FIFA Pitch Research Field Day to inspect the state-of-the-art shade house constructed to replicate conditions inside a domed stadium. More than 200 turf

specialists were given the opportunity to inspect the UT facility and learn more about the FIFA Research Project.

MSU conducted a similar field day in September at their 23,000-square-foot asphalt pad installed to replicate the concept of laying turf on stadium floors. John Sorochan, distinguished professor of turf grass science and principal investigator of the FIFA Research Project, explained that the research and development could lead to environmental and cost benefits. "Sustainability is kind of a unique component to this," said Sorochan. "FIFA is supporting cutting-edge sports turf research that is not only going to benefit the football pitches for the FIFA World Cup in 2026 but will have long-term impacts for sports fields all over the world."

Using Plants as “Devices”

Researchers within the UT Center for Agricultural Synthetic Biology have secured a \$12 million Defense Advanced Research Projects Agency (DARPA) contract to bioengineer plant-microbe communities to clean soil contaminated by trinitrotoluene (TNT). This four-year project, conducted in collaboration with the Massachusetts Institute of Technology and Penn State University, is part of DARPA’s Ceres program, which seeks innovative soil remediation solutions without the high costs of current machine-based methods.

Teams will bioengineer switchgrass, a native plant species, and its associated microbes to work together as “beacons” and “cleaners.” Beacons will act as natural sensors, turning red when TNT is present and green when the soil is no longer contaminated. Cleaners, however, will physically break down explosives, restoring damaged ecosystems without extensive involvement by on-site personnel.

Neal Stewart and Scott Lenaghan, the center’s co-directors, will lead the project, with Jennifer DeBruyn, professor in the UT Department of Biosystems Engineering and Soil Science, overseeing the microbial ecology research. The microbial synthetic biology research will be spearheaded by Chris Voigt at MIT and Howard Salis at Penn State, who will engineer microbes with traits necessary for reporting and eliminating explosives.

By utilizing plants and their relationship with soil-based microbes, biological “devices” could provide further opportunities for ecological restoration and practical functionality as UT AgResearch continues to be at the forefront of this emerging field.



Scott Lenaghan (left), Neal Stewart (center), and Jennifer DeBruyn (right) are working alongside researchers from across the nation to develop natural solutions for improving soil health.

Field Days

In 2024, UT AgResearch hosted more than twenty in person and online field days attended by upward of 37,000 agricultural producers, industry representatives, government officials, and more from across the world.

This year’s events included the highly anticipated thirty-third Milan No Till Field Day held at the AgResearch and Education Center at Milan on July 25, 2024. UTIA faculty members led fifteen tours on topics related to soil health and climate smart row crop agriculture, spotlighting the latest production strategies, industry regulations, research trial results, pest management solutions, and more.

Milan No Till Field Day first began in

1981 to promote the benefits of no till agriculture, and today more than 95 percent of row crop acres in Tennessee are farmed using some form of conservation tillage. In 2024, the event attracted more than 1,250 attendees from forty-four Tennessee counties, twelve states, and six African countries.

Additional field days were held at AgResearch and Education Centers and partner organizations statewide to share UTIA’s ongoing developments in climate smart agriculture, precision livestock, forestry management, natural resource conservation, equine science, residential and commercial horticulture, and more.





&



Together is Better

The year 2024 marked the second year of joint research summits between Tennessee's two land-grant universities. UT and Tennessee State University (TSU) researchers and administrators met twice, in March and August. Discussions centered on research synergies and how to meet grand challenges faced in Tennessee and beyond. Faculty in plant sciences, entomology, natural resources, and environmental sciences from both institutions provided summaries of research programs and joint collaborations. Administrators participating included TSU College of Agriculture Dean Chandra Reddy and UT System President Randy Boyd, UTIA Senior Vice Chancellor and Senior Vice President Keith Carver, and UT AgResearch Dean Hongwei Xin.

Xin also spoke during the opening session of the biennial Association of 1890 Research Directors Symposium in Nashville. With an attendance of almost 1,600, the conference offered a valuable chance to explore new collaboration prospects with our 1890 land-grant counterparts.



PhD student Conner Pope works on the CO₂-to-jet fuel reactor in the Bioenergy and Biofuels Lab on the Ag campus on May 8, 2024. Photo by Steven Bridges/University of Tennessee, Knoxville.

Noteworthy Awards and Honors for 2024

Soybean Geneticist Named 2024 Institute Professor

Vince Pantalone, professor in the Department of Plant Sciences, received the highest honor awarded annually by UTIA, the Charles E. Wharton Institute Professor Award. This honor recognizes a faculty member who has served at the rank of professor for a period of at least seven years and has demonstrated consistent outstanding performance over this period. The award recognizes excellence in teaching, research and extension or clinical practice. Leadership and reputation through service at the national or international levels is also expected. Pantalone has served at the Institute for the past twenty-six years, seventeen of which have been at the rank of professor. A plant breeder and geneticist, he oversees UTIA's soybean breeding and genetics program that uses a combination of classical plant breeding and DNA laboratory technologies to develop high-yielding cultivars that are resistant to pests and adapted to the climate, soil, and cultural practices of Tennessee, the Mid-South, and the Southeast.

Department of Agricultural Leadership, Education and Communications

Jamie Greig, assistant professor, was elected to serve a three-year term on the *Journal of Applied Communications* board.

Department of Agricultural and Resource Economics

Andrew Muhammad, professor, was elected president of the Southern Agricultural Economics Association and received the UT Smith Center for International Sustainable Agriculture Faculty Global Excellence Award.

Alicia Rihn, assistant professor, received the UT AgResearch Dean's Grantsmanship Award.

Edward Yu, professor, was appointed to the Environmental Issues in Aviation Committee under the Transportation Research Board of the National Academy of Sciences, Engineering, and Medicine.

Karen DeLong, associate professor, received the 2024 UT Athletics Professor of Excellence Award.

Aaron Staples, assistant professor, was selected as the 2024/2025 Anderson Center for Entrepreneurship and Innovation Research Fellow.

Department of Animal Science

Jun Lin, professor, received the UTIA J.E. Moss Achievement Award.

Daniel J. Mathew, assistant professor, was named the 2024 Rising Star by the Society for the Study of Reproduction and received the Outstanding Early Career Animal Scientist Award—Education from the American Society of Animal Science Southern Section.

Kyle McLean was promoted to associate professor with tenure.

Phillip Myer, associate professor, received the North American Colleges and Teachers of Agriculture (NACTA) Teaching Award of Merit; the UT Knoxville Graduate Student Senate Outstanding Graduate Research Mentor Award; and was chosen for the W.S. Overton Faculty Merit Award from the Herbert College of Agriculture.

Rebecca Payton, research associate, received the UT AgResearch Outstanding Professional Staff Award.

Yang Zhao, associate professor, is one of the twenty-one research leaders chosen from the University of Tennessee, Knoxville, to join the 2024-2025 cohort of the Office of Research, Impact and Economic Development's Expanding Horizons Program.

Lannett Edwards, professor, was awarded the UTIA E.R. "Prof" Lidvall Outstanding Teaching Award and the UTIA Webster Pendergrass Outstanding Service Award.

Neal Schrick, professor and department head, received the UT Beef and Forage Center Service Award.

Neal Schrick and **Lannett Edwards** received the University of Tennessee Research Foundation Innovation Patent award.

Department of Biosystems Engineering and Soil Science

Robert Burns, distinguished professor, was appointed by the US Secretary of Agriculture as one of the twenty-seven new members of the USDA Task Force on Agricultural Air Quality Research.

Doug Hayes, Charles E. Wharton Institute Professor, received the 2024 Surfactants and Detergents Division Distinguished Service Award from the American Oil Chemists' Society.

Sindhu Jagadamma, associate professor, received the Professional Promise in Research and Creative Achievement Award from the UT Office of Research, Innovation, and Economic Development; the UT AgResearch Dean's Grantsmanship Award; and was chosen to join the 2024-2025 cohort of the Office of Research, Impact and Economic Development's Expanding Horizons Program.

Jie Zhuang, professor, received the UT Knoxville Success in Multidisciplinary Research Award.

Department of Entomology and Plant Pathology

Rebecca Trout Fryxell was promoted to full professor.

Juan Luis Jurat-Fuentes, professor, received the UT AgResearch Research and Development Impact Award; was elected president of the Society for Invertebrate Pathology; and received the UT Smith Center for International Sustainable Agriculture UTIA Faculty Global Lifetime Achievement Award.

Bonnie Ownley, professor and assistant department head, received one of three University of Tennessee Alumni Association's Distinguished Service Professorship Awards and was also selected as the UT Chancellor's Professor.

Jennifer Chandler, research specialist III, received the UTIA Mildred Pendergrass Outstanding Service Award.

Department of Food Science

Jiajia Chen was promoted to associate professor with tenure.

Thomas Denes was promoted to associate professor with tenure.

Scott Lenaghan, associate professor, received the UT AgResearch Mid-Career Faculty Research Excellence Award and received the UT Research Foundation (UTRF) Innovation Licenses Technologies award.

Philipus Pangloli, research coordinator, received the UT AgResearch Outstanding Professional Staff Award.

Toni Wang, Charles E. Wharton Institute Professor, received the UT AgResearch Dean's Grantsmanship Award and the UTRF Innovation Patent award.

Tao Wu received tenure.

Qixin Zhong, professor, received the inaugural UT AgResearch Dean's Professor Award.

Department of Plant Sciences

Vince Pantalone, professor, received the UTIA Charles E. Wharton Institute Professor Award and the Outstanding Associate Editor Award for the Crop Science Society of America journal.

Derrick Stowell, UT Gardens program administrator, received an honorary lifetime membership at the American Horticulture Therapy Association's annual meeting for outstanding service to the professional organization of horticulture therapy.

Kellie Walters, assistant professor, received the Early Career: Research, Innovation, and Creativity

Award from the American Society of Horticultural Science and the UT AgResearch T.J. Whatley Distinguished Young Scientist Award.

Xinhua (Frank) Yin, professor, was selected as a 2024 American Society of Agronomy Fellow recipient.

Kim Brown, Extension specialist II, was named a Fellow by the American Association of Pesticide Safety Educators.

Jim Brosnan, professor; **Becky Bowling**, Extension specialist II; **Brandon Horvath**, professor; and **John Sorochan**, professor, received the National Excellence in Extension Team Award by the Extension Committee on Organization and Policy.

Larry Steckel, professor, received the UTIA B. Ray Thompson Sr. Outstanding Faculty Performance Award.

Mitchell Richmond, assistant professor, was elected as a member of the CORESTA Scientific Commission for the Agronomy and Leaf Integrity Study Group. CORESTA is the Cooperation Centre for Scientific Research Relative to Tobacco, founded in 1956.

Neal Stewart, professor and director, received the UTRF Innovation Licensed Technologies award.

Tarek Hewezi, professor, received the UTRF Innovation Patent award.

School of Natural Resources

David Harper, professor, received the UT Knoxville Undergraduate Research Mentor of the Year Award.

Niki Labbé, professor, received the 2024 UT System President's award and was named director of the UT Center for Renewable Carbon.

Alyssa Merka, communications specialist, received the UT AgResearch Outstanding Support Staff Award.

UT AgResearch Administration

Whitney Anderson, human resources consultant, received the UT Smith Center for International Sustainable Agriculture Outstanding Staff Global Engagement Award.

Blake Brown, director of the UT AgResearch and Education Center at Milan, received the 2024 Research Center Administrators Society Distinguished Service Award.

Hongwei Xin, dean and director, was selected for the 2024-2025 Chancellor's Leadership Academy.

2024 New Faculty And Leadership Hires



Matt Backus

- Director
- Ames AgResearch and Education Center
- 100 percent administration



Chris Boyer

- Department Head
- Department of Agricultural and Resource Economics
- 100 percent administration



Kelsey Coffman

- Assistant Professor
- Department of Entomology and Plant Pathology
- 75 percent research/25 percent teaching
- Insect-Microbe Interactions



Tyler Gifford

- Assistant Professor
- School of Natural Resources
- 45 percent research/55 percent teaching
- Forest Biometrics



Jensen Hayter

- Assistant Professor
- Department of Entomology and Plant Pathology
- 25 percent research/75 percent extension
- Plant pathology of important crops in Tennessee



Lisa Izzo

- Assistant Professor
- School of Natural Resources
- 60 percent research/40 percent teaching
- Fisheries and Aquatic Resources



Gayan Kariyawasam

- Assistant Professor
- Department of Entomology and Plant Pathology
- 75 percent research/25 percent teaching
- Plant Pathosystems



Dale Manning

- Associate Professor Cluster Hire
- Baker School of Public Policy and Public Affairs/Department of Agricultural and Resource Economics
- 30 percent research/15 percent teaching/55 percent Baker School
- Climate Smart Agriculture and Forestry



Sathishkumar Samiappan

- Associate Professor
- Department of Biosystems Engineering and Soil Science
- 75 percent research/25 percent teaching
- Artificial Intelligence



Gautam Shirsekar

- Assistant Professor
- Department of Entomology and Plant Pathology
- 75 percent research/25 percent teaching
- Plant Pathology and Bioinformatics



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