VSU hosts meeting discussing USDA's plans to invest $110 million in meat and poultry processing.

ARDUPdates

ASSOCIATION OF 1890 RESEARCH DIRECTORS

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USDA accepting bids for three nutrition hubs

The USDA recently announced the availability of $4.5 million in funding to establish three additional USDA nutrition hubs in communities across the country. The new nutrition hubs will provide tailored and scalable approaches to equitably advance food and nutrition security and help prevent diet-related chronic diseases, especially in historically underserved communities.

The additional hubs will create a network that builds on the work of the pilot nutrition hub established last year in partnership with **Southern University and A&M College** under USDA's Agricultural Science Center of Excellence for Nutrition and Diet for Better Health (ASCEND for Better Health) initiative.

The funding announcement was made during a virtual event highlighting USDA's effort to prevent diet-related diseases including cancers through precision nutrition research and community engagement as part of the White House Cancer Moonshot Community Conversations week of action.

With funding provided by the AFRI —the nation's leading competitive grants program for agricultural sciences—the hubs will focus on providing science-based infor-

See Hubs Page 6

Message from the Chair / DR. LOUIS WHITESIDES

134th ANNIVERSARY

DR. LOUIS WHITESIDES

On Aug. 30, the land-grant community will celebrate the 134th Anniversary of the Morrill Act of 1890, which established the 19 1890 historically black land-grant universities. This significant Act was successfully shepherded through Congress by U.S. Senator Justin Smith Morrill of Vermont on Aug. 30, 1890.

Due to the legal separation of the races in the South, African Americans were not permitted to attend the original land-grant institutions established by the Morrill Act of 1862. Although the Morrill Act of 1862 authorized "separate but equal" facilities, only Mississippi and Kentucky established institutions for African Americans under this law, with Alcorn State University being the sole institution designated as a land-grant university. Between 1866 and 1890, several southern states established normal schools to train African American teachers. While many of these institutions were similar to the land-grant universities, the federal government struggled to secure cooperation from southern states in providing land-grant support to African American institutions.

This situation was rectified by the passage of the Second Morrill Act by the United States Congress in 1890, which expanded the 1862 system of land-grant universities to include historically African American institutions. Senator Morrill, disappointed that such educational institutions were out of the reach of African Americans, believed that higher education should "be accessible to all, but especially to the sons of toil." Many African American normal schools were incorporated into this system, becoming known as "1890 Institutions." Each southern state that did not have an African American college by 1890 later established one under the Second Morrill Act. From these humble beginnings, the 1890 Institutions evolve into a major national educational resource. Today, the 1890 land-grant universities, located in 18 southern and Border States, are a thriving network of 19 universities. Despite numerous challenges, they proudly continue to educate first-generation and economically disadvantaged college students; enhance the resilience of limited-resource farmers, families, individuals and underserved communities and pioneer advanced research with immediate applications for local, regional and global challenges.

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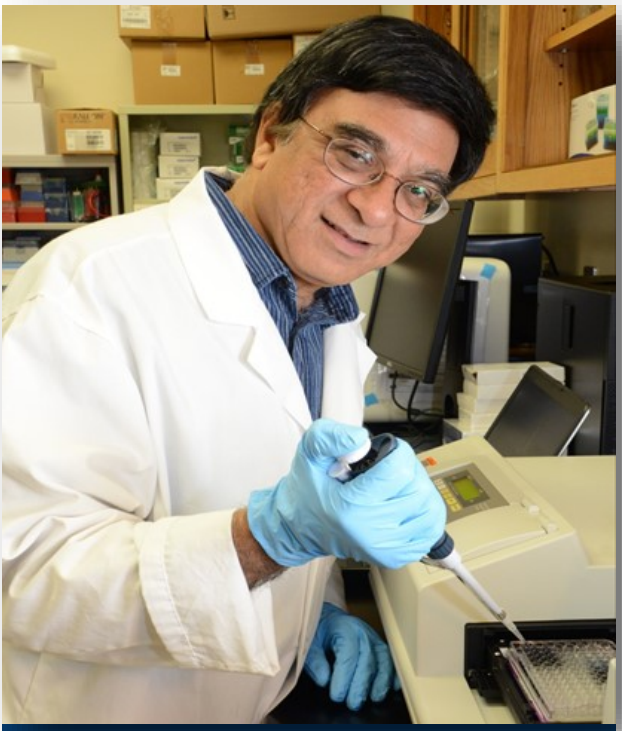
1890s HAVING AN IMPACT

Congress approved the Evans-Allen Act of 1977 to provide capacity funding for food and agricultural research at the 1890 land-grant universities and Tuskegee University (the 1890 Institutions) similar to that provided to the 1862 universities under the Hatch Act of 1887. Research conducted under the Evans-Allen Program has led to hundreds of scientific breakthroughs of benefit to both the unique stakeholders of the 1890 institutions and the nation as a whole. The Evans-Allen Program has been extremely important in allowing the 1890 institutions to attract top-notch scientists to their campuses, conduct high-quality and innovative research and become more fully integrated within the land-grant system.

This edition, includes impacts from the 1890 research program submitted by scientists at West Virginia State, the University of Maryland Eastern Shore and Virginia State universities.

Can immature ginger fight obesity, VSU asks?

As the county's obesity rates continue to rise, with 41.9% of adults affected, according to the Centers for Disease Control and Prevention (CDC) data collected between 2017 and 2020, researchers are increasingly turning to natural remedies. Alarmingly, one in five deaths of African Americans and Caucasians age 40 to 85 is attributed to obesity (Goldman, 2020). At the forefront of this movement is Virginia State University (VSU), where innovative research into immature ginger is uncovering promising potential in the fight against obesity.



DR. RAFAT SIDDIQUI

Under the leadership of Dr. Rafat Siddiqui, professor of food and nutrition science and interim associate director of the Agricultural Research Station at VSU's College of Agriculture, the university is making significant strides in its nutraceutical, or food as medicine, efforts. Siddiqui's latest research examines how ginger influences fat cell development and fat production in a laboratory model, contributing to VSU's broader efforts in developing solutions for better health.

Scientific Breakthroughs and Nutritional Benefits

In 2019, Siddiqui's team discovered that immature ginger contains about twice as many polyphenols and has two to three times more antioxidation activity than the mature ginger commonly found in grocery stores.

"Baby ginger is more perishable than its older counterpart, which naturally features a papery skin to lock in moisture and freshness. The immature ginger just couldn't make the voyage," said Dr. Reza Rafie, retired horticulture Extension specialist at VSU.

Given that baby ginger takes less time to grow and harvest (seven to eight months compared to commercial ginger's 10-11 months), it can thrive in regions with shorter growing seasons than Southeast Asia. Dr. Rafie noted that many people have successfully grown baby ginger in pots and raised beds along the East Coast.

"But it's a crop that must be sold close to home and quickly," he added.

Dr. Theresa Nartea, marketing and agribusiness specialist at VSU worked with Siddiqui and Rafie to develop baby ginger recipes and farmers market sales strategies stated, "Baby ginger is a unique crop for Virginia's small farmers to grow and market to consumers looking for food as medicine or functional foods," she added. "Researchers have discovered many bioactive compounds and phytochemicals present in mature ginger revealing powerful anti-inflammatory, anti-cancer, cardiovascular, respiratory, anti-obesity, antidiabetic and neuroprotective health benefits. However, Dr. Siddiqui's groundbreaking work looked at a new Virginia specialty crop of immature or baby ginger and how it can prevent obesity."

Building on these findings, Siddiqui's team published research in 2023 on the potential role of immature ginger in obesity prevention. They found that ginger extract reduced fat content by 15-25% and triglyceride levels by 30-50% in fat cells. How does ginger achieve this effect? By modulating the expression of genes involved in fat production, thereby decreasing fat storage and increasing fat breakdown. Specifically, the research showed that ginger inhibited the genes responsible for creating new fats and those involved in converting glucose into fat.

Weighing freshly harvested immature Virginia grown ginger

What does this mean for obesity

See Ginger on Page 4

UMES evaluates climate change on grape production

Grapevines, just as with other crops, have a new enemy: climate change. Producers and researchers are noticing changes in the leaves and berries, causing concern for the country's $270 billion table and wine grape industry.

The University of Maryland Eastern Shore's "grape guy" Dr. Sadanand Dhekney has worked on improving the fruit staple for disease resistance for the past two decades. A newly funded USDA grant will allow him to address climate change impacts and build on his research on fungal diseases like powdery mildew that grapevines are susceptible.

"Worldwide, grape growers are seeing a decrease in berry colors, along with sunburn damage in berries caused by heat stress from high temperatures," Dhekney said. "The new project will allow us to study these effects and the genes involved. Using techniques in precision breeding and genome editing, we hope to improve table and wine grape cultivars for climate resiliency."

Quality of the fruit and increased shelf life are key outcomes.

"Traditional varieties of grapevines are ancient, having been discovered or developed over several hundreds of years," the professor of plant breeding and biotechnology said. "The goal is to use these cutting-edge techniques to add traits for abiotic stress tolerance while keeping the desirable traits intact."

Maryland has more than 1,000 acres in grape production, with hopes of expanding that number to service a burgeoning wine industry, that includes agritourism. Dhekney's work is timely, as a new law took effect in July 2024 requiring the state's farm wineries to grow at least 20 acres of their own grapes or other fruit, or 51% of their ingredients sourced in-state. Along with developing climate-smart grapevine cultivars, the grant also funds Cooperative Extension activities to increase grower awareness of grapevine canopy management practices. The $600,000 capacity building grant (a competitive grant among the nation's land-grant institutions) was awarded by the National Institute of Food and Agriculture.

The benefits of the project are multifaceted, Dhekney explained, touching grape producers, farm workers and consumers.

"Precision breeding and gene editing involve modifying grape genomic DNA sequences, which is more consumer and eco-friendly than traditional breeding and avoids concerns about genetically modified organisms. Pesticide usage is minimized or prevented, which decreases production costs for growers, reduces field workers' exposure and lessens the risk of negative effects for consumers," he said. "Plus, it's safe for the environment, as it promotes using sustainable management and practices."

Dhekney's other research projects are funded by different programs under USDA-NIFA including the Evans-Allen Program, supporting the nation's 1890 land-grant institutions, and its competitive programs, the Agriculture and Food Research Initiative and the Specialty Crop Research Initiative.

Above, from left, Shanaya Hines and Kennedy Wallace, UMES sophomores majoring in general agriculture, work on grapevine research with Dr. Sadanand Dhekney. Photos provided by UMES.

Undergraduate and graduate students also reap the benefits of Dhekney's research, as it heavily involves their participation.

"Student researchers are trained in diverse areas, including cell and molecular biology," he said. "They also get quality experience in gene editing and genetic engineering. The education and hands-on training on these techniques they get from working in the lab and in the field allows them to be competitive in the industry's workforce."

For more information, please contact Gail Stephens, agricultural communications, University of Maryland Eastern Shore, School of Agricultural and Natural Sciences, UMES Extension, gcstephens@umes.edu, 410-621-3850.

WVSU pioneers sustainable solutions with biochar and bioengineering

The sustainability of our civilization is at risk due to the overuse of nonrenewable resources, which disrupts natural systems and their capacity to provide essential ecosystem services; this has led to a substantial increase in atmospheric CO2 levels, contributing to global climate change. Addressing these challenges requires a shift towards reliance on renewable resources and adopting sustainable practices that allow for the regeneration of natural systems' capacity to provide ecosystem services.


Photo Credit: David McGill

At West Virginia State University (WVSU), Dr. Amir Hass and his research team are at the forefront of tackling these challenges. As part of the 1890 HBCU multi-state climate program, the team is actively engaged in multidisciplinary research to address regional, national and global impacts of climate change, especially on underserved and underrepresented communities. Their work focuses on soil-plant-water interactions, climate justice and climate policy issues.

One critical initiative in their studies is the research and application of biochar as a sustainable soil amendment to promote the efficient and predictive use of biomass and bio-based products in the community and economy. Biochar, a charcoal-like material produced during biomass pyrolysis, has shown great promise in sequestering carbon from the atmosphere, enriching the soil carbon pool and enhancing soil health and productivity.

Thorough testing has been carried out to assess the impact of different biochars on soil types and developing formulae tailored to the specific conditions of local farmers and the community. "We are actively involved in grassroots dissemination of on-farm biochar production to spread awareness and encourage the broader adoption of this climate-smart practice," Hass said.

One of the team's significant achievements has been collaborating with local farmers to set up on-farm biochar production systems and conduct workshops to demonstrate the process. Their efforts have encouraged the broader adoption of biochar as a sustainable soil amendment and empowered local communities to become actively involved in building a bio-based economy.

In addition to their groundbreaking research, they also emphasized the importance of training teachers on circular economy concepts, including using biochar to remove contaminants from water. This initiative aims to disseminate knowledge and attitudes about biochar and sustainable practices to the younger generations, fostering a culture of environmental stewardship and responsibility for future generations.

Hass and his WVSU research team exemplify a commitment to pioneering sustainable solutions to address the challenges of climate change. Through collaboration with local partners and active engagement with the community, they are driving positive societal impacts and mitigating the effects of environmental instability. Their dedication to promoting biochar as a sustainable soil amendment is a testament to their vision of building a more resilient and sustainable future for all.

For more information, please contact Dr. Amir Hass at amirhass@wvstateu.edu, or 304.204.4045, Agricultural and Environmental Research Station, West Virginia State University.

Ginger . . . From page 2

treatment? The study suggests that consuming ginger, particularly immature ginger, could help prevent fat cells from accumulating too much fat and reduce overall fat production. This could provide a natural therapy for managing or reducing obesity.

A Broader Impact: VSU's Commitment to Community Health

VSU's research into immature ginger is part of a larger commitment to exploring the health benefits of food and nutrients. "Virginia State University continues to enhance its 'Food as Medicine/Nutraceutical' efforts as we transition this transformative work into our new state-of-the-art M.T. Carter Annex facility," said Dr. Robert N. Corley III, dean and director of land-grant programs at VSU's College of Agriculture.

"These efforts have been led by Dr. Rafat Siddiqui for the past year. I want to congratulate and thank him for his significant contribution and leadership to our program and his dedication to improving the health of our community by investigating high-value micronutrients and foods capable of reducing health disparities that disproportionately impact our communities," added Dr. Corley.

Sample ginger billboard.

VSU's research into immature ginger highlights the university's dedication to leveraging the health benefits of foods to combat prevalent health issues. As Dr. Siddiqui states, "I don't think it's too early to encourage more farmers to start learning more about how to jump on what I estimate to be the start of a baby ginger bandwagon."

NAREEE hosts annual meeting at N.C. A&T; gets project updates

USDA's National Agricultural Research, Extension, Education and Economics (NAREEE) Advisory Board recently held its annual meeting at North Carolina A&T's Center for Excellence in Post-Harvest Technologies in Kannapolis, NC.

The NAREEE Advisory Board advises the Secretary of Agriculture, Tom Vilsack, and land-grant colleges and universities on top priorities and policies for food and agricultural research, Extension, education and economics; and is made up of 15 board members representing land-grant and non-land-grant colleges and universities, private industry and non-profit organizations on the basis of the following categories: (1) academic or research societies; (2) agricultural research, Extension and education; (3) industry consumer or rural interests; and (4) national farm or producer organizations. One of NAREEE's tasks is to review the relevancy and adequacy (R&A) of USDA programs. his year's R&A report focuses on USDA efforts in precision nutrition.

Dr. Chavonda Jacobs-Young, the Undersecretary for Research, Education and Economics (REE), leading the establishment of priorities for the Agricultural Research Service (ARS), the Economic Research Service (ERS), the National Institute for Food and Agriculture (NIFA), and the USDA's Chief Scientist. Dr. Jacobs-Young presented the overall priorities of the REE leadership and delivered a compelling case for the Board to consider a review of its precision nutrition programming and NEXTGEN initiative.

Over the two-day meeting, the Board listened to Dr. Deidra Chester's, the director of the Office of Chief Scientist, vision of the oversight of scientific leadership, coordination, outreach and integrity across the USDA. Her office also financially supports the efforts of the NAREEE Advisory Board. Key topics presented by Dr. Chester included the five priorities of the Science and Research Strategy with emphasis on Priority 3 – Bolstering Nutrition Security and Health, the USDA's Agricultural Science Center for Excellence for Nutrition and Diet (ASCEND) at Southern University and A&M College, and the USDA and Foundation for Food and Agriculture Research (FFAR) Innovation Challenge funding opportunity.

Board members also had an opportunity to listen to principal investigators' presentations regarding their NIFA-funded NEXTGEN projects hosted in 1862 and 1890 land-grant institutions.

Dr. Antoine Alston, associate dean of Academic Programs within the College of Agriculture and Environmental Sciences at North Carolina A&T State University, (CAES) Tier 3, $18 Million NEXTGEN project shared the College's leadership of its multi-institutional and interdisciplinary project, "System Approach to Promote Learning and Innovation for the Next GenerationS (SAPLINGS) of professionals and leaders in food, agriculture, natural resources and human scientists."

The presentation included the project's objectives and activities, which provide experiential learning, outreach and engagement and scholarships to build and equip a diverse workforce within the food and agricultural industries. Other presentations included member-based eXtension and the integration of artificial intelligence (AI) and eXtension.

The NAREEE Advisory Board also includes four subcommittees – Citrus Disease, National Genetic Resources Advisory Council, Pollinator and Specialty Crops. Dr. Greg Goins, CAES associate dean for Agriculture Research at N.C. A&T, serves as chair of the Specialty Crops Subcommittee and provided an overview of the subcommittee along with its charge, which is to study the scope and effectiveness of research, Extension and economics programs affecting the specialty crop industry.

Goins also presented the subcommittee's FY (Fiscal Year) 2023 Recommendations for NIFA's FY 2024 Specialty Crop Research Initiative (SCRI). The Board concluded each day with tours of N.C. A&T's Center for Excellence in Post-Harvest Technologies, led by Dr. Guibing Chen, and North Carolina State University's North Carolina Food Innovation Laboratory, respectively.

For more information, contact: Dr. Kenrett Jefferson-Moore, chair and 1890 representative of the USDA NAREEE Advisory Board at jykenret@ncat.edu or 336-285-4829.

Meeting attendees at Center for Post-Harvest Technologies.

FROM THE USDA NEWSROOM

Nominations taken for Justin Morrill Lectureship

Each year, NIFA joins with the APLU to sponsor a lecture presented at the group's annual meeting. The lecture honors one of the three most important historical figures of the land-grant university system: William Henry Hatch for research; Seaman A. Knapp for Extension; and Justin Smith Morrill for whom the Morrill Act, which created the land-grant university system, is named.

NIFA and APLU are seeking nominations to honor Justin Smith Morrill - the U.S. Senator primarily responsible for enactment of the historic legislation establishing the land-grant university system. The Justin Smith Morrill Memorial Lectureship is awarded to honor outstanding contemporary leadership in teaching and significant contributions as an educator. Nominations will be accepted by **Aug. 23**. Learn more about the Morrill Lecture and how to submit a nomination.

NIFA sets environmental justice listening sessions

As communities across the nation confront continuing environmental challenges and climate change, USDA's National Institute of Food and Agriculture (NIFA) continues its work to support the development of solutions to this pressing issue.

As part of this work, NIFA is holding a listening session to receive stakeholder input on potential agency actions related to environmental justice. The listening session will be at 3 p.m. EDT Tuesday, Aug. 20. Register for the session.

NIFA will use the information and insights collected in the listening session to strengthen its program delivery.

Hubs . . . From page 1

mation tailored to priority communities of interest including Tribal, Hispanic and Insular Areas.

The nutrition hubs will complement and increase the impact of USDA's collective contributions to Extension, education and research communities, and underserved communities at large, to better understand real-world opportunities and challenges around nutrition and diet-related health disparities and to develop coordinated science-based solutions and resources that benefit those communities.

"Equitable access to healthy, safe and affordable foods that promote optimal health and well-being can have a significant impact in reducing rates of diet-related chronic diseases including many cancers," said Dr. Chavonda Jacobs-Young, USDA chief scientist and under secretary for Research, Education and Economics. "When people have tailored tools, resources and knowledge, they are empowered to take a more active role in managing their nutrition and health."

Each hub will address program area priorities through the lens of precision nutrition, which is defined as nutrition tailored to different population subgroups based on integrating data for that subgroup. Findings from precision nutrition research will result in targeted development of nutritional recommendations and messaging for individual subpopulations, rather than a "one-size-fits-all" approach to dietary guidance.

"These nutrition hubs present an exciting new opportunity through our AFRI program portfolio to strengthen Extension, research and education efforts of our nation's land-grant universities," said USDA NIFA Director Dr. Manjit K. Misra. "The program's goal is to stimulate and catalyze cross-cutting and interdisciplinary work among scientists and stakeholders that will reduce the incidence of diet-related diseases while building current and future workforce capacity."

Over the long-term, each hub will work with priority populations to develop and share science-based nutrition information and foster research and training opportunities in human nutrition research to advance food and nutrition security, particularly in underserved and underrepresented communities.

Applications for this new competitive award program are being accepted through Oct. 3. The complete Request for Applications, including eligibility information, is available online.

Whitesides . . . from page 1

In today's rapidly evolving socioeconomic landscape, the principles of the land-grant philosophy hold even greater relevance. Emphasizing an integrated, iterative systems approach, these principles offer the best path forward toward developing solutions that effectively address the dynamic complexities of our environment.

This month, ARD members reflect on the enduring wisdom of the land-grant vision and mission. We celebrate the pivotal role of the 1890 land-grant universities in advancing this vision, particularly for individuals who are low-income, underserved or marginalized.

Looking ahead, the 1890 institutions must continue to evolve and expand our mission to proactively meet future challenges. To this end, we are spearheading multi-state, integrated initiatives aimed at tackling disparities in health, nutrition and wellness, education, food nutrition insecurity, climate change, sustainability and profitability of small- and medium-scale agriculture that disproportionately affect the people and communities we serve.

"We are 19 strong!" "Happy birthday, 1890 Land-Grant Universities.

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1890 Land Grant Universities

Alabama A&M University
Alcorn State University
Central State University
Delaware State University
Florida A&M University
Fort Valley State University
Kentucky State University
Langston University
Lincoln University
North Carolina A&T State University
Prairie View A&M University
South Carolina State University
Southern University and A&M College
Tennessee State University
Tuskegee University
University of Arkansas at Pine Bluff
University of Maryland Eastern Shore
Virginia State University
West Virginia State University

ARD Updates is published monthly by the Association of Research Directors. To suggest articles, contact Dr. Alton Thompson at athompson1@ncat.edu

NEW APPOINTMENTS

JOHNSON, RONALD A., interim president, Tennessee State University, effective Aug. 1.

BEARD, TIMOTHY, interim president, Florida A&M University, effective Aug. 5.

TOLEDO, JOSE ULISES, vice president for Research and Economic Development and director of the 1890 Land-Grant Programs, Central State University, effective Aug. 1.

HURISSO, TUNSISA, interim associate director for Cooperative Research, Lincoln University, effective Aug. 5.

JOB OPPORTUNITIES

SOUTHERN UNIVERSITY SYSTEM, Department of Agricultural Sciences and Technology, Assistant/Associate Professor of Agricultural Economics.

PROGRAM SPECIALISTS, Office of Partnerships and Public Engagement, Department of Agriculture, Multiple Locations (Alabama A&M University; Alcorn State University and University of Arkansas at Pine Bluff).

TUSKEGEE UNIVERSITY, College of Agriculture, Environment and Nutrition Sciences, Climate-Smart Project Associate and Agroforesty Project Coordinator

PRAIRIE VIEW A&M UNIVERSITY, Cooperative Agricultural Research Center, Veterinarian

PRAIRIE VIEW A&M UNIVERSITY, Cooperative Agricultural Research Center, Research Associate/Professor and the Director of the International Goat Research Center (IGRC)

WEST VIRGINIA STATE UNIVERSITY, WVSU Research & Development Corporation, Associate Dean/ Associate Director for Research

FLORIDA A&M UNIVERSITY, COLLEGE OF AGRICULTURE AND FOOD SCIENCES, Executive Director, Brooksville Agricultural and Environmental Research Station (BAERS) in Brooksville, Florida.

SOUTH CAROLINA STATE UNIVERSITY, Senior Director for Research Development. Send resume and cover latter to PSAhumanresources@scsu.edu 803536835.

IOWA STATE UNIVERSITY, Associate Dean for Global Engagement

LANGSTON UNIVERSITY SHERMAN LEWIS SCHOOL OF AGRICULTURE & APPLIED SCIENCES, Associate Professor of Biosystems Engineering/Precision Agriculture, Associate Extension Administrator

LINCOLN UNIVERSITY OF MISSOURI, Director of Agricultural Communications. Contact the Search Committee Chair, Dr. Douglas LaVergne with questions.

USDA OFFICE OF ENERGY AND ENVIRONMENTAL QUALITY, Climate Fellow Program Analyst.

KENTUCKY STATE UNIVERSITY, SCHOOL OF AGRICULTURE, HEALTH & NATURAL RESOURCES Assistant professor position for Integrate Pest Management; Assistant Professor of Organic Agriculture; Assistant professor of Forestry ;Assistant Professor of Livestock Nutrition

PRAIRIE VIEW A&M UNIVERSITY, COLLEGE OF AGRICULTURE, FOOD AND NATURAL RESOURCES, Associate Professor or Professor & Associate Dean

FORT VALLEY STATE UNIVERSITY, COLLEGE OF AGRICULTURE, FAMILY SCIENCES AND TECHNOLOGY, Assistant Professor of Animal Nutrition

CALENDAR

2024 agInnovation Fall Meeting | Theme: "Reimagining the Land-grant University and Industry Relationship"
Registration is live and can be accessed on the conference webpage.*If you have any questions regarding registration, please contact the Office of Professional Development at ContinuingEducation@ncsu.edu or 919-515-2261. For all other questions contact Cindy Morley cmorley@uark.edu.*