

# econogram

Newsletter for UT  
Agricultural & Resource Economics  
Winter 2019

**ARE ALUM ASSISTS  
WORLD-CLASS**

**RESEARCHERS AT ORNL**

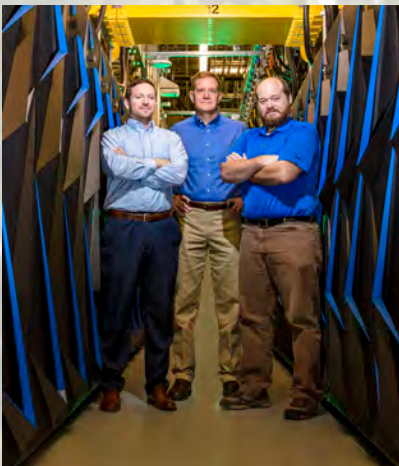


# econogram



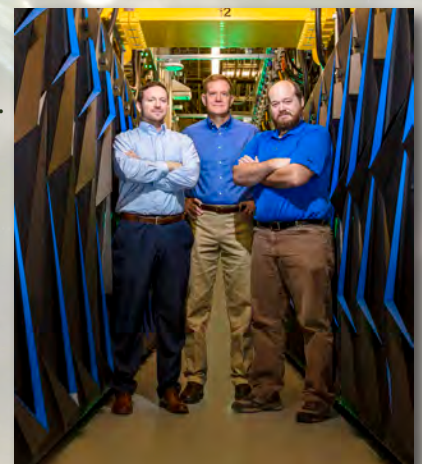
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## ON THE COVER:

ARE alum Tom Brady, Jr. assists world-class researchers at ORNL.



## ECONOGRAM COMMITTEE

**Becky Bowling**  
**Tina M. Johnson**



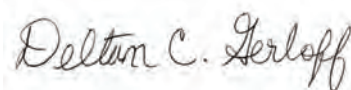


## Note from the Department Head

This is a special year for our department, as we celebrate the 100<sup>th</sup> anniversary of our founding. It is appropriate to both reflect on our past and project the possibilities for our future. How can success be measured for a department? Most likely it comes from people who once called this department home, as a student, staff, or faculty member. Departmental success is simply a compilation of individual successes over time from those who benefited from and contributed to its existence. So we celebrate our past with those who were a part of it.

The future seems bright—all you have to do is read through this latest Econogram. It is brimming with accomplishments of our current departmental personnel and students. The metrics by which departments are currently evaluated: student numbers; Extension educational programs; grantsmanship; and peer-reviewed publications are stable or increasing, and most importantly, relevant to the needs of Tennesseans. These accomplishments are possible because of the hard work done every day by our faculty, staff, and graduate students.

I appreciate the support our alumni and friends continue to give us. Thank You!



Delton C. Gerloff

# Garland Receives NACAA Service to America/World Agriculture Award



*Clark Garland (center) received the distinguished National Association of County Agricultural Agents (NACAA) Service to American/World Agriculture Award. Presenting were 2018 NACAA President Alan Galloway (left) and David Perrin, who nominated Garland.*

Department of Agricultural and Resource Economics professor emeritus Clark Garland received the distinguished National Association of County Agricultural Agents (NACAA) Service to American/World Agriculture Award in recognition of his immense contributions to agriculture. Garland was presented with the award at NACAA's 103<sup>rd</sup> annual convention and professional improvement conference that was held in Chattanooga, Tennessee.

"It's difficult to estimate Dr. Garland's impact on agriculture," said Delton Gerloff, department head of Agricultural and Resource Economics. "It is likely best measured one farm family at a time. His vision and follow-through in the farm crisis of the 1980s were nothing less than brilliant. Farm families' financial, mental, and emotional health were

strengthened and sometimes saved by his work—either directly by his analysis or indirectly by those he trained in the MANAGE educational program."

Garland began his university career more than forty-eight years ago, working as an agricultural economist in the Department of Agricultural and Resource Economics. He has provided exemplary leadership and conducted farm and financial management education programs throughout Tennessee. His signature career achievement is the design, development, and leadership of the highly successful MANAGE program, which employs farm management specialists across the state who work alongside Extension agents to help farm families evaluate their individual situation and assist them in improving their quality of life. More than 19,000 farm families have greatly benefited from the program,




which is recognized as among the strongest and most effective in the nation.

In receiving the award, Garland said, “I share this award with Tennessee area farm management specialists and Extension agents. We did this work together.”

With a sustained record of external funding, Garland has served as principal investigator on forty-five grants and contracts, totaling \$4.6 million to develop, deliver, and improve Extension programs. He also collaborated on seventeen additional projects, with \$2.2 million awarded.

Retirement has not hindered his devotion to agriculture, as he continues coordinating Tennessee’s

Federal Income Tax Seminars, in cooperation with Tennessee Farm Bureau and the Internal Revenue Service. Last year, seminar participants completed more than 325,000 tax returns.

Garland has received numerous awards throughout his career including NACAA’s Distinguished Service Award; the Association of Public and Land-Grant Universities Southern Region National Award for Excellence in Extension; the Superior Service Award from Tennessee Valley Region Association of Demonstration Farm Families; and the University of Tennessee’s B. Ray Thompson Sr. Outstanding Faculty Performance Award and the Webster Pendergrass Award for Outstanding Service. 

## Faculty Provide Instruction at Blount County Farm Tour Day



*Karen DeLong and Emmitt Rawls at the East Tennessee AgResearch and Education Center, instructing fourth graders at the Blount County Farm Tour Day, which is sponsored by Farm Bureau.*

# *Muhammad Serves As One of Only Two University Representatives*

**A**ndrew Muhammad, trade expert and Blasingame Chair of Excellence at the University of Tennessee Institute of Agriculture (UTIA), has been appointed as one of only two US university representatives to serve on the executive committee of the International Agricultural Trade Research Consortium (IATRC).


The consortium serves as an international think tank of agricultural trade researchers and policy practitioners, with the executive committee at the helm to provide general direction and operation, including the management of task forces, research projects, and more.

“The International Agricultural Trade Research Consortium is the premiere organization for international trade policy, research, and related activities in the agricultural and applied economics profession,” said Muhammad. “Over the years, IATRC has played an important role in ensuring that international issues are at the forefront of the profession and maintaining global connections. I look forward to serving and representing UTIA on the executive committee.”

A noted strength of the consortium lies in the research capabilities of its members and the ability to utilize research results in policy

analysis and advice. Established in 1980 by six US agricultural economists, membership has now grown to approximately 200 economists from academia, government, and other research institutions in thirty-one countries.

The executive committee is currently comprised of a representative from each of the four core funding agencies (United States Department of Agriculture [USDA]/Economic Research Service, USDA/Foreign Agricultural Service, USDA/Office of the Chief Economist, and Agriculture and Agri-Food Canada) and three elected representatives (two for US universities and one for non-US universities or other organizations). Muhammad will serve a three-year appointment, 2019 through 2021.

Joining the faculty of UTIA's Department of Agricultural and Resource Economics in 2018, Muhammad assists the state and nation's agricultural decision makers in the evaluation of potential policies and programs dealing with agricultural commodities, food, and international trade, as well as advocating for state and regional agricultural opportunities. His current research focuses on agricultural trade and trade policy, effects of trade on developing countries, and global food demand. 

## Muhammad Appointed to Executive Committee for International Agricultural Trade Research Consortium





*Andrew Muhammad, trade expert and Blasingame Chair of Excellence at the University of Tennessee Institute of Agriculture, has been appointed as one of only two US university representatives to serve on the executive committee of the International Agricultural Trade Research Consortium.*



# ARE Provides Insight in Economic Report to Governor



*Researchers from the Department of Agricultural and Resource Economics contributed detailed analyses of Tennessee's agri-forestry industrial complex for inclusion in this year's economic report to the governor.*



# *Tennessee's Agri-forestry Industrial Complex Remains Strong*

**D**espite a year wrought with international trade conflicts, research from the University of Tennessee Institute of Agriculture indicates overall strength in the state's agri-forestry industrial complex. Detailed analyses from the Department of Agricultural and Resource Economics (ARE) are included in the 2019 Economic Report to the Governor of the State of Tennessee.

The agri-forestry industrial complex encompasses the supply chain from farm and forest to consumers of the end products and is a vital part of the state's economy. Accounting for multiplier effects, the complex adds \$81.8 billion to Tennessee's economy and accounts for more than 351,000 jobs.

The state's 65,900 farming operations occupy 10.8 million acres, approximately 40 percent of the state's nearly 27 million acres of land area. Tennessee ranks eleventh in the nation in number of farming operations.

Agriculture, with multiplier effects, accounts for 9 percent of the state's economy and generates \$57.6 billion in output, adding nearly 250,000 jobs, with 96,000 employed directly in agricultural production.

Commodities drawing the highest cash receipts are soybeans, followed by cattle and calves, broilers, then corn and cotton. The 2017 value of cash farm receipts from crops and livestock in Tennessee was more than \$3.53 billion, with \$1.41 billion from animals and \$2.13 billion from crops.

Despite increased meat production and the negative influence of trade issues, calf and feeder cattle prices in Tennessee through the first nine months of 2018 increased 5.7 percent and 3.6 percent, respectively, compared to the same time frame a year ago.

Tennessee's four largest row crops are corn, cotton, soybeans, and wheat. In 2018, the state's harvested acreage for row crops was comprised of 1.67 million acres of soybeans, 690,000 acres of corn, 360,000 acres of cotton, and 290,000 acres of wheat.

Trade restrictions/tariffs with China have a negative impact on the prices Tennessee producers receive for their commodities. Soybean prices are 22 percent below the five-year average, and forecasted exports indicate an \$800 million to \$21 billion decline, in large part due to weakening demand from China. However, government payments through the Market Facilitation Program will help stabilize producer incomes for 2018 through 2019.

The state experienced notable growth in farmers markets, community supported agriculture, wineries, agritourism, the green industry, and hemp production. Also, the value of shipments for food and beverage manufacturing rose again in 2016, as did the value of shipments from the forest products sector.

ARE researchers responsible for the agri-forestry analyses include Kimberly Jensen, Jamey Menard, Burton English, Andrew Griffith, Andrew Muhammad, David Hughes, Aaron Smith, Edward Yu, and Emily Greear.

The complete economic report to the governor is prepared by Matthew Murray and the Boyd Center for Business and Economic Research at UT's Haslam College of Business. The full report is available online. [E](#)



# TRADE AGREEMENT W

*Equal Mark*



Research from the University of Tennessee Institute of Agriculture indicates that a trade agreement with Japan is crucial for the US beef industry.



# WITH JAPAN IS CRUCIAL FOR US BEEF INDUSTRY

## *Market Access Needed to Compete with CPTPP Countries*

University of Tennessee Institute of Agriculture (UTIA) projections indicate that the signing of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) in March 2018 could disadvantage US beef exports to Japan, a stumbling block that US beef producers can ill afford.

Beef-exporting countries party to the trade agreement, such as Australia, New Zealand, Mexico, and Canada, will benefit from an immediate reduction and phase-down of tariffs from their current levels over a fifteen-year period. The US was once a CPTPP member, but in January 2017, President Donald Trump signed a memorandum officially withdrawing from the trade agreement.

Under the CPTPP, Japan agreed to significant tariff reductions on beef, with reductions from 38.5 percent to 9 percent for muscle cuts. Tariff reductions for select offal products will be phased out completely. Meanwhile, US beef will continue to face tariffs of 38.5 percent to 50 percent, as well as a global safeguard tariff of 50 percent when imports exceed a specified level. Understandably, the tariff advantage for CPTPP countries has raised concerns in the US beef industry about its future in Japan.

Although the US has free trade agreements with several CPTPP countries, it does not have one with Japan, which is the leading market for US beef exports. In 2017, US beef exports totaled \$7.3 billion, with Japan accounting for more than 25 percent of this total.

Projected import shifts due to tariff reductions are substantial. For chilled beef, lower tariffs appear to benefit Australian beef, at the expense of US beef. The projection range suggests that Australian beef could increase by as much as \$139 million, while US beef could decrease by as much as \$143 million. Although Canada, Mexico, and New Zealand also face lower tariffs, the projected increase for these countries is small at \$4 million. Australia also gains in the frozen beef market at \$162 million.

Prior to the bovine spongiform encephalopathy (BSE) ban in the early 2000s, US beef exports were comparable to, and at times exceeded, Australian

exports. Following the BSE ban, US beef exports declined 74.7 percent, taking the industry eight years to rebound. While US beef exports have since recovered, Australia now accounts for the greater share of Japanese beef imports.

The research indicates that CPTPP will result in considerable increases in Australian beef exports to Japan, largely at the expense of US beef. However, similar tariff reductions for US beef could eliminate these negative effects and even result in an increase in beef imports from both countries. If the US also received tariff reductions, the total benefit is \$287 million, which is the avoided export loss of \$70 million and the export gain of \$217 million. UTIA research indicates that market access for US beef in Japan is needed to counterbalance the effects of the CPTPP.

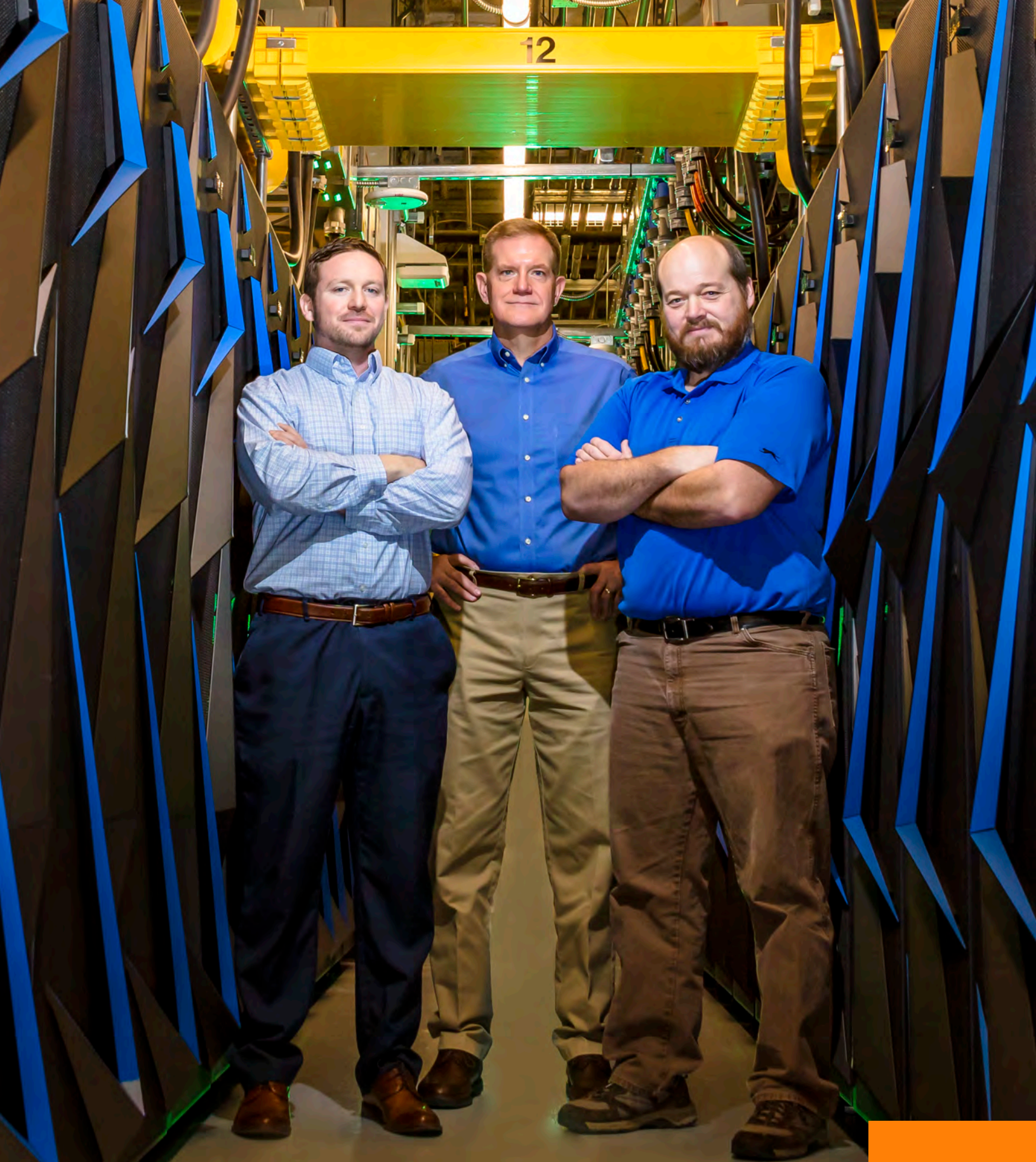
“As exporting countries, other than the US, aggressively pursue free trade agreements (FTAs), US agricultural sectors such as beef could be disadvantaged, if we stay out of the FTA game,” said UTIA trade expert and Blasingame Chair of Excellence Andrew Muhammad. “Overall, the report highlights why it is important for the US to stay engaged in international trade negotiations in order to maintain its competitive edge in global markets.”

The UTIA report, which was authored by Muhammad and his colleague Andrew Griffith, is available as UT Extension publication [W 656](#).

At the farm level, higher tariffs will likely cause a decline in US beef exports to Japan that could negatively impact returns to every segment of the industry, from the cow-calf producers to the packer. Alternatively, if the US is able to establish a trade agreement with Japan that is identical to competing countries, then returns at the farm level should be influenced positively.

Tennessee has consistently accounted for 1 percent of US beef and veal exports. UTIA projects that Tennessee’s beef industry stands to lose \$700,000 or gain \$2.17 million, depending on whether or not the US attains tariff reductions on par with CPTPP countries. [E](#)





*ARE alum Tom Bundy (center) supports basic and applied research in three divisions at Oak Ridge National Laboratory, including the National Center for Computational Sciences where the world's most powerful supercomputer—Summit—was recently launched. Bundy's contributions support the mission of those working directly with Summit: Operations Manager Stephen McNally (left) and Data Center Manager Paul Abston (right).*

*Photos provided courtesy of ORNL.*

ARE AN



## OAK RIDGE NATIONAL LABORATORY COMPUTING & COMPUTATIONAL SCIENCE DIRECTORATE

### **TOM BUNDY, JR.** *ARE MS '87*

**D**epartment of Agricultural and Resource Economics alum Tom Bundy, Jr. (ARE MS '87; BS in Agricultural Mechanization '81) describes his job at the Oak Ridge National Laboratory (ORNL) as a “dream job.” Serving as the quality manager in the Computing and Computational Science Directorate, he supports basic and applied research in three divisions, including the National Center for Computational Sciences where the world’s most powerful supercomputer—Summit—was recently launched. How powerful is this supercomputer? It can perform 200,000 trillion calculations (200 petaflops) per second.

Prior to landing his dream job, Bundy worked in manufacturing and purchasing for a traditional agricultural company and eventually took a job with TRW, an automotive parts manufacturer where he worked twenty-two years in the disciplines of purchasing and quality. Turns out, the quality principles and tools he learned while working in the manufacturing world adapt well to research.

Now, he works side by side with computer and computational scientists, helping them meet sponsor requirements and laboratory objectives through the implementation and improvement of ORNL’s quality management system. He helps lab organizations and researchers develop business and quality plans that include tools to help them chart a path to success with minimal risk. Additionally, he helps them ensure integrity in their research through the development and implementation of processes that

lead to repeatability, traceability, and compliance to requirements, regulations, and objectives.

If things don’t go as planned, he leads issue management activities to help ensure customer satisfaction is maintained and that the unplanned results aren’t repeated.

Among the most enjoyable aspects of his job include his work with the Oak Ridge Leadership Computing Facility, where they operate Summit, and working with the research and support organizations as one of the developers and “owners” of ORNL’s software quality assurance program.

“I love ORNL’s academic environment, and, daily, I feel I have a part in solving some of the nation’s greatest energy and global security challenges,” said Bundy.

If readers find Bundy’s name familiar, it may be due to the fact that his father, Tom Bundy, Sr., worked for UT Extension for thirty-six years.

*“I love ORNL’s academic environment, and, daily, I feel I have a part in solving some of the nation’s greatest energy and global security challenges.”*

um Assists World-Class Researchers at ORNL



### ADVICE FOR STUDENTS

***Don't be disappointed if that dream job in agriculture doesn't come along right away.***

Get some work experience and develop skills in disciplines that work for you, then leverage that experience to go for jobs and locations you really want—in or out of ag.

&

***It's not all about ladder climbing.*** I've been blessed with many different career opportunities, some of which I turned down because I felt they limited my time with family or interests outside of work.



# ORNL SELECTS BUNDY FOR TOP AWARDS



Oak Ridge National Laboratory Director Thomas Zacharia, left, presented Tom Bundy (ARE MS '87) with two prestigious awards: the Director's Award for Mission Support and the Community Outreach Award. Zacharia selected Bundy for individual achievement in Mission Support, which is the highest honor that can be achieved at ORNL for those that support the Lab's success in an indirect research role. His selection for the Community Outreach Award was based on his significant individual contributions in community activities such as suicide prevention, grief recovery, and economic development to distressed populations.

*“My most memorable and rewarding experiences at UT were on the ag campus, and I’ll always be thankful for everyone there that contributed to my success and enjoyment.”*





*A new report led by ARE's David Hughes, Greever Chair in Agribusiness Development, reveals the economic impact of agriculture by county.*



# ARE GREEVER CHAIR LEADS STUDY OF ECONOMIC CONTRIBUTIONS OF AGRICULTURE PER COUNTY

*Multiplier-based contributions calculated*

The importance of agriculture to the state of Tennessee is undeniable, accounting for 9 percent of the state's economy and \$57.6 billion in output. A new report from the University of Tennessee Institute of Agriculture reveals the economic impact of agriculture by county.

Online reports for each of Tennessee's ninety-five counties are available on an interactive map. In the reports, agriculture includes crop and livestock production; food and fiber processing, such as ice cream plants and textile mills; farm inputs, such as fertilizer plants and feed mills; and forestry-based products, such as sawmills and paper mills. Reports include the multiplier effect, which is the impact of agriculture on the non-agricultural part of the economy. Examples of the multiplier effect include farmers and other agricultural businesses purchasing local inputs, such as utilities, and local spending by agricultural workers and owner operators. Each report provides an estimate of agriculture's contribution to output—dollar value of sales—and jobs for the county in question. For example, activity in agriculture and the resulting multiplier effect are responsible for \$1.017 billion in sales and 4,003 jobs in Weakley County.

David Hughes, Greever Chair in Agribusiness Development and project leader, states that there is a real need for this type of analysis

at the county level. "Many areas of Tennessee have new residents that are often unaware of local agricultural roots and the important role that agriculture plays in the local economy," says Hughes. "Even long-established residents are often unaware of this contribution."

Agricultural activity is spread out across fields, pastures, and woods, and this lack of concentration can make its contribution much less obvious than that of a large factory. "The information in this report can be used to educate local leaders and the public at large regarding the contribution of agriculture and the necessity of resisting unwarranted encroachments on agricultural activities," adds Hughes.

To access the reports, go to [ageconomicimpact.tennessee.edu](http://ageconomicimpact.tennessee.edu) and click on the county of interest. The web page also provides training materials for those who wish to learn more about the method of analysis used to generate the reports.

The research was supported by Farm Credit Mid-America; Tennessee Cattlemen's Association; Tennessee Department of Agriculture; Tennessee Farm Bureau; and the Tennessee Soybean Promotion Board. It was also supported by members of the county-level agricultural economic impact workgroup that assisted in developing the final version of the reports.

# ARE RESEARCHER NAMED MANAGING EDITOR OF INTERNATIONAL AGRIBUSINESS JOURNAL


## *Trejo-Pech Helps Lead Prestigious Flagship Journal*

**C**arlos Trejo-Pech, researcher and assistant professor of agribusiness finance at the University of Tennessee Institute of Agriculture (UTIA), has been named a managing editor of the *International Food and Agribusiness Management Review* (IFAMR).

Often referred to as the flagship journal in the field of agribusiness, it publishes peer-reviewed, scholarly articles on topics related to the practice of management in the worldwide food and agribusiness industry, serving as a catalyst for related discussions and inquiry. IFAMR is a journal with an impact factor—indicating the importance or rank of a journal—indexed by Clarivate Analytics and Scopus.

As a managing editor, Trejo-Pech is responsible for the double-blind, peer-

review process of selected submissions assigned to him by the journal's executive editor. Typically, a managing editor selects potential reviewers and invites them to review a submitted manuscript, summarizes the completed reviews, and renders an opinion about the quality and readiness for publication of the manuscript.

Joining UTIA's Department of Agricultural and Resource Economics in 2016, Trejo-Pech teaches advanced agribusiness finance and conducts research in the areas of agribusiness, finance, and the case method. In addition to his teaching responsibilities, he conducts research primarily in the area of agribusiness finance but also has interests in agricultural economics, the case method, and corporate finance. 







*Carlos Trejo-Pech, researcher and assistant professor of agribusiness finance at the University of Tennessee Institute of Agriculture, has been named a managing editor of the International Food and Agribusiness Management Review.*





*Margarita Velandia and Andrew Muhammad, researchers at the University of Tennessee Institute of Agriculture, will serve as the 2019-2021 editorial team for the Journal of Food Distribution Research.*



# ARE Professors Provide Leadership for Journal of Food Distribution Research

**T**wo faculty members from the University of Tennessee Institute of Agriculture (UTIA) have been selected as the 2019-2021 editorial team for the *Journal of Food Distribution Research*.


Andrew Muhammad and Margarita Velandia, both with the Department of Agricultural and Resource Economics, were tapped for their considerable experience and vision for the journal. Both share an editorial philosophy that the journal should serve as a primary outlet for business-focused research, a source of quality applied economic, agribusiness and food industry research.

“The *Journal of Food Distribution Research* is a well-established journal with an applied, problem-oriented focus, and a particular emphasis on the analysis of the flow of products and services through the food wholesale and retail distribution systems,” said Muhammad. “Given the long history of the journal and the Food Distribution Research Society, we are excited about this opportunity and look forward to working with the Society in maintaining recent progress and moving the journal forward, particularly developing strategies that can increase the visibility of the journal and the number of submissions to the journal.”

The newly appointed team proposed plans that include dedicating segments to invited papers focused on relevant and current issues specific to key food and agribusiness sectors. Additional plans include strengthening the journal’s reputation as a platform for publishing executive reports and case studies; establishing an editorial advisory council to include academic, government, and industry representation; developing special issues focused on timely topics; and more.

Published manuscripts may include supply and demand analysis, industry structure and firm performance, price determination, analysis of trade and global markets, marketing, finance, the role of public policy, etc.

Muhammad and Velandia will review submitted research manuscripts to determine suitability for inclusion in the refereed journal.

The journal, established in 1969, is under the auspice of the Food Distribution Research Society—the only collection of scholars and practitioners in the United States dedicated to the study, monitoring, and sharing of knowledge related to the global food system. 



## TRADE WAR/TARIFFS



The ongoing trade war with China has kept ARE's agricultural trade policy expert Andrew Muhammad busy, obliging many news interview requests, as follows:

- (April 3, 2018) ABC WATE News at 5: [East Tennessee Farmers Concerned About Chinese Tariffs](#)
- (April-June 1) Activities related to extension report [W 532, Evaluating the Impact of Retaliatory Tariffs on U.S. Soybeans in China](#): Cited in Delta Farm Press estimated readers: 16,885; Southeast Farm Press estimated readers: 40,107. Article based on report was among the Top 5 Delta Farm Press trending articles in May 2018.
- (May 16, 2018) [Tennessee Farm Bureau radio interview](#) on U.S./China trade war and U.S. and Tennessee soybean exports.
- (July 7, 2018) Extension report on U.S. China soybean trade cited in [Bloomberg News](#) and Bloomberg infographics.
- (July 11, 2018) [Nashville Public Radio interview](#) and social media story on U.S. soybean trade with China.
- (September 10, 2018) Interview and article in [Forbes](#) on trade war.
- (October 26, 2018) Interview, documentary by the [Belgian public broadcasting company VRT](#) — How the tariffs and trade war with China affect the various industries in Tennessee.

## Japanese Trade Agreements and U.S. Beef Exports

- (Feb. 1, 2019) National Public Radio, [Marketplace with Kai Ryssdal](#) — Segment about Japanese trade agreements and U.S. beef exports, partly based on UTIA Extension report [W 656, Why a Trade Agreement With Japan Is Needed for U.S. Beef Exports](#)

# ARE IN THE NEWS

## FARM BILL



Crop marketing specialist Aaron Smith provides an [interview with WBIR](#) regarding the latest Farm Bill that includes \$867 billion and provides some stability for farmers for the next few years with regard to insurance commodities, subsidies, and other programs.

Smith notes the legalization of industrial hemp production in Tennessee, which could provide a new source of revenue for farmers.


**CONTACT US with story ideas or career updates for consideration in future editions of the *Econogram*. We'd love to hear from you!**

Update  
your alumni  
information  
[HERE](#)





The increased interest in locally produced hops prompted a group from the University of Tennessee Institute of Agriculture (UTIA) to host a “hops”- focused symposium on August 15, 2018. Seventy-seven members of UTIA’s faculty and staff were in attendance, representing several departments. The symposium addressed the opportunities and challenges of production, marketing strategies, and the roles of the Tennessee Department of Agriculture and UTIA/UT Extension. The symposium generated positive input and discussion for future research and outreach related

to the crop. Those on the program of the symposium included David Hughes, Aaron Smith, and Hannah Wright from the Department of Agricultural and Resource Economics; David Lockwood and Eric Walker from the Department of Plant Sciences; Bruce Kirksey from Agricenter International; Rob Holland from the Center for Profitable Agriculture; Whitney Flatt and Mike Brown from the Tennessee Department of Agriculture; and UTIA Chancellor Tim Cross. 



## SRMEC Project of Excellence

**T**he Southern Risk Management Education Center (SRMEC) selected a project led by ARE's Andrew Griffith as a Project of Excellence. The project is titled Implementing Biosecurity and Disease Prevention Measures and Evaluating Marketing Strategies and Contract Opportunities in Small Ruminant Production.


The SRMEC Advisory Council specifically lauded the project's quality educational materials, impacts that reached producers across several states, and the evaluation process. The council ranked the projects by evaluating the importance of outcomes; audiences reached; realized and potential impacts; and quality and value of project communications.

The project included the hosting of two conferences to educate producers on animal health and disease prevention; biosecurity planning and implementation for disease outbreak; traditional marketing and

exploration of alternative marketing avenues; writing and fulfilling contractual obligations for production and sales; and market diversification.

The conference drew 222 attendees from Alabama, Florida, Georgia, Illinois, Kentucky, Mississippi, Missouri, Ohio, Tennessee, and Virginia. The target audience included small ruminant producers, small acreage farmers, "local food farmers," operators looking to diversify enterprise mix or transition to alternative production, and landowners with idle land in Alabama and Tennessee.

The conferences included several interactive educational opportunities, live demonstrations, and hands-on learning.

Based on post-conference surveys, the estimated conference impact was \$327,611. 



# UT Extension Receives Grant to Help Digitally Disconnected Communities



*University of Tennessee Extension has received a grant to bring mobile hot spots to the most distressed and digitally disconnected communities in Tennessee. Collaborators pictured left are, from left, Sreedhar Upendram, UT Extension; Lois Rosenbalm, director of Hancock County Public Library; Pam Lane, assistant director of Hancock County Public Library; Gina Hunter, network services consultant, state IT; and Jacob Boone, UT Extension director in Hancock County.*

## ***Assessing strategies to bridge digital divide between urban and rural areas***

**B**roadband internet access has become commonplace in many areas of Tennessee; however, residents of some rural counties still lack access, possibly disadvantaging students, businesses, and lifestyles of these residents. University of Tennessee Extension has received a grant to target a solution for these disconnected counties.

While the Tennessee Department of Economic Development has launched a broadband initiative, the required infrastructure will likely take years before reliable and affordable internet is available to all rural residents. In response to the immediate needs of the most digitally disconnected communities, UT Extension has developed a solution to bridge this digital gap.

In a collaborative effort between UT Extension and the public libraries of Bledsoe, Hancock, and Wayne counties, mobile hot spots are available to residents at no cost for a one-year period. Residents in good

standing may check out a mobile hot spot for two to three days, on a first-come-first-served basis, and will be asked to complete a short survey regarding hot spot usage, experience, and willingness to pay for broadband internet. County Extension agents will train library staff in the use of the mobile hot spots. This collaborative program will be the first of its kind in these counties.

Recent statistics indicate that only 22 percent of the population in Hancock County and 25 percent of the population in Bledsoe County have access to broadband internet, making these counties the most digitally disconnected communities in Tennessee. These counties are also the most distressed in the state. There are anecdotal stories of families spending hours in parking lots of fast-food restaurants to access the internet so that children can complete their homework.

“The program has been hugely popular in Collinwood, with seventeen families checking out

the hot spot within the first month,” says Sreedhar Upendram, assistant professor and community development specialist with the Department of Agricultural and Resource Economics. “In order to meet the high demand, a local community member donated funds to support a second hot spot in the community. We are already making an impact. This is what community development is all about.”

The mobile hot spot program is currently available at Collinwood Depot Library in Wayne County, Hancock County Public Library, and Bledsoe County Public Library.

Researchers will also evaluate whether providing reliable internet access improves lifestyle, educational attainment, wellness, and business environment in rural areas. The survey data collected

will be used to evaluate the costs, savings generated, as well as improved efficiency in a cost-benefit analysis framework. The collected data on willingness to pay for broadband internet can be instrumental when negotiating affordable rates with internet service providers in these communities. The grant is partially funded by UT’s Office of Community Engagement and Outreach, with all funds supporting the mobile hot spots with unlimited data in Bledsoe, Hancock, and Wayne county libraries.

In addition to training library staff, the following UT Extension agents were also instrumental in developing collaborative relationships with the local libraries: James Harlan (Wayne County); Jacob Boone (Hancock County); and J.C. Rains (Bledsoe County). [E](#)



*Dora Pratt*

**D**ora Pratt has joined the Department of Agricultural and Resource Economics as an administrative support assistant. She has thirteen years of secretarial experience and most recently worked for an elementary school in West Virginia.

In addition to her faculty and undergraduate program support, she has recently taken on the weekly Market Highlights reports.

She enjoys spending time with her family and loves to travel and visit new places.

“The thing I like the most about working for Agricultural Economics is the welcoming, laid-back atmosphere.”





**T.J. Whitley Young Scientist Award**  
Chris Boyer, ARE associate professor

*Pictured above from left to right, UTIA Chancellor Tim Cross; Chris Boyer, associate professor in Agricultural and Resource Economics; Fred Tompkins, interim dean of AgResearch; and Caula Beyl, dean of the Herbert College of Agriculture. This award is one of the most prestigious given at UTIA's annual Awards and Promotions Luncheon. Photo by T. Salvador.*



**J.E. Moss Achievement Award**  
Bill Park, ARE professor

*ARE professor Bill Park was presented with the 2018 J.E. Moss Achievement Award. This award recognizes an outstanding person from each of UTIA's four units. Park represents the Herbert College of Agriculture. Photo by T. Salvador.*





**Webster Pendergrass Award for Outstanding Service**  
**Chris Clark, ARE professor**

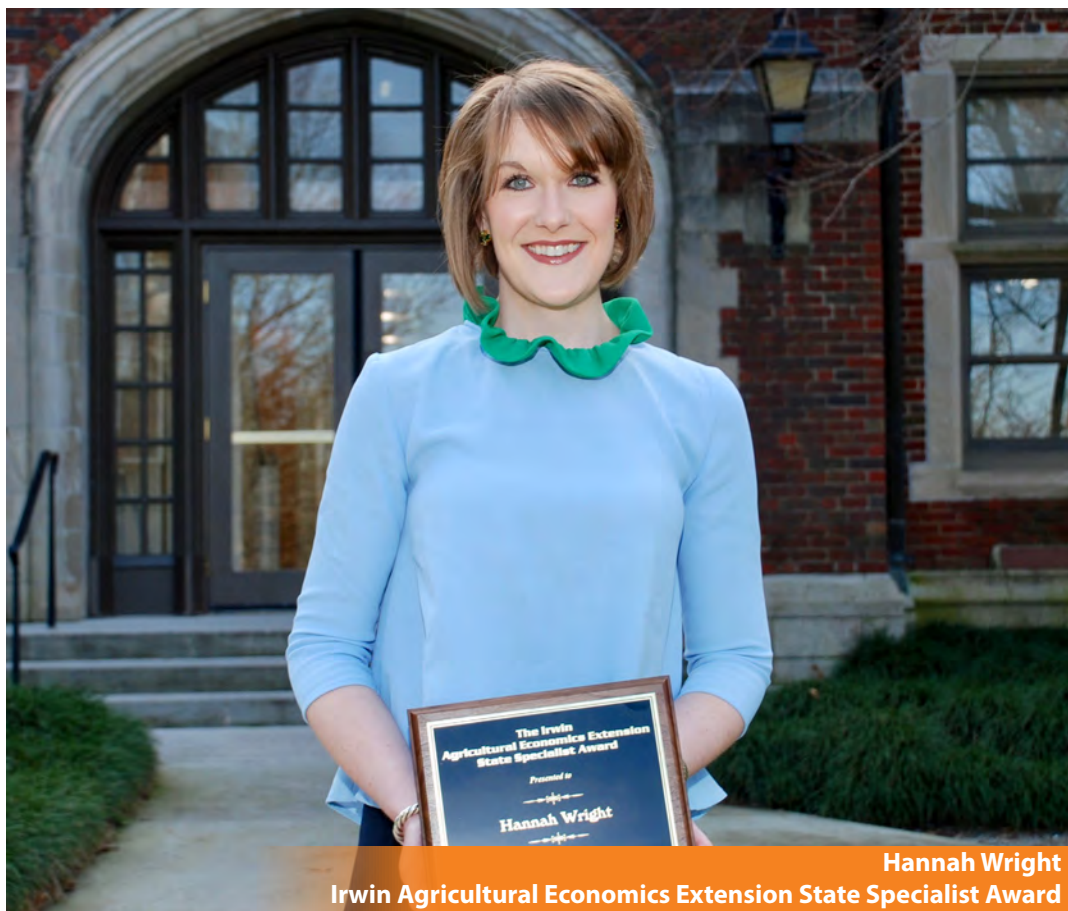
*Pictured above from left to right, UTIA Chancellor Tim Cross; Chris Clark, professor in Agricultural and Resource Economics; Fred Tompkins, interim dean of AgResearch; and Caula Beyl, dean of the Herbert College of Agriculture. This award recognizes a teaching, research, or Extension faculty member who has contributed most to the fulfillment of the Institute's goals and objectives. Photo by T. Salvador.*



**TAAAS-Hicks Award for UT Extension**  
**David Bilderback, area farm management specialist**

*Pictured above from left to right, UTIA Chancellor Tim Cross; Matt Webb, UT Extension county director for Marshall County; David Bilderback, UT Extension area farm management specialist; and Robert Burns, dean of UT Extension. Photo by T. Salvador.*





**Hannah Wright**  
**Irwin Agricultural Economics Extension State Specialist Award**

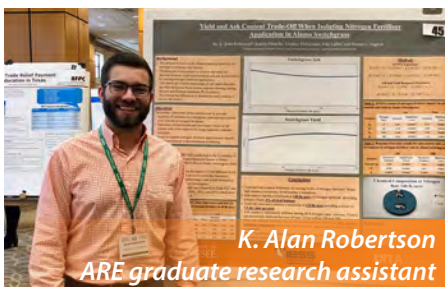
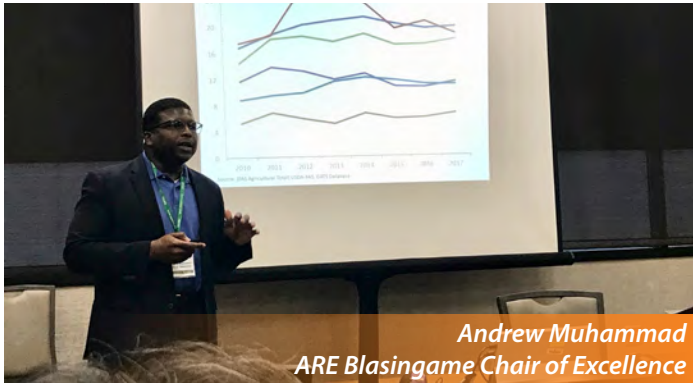
*Hannah Wright, Extension specialist with the Department of Agricultural and Resource Economics, received the Irwin Agricultural Economics Extension State Specialist Award for 2018. This award recognizes a state specialist who exhibits excellence of educational and service programs in the area of agricultural economics and business.*



**Dallas Manning**  
**Irwin Agricultural Economics Extension**  
**Area Farm Management Specialist Award**

*Dallas Manning, area farm management specialist with the Department of Agricultural and Resource Economics, received the Irwin Agricultural Economics Extension Area Farm Management Specialist Award for 2018. This award recognizes an area farm management specialist who exhibits excellence of educational and service programs in the area of agricultural economics and business. The award is made possible due to the generosity of Harley and Juanita Clark Irwin.*

# ARE Represents at Southern Agricultural Economics Association





# Graduate Degrees Awarded

## **Doctor of Philosophy in Natural Resource & Environmental Economics**

### **Summer 2018**

Bijay Sharma

### **Fall 2018**

Katryn Pasaribu

## **Master of Science in Agricultural & Resource Economics**

### **Summer 2018**

Moon Won Soh

### **Fall 2018**

Bartholomew Wade Kenner  
Lettie Collett McKay  
Umama Rahman

*Congratulations, ARE graduates!*

## **Agricultural & Resource Economics Undergraduate Degrees Awarded**

### **Bachelor of Science in Food & Agricultural Business**

#### **Fall 2018**

William Hunter Ballew  
Samuel Jeffrey Hawkins  
John P. Vandergriff

### **Bachelor of Science in Natural Resource & Environmental Economics**

#### **Fall 2018**

Jackson Bradley Cox  
Alexis Nicole McDonald  
Cristal Dean Pugel  
Daisey Annette Smith

Among 162 majors,  
agricultural economics had  
the lowest unemployment  
rate at

0.4%

in 2018.

As reported by *USA Today*, October 2018.

GIVING  
PAGE!

*Interested in supporting  
future Vols?*



## 3 Minutes to Win It



*Congratulations to our graduate students who competed in the 2019 Herbert College of Agriculture 3MT (Three Minute Thesis) Competition. Each competitor had three minutes to explain and engage the audience in their research. Pictured above, from left, are McKenzie Gill, Emily Greear, Tori Campbell, Tom Stier, Alan Robertson, Jared Bruhin, Sarah Berman, Jade Ellis, and Kevin Adkins.*



# ARE Grad Students Place 2nd and 3rd in UTIA Graduate Research Poster Symposium and Competition



ARE graduate student Jade Ellis earned second place for her presentation on the analysis of closed versus operating dairies in the southeastern United States.



ARE graduate student Jared Bruhin earned third place for his presentation on determining an optimal start-up strategy for a cow-calf producer to maximize long-term profitability and minimize risk.



# Ag Business Club



Ag Business Club members selling shirts and hats at Ag Day pause for a photo with distinguished alumni Jim and Judi Herbert. In the spring of 2018, the College of Agricultural Sciences and Natural Resources was renamed the Herbert College of Agriculture, making it the third named college in UT's 224-year history and only the second land-grant agricultural college in the nation named from a philanthropic gift.



In October, the Ag Business Club visited The Winery at Seven Springs Farm near Maynardville, Tennessee.



In February, the Ag Business Club went to Oak Hollow Angus Farm in Bowling Green, Kentucky. Joe Lowe (MS '13), a former ARE graduate student, runs the farm with his father. The following day was spent at the National Farm Machinery Show in Louisville, Kentucky.

# Our Ag Ambassadors



**Ty Wolaver**

Major: Food & Ag Business

Hometown: Fayetteville, Tennessee



**Mary Lynn Marks**

Major: Food & Ag Business

Hometown: Hendersonville, North Carolina



**Jordan Peterson**

Major: Food & Ag Business

Hometown: Harvard, Illinois





Several ARE students posed for a quick picture with distinguished alumni Jim and Judi Herbert. In the spring of 2018, the College of Agricultural Sciences and Natural Resources was renamed the Herbert College of Agriculture, making it the third named college in UT's 224-year history and only the second land-grant agricultural college in the nation named from a philanthropic gift.



## ARE Students Sweep Farm Bureau Discussion Meet



Congratulations to our Food and Ag Business students who swept the University of Tennessee Farm Bureau Discussion Meet. Pictured, from left to right, are Janey Green (3rd place); Zachary Talmadge (2nd place); and Shelby Mainord (1st place). Shelby will compete in the state contest in July at the Young Farmers and Ranchers Summer Conference.



# ARE Graduate Students



*Sweetwater Valley Farm graciously hosted a field trip so that ARE students could see a robotic milker, an outstanding display of agricultural innovations helping producers.*



# FROM ROCKY TOP

*ARE ALUMNI SHARE  
EXPERIENCES*

# TO A JOB

IN SEPTEMBER 2018, THE DEPARTMENT HOSTED A SEMINAR FEATURING FOUR ARE MASTER PROGRAM GRADUATES WHO SHARED THEIR MS PROGRAM EXPERIENCES AND HOW IT SHAPED THEIR CURRENT CAREERS, THEIR INCURSION IN THE JOB MARKET, AS WELL AS HIGHLIGHTS FROM THEIR CURRENT JOBS.



**Andy Davis (MS'12)**  
Co-owner/co-operator of Davis Farm



**Alicia English (MS'08)**  
Applied economist & data analyst for FAO (Rome, Italy)



**Meagan Merritt (MS'17)**  
Market research analyst at Shelton Group



**Stephanie Owen (MS'14)**  
Economist at US Army Corps of Engineers

# FARM CREDIT SCHOLARS INTERNSHIP PRESENTATIONS

IN THE SUMMER OF 2018, FOUR SENIOR FARM CREDIT SCHOLARS SHARED ABOUT THE SPECIAL PROJECTS THEY COMPLETED AS A PART OF THEIR INTERNSHIPS.



**Jacob Beasley**  
Food & Ag Business



**Haley Webb**  
Food & Ag Business



**Catherine Moore**  
Ag Communications



**Colin Jennings**  
Food & Ag Business



# ARE Faculty Study Optical-Sensing Based,

*Eva*

A team of multidisciplinary researchers from land-grant universities in Louisiana, Mississippi, Missouri, and Tennessee conducted a study evaluating the profitability and nitrogen efficiency of real-time, on-the-go optical sensing measurements for variable-rate nitrogen management for cotton in the lower Mississippi River Basin.



Photo by F. Yin



# Variable-Rate Nitrogen Management for Cotton

## *evaluate effects on yields, nitrogen use, and profitability*

Researchers at the University of Tennessee Institute of Agriculture partnered with three land-grant universities to conduct a multisite, multiyear study evaluating the profitability and nitrogen efficiency of real-time, on-the-go optical sensing measurements (OPM) for variable-rate (VRT) nitrogen management. Cotton farms located in the lower Mississippi River Basin (MRB) participated in the study.

Existing research indicates that OPM-based VRT nitrogen applications may provide higher nitrogen use efficiency and profitability in corn and wheat production. Research was limited, however, regarding its use in cotton production in the MRB.

Nitrogen fertilizer is an important and expensive input in the production of upland cotton. Applying nitrogen uniformly across a field that has soil and landscape variability may result in sections of the field that are over- or under-fertilized, which could affect profits or lead to excess nitrogen being released into the environment. The use of precision agriculture technologies such as OPM-based VRT fertilizer application can reduce or eliminate over- or under-application of nitrogen.

Two forms of OPM-based VRT nitrogen management and existing farmer practices (the uniform rate of nitrogen application across the field) were used in on-farm trial studies to determine nitrogen rates applied to cotton on twenty-one farm fields in the lower MRB states of Louisiana, Mississippi, Missouri, and Tennessee.


The three-year research study determined the lint yields, nitrogen fertilization rates, nitrogen efficiency, and profitability of OPM-based VRT in cotton production in the lower MRB.

- Trial results found no differences in either VRT applications versus existing farmer practices when lint yields for each treatment were averaged across the twenty-one fields. Lower nitrogen rates relative to the typical farmer practice would need to be the driver of VRT profitability rather than lint yields for the project fields.

- The results were farm/field specific with respect to nitrogen rates determined with VRT or the existing farmer practice, likely due to differences in soil variability, landscape characteristics, and weather.
- No farm fields exhibited a higher nitrogen efficiency with VRT when compared to the typical farmer practice. Nitrogen rates across all project fields were not low enough to increase nitrogen efficiency.
- The findings indicated that OPM and VRT nitrogen management exhibit some potential for nitrogen savings, but field-level profits associated with these technologies were not different from profits associated with the farmer's practice. Despite the fact that project fields represented a range of soils, landscapes, and weather, there was likely not enough within-field spatial variability for VRT nitrogen management to make a difference in net returns.
- Field elevation, soil texture, and weather also explained the variability in lint yield, nitrogen rates, and nitrogen efficiency, and also differences in profitability.

Land-grant universities participating in the study included the University of Missouri, Louisiana State University, Mississippi State University, and the University of Tennessee.

The following faculty from the Department of Agricultural and Resource Economics participated in the study: Jim Larson, Dayton Lambert, and Chris Boyer.

This research was made possible with funding from USDA NRCS Conservation Innovation Grant Project No. 69-3A75-11-177, USDA Hatch Project TN TEN00442, and agricultural research institutions at Louisiana State University, Mississippi State University, University of Missouri, and University of Tennessee. 



# Ag Leaders Motivate Students in Popular ARE Executive Seminar Series



In recent years, the Department of Agricultural and Resource Economics launched the executive seminar series, bringing a broad array of agricultural professionals and industry leaders directly into the classroom. The invited speakers provide a uniquely motivational learning environment, and the series has become popular among students.

Speakers for the 2018 series included:

- *Tim Cross*, UTIA chancellor
- *Jai Templeton*, Tennessee commissioner of agriculture
- *Phil Perkins*, president and CEO of Solaster LLC and Feeding Tomorrow board member
- *Jim Herbert*, founder and former CEO of Neogen
- *Roger Thurow*, author and senior fellow on global food and agriculture at the Chicago Council on Global Affairs
- *Jeff Aiken*, president of Tennessee Farm Bureau Federation
- *Donnie Smith*, former CEO of Tyson Foods
- *Kim Allen*, previous president of the commercial division of Henry Schein Animal Health and previous board of directors of the American Veterinary Distributors Association
- *Robert Brown*, president and chief forecasting officer of Robert Brown, Inc.; and *Wade Smith*, vice president of OSI Group
- *Bill Johnson*, president and CEO of Farm Credit Mid-America
- *Jeff Hunt*, partner/owner of Hayden Hunt Agri-Marketing





Visiting lecturer Ruthann Geib brings a rich perspective to students in ARE's food policy class, which quickly maxed-out enrollment.

# Visiting Lecturer in Food Policy Course

*Former agricultural lobbyist brings rich perspective*

The Department of Agricultural and Resource Economics is pleased to introduce visiting lecturer Ruthann Geib who teaches a maxed-out course on food policy. Geib was an agricultural lobbyist in Washington for thirty-six years for the sugar industry and brings a wealth of experience to the classroom.

She worked at an international development organization and was later hired to be the diplomatic liaison with embassies for the more than twenty countries where the organization had development and linguistic projects. She also researched and wrote proposals for grant funding for those projects.

After a brief transition with a law firm, she joined the American Sugarbeet Growers Association (ASGA) where she ultimately became vice president. Her portfolio includes legislative and public relations meetings; crop insurance, regulatory, and administration issues; board education and communications; writing and editing articles for sugar magazines and briefing materials; political action committee management and activities; the design, direction, and implementation of the annual Cleavinger Internship program; and management

of the annual grower fly-ins that cover more than 300 congressional offices over two weeks by twenty-four teams, consisting of seventy beet and Louisiana cane growers. Her time at ASGA spanned nineteen congresses, seven farm bills, and multiple appropriations bills and free trade agreements. She received the Distinguished Service Award by ASGA in 2016.

Her most memorable experiences include visiting the farms and communities in sugarbeet and sugar cane areas and visiting Cuba in 1999 as a member of the US sugar industry delegation to a United Nations sugar meeting.

She has also served as a volunteer with Honor Flight, which brings WWII veterans to Washington free of charge to visit the WWII and Iwo Jima Memorials and Arlington National Cemetery. Additionally, she has volunteered with Rebuilding Together to help repair and rehabilitate homes in low-income neighborhoods.

An avid traveler, Geib has traveled to forty-nine states and twenty countries. [E](#)





*Measuring the nitrogen volatilization for individual nitrogen treatments, above, was part of a recent study conducted by the University of Tennessee Institute of Agriculture to determine the effects of enhanced efficiency urea fertilizers relative to ammonium nitrate and conventional urea on no-till corn yields and net returns in Tennessee.*



# ARE Faculty Study Profitability of Enhanced Efficiency Urea Fertilizers

## *Relative to Ammonium Nitrate and Conventional Urea in No-till Corn*

**N**itrogen is an important and expensive input for corn production, with fertilizer expenses including nitrogen comprising 37 to 45 percent of annual total operating expenses for corn in the United States between 2010 and 2016. Researchers at the University of Tennessee Institute of Agriculture (UTIA) studied the effects of replacing ammonium nitrate fertilizer with enhanced efficiency (EE) urea fertilizers on no-till corn yields and net returns in Tennessee.

This study is timely, as increasing security concerns regarding ammonium nitrate have led to more government regulation, increased prices, and reduced availability of the product. Tennessee no-till corn producers were directly affected by the changes, as the state was the second-leading user of ammonium nitrate in the US in 2011. In 2016, harvested corn for grain in Tennessee covered 830,000 acres, and approximately 75 percent of that acreage was planted using no-till.

An additional challenge for producers is the fact that nitrogen is a difficult nutrient to manage in farm fields, and the inefficient use of nitrogen fertilizer can adversely impact the environment and net returns.

Although urea is a less-expensive, widely available nitrogen fertilizer alternative, considerable amounts of nitrogen can be lost through ammonia volatilization—the amount of nitrogen lost to the air—when broadcast on the soil surface in no-till crop production.


EE nitrogen fertilizers have been developed to reduce nitrogen losses when applied to the soil

and to improve nitrogen use efficiency in crop production.

The UTIA study determined the effects of EE urea fertilizers relative to ammonium nitrate on no-till corn yields and net returns in Tennessee. Results showed:

- Urea + nitrogen-(n-butyl)-thiophosphoric triamide (NBPT) and polymer-coated urea (PCU) produced significantly higher yields and net returns than conventional urea and produced the highest yields and net returns among the EE urea products; however, these nitrogen fertilizers did not perform as well as ammonium nitrate under the no-till growing conditions in Tennessee.
- Urea + NBPT and PCU offer greater potential to improve net returns than urea + maleic-itaconic acid copolymer (MICP). The addition of MICP to urea improved neither yields nor net returns compared with conventional urea. In fact, yields were significantly lower with MICP compared with the other EE treatments.
- Conventional urea provided higher yields but with net returns similar to no nitrogen fertilizer control. The additional revenue from increased yields was offset by the additional cost of urea.

The study was a multidisciplinary effort undertaken by UTIA researchers in the Department of Plant Sciences; the Department of Biosystems Engineering and Soil Science; and the Department of Agricultural and Resource Economics.

ARE faculty involved in the study included Vivian Zhou, Jim Larson, and Chris Boyer. 



# ARE/UTIA Host Borlaug Fellow



*ARE/UTIA had the privilege of hosting USDA Borlaug Fellow Jean Claude Rukundo for approximately thirteen weeks in the fall of 2018. ARE's expert in agricultural trade policy and global food demand, Andrew Muhammad, served as Rukundo's mentor, supporting his research efforts of examining international standards on the testing of meat and dairy products and understanding the necessary requirements and prerequisites to adopt and apply them in Rwanda. Pictured above, from left to right, are Andrew Muhammad; Jean Claude Rukundo; and Amy Delgado, director of Monitoring and Modeling at USDA's Center for Epidemiology and Animal Health.*

**T**he Department of Agricultural and Resource Economics/UTIA had the privilege of hosting USDA Borlaug Fellow Jean Claude Rukundo in the fall of 2018. Andrew Muhammad, ARE's Blasingame Chair of Excellence, served as Rukundo's mentor during his thirteen-week visit.

Rukundo maintained a rigorous, tailored schedule, all in support of his research. The fellow benefited from programmatic activities needed for building research capacity in his home country, Rwanda, including networking with fellow scientists through field tours and departmental activities, professional development workshops (e.g., grant writing and compliance), and one-on-one mentoring with Muhammad and colleagues who are experts in the focus area.

The Borlaug Fellowship Program honors Norman E. Borlaug, the American agronomist, humanitarian, and Nobel laureate known as the “father of the Green Revolution.” Since the program's inception in 2004, approximately 800 fellows from sixty-four countries have participated in research and training focused on a wide array of agriculture-related topics, including agronomy, veterinary science, nutrition, food safety, sanitary and phytosanitary issues, natural resource management, agricultural biotechnology, agricultural economics, and agricultural policy. By improving participants' understanding of agricultural science, the program helps foster science-based trade policies that improve international market access for US agricultural products. [E](#)



Borlaug Fellow Jean Claude Rukundo and departmental faculty member Andrew Muhammad had the opportunity to meet with US Department of Agriculture Under Secretary for Trade and Foreign Agricultural Affairs Ted McKinney at the World Food Prize in Des Moines, Iowa. The World Food Prize is a group of dedicated scientists and researchers focused on solving the world's pressing food security issues.



ARE's Blasingame Chair of Excellence, Andrew Muhammad, had the pleasure of meeting Bernard Blasingame, supporter of the Blasingame Endowed Chair. Pictured above, from left to right, are Bernard Blasingame, Andrew Muhammad, and Evan Beech, assistant director of advancement for UTIA.



ARE's Blasingame Chair of Excellence, Andrew Muhammad, had the pleasure of meeting ARE MS graduate and former Fulbright Scholar Maria Celeste De Matteis in Argentina. De Matteis is a market analyst with FYO, one of Argentina's main grain brokers. Muhammad is pictured in the center and Matteis is to his left. Also pictured are staff from USDA Foreign Agricultural Service and USDA Economic Research Service.



# Fall Departm





# mental Picnic



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