

ARD Updates

ASSOCIATION OF 1890 RESEARCH DIRECTORS

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Hamby appointed NIFA director; leads ag forward

Dr. Jaye L. Hamby has been appointed NIFA director. As director, Hamby will lead USDA's efforts to advance agricultural innovation, community outreach and foster the next generation of agricultural leaders.

"Dr. Hamby's deep-rooted experience in agriculture—from hands-on work in farming to decades of leadership in research and innovation—makes him the ideal choice to lead NIFA," said U.S. Secretary of Agriculture Brooke Rollins. "His commitment to advancing agricultural research, Extension and education will help drive solutions to the industry's most pressing challenges and ensure the continued strength and global competitiveness of U.S. agriculture."

A Tennessee native, Hamby grew up on his family's cow-calf operation and developed a deep connection to agriculture through 4-H and FFA, eventually serving as a national

FFA officer. He then earned a bachelor's degree in agricultural education from the University of Tennessee before completing his master's and doctorate degrees in agricultural education at Oklahoma State University. Over the course of his career, he has directed hundreds of research efforts specializing in concept testing, product marketing, value driver analysis and following market trends and strategies to support agricultural producers.



DR. JAYE L. HAMBY

Message from the Chair / DR. WESLEY WHITTAKER



DR. W. WHITTAKER

Dear Friends and Colleagues,

"What's Top of Mind?" The unprecedented challenges and sweeping policy changes of the past two months have significantly disrupted federal funding for research, academic and Extension programs within the 1890 land-grant system. Recent Presidential Executive Orders have eliminated funding for diversity, equity and inclusion initiatives along with support for underserved communities, creating uncertainty and complicating institutional planning, innovation and the sustainability of critical programs.

The ongoing "pausing" or "freezing" of funds has undoubtedly threatened long-term research and Extension projects, slowed scientific progress and placed undue strain on universities and scholars who rely on federal support to advance knowledge and technology. Without stable and transparent funding, the future of academic research, education and Extension is at risk—undermining the nation's leadership and competi-

tive advantage in science, agriculture and innovation.

In response to this rapidly changing political landscape, ARD encourages our divisions of research and finance to be proactive as they initiate regular drawdowns of available funds to ensure financial stability. Despite the enormous ongoing challenges, we remain vigilant and committed to our mission, as well as to demonstrate the impact we make.

As noted last month, ARD will continue aligning its mission and programs with the administration's priorities: agricultural profitability, thriving communities, positive youth development and healthy people.

Furthermore, the 1890 Evans-Allen Research Program maintains a long-standing and productive partnership with NIFA. Under the theme, *Stacking the Deck with Knowledge and Networking*, 1890 research directors and associate directors participated in NERAOC 2025, hosted by agInnovation West, from March 31 to April 3 in Reno, Nevada. This event provided valuable opportunities for professional development, information sharing and networking—covering topics such as grant administration (both competitive and capacity) and strategies for navi-



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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 Tennessee State University.

TSU researchers help cultivate state's nursery producers

Middle Tennessee is home to a large concentration of nurseries that provide plants for commercial and residential landscapes across the U.S. – producing economic, ecological and health-promoting benefits for Americans. Tennessee State University is helping to ensure the nursery industry continues to thrive.

Through research conducted at TSU's Otis L. Floyd Nursery Research Center (NRC), located in the heart of the state's nursery production region, Dr. Anthony Witcher is developing sustainable practices that improve



glyphosate application rates.

The study showed that susceptible horseweed plants at taller growth stages (rosette and bolting) were tolerant to glyphosate and had a 40-65% survival rate. The findings suggest that the best way to control actively growing weeds in susceptible horseweed plants is by using an effective herbicide while the plant is less than six inches tall and prior to its flowering.

A second study exposed the seeds of glyphosate-resistant horseweed to different pre-emergent herbicides (which are designed to keep seeds from germinating). It found that most of the pre-emergent herbicides were effective and provided excellent control.

The study gives growers a new approach to reducing the spread of glyphosate-resistant weeds: preventing them from establishing in the first place. Moreover, because fewer applications of pre-emergent herbicide are required relative to post-emergence herbicides, this approach has the added benefit of being more cost-effective for growers.

Best-Management Practices for Cover Crops.

Cover crops are another type of production practice that can be used to control weeds. Yet while cover crops are widely used in vegetable and agronomic cropping systems, very little information has been available for nursery production. Today, we have a clearer view into these questions, following several years of field trials conducted by Witcher and his team.

Their work resulted in the development of best-management practices for using cool-season cover crops in nurseries. First, they identified several cool-season cover crop species that performed well in Tennessee. Next, they evaluated different planting dates and planting methods that maximized cover crop establishment and growth. Finally, they developed cover crop mixes to give nursery growers options based on their primary goals such as weed suppression, reduced erosion, and increased soil organic matter.

Witcher has also collaborated with other TSU researchers to demonstrate other benefits of cover crops in nursery production, including the suppression of insects and disease.

Using Mulches in Propagation.

Weeds are also a major challenge in nursery crops grown in containers. These crops are commonly propagated from seeds or vegetative

the quality of crops and address key grower challenges such as weed control.

Managing Herbicide-Resistant Weeds. Controlling horseweed is a major issue in nursery crops, since this weed has developed resistance to glyphosate, the most widely used agricultural herbicide. Studies conducted by a graduate student in Dr. Witcher's program, will provide nursery growers with valuable insights into controlling glyphosate-resistant horseweed.

In the first study, horseweed plants (susceptible and glyphosate resistant) were grown to three growth stages (seedling, rosette and bolting) and then treated with different

TSU nursery research evaluates horseweed control.

TSU research aids egg and poultry production

As consumers increasingly demand sustainable, ethical food production practices in animal agriculture, the U.S. has seen a growing trend toward pastured poultry, small-flock free-range poultry and cage-free poultry production. These approaches not only produce nutrient-rich eggs and meat but also provide ecological benefits such as improved soil fertility and reduced dependence on chemical fertilizers and pesticides. To meet the growing demand, small-flock and backyard poultry producers must be able to build sustainable and profitable operations. Research led by Dr. Pramir Maharjan at Tennessee State University is producing insights that can help these producers reach that goal.

Drone-Assisted Pasture Rotation. Pastured poultry systems allow chickens to forage on grasses, insects and worms, leading to a more natural diet that can improve the quality and nutritional value of their meat and eggs – and reduce feed costs for producers.

A key to success is providing chickens with fresh pasture every day (for meat production) or every few days (for egg production). For producers, the goal is to optimize this process by identifying areas that have the best forage coverage and quality.

Ensuring their flocks get a diet rich in both greens and insects can reduce the need for feed supplements by up to 20%. Yet small producers lack effective tools to help them identify the best areas. Typically, they rely on their own judgment – eyeballing the pasture and making decisions based on what they think looks best. But it's easy to get it wrong. To address this challenge, Maharjan and his team are tapping into one of agriculture's most cutting-edge tools – drones.

In a study examining the feasibility of using drones to facilitate the pasture rotation process, they found that the technology provided the ability to scan large areas of pasture to identify the patch with optimal forage coverage and quality. The study also had an outreach component, in which the researchers assessed the needs of small-flock producers, provided information on effective husbandry practices and trained them on the use of drones in pasture rotation and flock management practices.

The study also suggested that drones could be beneficial in other daily management practices, such as monitoring flocks on extremely hot or cold days, monitoring the conditions of farm properties and fences and controlling one of the most significant concerns for small-flock producers: the loss of birds from predator attacks.

Feeding Practices. A key aspect of profitable poultry operations is managing feed nutrients, since feed accounts for 70% of total production cost. Generally, small-flock producers choose feed based on what is available in their local feedstore, without having much knowledge/information about either the feed's nutrient profile or their flock's specific nutrient needs (which is based on breed and bird age).

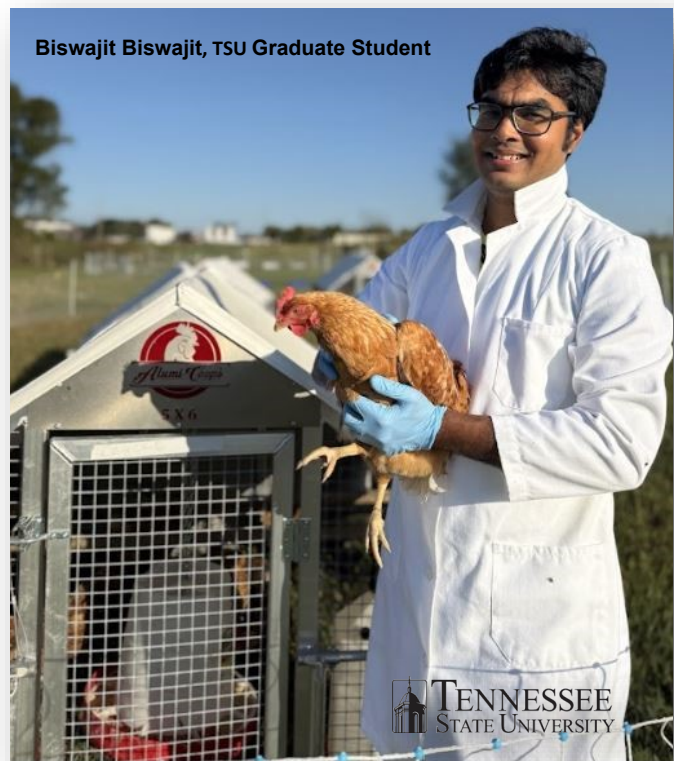
Another challenge is that for most backyard breeds,

there is virtually no research-based information on how different rearing and management systems affect nutrient requirements. This leaves a huge knowledge gap in understanding how diet influences egg production and quality in free-range pastured poultry flocks – a gap that Maharjan and his team are working to help fill.

In laying hens, dietary energy levels play an important role in regulating feed intake and they impact overall performance. Low-energy diets do not fulfill birds' metabolic needs, requiring them to spend time on feeding activity instead of egg production. Most of what is known about the laying hens' dietary energy requirements comes from research conducted on commercial layer hens in confined settings; there's a need for more information about energy requirements for birds in the free-range production setting. This information will be equally useful for commercial laying hen production as the industry shifts toward cage-free production.

Maharjan's team is testing diets with varying energy densities on egg-type breeds in confined and non-confined production settings and assessing the impact on performance measures – egg production, egg weight, feed intake, feed-conversion ratio, body weight gain and eggshell thickness – as well as physiological markers such as dietary calcium uptake, blood calcium levels, hormonal profiles, tibia bone mineral content and the expression of calcium-related genes. The findings will help refine dietary strategies for optimal performance, shell quality and skeletal health. The insights will benefit the egg industry – and help support the vitality of both small-flock and commercial producers.

For more information, please contact Dr. Pramir Maharjan, assistant professor, Poultry Production and Applied Nutrition, Tennessee State University, pmaharja@tnstate.edu, 615-963-5823



Biswajit Biswajit, TSU Graduate Student

Foundation readies 135th celebration

Join us as we commemorate “135 Years Strong...celebrating the enduring legacy, growing opportunities, inspiring innovation, and empowering communities” through the transformative impact of the 1890 Universities.

The 1890 Universities Foundation, on behalf of the 1890 Council of Presidents, Deans and Directors, will host a special observance on Sept. 10 at the Library of Congress. This event will highlight the historical significance of the Second Morrill Act and the lasting contributions of 1890 land-grant universities. Each university will have the opportunity to showcase its rich history and achievements through a curated display. Further guidance will be provided to help shape your university’s exhibit.

This is where we need your help. We

want to produce a 135th anniversary commemorative video. Help us tell the powerful story of 1890 universities and their impact over the past 135 years. We invite you to

submit photos, videos and historical content to be featured, which will highlight our collective achievements and contributions.

We need:

- Historical and Multimedia Content – Archival materials, stories and media on the history and impact of the Second Morrill Act.
- Photos and Videos – High-quality images or clips (JPG, PNG, MP4, MOV) that reflect your university’s legacy, with brief descriptions and approximate dates.
- Video Guidelines – Landscape orientation, clear audio, good lighting and under 60 seconds.

All files should be uploaded via Dropbox [here](#) by June 30. By submitting content, you grant the 1890 Universities Foundation permission to include your materials in the final video, which will be shared internally and publicly.

For questions, contact John Parker III – JParker@1890foundation.org or Luwanda Jenkins – LJenkins@1890foundation.org.

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Celebration

2025 1890 LAND-GRANT UNIVERSITIES IMPACT REPORT



Here’s our impact!

AEA and ARD, in collaboration with the 1890-USDA Task Force, recently published a 57-page document titled, “The 1890 Voice: Empowering Communities, Elevating Futures.” This document highlights selected impacts of the 1890 land grant system. Special thanks Ms. Latasha Ford and the communications staff at Fort Valley State University for gathering and editing the impact stories and publishing this superb document. It will be distributed widely within the land grant system and among our stakeholders and legislators. Click on this link to assess the [1890 Impact Document](#).

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gating federal grant programs in light of current administration priorities.

Participants also discussed best practices, policy interpretations and the implications of the recent Executive Orders and regulations affecting land-grant research and Extension enterprises. Overall, NERAOC 2025 proved to be an invaluable forum for strengthening collaboration and ensuring the continued success of the 1890 research community. One key takeaway was the importance of building relationships with state and local leaders, ensuring they understand your work and the value you contribute to the state’s economy.

Review Article: Big data in agriculture

Jonathan Masasia, John N. Ng'ombea, Department of Agribusiness, Applied Economics and Agriscience Education, and Blessing Masasib, Department of Natural Resources and Environmental Design, North Carolina A&T State University, Greensboro, N.C.

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ABSTRACT: Artificial intelligence (AI) presents an opportunity to offer innovative solutions to long-standing ag challenges. This review study provides an overview of AI applications in agriculture, focusing on its applications to predict and monitor crop growth rate and yield, climate change and weather patterns, pests and diseases management, weed management, animal production, agricultural machinery, crop irrigation, soil management and crop fertilization.

AI technologies, including machine learning, computer vision and precision agriculture, are explored. This review highlights the significant potential of AI to improve agricultural productivity, efficiency and sustainability.

Furthermore, AI adoption's challenges and limitations, including data quality and availability, infrastructure requirements, and ethical considerations, are also discussed.



JOHN N. NG'OMBEA



BLESSING MASASIB

Overall, this study demonstrates the transformative power of AI in agriculture and highlights the need for continued research and investment in this critical field to build more resilient and sustainable agricultural production systems.

Keywords: Artificial intelligence; agriculture; machine learning; deep learning.

A free version of this journal article is available at <https://doi.org/10.26480/bda.02.2024.113.116>.

Nursery . . . From page 2

cuttings, which can be sensitive to herbicides. Hand weeding is an option, but it's labor intensive and costly. Mulches have recently been used in container production for weed control, but some of the materials are not adaptable to plant propagation.

To better understand, Witcher and a graduate student identified several alternative mulch products and evaluated them for weed control in seedling and cutting propagation. The researchers looked at the effects of mulch depth on crop root growth and performed weed germination assays at different mulch depths and over time. They found that pine pellets and paper pellets provided excellent weed control and had no negative effects on the propagated plants. As a result, nursery growers now have a new way to address a key challenge in container production.

For more information, please contact Dr. Anthony Witcher, associate professor, Otis L. Floyd Nursery Research Center, Tennessee State University, awitcher@tnstate.edu, 931-815-5147



TSU research evaluates weeds in nursery rows.

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JOB OPPORTUNITIES

LINCOLN UNIVERSITY, School Of Agriculture, Environmental and Human Sciences, [Associate Director for Cooperative Research](#)

NORTH CAROLINA A&T STATE UNIVERSITY, College Of Agriculture and Environmental Sciences, [Assistant Professor, Dietetics](#); [Program Director, Dietetics Graduate Program](#); [Assistant Professor, Nutritional Services](#); [Assistant/Associate Professor, Nutritional Sciences](#)

SOUTHERN UNIVERSITY SYSTEM, Department of Agricultural Sciences and Technology, [Assistant/Associate Professor of Agricultural Economics](#).

ALCORN STATE UNIVERSITY, School of Agriculture and Applied Sciences, [Assistant/Associate Professor of Agricultural Economics and Agribusiness](#)

TUSKEGEE UNIVERSITY, College of Agriculture, Environment and Nutrition Sciences, [Climate-Smart Project Associate](#) and [Agroforestry 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](#)

LANGSTON UNIVERSITY SHERMAN LEWIS SCHOOL OF AGRICULTURE & APPLIED SCIENCES, [Associate Professor of Biosystems Engineering/Precision Agriculture](#), [Associate Extension Administrator](#) : [Associate Research Director](#)

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

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](#)

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](#)

SOUTHERN UNIVERSITY AGRICULTURAL RESEARCH & EXTENSION CENTER, [Vice Chancellor for Research](#).

PRAIRIE VIEW A&M UNIVERSITY, College of Agriculture, Food and Natural Resources, [Director, Center for Sustainable Farms and Urban Agriculture](#).

UNIVERSITY OF MARYLAND EASTERN SHORE, School of Veterinary Medicine, [Associate Dean for Research](#), School of Veterinary Medicine, [Associate Dean for Academic and Faculty Affairs](#).

LANGSTON UNIVERSITY, Sherman Lewis School of Agriculture and Applied Sciences, [Associate Research Director](#).

ALCORN STATE UNIVERSITY, School of Agriculture and Applied Sciences, [Alcorn State University Employment Opportunities](#) | [Chairperson, Human Development and Family Science](#)

NEW APPOINTMENTS

DR. C.P. (Pat) BAGLEY, Associate Vice Chancellor for Research, Southern University Research and Extension Center, March 1, 2025

DR. TUNSISA HURISSO, Interim Dean, College of Agriculture, Environmental and Human Sciences, Lincoln University, March 15, 2025

CALENDAR

[Southern Mini Land-Grant Meeting](#) | June 9 - 12, The Graduate Hotel, Fayetteville, Arkansas

[Association of Communications Excellence \(ACE\)](#) | June 16 - 18, Hyatt Regency Milwaukee, Wisconsin



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