

WKU Agriculture Alumni

Newsletter • Fall 2025



Dear Alumni,

We had another productive year here on the Hill in 2024/2025. I hope you take time to see some of the highlights in this newsletter. While budgets, the ‘academic cliff’, and weather made this past year challenging, we were able to continue providing our students quality educational experiences both inside and outside the classroom. This is a testament to the dedication of our faculty and staff and the support of our alumni. For first-time, first-year freshmen, the department had an 87.9% retention rate of these students from fall of 2024 to the fall of 2025 semester. This was the highest in the Ogden College of Science & Engineering! Additionally, we saw a growth of 8.5% in our student enrollment. Finally, our graduation rate was 72.6% which is almost 13

percentage points higher than the university’s average. I am truly proud of our faculty and staff’s hard work and dedication towards our students.

Please check out the rest of this newsletter. You will learn about student achievements and activities, ongoing research, new industry partnerships, and Homecoming 2025 information. We believe it is an exciting time to be in Agriculture here on the Hill. I hope after you review this newsletter, you agree. Again, I want to thank you for your support. Whether you were able to contribute financially, donate supplies and equipment, come speak to a class or judge a contest, or just pointed a potential student in our direction, we are truly grateful.

Go Tops!

A handwritten signature in black ink that reads "Paul B. Woosley".

Paul B. Woosley, Ph.D.
WKU Agriculture & Food Science Chair



 **WKU** Department of Agriculture & Food Science

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2024-2025 Outstanding Students

AGRICULTURE & FOOD SCIENCE STUDENT AWARD WINNERS



JOHN SHIRLEY



TORI LANGMAN



ELIJAH DOTSON



KENZLEY ALLARA



CATIE CRAIG



SOPHIA PATINO-RUIZ



SHI JIE LIU

- John Shirley (Outstanding Agribusiness Student)
- Tori Langman (Outstanding Agricultural Education Student)
- Elijah Dotson (Outstanding Agronomy Student)
- Chris Shaw (Outstanding Animal Science Student)
- Kenzley Allara (Outstanding Floriculture Student)
- Catie Craig (Outstanding Horticulture Student, Outstanding Senior in Agriculture)
- Sophia Patino-Ruiz (Outstanding Horse Science Student)
- Shi Jie Liu (Outstanding International Student)

**Congratulations to
these amazing students!**



Department of
Agriculture & Food Science

Homecoming



Eric Raby
Guest Speaker

Eric Raby is the Senior Vice President of the Americas Region for CLAAS, based in Omaha, NE. In this role, he leads the operations for North and South America encompassing all commercial aspects of the business. Most recently, he was the President and GM for CLAAS of America while previous roles included executive leadership positions in the agricultural equipment

industry for AGCO Corporation, including VP of Global Seeding & Tillage, VP of Corporate Marketing & Commercial Development, VP of Sales & Marketing in Eastern Europe & Asia based in Switzerland, and a VP/ Managing Director for Europe, Africa, and the Middle East located in the United Kingdom. For 17 years prior to that, he served in a variety of other positions within North America.

Raby started on the manufacturer side in 1990 when he joined the Hesston Corporation, serving as a field service representative. He also worked for two dealerships in Kentucky; one as a service technician apprentice during high school and the other as a retail sales representative during college. In addition, he grew up on his family's beef cattle, hay, and tobacco farm in western Kentucky. Raby received an Associate in Science Degree in Ag Equipment Management and a Bachelor of Science Degree in Agricultural Mechanization from Western Kentucky University as well as attending professional development programs at Purdue University, University of Virginia, and Universität St.Gallen in Switzerland.

He is a member of the National Agri Marketing Association, has served as judge for the Southeastern U.S. Farmer of the Year Program, and is a member of the Alpha Gamma Rho agricultural fraternity. Raby also served as a member of the U.S. Commerce Department's Industry Trade Advisory Committee on Automotive Equipment and Capital Goods (ITAC 2) and is currently a board member with the Association of Equipment Manufacturers.



*More Information
& Registration*



Department of
Agriculture & Food Science

Agriculture Alumni Board



**Tim Hughes,
1987
WKU Agriculture
Alumni Chapter
President**

Tim is a native of Auburn, KY but now resides in Frankfort, KY. He is currently a Managing Partner with Accentuating Stewardship, LLC, where he holds an advisor role with biofuels and agricultural development. Tim has held several positions of leadership within Kentucky's agriculture industry throughout the years to include positions with the KDA.



**Angela
Wilcoxson
Vaughn, 1986
WKU Agriculture
Alumni Chapter
Vice President**

Originally from Horse Cave, Angela grew up on a dairy farm on the Hart/Barren County line. While at WKU, she met Dennis Vaughn in the Ag department. They married in 1987 and moved to Franklin, KY. They have two children who are both WKU graduates, Justin (2014) and Hillary (2020). Promoting WKU and agriculture is important to Angela. She is a third generation Hilltopper. The Vaughns farm in Simpson County, producing corn, soybeans, hay and beef cattle. Her hobbies include traveling, kayaking, cooking, planning events, and spending time with her family, especially their two grandchildren, Case and Codi Vaughn.



**Andy Hurt,
2006
WKU Agriculture
Alumni Chapter
Treasurer**

Andy is a Bowling Green native and was a WKU student trying to find his path when he stumbled upon the Agriculture department and its turfgrass science courses. Though he would never have thought he would be drawn to agriculture, the coursework and the culture fit his interests. Andy had his own lawncare business during his time at WKU, which he expanded upon graduation. He currently is employed by Tenbarge Seed Company as an Outside Sales Representative focusing on the turfgrass industry and still resides in Bowling Green.



**Jo Lyn
Eblehar, 2021
WKU Agriculture
Alumni Chapter
Secretary**

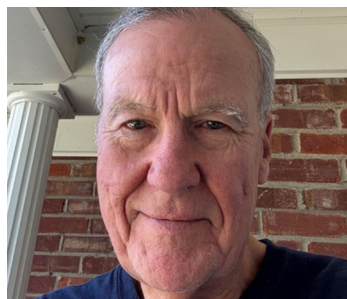
Jo Lyn received her B.S. from WKU in Agriculture specializing in Agribusiness. She is a Franklin, KY native and works there today with Worldwide Technologies, LLC.

Agriculture Alumni Board



Robert Anderson, 2015, 2018
WKU Agriculture Alumni Chapter Board Member

Robbie Anderson received both his B.S. and M.S. in Agriculture. He is an Owensboro, KY native but now resides in Louisville, KY. Robbie currently works as a Retail Credit Officer for Farm Credit of Mid America.



Doyle Cunningham, 1976, 1977
WKU Agriculture Alumni Chapter Board Member

Doyle received both a B.S. and M.S. from WKU. Originally from Irvington, KY, he now resides in Prospect, KY. Doyle is retired but worked with KY Farm Bureau for 23 years. He continues to be active with WKU's Alpha Gamma Rho fraternity.



Gary Woodall, 1969
WKU Agriculture Alumni Chapter Board Member

Gary Woodall is the owner of Woodall Angus Farm in Logan County, KY. He has served as President of the KY Cattleman's Association and was elected into their Hall of Fame in 2022.



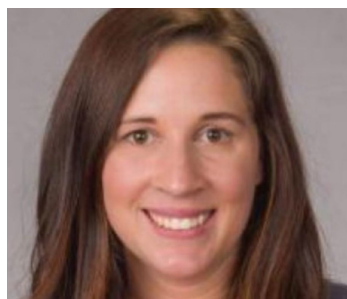
Joe Duncan, 1970
WKU Agriculture Alumni Chapter Board Member

Joe Duncan has served on Warren County Extension Board and was awarded the 2022 Extension Leader Award. He has also co-hosted Ag Connections on WKCT, served on the Warren County Ag Development Council, and for the Warren County Ag Foundation. Joe is a long-time farmer here in Warren County.



Molly Clayton, 2019
WKU Agriculture Alumni Chapter Board Member

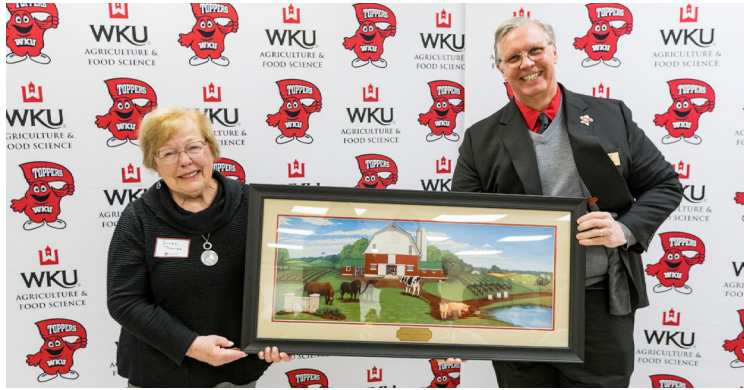
Molly received her B.S. in Agriculture in 2019. A native of Metcalfe County, she represented WKU Agriculture and the Commonwealth as Miss Kentucky in 2017. She currently teaches 2nd grade at Hedron-Loan Oak Elementary in McCracken County.



Dr. Katherine Van Valin, 2013
WKU Agriculture Alumni Chapter Board Member

Dr. Van Valin received her B.S. in Agriculture and Biology in 2013. She received an M.S. (2016) and a Ph. D. (2019) from Virginia Polytechnic Institute and Iowa State University, respectively, specializing in Animal Science. She is an Extension Specialist with the University of Kentucky and conducts research at the Princeton, KY Experiment Station.

Agriculture Alumni Award Winners



Dr. Susan Jones
Friend of the Year



Doyle Cunningham
Spirit Award



Nathan and Michelle Howell
Alumni of the Year

Alumni Scholarship Recipient

Meet Emma White

My name is Emma White, and I am from Edmonson County, Kentucky. I am currently a senior at Western Kentucky University, pursuing a degree in General Agriculture along with certificates in Geographic Information Systems (GIS) and Land Surveying. I am deeply honored to have been selected as the recipient of the Alumni Scholarship. Knowing that there were many amazing candidates makes this honor even more meaningful to me, and I am truly grateful for the opportunity your support provides.

This scholarship will allow me to devote more energy and focus toward my studies and future career goals. My passion for agriculture runs deep, as I hope to one day take over my family farm, which has been in our family for generations. With the education and hands-on experiences I am gaining through WKU's Agriculture Research and Education Center, I feel prepared to carry on this legacy and work toward making the farm the best it can be. At the same time, I am pursuing my certification and career goals in land surveying. While surveying will hopefully be my career, agriculture has always been a part of my life and will continue to remain a big part of who I am. I am truly thankful for your generosity and support in helping me take the next steps toward building my future.



Memorials



Dr. James Worthington

Dr. James Worthington passed away on October 3, 2024, at the age of 89. He was a native of Conover, OH and received his Ph.D. from the Ohio State University. He retired from WKU's Department of Agriculture in 1997 where he served twice as Interim Department Head. He conducted herbicide research and taught plant science, pest management, and statistic courses in the department. He was a permanent fixture at WKU Men's basketball games wearing his traditional red sweater. He was well loved by his students and fellow faculty that worked along his side. Rest in peace, Dr. Worthington.



Dr. Luther Hughes

Dr. Luther Hughes passed away on May 5, 2025 at the age of 81. Dr Hughes was a Trigg County native and graduated from WKU in 1966. He later pursued graduate school and received his Ph.D. from the University of Purdue. Dr. Hughes was an agronomist and served on the faculty at California Polytechnic State University and the University of Missouri before accepting the Agriculture Department Head position at WKU in 1983. While under his leadership, the department experienced an extended period of growth and stability. He worked with Dr. Bob Schneider to develop the compost program with the City of Bowling Green that still operates today. In 1996, he took the Associate Vice President for Enrollment Management position at WKU. He held this position until 2006. During this time, the university experienced significant growth in student enrollment. Dr. Hughes remained active in agriculture through various roles within the state and the FFA until his death. He was instrumental part of continuing and improving upon the department's legacy and will be greatly missed.



Dr. Elmer Gray

Dr. Elmer Gray passed on March 26, 2025, at the age of 90. Dr. Gray was a native of Jackson County, KY. He attended Berea College for his B.S. degree. After a stop at the University of Kentucky for his M.S., he later received his Ph.D. from Cornell University in NY. Dr. Gray spent time on the faculty at the University of Tennessee before settling into a long career at WKU. While serving on the faculty in the department, he taught many graduate level classes dealing with statistics, experimental design, and population genetics. Later in his career, he also taught undergraduate courses related to agriculture sustainability. He spent several years as Dean of the Graduate College and loved to mentor students in research. Dr. Gray mentored many graduate students throughout the years, many of which were international students. His zeal for research and love for mentorship allowed him to form strong relationships with his students. This was evident when former students from California, Colorado, and Texas came back to the Hill for his memorial. Dr. Gray embodied all the qualities that the department values in its faculty, staff, and students. He was an extraordinary example on how to live and will be greatly missed.

Agronomy News

Pictured to the right is the 2024 WKU Soil Judging Team comprised of Allie Mutter, Kylie Davis, Eli Dotson, and Landin New. The contest was hosted by UK and held at Lexington and Berea, KY. We graduated three of the four students between the Fall and Spring: Allie Mutter, Kylie Davis, and Landin New. We also were able to see many other soil profiles after we returned from Lexington. Special thanks to Allie Mutter's family and Eli Dotson's family for use of their farms. Special thanks to Eli for hauling and digging the soil pits this past year.



The Agronomy Club was active this past year. The group planted popcorn and ornamental corn at the WKU AREC this spring. In the process, they learned a lot of the practical skills associated with planting crops. We appreciate Eli Dotson's help with bringing equipment, acquiring seed, and demonstrating tillage and planting techniques.



In Dr. Singh's AGRI 493/493G (Sustainable Agriculture) class, guest speakers Katie Smith (Soil Conservationist, USDA-NRCS) and Darby Aubin (Soil Conservation Technician for Warren County Conservation District and NRCS) were invited in Spring 2025, who shared their insights on conservation programs and the vital role of NRCS in supporting Central Kentucky farmers.



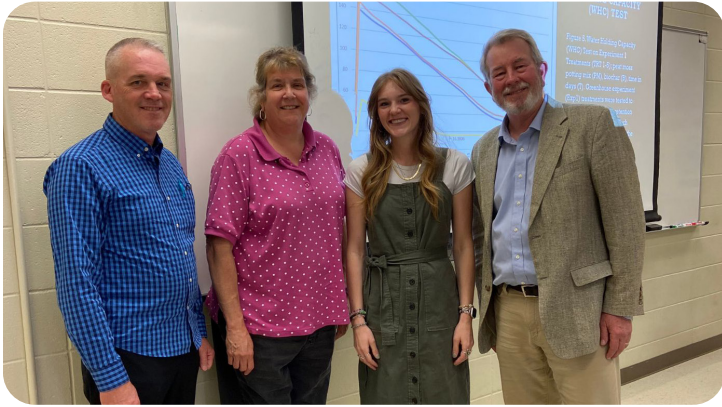
Students from the AGRI 493/493G (Sustainable Agriculture) class, instructed by Dr. Navdeep Singh, visited local producer Mr. Willie Huston's field, at Rockfield, KY in Spring 2025. Students learned about innovative strategies for diversifying farm enterprises and advancing sustainable agriculture. Pictured from left to right are Dr. Navdeep Singh, Willie Huston (producer), Mary Niblett, Addie Ramey, and Samantha Massey.

SAIFD

Summer 2025 was big for the James M. Martin Western Kentucky University Student Chapter of the American Institute of Floral Designers! Five students from the chapter attended the American Institute of Floral Designers National Symposium held this year in Palm Springs, California, competed in the nationwide student competition, attended educational hands-on workshops taught by industry leaders, and attended large mainstage presentations from prominent names in the floral design industry. Chaperoned by Professor Roger Dennis (MAE, BS, AIFD, AAF, PFCI), the students in attendance were Chapter President Ariel Wolfe, Vice President Joe Taylor, Historian Arin Stewart, Daisy Machado-Sanchez, and Madalyn Gripp. They competed in a five-hour competition where they were required to complete a design in four categories: Interpretive, Fashion Flowers, Flowers to Carry, and Arrangement. Awards night added to the magic of the symposium, where it was announced that out of the 28 competitors, Ariel Wolfe placed third in the Interpretive category, Madalyn Gripp placed first in the Arrangement category, and Joe Taylor earned second runner-up overall! With their overall scores being high enough, Ariel, Joe, and Madlyn are able to and will be pursuing their Certified Floral Designer (CFD) accreditation over the next several months through the American Institute of Floral Designers. Receiving this accreditation is the first phase of becoming a certified member of the American Institute of Floral Designers. Over the entirety of the symposium, so much was learned, friendships with students from colleges across the country were kindled, mentors were gained, and unforgettable memories were made, all in one flower-packed week.



Graduate Student News



Megan Mudd after her successful defense with her committee members. (From left, Dr. Todd Willian, Dr. Becky Gilfillen, Megan, and her advisor Dr. Martin Stone).

In April, Megan Mudd completed her M.S. degree. Megan researched the effect of adding biochar to a propagation mix of two conifer species. One of her results found that at the correct ratio of propagation mix with biochar, conifer roots were heavier and longer than using commercial potting mix alone. This result will positively impact the nursery industry in the coming years. Megan also taught courses in plant science and farm safety at the WKU-Glasgow campus. She previously earned her B.S. degree in Horticulture at WKU. Congratulations, Megan.

Agricultural Education



The Agricultural Education students competed in the 2025 North American Colleges and Teachers of Agriculture Contests in April at West Texas A&M University in Amarillo, Texas. The students were entered in the Agricultural Education Teaching Contest. The team finished the contest as the national runner-up. Team members Emma Betz, Kendall Berry, Alicia Konichek, and Alena Jordan made the trip to Texas and explored the Amarillo Area. The team made stops at F Troop Feeders, Botanical Gardens, Quarter Horse Museum, Vega High School, Cadillac Ranch, and ate a meal at the Big Texan.

50th Annual Little North American



Saturday, March 28, 2026
Please follow our
Facebook (WKU Block & Bridle)
or **Instagram (@wkublockandbridleclub)**
for more information!

Block & Bridle

Block and Bridle members, Emma Davidson (Class of 2027), Alena Jordan (Class of 2026) and Holland Scruggs (Class of 2027) with assistance from CJ Johnston (Class of 2026), had a successful first year showing 14 dairy heifers at the Casey County Fair (KY state Holstein show), Lincoln County Fair, Hardin County Fair, Barren County Fair, and Allen County Fair. We will finish the season at the Tennessee State Fair. This would not have been possible without all the support from our sponsors and the WKU Farm faculty and staff. Thank you!

Results from the Lincoln County Fair held in July

Junior Calf:

- 1st: WKU Tristan Bertha-TW
- 2nd: WKU Crusher Toucan Sam
- 3rd: WKU Post Chappell Roan

Intermediate Calf:

- 2nd: WKU Andri HOTTOGO
- 3rd: WKU Hansel Ohme-TW
- 4th: WKU Sheepster Dumbo

Senior Calf:

- 2nd: WKU Crusher MJ
- 3rd: WKU Sheepster Skittles
- 4th: WKU Sundance Julep

Junior Yearling:

- 1st: WKU Captain Lawless

Intermediate Yearling:

- 2nd: WKU Achieve Big Brain



Agribusiness News

The WKU Agribusiness program is thankful to all our alumni, friends, and stakeholders who have helped us with another successful year. This past academic year, we had some excellent students graduate from our program and go into the workplace to represent WKU well. This past year, we had various alumni speak in our classes and at our Agribusiness Club meetings. Some of these were Paul Moore (1975 WKU Ag graduate) who spoke to our students about opportunities in agricultural land and farm appraisal, Spencer Langford (2020 Agribusiness) who spoke about opportunities with the USDA National Agricultural Statistical Service, and Lucas Garrison (2020 Agribusiness) who spoke about opportunities in the agricultural financial service industry.

Dr. Dominique Gumirakiza and Dr. Stephen King have received approval from the Taylor & Francis Group to publish a textbook. Provisionally, the textbook is entitled *Agribusiness and Entrepreneurship: A Practical Introduction*. A draft of the textbook is due to the publisher by June 30, 2026. Dr. Gumirakiza and Dr. King will be busy with this project over the upcoming academic year. They hope to include case studies and profiles of professionals in the industry. Anyone who might be interested in assisting with such content is encouraged to contact either Dr. King or Dr. Gumirakiza.

Thank you to everyone who has helped us with another successful year. If you know of any students interested in our program, please let us know. Also, if you would like to be involved by being a guest speaker, organizing a field trip, or supporting the Agribusiness Club, please contact Dr. King (Stephen.King2@wku.edu) or Dr. Gumirakiza (dominique.gumirakiza@wku.edu).



WKU Agriculture Agribusiness Students with Paul Moore and Dr. Gumirakiza, October 29, 2024.

WKU Collegiate Farm Bureau



Chapter President Amelia Tucker competing at the National Discussion Meet competition in Denver, Colorado, March 2025.



WKU CFB members Mattalyn Johnson and Amelia Tucker at the Young Farmers Leadership Conference in Lexington, Kentucky, January 2025.

The WKU Department of Agriculture and Food Science now has a Collegiate Farm Bureau Chapter. Dr. Paul Woosley and Dr. Stephen King worked with Taylor Nash, Director of Young Farmer Programs at the Kentucky Farm Bureau Federation, to establish our Collegiate Farm Bureau Chapter. We helped identify a set of student leaders and Dr. King signed the Memorandum of Understanding on August 28, 2024.

During this first year, WKU CFB chartered, elected officers, held meetings in both the fall and spring semesters, participated in the first Collegiate Day at the Kentucky Farm Bureau office in Louisville, had two members compete in the State Discussion meet at the Young Farmer Winter Outing while gaining professional development, had one member win the state discussion meet, sent a member on the 2025 KFB Congressional Tour, and sent a member to the 2025 Fusion Conference in Denver, Colorado to compete in the National Discussion meet and take part in leadership workshops and industry tours. We are proud of the efforts by our new WKU CFB members. They have done very well, and we look forward to their continued success.

If you would like to know more about the WKU CFB, be a guest speaker at a meeting, organize a field trip, or support us in any other way, please contact Dr. Stephen King (stephen.king2@wku.edu) or the WKU CFB student President Amelia Tucker (amelia.tucker514@topper.wku.edu).



Collegiate Farm Bureau members from Kentucky universities on the 2025 KFB Congressional Tour in Washington DC. WKU's Amelia Tucker is pictured fourth from the right.

AGR to Celebrate 60 Years at WKU

Alpha Gamma Rho (AGR), one of two agriculture-based fraternities at WKU, became a national fraternity on our campus on January 8, 1966. Since that date, the AGR chapter at WKU has had over 850 young men join its Brotherhood.

AGR has not attempted to be the biggest, but rather to be the best. Its motto is “to make better men.” Throughout its history on the WKU campus, AGR has had individual members become successful in their chosen careers, and not just in agriculture or agribusiness, but in every field of study. One of AGR’s members, Dr. Jack Britt, was inducted into the WKU Hall of Distinguished Alumni.

AGR is proud of its performance during the annual WKU Greek Week. Last spring, AGR won first place overall, including first in Tug and Blood Drive. Earning first place in Greek Week has almost become a tradition. AGR has won Greek Week 28 years, and all the other fraternities combined have won it 31 years. As for Tug of War, AGR has won 31 times, and all the other fraternities combined have won 28 times. All this, despite being one of the smallest fraternities on campus. AGR stresses academics, leadership, and philanthropy.

The official 60th anniversary celebration for AGR will be held at the Sloan Convention Center in Bowling Green, April 10-11, 2026. AGR thanks everyone who has helped make it a successful and proud member of the WKU community.

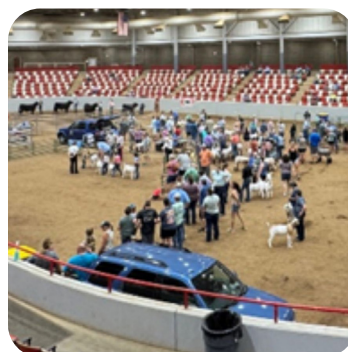
For further information on AGR, contact faculty advisor Dr. Stephen King (stephen.king2@wku.edu), AGR Student Chapter President Noble Ruler, Collin Cook (collin.cook393@topper.wku.edu), or Chairman of the AGR Alumni Board, Will Tolley (willtolley@yahoo.com).



AGR Members at The Pete Dotson Memorial Golf Scramble, July 12, 2025.

L.D. Brown Ag Expo Center

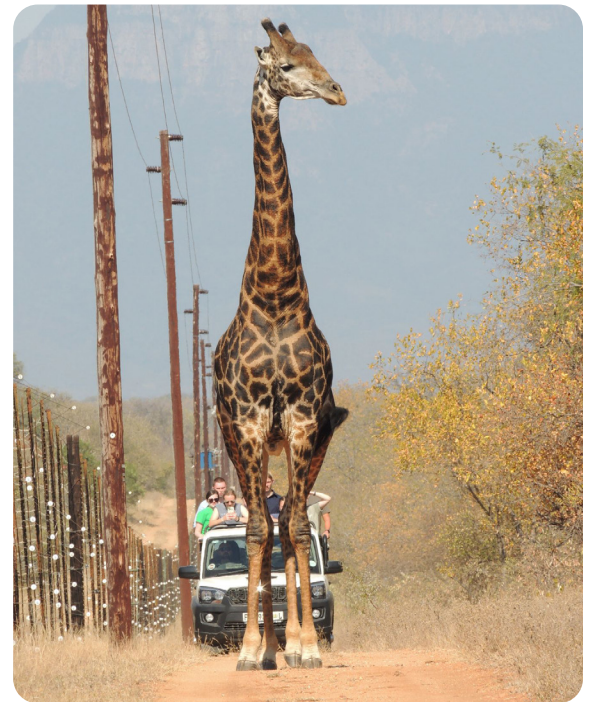
- Hosted several new events including the American Shetland Pony Club Show & Sale and Ranch Horse Association of Kentucky.
- Hosted many returning events including the Southern Kentucky Team Penning Association, Lone Star Rodeo, Carden Circus, West Kentucky Flat Shod Sale Kentucky Sustainable Living Expo.
- Proud to support our local 4-H, FFA, and other youth activities.



Pre-Vet News

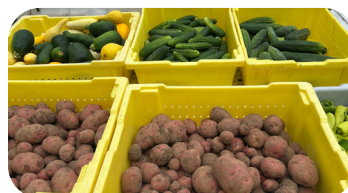
The Pre-Veterinary Club hit the ground running last fall under the leadership of an outstanding team of officers and faculty advisors, Dr. Debra Shoulders (Agriculture) and Dr. Carl Dick (Biology). Throughout the fall semester, we hosted speakers from Auburn University, the University of Tennessee, and the University of Missouri veterinary schools, who provided valuable insight into their curriculum and application processes. We also enjoyed a variety of hands-on and informational sessions, including Dr. John Laster's equine lameness discussion and joint injection demonstration, Dr. Tim Gardner's bovine ultrasound and fetal sexing session at the WKU Dairy, and Dr. Ellie Hollis's equine vaccination day, which also featured farrier services and equine dental care. Additionally, we held a Zoom call with USDA veterinarians to explore federal government career opportunities and the Veterinary Corps.

The club also participated in exciting field trips, including a tour of Hagyard Equine Medical Institute in Lexington, KY and a visit to the Nashville Zoo. We were proud to host our first WKU Rabies Vaccination Clinic, offering services to students, staff, and faculty. The year concluded with a remarkable field biology course in South Africa, where seven pre-vet students gained firsthand experience in wildlife ecology and management, including the capture and relocation of zebras, impala, waterbuck, and giraffes.



Horticulture News

The Horticulture unit at AREC continues to engage our campus community. Horticulture students help grow and care for thousands of annual flowers that are planted on campus during each spring and fall semesters. This past summer, faculty, staff, and students had the opportunity to participate in a CSA (Community Supported Agriculture). For a monthly fee, customers would receive vegetables, beef, and other items produced by students at the University Farm. It was great having Dean David Brown as one of our customers!



Crop News

- Total 2024 crop acreage for AREC was 63.5 ac of corn silage, 98.5 corn, 177.5 ac of soybeans, and 40 ac of wheat haylage.
- Total of 11 industry partner agronomic companies for 2024 to include: BASF, Corteva, Pioneer, Growmark, Bayer, Wheat Tech, UK Plant Pathology, LG, Becks, NK, and FMC.
- Total of five WKU/USDA small plot research studies.
- Hosting KY Soybean Board meeting in Summer 2025.
- Hosted BASF, Bayer, Pioneer and Growmark field days.
- Winner of the 3rd district soybean high yield (non-irrigated) contest for the third year in a row with a yield of 84.8 bu/ac.
- Partnership with Claas Farmpoint will allow silage to be harvested by Claas Jaguar 990 silage chopper, grain harvested by Claas 740 Trion combine, and utilization of Claas Arion 630 and Claas Arion 650 tractors for both hay and crop production.



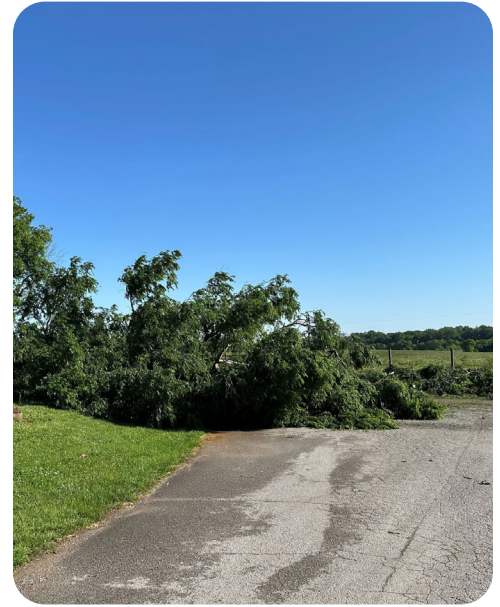
WKU SmartHolstein Lab



- 50-55 Cows milking
- 85# Average per cow, 4.1%BF, 3.2%P
- 36 heifers born last year, with more expected this year
- New 2,700 gallon Mueller tank installed
- Block and Bridle started a show string using heifers from the dairy. 14 heifers and three kids traveled the state showing this summer
- Used a Claas forage harvester this year to chop silage and are excited to see milk impacts from quality forage processing



WKU AREC



Over the past year, AREC has endured several storms and enjoyed lots of rainbows. Most notable of the storms was in May in which wind speeds exceeded 75 mph and resulted in the loss of over 50 trees and damage to the beef pavilion barn roof. Clean-up is ongoing.



WKU is proud to announce a new partnership with Claas Farmpoint, and WKU AREC has brought some new equipment to aid in farm activities. Through the generous help of alumnus Eric Raby, Claas Farmpoint has provided two Claas Arion Tractors, Claas Jaguar 960 Forage Harvester with 12 row corn head, and Claas Trion 740 Combine with corn and soybean heads for use around AREC.

Wright Implement has continued their pledge to support Agriculture at WKU by continuing to provide equipment for AREC and Ag Expo usage. Their continued support includes a John Deere 6155 tractor, a John Deere 6140 tractor, two John Deere 5095 tractors, and two John Deere Gators.

WKU AREC and the WKU Men's and Women's Golf Teams have partnered to develop a new golf practice area. The old turf area is slowly being converted into a practice area with the addition of a new teebox. The tee is approximately 7,500 square feet and will be sodded with TifTuf bermudagrass from Iron Bridge Sod Farms. This new area will give golf teams a place to practice wedge and iron shots on days when courses are closed and add a new area for turfgrass students to learn.

Equine News



- The WKU IHSA Equestrian Team finished the 2024-2025 year with 9 Regionals qualifiers- Katie LaDuc in both the Level 2 and Ranch Riding, Paige Burckhard in Level 1, Evelyn Scheel, Mary Niblett, Sophia Patino, Elsa Humphrey and Emmy Clements in Rookie B, and Stella Davis in Beginner. Out of these, 5 riders went on to qualify for Semi-Finals held in Galva, Illinois by Blackhawk College. The WKU Equestrian Team also was able to provide 4 great horses to use at the Semi-Final show.
- The IHSA team ended the season with 2 Reserve High Point Team awards placing 3rd Overall for the season.
- The WKU Stockhorse team had a great season with Paige Burckhard and WKU owned Asking for Chex "Trigger" taking home 2 Highpoint and 2 Reserve Highpoint all around show awards and was named the Year End Champion Collegiate Novice All Around pair.
- The WKU Stockhorse team also provided some great assistance moving cows on the farm to help vaccinate, manage fields, and wean calves. This was great experience for our riders and horses alike!
- WKU hosted our third regular season IHSA show in October, providing our riding facilities and 17 university horses, while also competing against our regional colleges.
- Horse Training class was a very successful class this past semester with 9 students starting horses, one of which was our home-grown, Moose, who was foaled out in our Equine Reproduction course two years ago.
- Horse Production class was also able to welcome out newest foal, Boomer.
- We retired one of our greats, Whiz this year. While it is sad to see him go, we are glad that Whiz was able to be retired to an alumnus. Whiz served 18 years with our program, becoming one of the go-to Basic Equitation mounts.
- The Equine Unit hosted the FFA Field Day Equine test, providing several classes of horses to judge as well as a hippology test. This brought in several groups of FFA and 4-H groups.
- The Equine Unit also hosted several 4H meetings and seminars. The 4H Judging seminar was a big hit amongst the local 4H members.
- We welcomed 4 new additions to our program- Xtra Easy on the Ice, "Iceberg", Lil Joe Survivor, "Billy", Dreaming of Sparkles, "Annie", and One Tuff Badger, "Tuff". We are extremely grateful for these horses and what they bring to our program.
- Thank you to our local and regional equine professionals and friends for your continued support of our program. You provide us horses, dentals, volunteerism at our events, and guest lecturers to further enrich our program.



Research

Studying β -Carotene Metabolism in Cattle

From August 2022 to May 2024, Dr. Luiz Silva and Tesla Trammell, his graduate student and our current Livestock Technician, conducted a study on calves at the Beef Unit of the AREC. Their goal was to evaluate whether bulls, steers, and heifers differ in β -carotene metabolism. This study was funded by the WKU Research and Creative Activities Program (RCAP), and the lab analyses done at the WKU Biotech Center and WKU Advanced Material Institute (AMI). The research results have been presented at the WKU Student Showcase by Tesla and by Dr. Silva at the 2024 Reciprocal Meat Conference (RMC), the annual American Meat Science Association (AMSA) meeting in Oklahoma City, OK. Tesla successfully defended her thesis and got her MS degree in November 2024.

The Study in Detail

Background: β -carotene is a provitamin A that animal tissue, mainly the intestinal epithelium and liver, can convert into vitamin A. Vitamin A is not only important for animal health but also can modulate fat deposition in cattle. Additionally, β -carotene that is not converted to vitamin A will be deposited in the adipose tissue, enhancing subcutaneous fat yellowness. Greater subcutaneous fat yellowness has been reported in cows compared to steers and bulls, indicating that β -carotene metabolism may differ among sexual classes in cattle. The objective of this research was to evaluate β -carotene and vitamin A in the blood of bulls, steers, and heifers.

Experimental Procedures: The study was divided into pre- and post-weaning phases. During the pre-weaning phase, calves (12 bulls, 12 steers, and 12 heifers) were kept on the same pasture with their dams, and blood samples were collected at weeks 2, 16, and 30 (weaning) for β -carotene and Vitamin A analyses. After weaning, calves were brought to the AREC feedlot, adapted to the new experimental conditions, and each received an oral dose (200 mg/100kg of BW) of β -carotene supplement (ROVIMIX® β -Carotene, DSM), generously donated by DSM-Firmenich. Blood samples were then collected on days -1, 0, 1, 2, 3, 6, 12, and 24 days post oral dose for β -carotene and Vitamin A (days 3 and 24) analyses. A liver biopsy was performed on day 24 post oral dose and analyzed for protein abundance and gene expression of key biomarkers involved in β -carotene metabolism (BCMO1, BCO2, SDR16C6, ALDH1A1, CYP2B6, and LRAT).

Main results: Blood β -carotene was lower in bulls compared with steers and heifers at 30 weeks of age (Figure 1), as well as after oral administration (Figure 2). Vitamin A in blood was similar among sexual classes at weaning (Figure 1) but it was greater in post-weaning steers than bulls (Figure 2). Hepatic gene expression of the biomarkers for β -metabolism was not affected by sexual class.

Conclusions: Our results suggest that β -carotene metabolism differs among sexual classes in cattle. However, this differential metabolism of β -carotene does not appear to be regulated by the liver enzyme abundance. Further studies may help elucidate the mechanism behind the differential β -carotene metabolism among sexual classes, as well as its impact on meat quality traits such as fat color, deposition, and fatty acid profile.

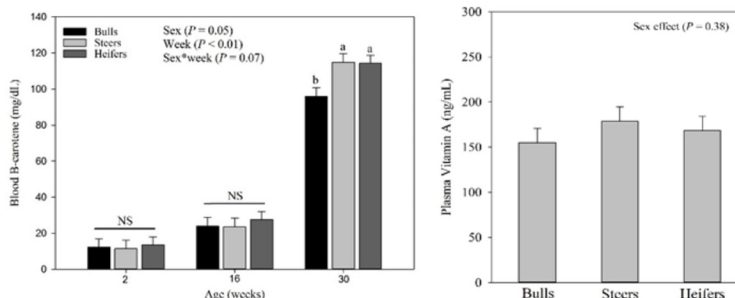


Figure 1. Blood β -carotene and Vitamin A in pre-weaning calves.

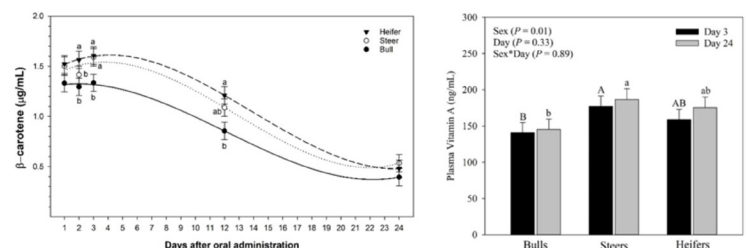


Figure 2. Blood β -carotene and Vitamin A in post-weaning calves after receiving an oral dose of 200 mg of β -carotene per 100 kg of body weight.



Dr. Silva presented the results at the 2024 Reciprocal Meat Conference (RMC).



Angus calves used in the study.

Drs. Netthisinghe, Woosley, and Strunk recently published their compost research in the Agronomy Journal. The research focused on mitigating herbicide contamination of compost utilizing biochar. Additions of biochar did reduce herbicide contamination and effects on growing plants. More work is needed to see if upscaling the use of biochar in larger compost systems is effective and feasible.

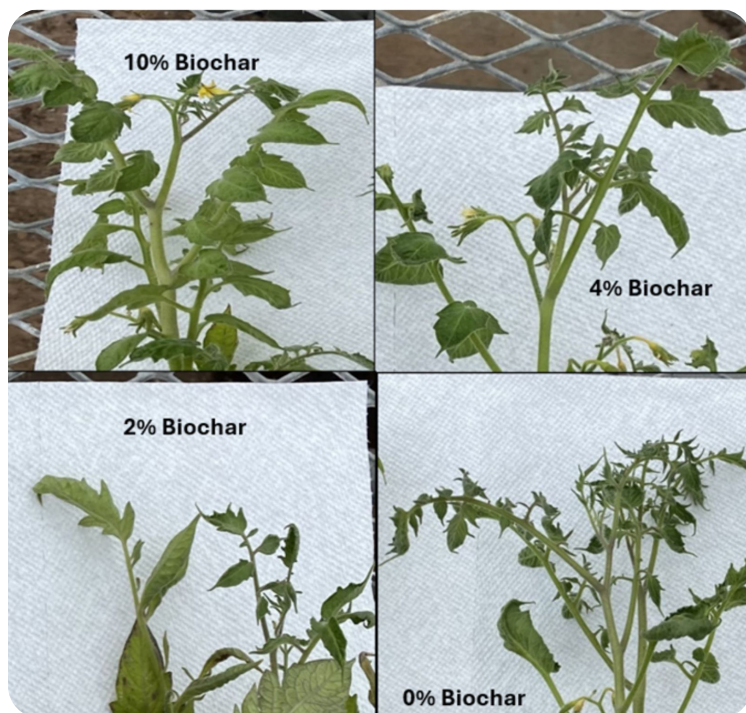


Table 6. Residual aminopyralid concentration (ppb–dry matter basis) in compost for the treatments after 6-month composting cycles 1 and 2.

		0% BC	2% BC	4% BC	10% BC
	n	Cycle 1			
Initial	4	37.3 ± 0.3 a	34.7 ± 0.9 b	33.1 ± 0.8 b	33.9 ± 0.8 b
Final	4	19.5 ± 2.2 a	15.2 ± 0.7 a	2.5 ± 2.5 b	0.0 ± 0.0 b
% change from initial		47.7	56.2	92.4	100
% difference from 0% BC			8.5	44.7	52.3
	n	Cycle 2			
Initial	4	38.4 ± 0.5	37.5 ± 2.0	36.1 ± 2.0	33.8 ± 2.6
Final	4	42.1 ± 2.0 a	36.6 ± 4.1 a	22.0 ± 2.8 b	2.1 ± 2.1 c
% change from initial		−0.1	2.4	39.0	93.7
% difference from 0% BC			2.5	39.1	93.8

BC, biochar; Mean ± SE. Numbers with different letters within rows are significantly different at $p < 0.05$.

Table 7. Effect of biochar (BC) treatment on growth and injury levels of tomato plants grown on compost from cycle 1.

Parameter	n	0% BC	2% BC	4% BC	10% BC
Plant height (cm)	4	49.3 ± 1.5	52.0 ± 1.0	53.4 ± 1.6	53.7 ± 1.8
Plant biomass (dry g/plant)	4	4.8 ± 0.3 b	5.2 ± 0.3 ab	6.1 ± 0.3 a	5.9 ± 0.3 a
Mean plant injury index	4	1.6 ± 0.1 a	1.7 ± 0.1 a	1.3 ± 0.1 b	1.0 ± 0.1 b

BC, biochar; Mean ± SE. Numbers with different letters within rows are significantly different at $p < 0.05$.

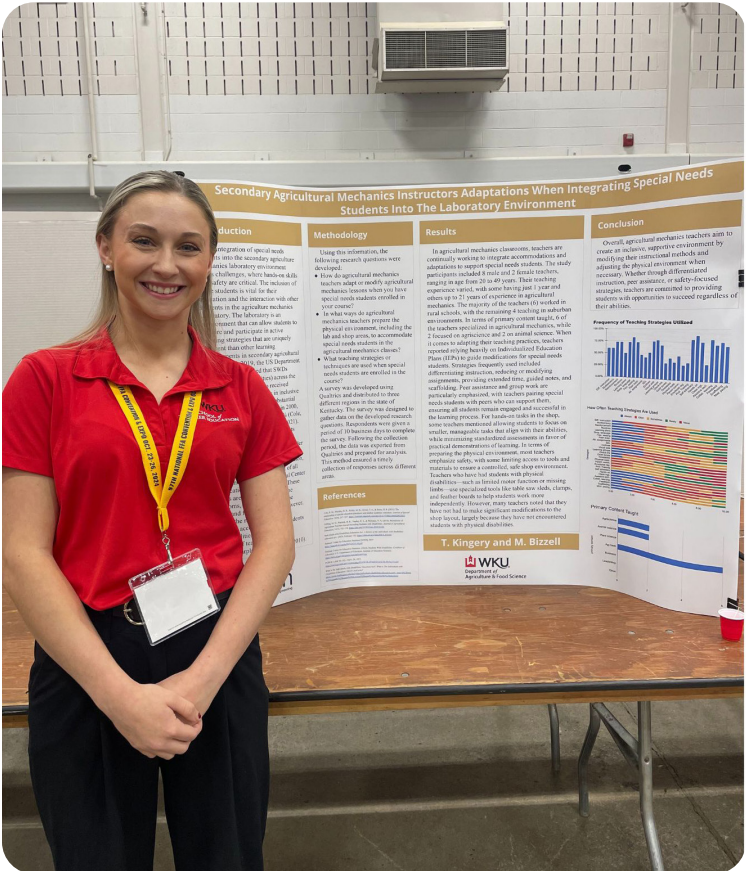
Dr. Singh is advancing his research on cover cropping and the effects of organic and inorganic fertilization on soil health and tomato yields with assistance from Drs. Gilfillen and Willian. This research aims to uncover sustainable agricultural practices that enhance productivity while preserving soil quality.

Along with assistance from Drs. Singh and Willian, Dr. Gilfillen is continuing the research on carbon storage in a crop rotational system using animal manure and inorganic fertilizers. This research is in its 20th year.



Undergraduate student Mattalyn Johnson applying fertilizer in the tomato fertilization experiment at AREC.

Makayla Bizzell, Agricultural Education Graduate student, exhibited her research poster at the Blue-Ribbon Agricultural Mechanics Research Symposium in Indianapolis, IN and at the Kentucky Academy of Science Conference. Her works is focused on Discovering ways in which secondary agricultural education teachers adapt their laboratory environments for special needs students.



We would like to thank our wonderful industry partners!



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