AgKnowledge

2023

LAND GRANT PROGRAM
Community Research Service
Cooperative Extension Program

KENTUCKY STATE UNIVERSITY
COLLEGE OF AGRICULTURE,
COMMUNITY, AND THE SCIENCES

SMALL FARMER OF THE YEAR

David Miller likes farming—
that's why it's the lifestyle for him

KENTUCKY STATE UNIVERSITY
Land Grant Program

Dear Reader,

I am excited to present the 2023 edition of AgKnowledge magazine, an annual publication of the Kentucky State University Land Grant Program, including its College of Agriculture, Community, and the Sciences and the Cooperative Extension and Research Programs. This annual magazine is designed to highlight the research and Extension activities our faculty and staff are conducting at Kentucky State.

The Land Grant Program's faculty, staff and students have continued to concentrate on research and Extension programming to serve the stakeholders of the commonwealth, with an emphasis on serving minority and limited-resource populations in rural and urban settings. Even as we continue to endure and adjust to the COVID-19 pandemic, we have increased our in-person Extension programming while still embracing a hybrid approach to reach our virtual audience.

We hosted our Small, Limited-Resource, Minority Farmers Conference in person for the first time since before the COVID-19 pandemic, welcoming stakeholders back to Kentucky State facilities in Frankfort. For the first time, we hosted a Small, Limited-Resource, Minority Farmers Conference in Hardin, Kentucky, in an effort to reach even more stakeholders in the western part of our state.

To that end, we also opened a new Extension office in Bowling Green, headed by Janey Cline. And in the eastern part of the state, Courtney Jenkins leads an Extension office in Morehead. We are continuing to staff both offices to better serve you across the state.

While we are thrilled to gather in person more frequently, we continue to understand and educate about the risks of COVID-19. Our Successful Kentucky Immunization Program (SKIP-COVID) promotes COVID-19 vaccinations through an evidence-based approach to reduce vaccination hesitancy and help stakeholders make informed decisions about their health and well-being.

Whatever the next year brings, we will continue to build valuable partnerships with community and government organizations, and we will promote our programs to prospective students and collaborators.

And we will continue to serve you, our stakeholders. Please give us your feedback and let us know how we can help you solve your problems. Follow us on social media— Kentucky State University Cooperative Extension on Facebook and @kysuag on Twitter, YouTube, and Instagram— and visit us on the web at kysu.edu to keep up with our day-to-day activities in communities near you. We can't wait to work with you.

Thanks again for reading and we hope you find the information provided in this magazine to be useful and enjoyable. If you have questions, please call (502) 597-6519 or email kysuag@gmail.com.

Kirk Pomper, Ph.D.
Land Grant Director
Dean of the College of Agriculture, Community, and the Sciences
Kentucky State University

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AgKnowledge

2023 EDITION, VOLUME 9

AgKnowledge magazine is published annually by the Kentucky State University Land Grant Program to promote the research and Extension work of the 1890 Land Grant institution.

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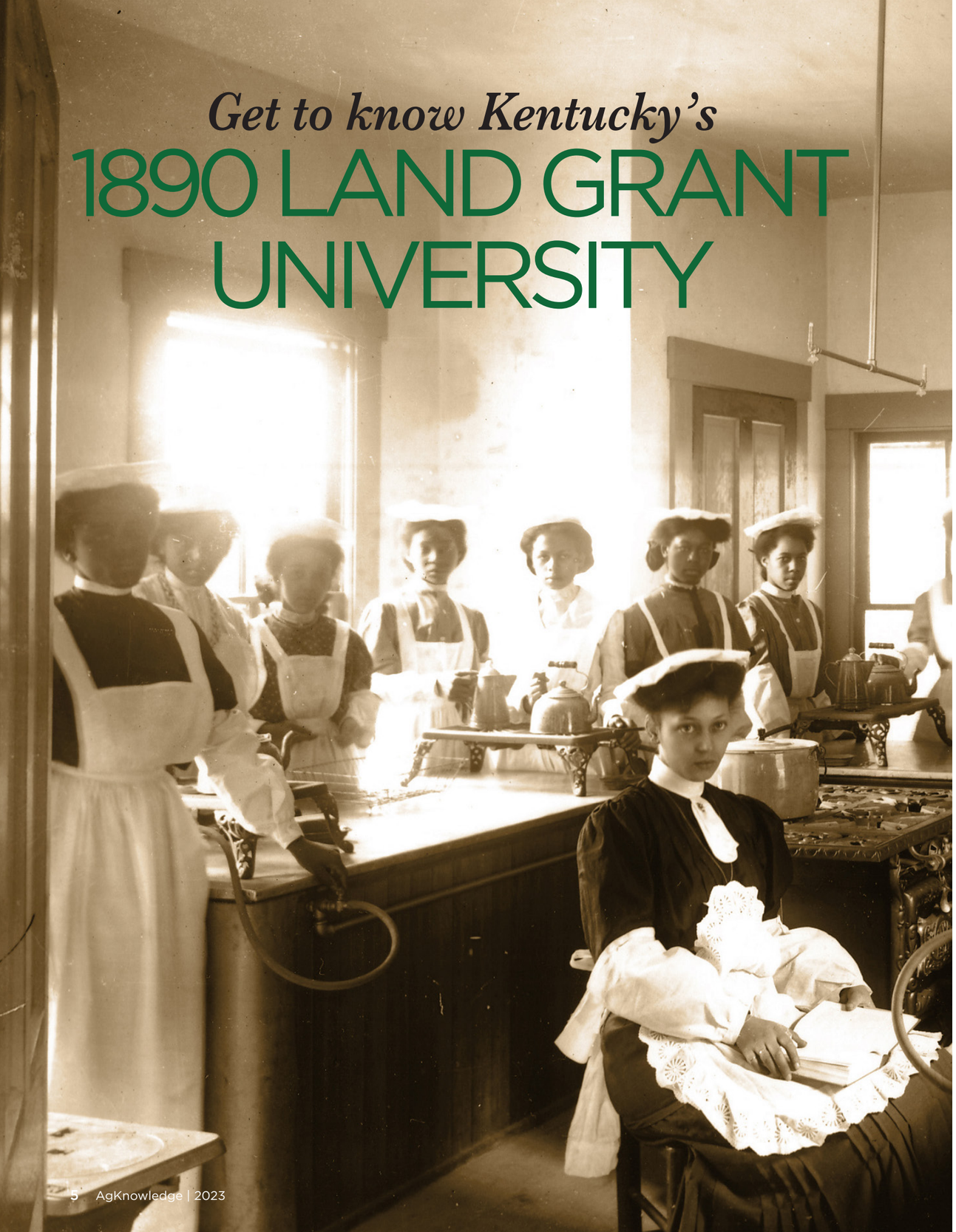


Get to know Kentucky's 1890 LAND GRANT UNIVERSITY

In 1886, the institution that would become Kentucky State University was chartered as the State Normal School for Colored Persons. Four years later, it became a land grant institution thanks to the Second Morrill Act of 1890.

The land grant system was founded with the Morrill Act of 1862, which provided financial support for a land grant instutition in each state to educate in agriculture, home economics, the mechanic arts, and other useful professions. However, southern states did not extend that education to minority students and colleges; therefore, the Second Morrill Act of 1890 was passed specifically for minority institutions, and Kentucky State became one of the now nineteen 1890 land grant institutions.

Today, the Kentucky State University Land Grant Program works to uphold the mission of the university through its commitment to research, Extension, and teaching in the food and agricultural sciences. The Land Grant Program— in collaboration with the Cooperative Extension Program and the College of Agriculture, Community, and the Sciences— is committed to resolving agricultural, educational, economic, and social problems of the people of the Commonwealth of Kentucky, especially the underserved in rural and urban settings.

That commitment includes researching best aquaculture practices and sharing findings with farmers; hosting the Third Thursday Thing workshop for 25 years; teaching those who will enter, take over, and advance the agriculture industry; and much more. In these pages and by contacting us at kysuag@gmail.com, learn how this land grant university can serve you.

OPPOSITE: Women students of the Kentucky Industrial Institute pose with tea kettles. | Archive
TOP RIGHT: Stakeholders participate in a goat workshop during the 15th anniversary of Third Thursday Thing at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on July 19, 2012. | Photo by Jonathan Palmer
SECOND RIGHT: Stakeholders tour the goat barn during the 24th annual Small, Limited-Resource, Minority Farmers Conference at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on Nov. 16, 2022. | Photo by Anthony Guglielmi
THIRD RIGHT: A man works on an aquaculture project at the Harold R. Benson Reseach and Demonstration Farm in Frankfort, Kentucky. | Archive
FOURTH RIGHT: Dr. Ken Semmens, left, discusses raceway technology and other aquaculture practices while STEM Day participants Dion Patterson and London White feed fish in a raceway at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on July 16, 2022. | Photo by Jonathan Palmer
FIFTH RIGHT: Dr. Oliver Freeman, left, and Matt Behrends plant pepper plants in plastic mulch at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on June 24, 2020. | Photo by Jonathan Palmer
BOTTOM RIGHT: Men plant vegetables in plastic mulch. | Archive

Jocelyn Marables, center, a 2022 graduate of the College of Agriculture, Community, and the Sciences, celebrates with family at a graduation party at Kentucky State University in Frankfort, Kentucky, on May 13, 2022. | Photo by Kris Chappel

Student Success CONTINUES with 2022 Graduates

Kentucky State University students have continued to excel. A goal of the Kentucky State College of Agriculture, Community, and the Sciences is to see our students move into careers or continue studying in advance degrees.

In spring and summer 2022, the college graduated approximately 48 students with associate or bachelor's degrees. (Note: The data provided by the Office of Institutional Research is preliminary. Currently, official summer and fall 2022 degrees are not available.) Three students graduated with degrees in Agriculture, Food, and Environment; four in Biology; one in Chemistry; one in Mathematics; two in Childhood Development and Family Relations; seven in Computer Science; five in Early Elementary and Elementary Education; 13 in Physical Education; and 12 in Nursing.

In 2022, six students graduated with a Master of Science in Environmental Studies and five students graduated with a Master of Science in Aquaculture and Aquatic Studies.

We are proud of our students and hope to see them at alumni events in the future!

Kentucky State University at the AEA CONFERENCE

LEFT: Kentucky State University personnel gather at the Association of Extension Administrators conference in Orlando, Florida, on Aug. 3, 2022. RIGHT: Dr. Allison Young conducts a workshop about SKIP-COVID at the Association of Extension Administrators conference in Orlando, Florida, on Aug. 2, 2022. | Photos by Kris Chappel

For the first time in a decade, personnel from 1890 land grant universities met at the Association of Extension Administrators conference.

The conference was held from July 31 to August 4, 2022, in Orlando, Florida. Nearly fifty personnel from Kentucky State University attended the conference, which included educational and networking opportunities. Dr. Courtney Owens, who was then Kentucky State's Cooperative Extension director, was on the board of the conference.

Three posters created and presented by Kentucky State personnel placed in the conference's poster competition. Dr. Allison Young and Chandra DeRamus placed first in the Family and Consumer Sciences category, for their poster titled, "Project Uplift CYFAR Project: Empowering Youth," which highlighted their work teaching life skills to at-risk youth ages 12-18. Dr. Young also gave a presentation about the SKIP-COVID program during the conference.

Mason Crawford placed first in the Integrated Programs category, for his poster titled, "Urban Garden Project Puts Community First," which highlighted his work with the Russellville Urban Garden Project and other partnerships in Russellville.

Chelsea Walling and Dr. Ken Thompson placed third in the 4-H and Youth Development category, for their poster titled, "Implementing Aquaponics Project-based Investigations (APBI) in K-12 Extension Programs to Promote Student Interest and Understanding of STEM Concepts," which highlighted their use of aquaponics systems to increase youth's interest in STEM.

"We had three outstanding Extension educators receive awards."

- Dr. Courtney Owens, *Interim Associate Extension Administrator*

Small Farmer of the Year

David Miller likes farming—that's why it's the lifestyle for him

OPPOSITE: David Miller poses on his farm in Lincoln County, Kentucky, on Oct. 18, 2022. | Photo by Jonathan Palmer
TOP: David Miller, center, receives the Small Farmer of the Year award from Edwin Chavous, left, and Dr. Allison Young at the Small, Limited-Resource, Minority Farmers Conference banquet at Capital Plaza Hotel in Franfort, Kentucky, on Nov. 16, 2022. | Photo by Kris Chappel

David Miller wakes up in the morning and goes to check on his girls. His "girls" are the 30 cows he raises on his 130-acre farm in Lincoln County, Kentucky.

"When I get out of bed, I hit it and go after it," Miller said. "I don't go after it in a negative way, I go after it in a positive way. If you're not going to be positive, don't do it."

In 2022, Miller was named Kentucky State University's Small Farmer of the Year. He now farms on the same land he was raised on, where he helped his father farm along with his four brothers. As a father himself, he didn't insist his two sons work with him on the farm— but being forced to work on his father's farm worked out for him. Farming was and continues to be "the lifestyle for me," he said.

Miller used to raise tobacco but called it "a headache." He transitioned away from tobacco and is happy to now run a cow-calf operation.

"I like my cattle operation," he said. "I don't want nothing else."

He treats the cows like his pets, and it pays off.

"I walk to them, I talk to them, I sing to them, I play with them," Miller said. "I can stand in the barn; they can be five miles, five feet from me. I can call them, and they come right up to me."

Miller got involved with Kentucky State University through Edwin Chavous, Small Farmer Outreach Training and Technical Assistance Coordinator. Chavous nominated Miller for Small Farmer of the Year.

"Mr. Miller has been an excellent role model as a cow-calf operation as a small farmer in Kentucky," Chavous said.

Miller has volunteered with Kentucky State's Fourth Wednesday Beef Cattle Workshop, as well as attending other Kentucky State programming like Third Thursday Thing and the Small, Limited-Resource, Minority Farmers Conference.

"KSU has been a lot of help," Miller said. Kentucky State has offered him a lot of learning opportunities and has taught him "how to do, how not to do" various farming tasks.

Over the years, Miller has kidded with Chavous, asking when he'll be Small Farmer of the Year. When Chavous called to tell him it was him, Miller thought he was joking at first.

"[I'm] thankful through Chavous, thankful through God, thankful to KSU that I got it," Miller said. "I'm well pleased. I really appreciate it."

Not everyone realizes how important small farms are, but "every farm is important because that's what takes care of the world," Miller said. He also said he thinks a small farm is more enjoyable and more exciting.

"To the younger farmers out there: If you want to farm, try it," Miller said.

A pastor once told him, "If you never try, you never get it done." There's no shame in trying and not liking it, Miller said— but don't try farming unless you really like it.

"I'm a farmer because that's what I like to do. I enjoy doing it," Miller said. "If you enjoy doing it, do it. If you don't, I wouldn't do it."

"Every farm is important because that's what takes care of the world."

— David Miller, *2022 Small Farmer of the Year*

Miller emphasizes positivity, but he knows farming is not without its challenges. There have been times when he thought about quitting, including when he lost his father and his wife.

"Some days you want to throw it in," Miller said. But farming is still his favorite thing to do. He likes his cows, and he likes being outside. "Only time I like going inside is going in the house and going to bed."

Miller, 63, sometimes thinks about if or when he'll stop farming. He knows that age will catch up with a farmer, but he won't quit until it does.

"If you like farming, you don't stop."

TOP: David Miller feeds the bulls on his farm in Lincoln County, Kentucky, on Oct. 18, 2022. | Photo by Jonathan Palmer
OPPOSITE: David Miller speaks with other Small, Limited-Resource, Minority Farmers Conference attendees in Frankfort, Kentucky, on Nov. 15, 2022. | Photo by Jonathan Palmer
RIGHT: Bulls approach the barn at David Miller's farm in Lincoln County, Kentucky, on Oct. 18, 2022. | Photo by Bailey Vandiver

Women in Agriculture

EXCELLENCE AWARDEE

Jane O'Tiernan loves growing flowers and thinks you should, too

Jane O'Tiernan was raised to have dirt in her blood.

On the 30 acres in Indiana that her dad owned, O'Tiernan and her siblings grew up raising cattle and hay.

"He told us we would have the land in our veins," O'Tiernan said.

Decades later, she has 11 acres of her own in Madison County, where she grows flowers and vegetables outdoors and in two greenhouses. In 2022, she was named Kentucky State University's first-ever recipient of the Women in Agriculture Excellence Award.

When she first started growing at her farm, O'Tiernan was frustrated by how many of her vegetables were eaten by deer— but they left the flowers alone.

"So then we just did more and more flowers. Everybody sells vegetables, and hardly anybody sells flowers."

O'Tiernan sells as Jane's Garden, Flowers, and Herbs at the Lexington Farmers Market and at the Bluegrass Farmers Market, which is a growers-only market that she helped start about 18 years ago.

"I like selling cut flowers," O'Tiernan said. "If people come, they look, they see they're pretty."

O'Tiernan's love for growing flowers goes back to her childhood: She would go down to the creek on her family's land, dig up violets, and plant them beside the house.

"Much to my dad's dismay," she said.

O'Tiernan has almost always had a garden— at least "a small little spot." For many years, she worked at and sold her vegetables to a restaurant. Her gardens got bigger and bigger. "It just grew," she said.

One of O'Tiernan's greatest joys throughout her career: "Being able to give

Jane O'Tiernan leads a floral design workshop at the Small, Limited-Resource, Minority Farmers Conference at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on Nov. 15, 2022. | Photo by Jonathan Palmer

Jane O'Tiernan poses for a picture with Dr. Jessie Lay, left, Edwin Chavous and Dr. Allison Young following her recognition as the 2022 Women in Agriculture Excellence awardee at Capital Plaza Hotel in Frankfort, Kentucky, on Nov. 17, 2022. | Photo by Kris Chappel

flowers to anybody for anything." She puts a lot of fragrance— mint, basil, including lemon basil and cinnamon basil— and colors in her bouquets. She likes to do red, white and blue bouquets for Fourth of July, for example, and for the summer in general she likes mixed colors of zinnias and lisianthus.

Grow more flowers: This is O'Tiernan's message to just about everyone. In her opinion, there are never enough people growing flowers.

"I spend a lot of time not only encouraging people to grow flowers but to grow and to be able to market and to improve what they're selling," she said.

When she helps people try to improve what they're selling, she points them to the Kentucky State University Land Grant Program. O'Tiernan is good friends with Marion Simon, who founded Third Thursday Thing 25 years ago; O'Tiernan said she's been attending the workshops since the beginning. Now several of her fellow growers at the Bluegrass Farmers Market have started attending Third Thursday Thing, too.

O'Tiernan has also noticed that more of her fellow growers are women, something she finds "incredible."

"One of the reasons I think that there's more women in agriculture, as the allowable role for women has expanded— women can now wear pants out in public!" O'Tiernan said.

This was not always the case: When O'Tiernan was a student at the University of Kentucky in 1964, she ran for student government on the platform that women should be able to wear pants underneath their dresses— "because I was freezing my tail," she said.

At the 2022 Small, Limited-Resource, Minority Farmers Conference, where she was also recognized as the awardee, O'Tiernan gave a presentation about growing flowers as part of the Women in Agriculture track of sessions.

Jane O'Tiernan, right, speaks at Louie Rivers' retirement party and Third Thursday Thing on June 20, 2019, at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky. Photos by Jonathan Palmer

Kentucky State University's Land Grant Program started the Women in Agriculture Excellence Award to recognize women in the industry, in conjunction with a series of workshops geared toward women principal operators.

"Women have always been a big part of the family farm," said Dr. Jessie Lay, assistant professor and veterinarian. "In the past, it has been assumed that men were the decision makers. But this program acknowledges and highlights women as principal operators."

Jane O'Tiernan

> *"I'm really grateful. I think there are a lot of other people that have done a lot more farming, that are bigger than me, that have done more, and that are committed to agriculture just as much as me. I think there's all kinds of women that want to see agriculture in Kentucky expand and be more productive. I think every woman that does any kind of farming or marketing wants to save her farm and find ways for the young ones coming after us."*
>
> - Jane O'Tiernan, *2022 Women in Excellence Awardee*

Somos Una

FAMILIA

Grupo de Mujeres provides education, community for Spanish-speaking women

The women at Grupo de Mujeres pass around a corazón— a heart.

Grupo de Mujeres, or the women's club, is a monthly meeting of Spanish-speaking women in Louisville. Run by Eastern Area Community Ministries and Kentucky State University's Jessica Marquez, the group offers life-skills development, financial education, and empowerment for the women and their families.

"Whoever has the heart has the floor to speak," said attendee Cristian. "It creates respect and allows those who want to share to speak."

Cristian said she is "always waiting" for the day that Grupo de Mujeres meets.

"We can talk about everything and anything," she said. "There is a lot of information that this group provides for me that I do not get elsewhere."

Marquez, a first-generation college student who graduated from Kentucky State University as valedictorian in 2018, is the bilingual community resource development agent for

Grupo de Mujeres attendees make Christmas ornaments at their monthly meeting in Louisville on Nov. 22, 2022. | Photo by Jonathan Palmer

Paty Robles, Eastern Area Community Ministries Director of Multicultural Services, gets food at the monthly Grupo de Mujeres meeting in Louisville, Kentucky, on Nov. 22, 2022. | Photo by Jonathan Palmer

Jefferson and Shelby Counties. At Grupo de Mujeres, which is conducted in Spanish, Marquez teaches a variety of financial literacy topics.

Cristian said she didn't know she was doing her budgeting wrong until Marquez taught her the right way. An activity on expenses helped Maria, another attendee, reflect on her spending habits.

"I have learned how to better my finances and how to reach financial goals," Maria said.

Eastern Area Community Ministries Director of Multicultural Services Paty Robles has coordinated Grupo de Mujeres since 2005 and has known Marquez since she was a child, when Marquez's mother occasionally attended Robles' group.

"She came back as a leader for the group and has provided new knowledge to the participants," Robles said. "The way she teaches is very engaging, it is never boring, and it allows us to learn and stay focused on the topic being taught."

Marquez knows the needs of the Hispanic community because she's in it.

> ***"Seeing the results that they had from one of my programs made me realize how much I love this job."***
>
> - Jessica Marquez, *bilingual community resource development agent*

"My family didn't grow up with a lot of money, so that's why financial literacy is very important to me," Marquez said.

She continues to learn people's needs through outreach, such as going to community events or hearing from individuals. Then she is able to assess the need and come up with a program to meet it.

One of the attendees at Grupo de Mujeres had never had a bank account before— "they were used to having all of their money stashed under the mattress in a shoebox," Marquez said. After completing Marquez's financial literacy program, the woman opened a bank account and now knows how to manage checks, money orders, and credit and debit cards. She is now working on a short-term and long-term plan to buy a house.

Jessica Marquez, right, and other attendees make Christmas ornaments at the monthly Grupo de Mujeres meeting in Louisville, Kentucky, on Nov. 22, 2022. | Photos by Jonathan Palmer

"Seeing the results that they had from one of my programs made me realize how much I love this job," Marquez said. "I love what I do because I truly made an impact in this individual's life. If they had not participated, maybe they would not be where they are today."

In addition to being a source of important information, Grupo de Mujeres is a place of community.

"It feels like we are a family," Maria said. "There is a feeling of friendship and what we share is respected by everyone and it stays confidential to the group."

The women talk, laugh, and cry together— and simply enjoy each other's company, Maximina said.

Some women have attended the group for a decade, while others are newer.

When Viatriz came to the United States, she didn't know anyone; Grupo de Mujeres has helped her "navigate" her new country, she said.

"This group has oriented me and taught me how to grow and succeed," she said.

The group is also special to Cristian because she has no family nearby.

"This is a very strong community," she said. "I see this as part of my family."

For more information about Grupo de Mujeres and other bilingual programming, contact Jessica Marquez at jessica.marquez@kysu.edu.

Something in the WATER

Kentucky State helps farmers with clean water, safe produce

By offering water quality testing, Kentucky State University is helping Kentucky small farmers ensure their products are safe.

The project is headed by Dr. Avinash Topè of Kentucky State University, in partnership with the Kentucky Center for Agricultural and Rural Development, the Kentucky Department of Agriculture, Organic Association of Kentucky, Appalachian Groundswell, and other local associations. The grant, titled, "Helping Small-scale and Socially Disadvantaged Growers in Improving Water Quality to Ensure Food Safety of Produce for Consumers and Increased Sales," received nearly $350,000 in funding from the USDA in 2021.

This project originated with a 2014-17 Evans-Allen research project that focused on microbial quality of fruits and vegetables. The research team tested water quality, since many foodborne illnesses in produce are connected to the water used. Then the Horticulture Council funded further research, specifically about water. Dr. Topè and his team found that about 17 to 20% of water samples were "substantially contaminated and stayed contaminated for a big chunk of time."

This project was relevant to the Food Safety Modernization Act, passed in 2011, which required farmers who sell more than $25,000 per year to meet certain regulations, including water regulations.

"With Kentucky being a small farmers state, a big chunk of our farmers are exempt," Dr. Topè said. "Yet they would like to make sure that what they put out in the market is safe. They also wanted to be in the game, follow what the big farmers do follow, and be safe."

Dr. Topè and others were hearing that small farmers wanted to hold their water to a high standard, but they needed help.

"That's where we stepped in," Dr. Topè said.

Kentucky State University has now established or is in the process of establishing water quality testing labs across the state: on Kentucky State's campus in Frankfort; in Whitesburg; in Hodgenville; and in Bowling Green.

At no cost to them, farmers can visit one of these labs and pick up the necessary equipment to gather a water sample from their farm, then return the sample to the lab to be tested. A Kentucky State employee or partner will then call the farmer with their results.

Results can fluctuate from sample to sample, and the threshold for contaminants' presence, such as E. coli, in water is high, so one less-than-ideal result is not alarming.

"We don't expect the reports to be satisfactory in the first place," Dr. Topè said. "If the farmer gets too bad a report on two or three consistent reports, then we get back to the farmer asking if they would like us to help."

In Whitesburg, the water quality lab is located in the basement of an old post office on Main Street; it's run with the help of resident Valerie Ison Horn, who works with several organizations to "grow a stronger, healthier community with food and agriculture at the core."

Dr. Topè connected with Horn via Kentucky State employee Joni Nelson, who already had connections in the Whitesburg area through the Small-Scale Farm Grant Program.

"I think that we have a strong community base here of farmers that are well connected, can be in touch with them easily, share resources, share information— so it felt like a good fit there," Horn said. "So when he reached out, we were happy to volunteer to be a partner on that grant."

The cost of water quality testing varies; Horn estimated it would be an expense of about $100 for most farmers in the area.

"Although in the scale of things that's a small cost to ensure the water quality, it can also be significant when you're making hard choices," Horn said.

Horn recently helped conduct a survey of about 200 farmers in Letcher and surrounding counties. One question asked if farmers had tested their water since the July 2022 flood. About 96% said no. Horn plans to invite these farmers to utilize Kentucky State's water quality testing lab.

Photos by Jonathan Palmer

"They can grow with certainty, they can make adjustments as needed based on [results]," Horn said. "We never want this to be a situation that shuts a farmer or gardener down, but information and knowledge can be power and allow people to make informed choices."

Timothy Lane Breeding of Rocket Farm in Jeremiah, Kentucky, has already utilized the water quality testing lab in Whitesburg.

"We're ready and set for spring this year after testing," Breeding said.

Rocket Farm typically grows potatoes, beans, corn, Brussels sprouts, peppers, and other produce. Due to the flooding, some of the water has higher contamination, so not all produce can be grown this year, but Breeding said the farm is set for flowers and herbs.

Breeding said having the water quality testing lab is "very, very, very beneficial not just for our farm, but for all the farmers in the community."

For information about Kentucky State's water quality testing labs across Kentucky, contact Dr. Avinash Topè at avinash.tope@kysu.edu.

Environmental Education and Research Center

Kentucky State University's Environmental Education and Research Center (EERC) is a collaborative experiential learning facility that connects students, teachers, and community groups to the environment through meaningful, hands-on learning activities. The center is managed with environmentally sound practices that aim to protect, enhance, and educate about local ecology.

Located in Henry County, Kentucky, the EERC is home to a variety of educational opportunities focused on its many attractions. A 1.6-acre man-made upland pond is frequently used for fishing and other aquatic resource education. Extensive trails varying in difficulty span the 307-acre property and offer opportunities for groups to access secluded viewing sites for observing wildlife corridors. There is ample access to Six Mile Creek, which runs through the center and has Outstanding State Resource Waters designation by the Division of Water. There are numerous sites for anthropology, aquatic sciences, forestry, and biology education.

EERC staff are equipped to work with formal classroom teachers, summer camps, community groups, and after-school programs to tailor field trips to each group's educational and recreational needs and Kentucky academic standards. Progress continues to focus on the EERC's mission to make the center accessible to visitors of all abilities with the implementation of trails and resources for those with sensory and mobility disabilities, such as a trail with guide ropes and Braille signs.

To learn more, contact Louis Ross at louis.ross@kysu.edu.

The sun shines over Six Mile Creek at the Environmental Education and Research Center on Oct. 19, 2022. | Photo by Media and Communications Drone Team

Up with the CHICKENS

MES student helps change backyard chicken law in Frankfort

Katy Doyle likes to have a cup of coffee with her chickens in the morning.

Doyle has six hens in a pen in her backyard— which is allowed only because she helped change the Frankfort ordinance.

An animal lover for all her life, Doyle became interested years ago in urban, or suburban, agriculture.

"Wouldn't it be cool if we could have chickens?" she thought, but Frankfort's regulations at the time forbade the raising of poultry (as well as other livestock) within the city limits. "I need to figure out what we can do to make it legal," Doyle thought, "because chickens are super cool and would do so well in a backyard setting."

By fall 2015, Doyle had begun the Master of Environmental Science program at Kentucky State University. In one of her classes, she wrote a paper about agriculture policy. Dr. Leigh Whittinghill, then a professor of urban agriculture at Kentucky State University, recommended that Doyle make chicken policy her capstone project.

Most MES students write a thesis that is more focused on science; instead, Doyle wrote a policy-focused capstone.

LEFT: Katy Doyle poses for a portrait with her chicken in her backyard in Frankfort, Kentucky, on Nov. 4, 2022.
ABOVE: Katy Doyle feeds her chickens in her backyard in Frankfort, Kentucky, on Nov. 4, 2022.
Photos by Jonathan Palmer

"It was a little different from anything that [MES students] had done previously," Doyle said.

Doyle got to work on changing Frankfort's ordinance. She first went to a Frankfort City Commission meeting in 2019 to ask the commissioners to consider changing the ordinance on raising poultry in the city. The commissioners listened and asked questions but tabled the issue until a later meeting.

After the next election, Doyle felt like enough of the commissioners would vote in favor of changing the ordinance, so she pushed to get the issue on the agenda. The City Commission formed an unofficial working committee, which meant the commission wasn't bound by the committee's recommendations.

Doyle and the rest of the committee worked to draft a proposal. She researched other Kentucky cities' ordinances that allowed chickens, including stricter and less strict ones. She did her best to prepare for every counterargument. Finally, the proposal was read before the commission, then went through the mandatory reading and waiting process. The final adoption of the ordinance was January 24, 2022, with a 3-1 vote in favor.

> ***"Chickens are surprisingly easy to keep, once you have good information."***
>
> - Katy Doyle, *Kentucky State University Alumna and Employee*

The new ordinance allows Frankfort residents to raise up to six non-crowing chickens in their backyard. There are other requirements, such as a six-foot-tall fence and proper storage of feed.

Doyle received the very first permit to raise backyard chickens.

"Come on, I had to propose this, work to get it— I'm going to be number one," she said.

As of summer 2022, six permits had been issued. Doyle has helped many of them through the process, through a Facebook group for Frankfort backyard chicken owners.

Now she has her six chickens— red, cochin, brown, and Sussex chickens. Doyle hasn't named all of them, but she's thinking three will be Reba, Dolly and Wynona.

In the mornings, she goes outside and opens the coop, where the chickens sleep. She feeds them, including kitchen scraps.

"Chickens are surprisingly easy to keep, once you have good information."

Many mornings, she sits in a camp chair and drinks her coffee, watching the chickens eat.

"I just romanticize them," Doyle said. "It's perfect. I love it so much. I'm so glad I went through this whole process, because it's so rewarding."

A Life-changing EVENT

Small-Scale Farm Grant helps farmers achieve their dreams

Photo provided by Mehera Baugher

Kentucky State University's Small-Scale Farm Grant Program is for small-scale Kentucky farmers who need funds to improve their farms.

"The Small-Scale Farm Grant Program is important to so many producers in the area because it can help them get past hurdles that they need to overcome in order to be successful," said Joni Nelson, manager of Kentucky State University's Center for the Sustainability of Farms and Families (CSFF).

In partnership with the Kentucky Agricultural Development Fund and the Kentucky Agricultural Development Board, the CSFF offers grants in the following areas: Aquaculture and Aquaponics; Certified Organic Agriculture; Value-Added Products; Food-Insecure Area Production; Agroforestry; and Farmer Education Assistance.

Farmers can apply for up to $5,000 at one time and can receive a lifetime maximum of $10,000. The program started in 2012 and had given $3.6 million to 979 farmers in 113 Kentucky counties as of August 2022.

The program offers new economic opportunities to limited-resource farmers, Nelson said.

Joni Nelson | Photo by Jonathan Palmer

"It is very rewarding to see and hear how far a 'small' grant can go to help small farmers," she said. "It is not a 'small' grant to them. It is a life-changing event."

Jim Embry of Richmond, Dustin Cornett of Beattyville, and Mehera Baugher of Frankfort are just a few recent recipients of the Small-Scale Farm Grant.

Jim Embry, Richmond

Jim Embry's ancestors have farmed in the Concord community in Richmond, Kentucky, for centuries.

Census records indicate that Embry's enslaved ancestors were brought to the area by a white farmer around 1800.

"We were brought here to work the land, so we claim stewardship since 1800," he said.

Embry calls himself an agrarian intellectual activist, because he comes from a long line of people who combined agriculture, education and civil rights activism. Three of his farming ancestors fought in the Civil War, and two were at the Appomattox Courthouse on the day of the Confederacy's surrender. Some of his ancestors attended college as early as just after the Civil War, starting "a long line of folks who value education."

Jim Embry checks on the bees he raises on his farm in Madison County, Kentucky, on Nov. 9, 2022. | Photos by Kris Chappel

When he was growing up, the 30 acres in Madison County that Embry now lives on were owned by his great-uncle. He became used to working hard on the farm— putting in two hours of work before he even ate breakfast. Embry moved to the farm about 10 years ago, to farm and help care for elderly relatives.

Embry gives 30 to 40 presentations each year at various events across the world, from Tennessee to Italy. Even on his own land, he partners with others, such as a research project by a friend who works at the University of Kentucky. He also welcomes school and church groups for tours.

Embry stressed the importance of collaboration, among humans and with the land.

"The Earth already operates cooperatively, collaboratively, synergistically— that's how she operates," Embry said. "So the idea of being collaborative and having networks, we're just trying to catch up."

Embry has received two Small-Scale Farm Grants from Kentucky State, which have funded necessary equipment. The funding also helped him purchase bees, hives, and tools.

"I became a beekeeper thanks to KSU," Embry said.

The honey from his Richmond hives will soon be bottled up and given away to family, then maybe sold. Embry owns property in Western Kentucky, too, and he's already bottled up honey from hives there. It's called "Mom Bea's Honey," after his grandmother, Beatrice.

Embry also has high tunnels, about 30 fruit trees and a pollinator conservation area on his farm. Running a farm means being involved in many things and requires a lot of knowledge— from how to repair a tractor to animal husbandry to reading the weather.

"I kind of tell people that farmers, yes, bless our hearts, bless our hearts— yes, they farm, they do other kinds of things, too! They can do anything, in my opinion," Embry said. "It's one of the professions where you're called upon to do a lot of things."

Jim Embry

Dustin Cornett, Beattyville

In 2013, Dustin Cornett moved home to Beattyville.

He thought his stay in Beattyville would be temporary— he was moving back to America after six years in Japan, where he met and married his wife, Mai. Because his father and brother still lived in Beattyville, Cornett saw his hometown as "a landing spot" until he and his wife, who is from Osaka, the second biggest city in Japan, decided where to settle permanently.

"I never anticipated that my wife would like it here," Cornett said. "She fell in love with the people, the nature, and just felt at peace."

After years away, Cornett had a new perspective of his hometown.

"I thought tourism might be something that could actually boom here," he said, but he wasn't yet sure what to do.

Then he found his grandmother's candy recipes. She had stopped making candy when Cornett was in elementary school, but he had a vague memory: The chocolate was so good that his mom would hide it from his dad.

"I thought, 'I'll give it a shot,'" Cornett said. "I had never made candy before in my life, so I messed up over and over and over again."

Dustin Cornett

His grandmother was still living, but she had dementia, so Cornett couldn't ask her directly about the candy. But sometimes she would tell stories, and one day, "a nugget fell out of a story that helped me create the candies," Cornett said.

So, not wanting to let the family tradition die, Cornett started making and selling candies at a café he and his wife opened in Beattyville. His grandmother had always used Hershey's candy, but Cornett decided to make the chocolate himself— "that's something I could bring to her candies," he said. So he started creating chocolate bars to sell at the café as well.

Around the same time, the Cornetts were looking for a home. On Highway 11 in Beattyville, a motel that came with a house was for sale. After securing a loan, Cornett bought it, and they moved in and started renovating what became Chocolat Inn and Café. Today, the inn features eight rooms, each of which is themed after a city across the world. The inn also features the café, which sells Cornett's candies and 14 original chocolates.

With a Small-Scale Farm Grant from Kentucky State, Cornett bought a tempering machine and other equipment to make chocolate and candies. Two of Cornett's chocolate bars are value-added, using ingredients from Kentucky farms. A dark milk chocolate lavender bar features lavender from Positive Attraction Soaps in Beattyville, and a bourbon dark chocolate bar features bourbon from Jeptha Creed.

The grant came at a good time: The COVID-19 pandemic had halted the tourism industry and created a "fear of losing everything" for Cornett.

"The grant helped kickstart [the chocolate] because it helped me financially be able to produce what I needed to," Cornett said.

Mehera Baugher, Frankfort

Unhappy with her program evaluation job, Mehera Baugher started volunteering at an urban farm in Chicago. Then she did a year-long apprenticeship with the Chicago Botanic Garden.

Baugher quit her job and has been farming ever since. She worked at several different urban farms in Chicago before deciding to move closer to her hometown of Louisville. Baugher had connected with Connie Lemley, who was looking to mentor a farmer who could then lease and take over farming on Lemley's Franklin County farm.

"That was an incredible opportunity," Baugher said.

So in 2021, Baugher moved to Frankfort and worked with Lemley before taking over the farm herself in 2022.

"I'm doing everything myself, from the crop planning, deciding what I'm going to grow, preparing all the beds, planting, harvesting, selling, transporting, accounting," Baugher said. "Of course, I'm getting mentoring from Connie, which is great."

Baugher said her first year on her own went really well.

Photos provided by Mehera Baugher

"I made a lot of mistakes, but I learned tons," Baugher said. "The work was long and exhausting, but I'm proud of how I did my first year and I'm really looking forward to improving and changing the way I do some things next year to make them work even better."

Fortunately, she said, she has moved into a wonderful community that Lemley had been part of for years. Baugher has continued to sell greens to loyal customers at the Franklin County Farmers Market, including a customer-favorite spicy mix. Baugher is also selling basic-cut sunflower arrangements at the market.

"I'm doing it just because it makes me happy, but customers seem to actually really like them as well," she said.

With the $5,000 she received from Kentucky State's Small-Scale Farm Grant Program, Baugher purchased an assortment of supplies and equipment.

"I'm lucky enough to have a lot of that infrastructure available to me already, so I wanted to get more tools and small equipment that I thought would help make me more efficient as a single person doing all of the work. Efficiency is key to be able to run this business."

Her purchases included a precision seeder, which is a huge help with growing baby greens, and insect netting, which protects her plants. The netting gives her "much nicer looking, higher quality products."

Her customers' happiness has been a highlight of Baugher's farming experience— like when a customer returns to the next week's market to tell her that the head of lettuce she sold them was the best they'd ever had.

"To have customers be so happy with what you're growing and really, really enjoy it is so meaningful. It makes it feel like what I'm doing is worthwhile."

Harold R. Benson Research and Demonstration Farm

Kentucky State University purchased 203 acres on Mills Lane in Franklin County, Kentucky, in 1986 under the leadership of then Land Grant Director Harold R. Benson. Later, in 2009, Kentucky State acquired additional acreage, making the total size of the farm nearly 300 acres. The farm hosts a variety of research projects, including small ruminant research, soil management research, organic agriculture research, ornamental horticulture research, livestock nutrition research, honeybee research, conservation biological control and beneficial insect research, and urban agriculture research. Additionally, the USDA National Clonal Germplasm Repository (Gene Bank) for pawpaws has been housed at the farm since 1994; this collection includes more than 2,000 trees from 16 states.

The Center for Sustainability of Farms and Families is also located at the Harold R. Benson Research and Demonstration Farm. The center is a multifunctional building with a commercial kitchen that can be used for both processing and food preparation. The space can be used for conferences, workshops, and other events.

For more information about the use of the Center for Sustainability of Farms and Families and about farm tours and field trip opportunities, contact Megan Goins at megan.goins@kysu.edu.

The sun rises at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on Oct. 7, 2022. | Photo by Aidan Thompson

Passion for PAWPAW

Kentucky State continues its decades-long focus on pawpaw research

So much about Kentucky's native fruit, from its taste to the fervent support of those who grow and love it, is unique.

"It's a pawpaw thing," said Jeremy Lowe, a Kentucky State University horticulture research associate, about how the tropical-adjacent fruit grows in a place like Kentucky. "They are kind of unusual."

Asimina triloba has been an important part of Kentucky State University's Land Grant Program for decades. In 1992, the first pawpaw orchard was planted at Kentucky State's Harold R. Benson Research and Demonstration Farm; most of the seeds came from pawpaw entries at the Kentucky State Fair. Since 1994, Kentucky State has served as the USDA National Clonal Germplasm Repository, or gene bank. Kentucky State is home to more than 2,000 pawpaw trees from 17 states.

In 1998, now dean of the College of Agriculture, Community, and the Sciences and director of the Land Grant Program Dr. Kirk Pomper was hired at Kentucky State University, specifically to work with pawpaws. As a graduate student at Oregon State University, he had tasted pawpaw for the first time.

"I thought it was a very unique fruit that had potential to become more popular, therefore I was excited to come to KSU and work on pawpaw," Dr. Pomper said.

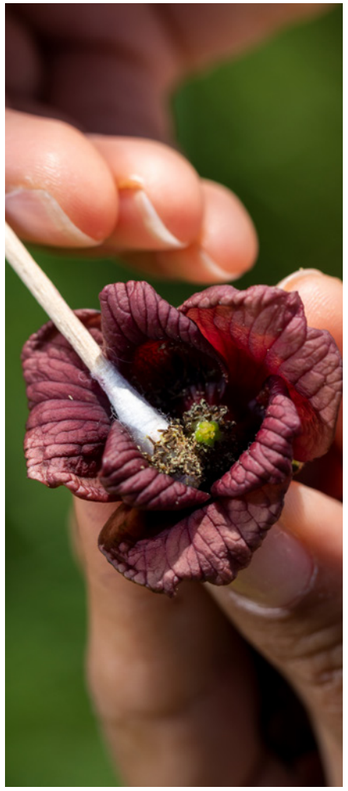
Kentucky State had always focused on sustainable agriculture and unique niche crops that might be options for small, limited-resource farmers. Because pawpaw is native to Kentucky, researchers knew that it would grow well in Kentucky. And because it was a unique crop, it could have high value. Pawpaw's rise in popularity also paired well with the decline of tobacco, when farmers were looking for new crops to grow.

Following Dr. Pomper's arrival, the focus shifted from just genetic diversity to include applied horticulture research.

The first pawpaw variety trial was planted in 1998.

"That was when it started to take off and we started doing more," said Sheri Crabtree, horticulture research and Extension associate.

Kentucky State's research has ranged from determining when the best time is to plant pawpaws (March and November did fine, while trees planted in June suffered) to what types of grafting techniques work with pawpaw (T-budding doesn't work well, according to one graduate student's research) to treatments on how to control fungal disease (students are still working on what preventative measures might work best).



One of Kentucky State's main pawpaw focuses continues to be "breeding new improved varieties and conducting variety trials to see how those varieties perform here," Crabtree said.

Developing a new variety is about a 15-year process. The first step is choosing parents that have the desired characteristics, then planting their offspring. The seedling will take seven or eight years to produce fruit, which researchers will study for several growing seasons. Then, if the fruit looks good so far, researchers will graft multiple plants to have replicated variety trials, which then take three or four years to produce fruit. After at least three years of data on that fruit, researchers may be able to reach their conclusion about the variety.

"It's a long-term thing," Crabtree said.

Kentucky State has released three cultivars; the first, KSU-Atwood™, was released in 2006 and was named after Rufus B. Atwood, longtime president of Kentucky State. KSU-Benson™ was released next, named for former Kentucky State University Land Grant Program director Harold R. Benson. Kentucky State most recently released KSU-Chappell™ in 2018, named after Dr. Lucy Lang Chappell, a Kentucky State graduate, and her late husband Roy Chappell, a Tuskegee airman. Kentucky State celebrated by establishing the third Thursday of every September as National Pawpaw Day.

"We have released three excellent named cultivars of pawpaw," Dr. Pomper said. "It was exciting to develop and release these improved pawpaw varieties to the public to grow."

Kentucky State researchers have crossed "some of the best pawpaw cultivars," Dr. Pomper said, and have planted the resulting seedlings.

"I am very excited to be testing the fruit produced by these seedlings' trees over the next several years and hopefully we will be selecting another cultivar release from these seedlings in the next few years," Dr. Pomper said. Crabtree said there are some "that look really good."

Pawpaw is one of Kentucky State's greatest claims to fame, and the fruit

OPPOSITE: Pawpaw fruit grows in the Highland Orchard at the Harold R. Benson Research and Demonstration Farm in Frankfort on June 4, 2019.
ABOVE LEFT: Kentucky State graduate research assistant Anju Chaudhary manually pollinates select pawpaw flowers as part of her graduate research project at the Harold R. Benson Research and Demonstration Farm in Frankfort on April 11, 2020.
ABOVE RIGHT: Anju Chaudhary records data from a project measuring the chill period necessary for pawpaw to bud out at the Atwood Research Facility in Frankfort on March 19, 2021. | Photos by Jonathan Palmer

frequently draws people from across the state, country and world to Kentucky State to learn more about the fruit. Each year, hundreds of people attend Kentucky State's Third Thursday Thing workshop about pawpaw; since the pandemic, people from across the world have also been able to join virtually.

Last year, a baby came dressed as a pawpaw. One man drives every year from Tennessee, with "Honk if you love pawpaw" written across the back of his car. A pawpaw grower came from France to study American pawpaws and visited Kentucky State.

Mainstream interest in pawpaw has grown and grown, Crabtree said. In years past, pawpaws would get some interest from regional journalists; last year, Kentucky State's pawpaw research and photos were featured in *National Geographic*.

Crabtree was once on the cover of a horticulture journal, scooping pawpaw ice cream (another big hit at Kentucky State events). Someone asked her to autograph the cover. A family who came to a Third Thursday workshop asked to take a photo with Kentucky State researchers. "You all are rockstars!" Lowe remembered the man saying.

"There are definitely enthusiasts," Crabtree said about growers and fans of pawpaw. "Because it's something that's kind of unique and weird, it attracts people that are super passionate about it."

ABOVE: Sheri Crabtree, center, hosts KET's The Farmer and The Foodie for an episode featuring pawpaws at the Harold R. Benson Research and Demonstration Farm in Frankfort on Sept. 8, 2021.
RIGHT: Jeremy Lowe teaches during the annual pawpaw grafting workshop offered by Kentucky State at the Harold R. Benson Research and Demonstration Farm in Frankfort on May 5, 2022. | Photos by Jonathan Palmer

Exploring AGRICULTURE

AgDiscovery gives high schoolers unique agriculture experience

PREVIOUS: A zoo employee speaks to the AgDiscovery class in the Islands Exhibit at Louisville Zoological Gardens in Louisville, Kentucky, on June 9, 2022.
ABOVE: The 2022 Kentucky AgDiscovery class received a private educational tour at Louisville Zoological Gardens in Louisville, Kentucky, on June 9, 2022.
RIGHT: The 2022 Kentucky AgDiscovery class visited Bluegrass Stockyards in Lexington, Kentucky, on June 6, 2022. | Photos by Jonathan Palmer

Through AgDiscovery, high school students have the opportunity to get hands-on experience in animal science and veterinary medicine.

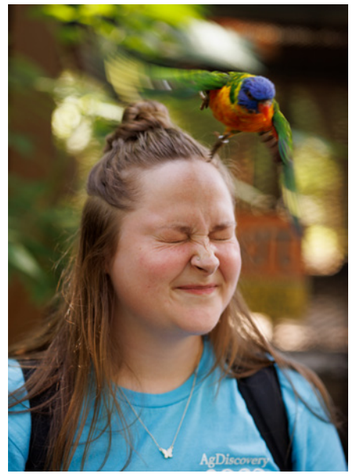
And, in some cases, have a bird land on their head at the Louisville Zoo.

The two-week residential camp is packed with lab and research projects, workshops, and site visits. The USDA's Animal and Plant Health Inspection Service (APHIS) partners with universities, including Kentucky State, to host AgDiscovery. High school students in grades 9-12 are eligible to apply.

"AgDiscovery is important because it allows its participants to learn about the agricultural industry and get hands-on experience while in the program," said Danielle Kinder, 4-H Youth Development Extension Area Agent at Kentucky State University.

Kinder attended AgDiscovery when she was a sophomore in high school, which was "a huge eye opener." She had plans to be a veterinarian, but AgDiscovery helped her realize that wasn't what she wanted. But the camp showed her other options— "a variety of careers I could pursue that did not require me to be a veterinarian but would still allow me to work with animals." She also formed relationships with Dr. John Hollis of USDA APHIS and with Dr. Travella Free, former program coordinator at Kentucky State.

"If it wasn't for these relationships and the employment opportunities through the AgDiscovery Program, I would not be where I am today," Kinder said.



ABOVE: Dr. John Hollis shows AgDiscovery students how to properly draw blood from the neck of a goat at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on June 17, 2019.
LEFT: Kentucky State 4-H agent Danielle Kinder serves as a landing spot for a bird at Louisville Zoological Gardens in Louisville, Kentucky, on June 9, 2022. | Photos by Jonathan Palmer

Many 2022 attendees emphasized the relationships formed at AgDiscovery—and the relationships that make the agriculture industry work.

Through AgDiscovery, Laura Ponce-Jiménez of Louisville learned that "communication is key."

"Working together as a group is something that's going to come a lot in whatever career you're trying to focus on," Laura said.

Daniella Cruz-Lopez, a 2022 attendee from Puerto Rico, was surprised by how much teamwork is required in the agriculture industry.

"It looks like such a solitary thing from far away," Daniella said. "But when you're in it, it's a group thing. Everybody depends on everybody."

Aiden Barnes, from Olathe, Kansas, said the interpersonal relationships formed at AgKnowledge were great—but so were the dissections.

Getting hands-on experience and visiting farms and other agricultural locations was a valuable experience, Aiden said. Like for Kinder, AgDiscovery shaped Aiden's thoughts on his future career.

"I've learned that there's always something else that might pique your interest that you never thought would," Aiden said.

Before AgDiscovery, Aiden didn't know what being a pathologist was— but after seeing that "it's a really, really cool job," Aiden might become one someday.

Laura also became interested in pathology, even though she came into AgDiscovery thinking she wanted to work with large animals.

"AgDiscovery helped me find what career fits me best," Laura said.

AgDiscovery also helps students make a plan for their next several years, even before going to vet school. Megan Lashkar from Wisconsin said AgDiscovery showed her that she can start shadowing veterinarians and getting volunteer hours now. Hope Smith, who visited Kentucky for the first time from East Orange, New Jersey, said AgDiscovery has helped her better prepare for vet school.

"They're really telling us how to get into a vet school," Hope said. "Vet schools are really competitive... so it's really nice that they've given us this information to help us get a leg up on it."

For more information about AgDiscovery, contact Danielle Kinder at danielle.kinder@kysu.edu.

Student SPOTLIGHT
Anthony Jackson Jr.

Learning about agriculture's history inspired Anthony Jackson Jr. to be part of agriculture's future.

Anthony, now a freshman studying agriculture communications at Kentucky State University, learned about agriculture in history class and in his own family tree. His great-great-grandfather immigrated from Germany to Kentucky and had a bourbon distillery and ice cream shop.

"It made me interested in doing that kind of stuff," Anthony said.

And as an eighth-grade student in Lexington, he learned about the progression of agriculture in history class. It seemed to him that agriculture had progressed rather slowly over the past 100 years.

"I was thinking everything else in the world is moving so fast, and ag is going but it's not going as fast as it could," Anthony said. "It just caught my interest."

As a high school student, Anthony attended the Carter G. Woodson Academy and the Locust Trace AgriScience Center, which gave him many agriculture-related opportunities. He started as pre-vet at Locust Trace but was looking for something different when a teacher recommended agriculture communications.

"I gave it a shot and fell in love with it," Anthony said. "I like the idea of helping people through food because obviously food is the biggest, most important thing in the world. I think that with agriculture communications, that's one way I can really help people."

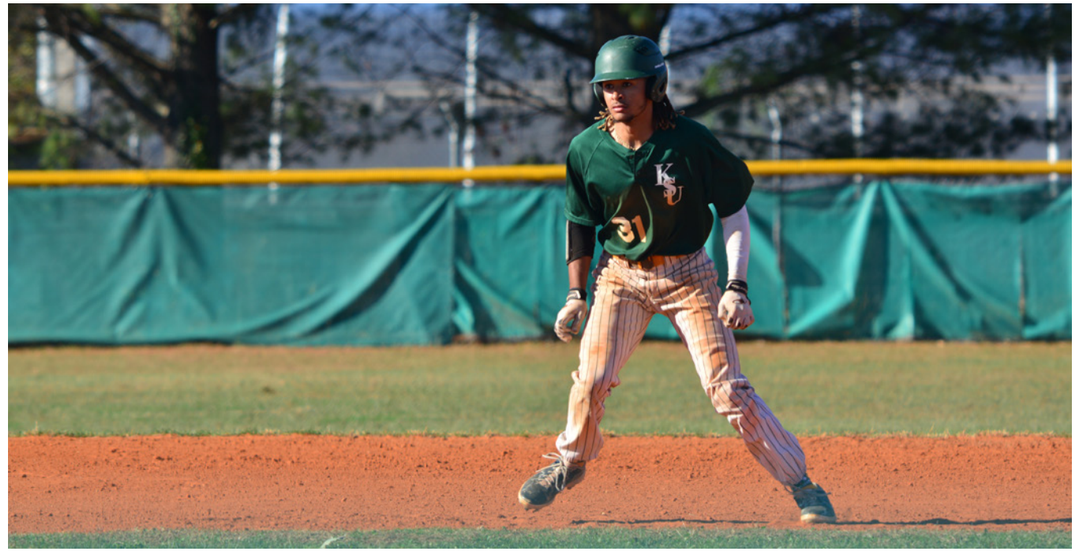
Many of Anthony's family members have worked in politics, which he feels has helped his communications skills.

"[Communication] is probably my biggest feature," he said. "I feel like I just have a way with words."

Anthony was in leadership roles in FFA and Jr. MANRRS as a high schooler. Through the Woodson Academy, Anthony got an internship with AppHarvest, a sustainable food company in Kentucky, during his senior year of high school. He shadowed and assisted Ramel Bradley, community director at AppHarvest and former basketball player at the University of Kentucky.

Bradley became a role model of Anthony's, who plays baseball at Kentucky State.

"Working under him was really helpful because he's an African American male who played a sport in college and had the same goals as me through ag communications," Anthony said.



OPPOSITE: Anthony Jackson Jr. poses for a portrait at Kentucky State University in Frankfort, Kentucky, on Jan. 23, 2023. | Photo by Jonathan Palmer
ABOVE: Anthony Jackson Jr. practices baseball at Kentucky State University Alumni field in Frankfort, Kentucky, on Nov. 6, 2022. | Photo provided by Andria H. Jackson

Anthony and Bradley are business partners, creators of an ag-leisure clothing brand called God of the Hills.

"We're going to try to figure out a more innovative way, besides cotton, to grow clothing," Anthony said.

Through Bradley and attending an HBCU, Anthony has met many people of color in the agriculture industry—which has been amazing, he said. Those connections have opened a lot of doors for him, including scholarships. Anthony is part of the USDA 1890 National Scholars Program.

"You wouldn't imagine the amount of people in Kentucky that are Black and in agriculture," Anthony said. "It has just been awesome."

In high school and now at Kentucky State, Anthony prioritizes getting involved. He's a member of MANRRS, plays on the baseball team, and is the baseball team's representative on a student athlete leadership team.

> ***"I like the idea of helping people through food."***
>
> — Anthony Jackson Jr., *Student Spotlight*

"I'm a well-connected person," he said.

"From mentoring Anthony in the Black Male Working Academy (BMW) to now his professor at Kentucky State University, I am proud of his work ethic, focus, and commitment to excellence," said Dr. Marcus Bernard, associate professor.

Anthony said his college schedule has certainly been busy, with classes, baseball, and other organizations. It's been challenging, but he loves it.

"The baseball team has completely changed my life," Anthony said. "I love it there. It's been awesome."

Many of Anthony's teammates are from further north. As a native Kentuckian, Anthony has introduced them to regional treasures– like Ale-8 and Grippos.

After college, Anthony hopes to work for the U.S. Department of Agriculture or AppHarvest— or any organization that has the same goal as he does: to end world hunger.

"I don't plan on ending it in my lifetime, but just taking steps towards it, at least solving it in my community," he said.

Resilient
PEOPLE

Eastern Kentucky farmers, communities continue to recover from historic flood

Early in the morning on July 28, Bennett and Colette Quillen stepped on their porch with a mining light to watch the rain pour and the creek rise.

Their home and farm are in Letcher County, Kentucky, part of the region that was hit by a 1,000-year flood in late July 2022.

Colette noticed that water was getting into their basement— and that's when Bennett panicked. He used a tractor to build a levee to stop the water; while getting an irrigation pump, he cut his hand.

By the time the flooding stopped, the Quillens had lost equipment, plants already in the ground, heirloom seeds, and more.

"Good farmland is covered with mud and creekbed gravel and erosion," he said. "It set it back a lot."

The floodwaters washed out his bridge, which had been there since 1985. This trapped the Quillens on their side of the creek; when Bennett's cut continued to swell, he had to find a way across to get to the ER for a tetanus shot.

"We've had a rough time, but not near as bad as other people," Bennett said. "Plenty of friends and neighbors have it much worse than we have."

Bennett was two years old when the region flooded in 1957— the only flood that's anywhere close to comparable to what happened in July 2022. Bennett said he always heard people talking about the flood of '57. He said July 28, 2022, was the second worst night of his life; the first was decades ago, when his brother died.

...

"The floods were— in a way, they're even hard for me to comprehend how big they were," said Valerie Ison Horn, who works in Whitesburg to grow a stronger and healthier community as the director of Cowan Community Center and as a board member for the Whitesburg Farmers Market and CANE Kitchen.

CANE, or Community Agriculture Nutritional Enterprises, Kitchen was founded to "expand the agriculture footprint and give additional opportunities" to farmers in the area, Horn said. CANE Kitchen is located in a 2,000-square-foot space owned by Mountain Comprehensive Health Corporation and leased to CANE Kitchen for $1 a year for 20 years. The organization helps farmers increase their profits but has also served meals to those who need them, particularly during the COVID-19 pandemic.

Horn said she believes CANE Kitchen was the first place to serve a meal to the community after the flooding on July 28.

"I think the first meal was ready before the water crested," Horn said.

A doctor brought over patients who had been evacuated from the hospital, and people who had fled their homes came in for a safe place to be. One of the first people through the door was a former cafeteria worker. She started cooking.

"That woman worked for eight hours that day preparing food for others while the water continued to rise around her home. And after the first meal was served, she took off her apron and said, 'I'm going to go see if I have a home now,'" Horn remembered. "Those are the things that we're really, really proud of, and exemplified the best of our community."

In the months after the flood, CANE Kitchen served three meals a day to anyone who walked through the door— an estimated 100,000 meals.

As the needs of the community have shifted, CANE Kitchen has stopped serving meals each day, but Horn said she thinks CANE Kitchen will meet that need again one day. Just after the flooding, Kentucky State University accepted donations at its August Third Thursday Thing workshop, which focused on environmental impacts on farmers. Donations, including hotel cooking pans, bottled water and cleaning supplies, were given to CANE Kitchen.

Months later, Kentucky State personnel Tara Maynard and Cynthia Rice organized a donation drive at Kentucky State's GIS Day. Maynard, who used to work in the Wolfe County School District, also organized a Christmas coat drive to meet immediate needs for clothing.

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As flood recovery continues, Horn has been part of meetings specifically for farmers who are reeling from what they lost and planning for the future.

"Our farmers have lost equipment, they've lost tools, some have literally lost their land," Horn said. And, of course, farmers have lost revenue from the plants that were washed away

Horn said the community has received "a wonderful response" from farmers across the state, who have sent produce or supplies to farmers and CANE Kitchen.

"That definitely has been a big strength for us, to see the power and the connection with farmers across the commonwealth," Horn said.

Even before the flooding, farmers in Whitesburg had been forging connections with organizations offering partnerships and resources, such as Kentucky State University's Small-Scale Farm Grant Program.

"It's sort of like they were stored away, and we're not starting completely at zero— although many on their farms are starting way below zero," Horn said. At meetings with farmers, Horn has been encouraged by their will to continue farming— which seems to be in their DNA.

"We are resilient people," Horn said. "We love the time to come and for our children to not have to be. We'd like to have some babies that don't have to worry about all these things... It's nice to be strong, but sure wish we didn't have to be so strong sometimes."

TOP: Bennett Quillen, left, removes trees from a drainage off Watts Fork Road in Garner, Kentucky, on Aug. 29, 2022.
INSET: Franklin Adams, 85, poses in front of his bridge, which was damaged by the July 2022 flooding, over Troublesome Creek in Garner, Kentucky, on Aug. 29, 2022. "This is the wildest thing I've ever seen," Adams said of the flooding. "It was mean." | Photos by Jonathan Palmer

Aquaculture Research Center

From 1985 to 1991, Kentucky State University's aquaculture research program was entirely research and Extension. In 1992, Kentucky State began offering classes in aquaculture, adding academics to the program. In 1999, the Division of Aquaculture was named Kentucky State's Program of Distinction by the Kentucky Council on Post-Secondary Education.

The primarily thesis-based Master of Science in Aquaculture and Aquatic Sciences fully integrates academics with research with the goal of increasing the knowledge base in aquaculture, farm income, and the productivity of on-farm water resources in Kentucky and around the world. Additionally, Kentucky State aquaculture Extension professionals disseminate research information to producers in a useful and understandable form.

Kentucky State's 14-acre Aquaculture Research Center (ARC) in Frankfort, Kentucky, is the only facility of its kind in the commonwealth. Facilities at the ARC include 33 research ponds; a hatchery with spawning, holding and experimental tanks; the office and laboratory building, with a histology laboratory, offices, and conference/classroom space; a nutrition laboratory with a wet lab and analytical lab; two greenhouses; a 120,000-gallon, 24-tank pond microcosm facility; a multipurpose building with a fish disease diagnostic laboratory, a processing room for food science research, and a videoconferencing facility; and a new production technologies and genetics laboratory, which contains one of the only replicated aquaponics research systems in the U.S.

For more information about the Aquaculture Research Center, contact Dr. Ken Semmens at ken.semmens@kysu.edu

Kentucky State aquaculture personnel conduct research at the Aquaculture Research Center in Frankfort, Kentucky, on January 24, 2023. | Photo by Anthony Guglielmi

Introducing AQUAPONICS

Middle and high school students learn aquaponics, connect with Kentucky State

Kentucky State University has partnered with nearly 20 high schools, as well as middle schools, to get aquaponics into classrooms.

"Aquaculture and aquaponics are a good fit because it's fun growing living aquatic animals and plants in a controlled environment," said Ken Thompson, state specialist for 4-H youth development in Kentucky State's School of Aquaculture and Aquatic Sciences. "It's real-life, applied activities that may help increase their aspirations, motivation, and interest to learn more about STEM and related career paths."

These efforts have been funded by two USDA capacity building grants, one for nearly $150,000 that ran from 2017 to 2021 and the current one, which provides another $150,000 through 2024.

In 2022, Kentucky State finished an Aquaculture Teacher's Manual, with instructions and assignments for aquaponics education with high school students.

In addition to introducing students to STEM careers in general, the goal is recruiting students to Kentucky State for their undergraduate degree.

"Through aquaponics education, students obtain problem-solving and decision-making skills that extend beyond the classroom," Thompson said.

Simons Middle School in Fleming County and Eminence High School in Henry County are two of the schools that currently have aquaponics systems.

Simons Middle School, Fleming County

"I've got more greens," said teacher Brad Hay, harvesting more lettuce from the top row of one of Simons Middle School's aquaponics systems.

Students retrieved the lettuce then weighed and bagged it before taking it to the cafeteria for use in school lunches.

Hay and fellow teacher Paul King teach the classes for Cougar Hill Farm, a growing-and-selling operation run by students. The farm is sustained by sales revenue, grants and partnerships from organizations such as Kentucky State University, and selling Ale-8 drinks to students.

Simons Middle School has had aquaponics systems for about four years and now has several, ranging from tabletop to commercial systems.

The school's first tank and pump came from Kentucky State— and "all of the knowledge," Hay said. "We didn't have a clue; we had zero experience with it." Dr. Ken Thompson and John Kelso of Kentucky State have helped over the years, from setting up systems to helping get rid of fish diseases.

From the moment the fifth period class started on a January afternoon, the students got to work. One fed the tilapia in the tank; Hay harvested the lettuce that was then processed by students; two other students prepared the seedlings to take the harvested lettuce's place. Other students went to work outside, where the greenhouse and compost are, while others sold products or searched Amazon for the best deals on materials.

Getting to run a business with classmates is a unique experience, said Patrick, an eighth-grade student.

Lilly, another eighth grader, was interested in aquaponics because she lives on a farm.

"[Aquaponics] interested me because it's a new way of farming, it's more advanced," Lilly said.

Students built much of their equipment by hand— the type of hands-on activities that help Lilly learn.

Now that seventh grader Xachary has learned about aquaponics systems, he and his family are considering building one at home.

"It can be easy. Some days, it's complex, gives your brain a workout," he said.

Eminence High School, Henry County

Many students in Karin Ceralde's aquaponics elective course at Eminence High School learn about agriculture for the first time.

"Many of them are sort of small-town living," Ceralde said. "So if they have any experience, it's growing some tomato plants in the backyard."

In Ceralde's classroom, students learn how to grow plants without soil and with fish and water.

"It's a great way to introduce some of them who haven't had any experience growing things before," Ceralde said.

"Aquaponics is going to continue to be more and more important in our industries, so knowing how to grow your own fish and your own food in an enclosed system, regardless of what it's like outside— that's a skill that's really useful."

Eminence High School's relationship with aquaponics and Kentucky State University predated Ceralde's tenure there, and she has been working since 2017 with Kentucky State's Dr. Ken Thompson. First she incorporated aquaponics tanks into her biology class for a lesson about carrying capacity in the ecology unit. Now she teaches aquaponics as an elective science course.

Senior Andrew Guenther was excited to take an aquaponics course.

"It combines both the hands-on factor and taking notes," Andrew said, a balance not often present in high school classrooms. "One day we're taking notes and we're studying, and I'm like, 'Oh my gosh, I'm so tired of this.' And the next day, we're doing hands-on stuff."

Ceralde gives students different rotating assignments related to the aquaponics systems so they can learn multiple parts of the process. The assigned botanist takes care of the plants, for example, while the environmental engineer does the water testing.

"I like the fact that this whole class is revolved around teamwork and helping each other," Andrew said.

TOP LEFT: Students feed koi fish in their aquaponics system at Eminence High School in Eminence, Kentucky, on Jan. 24, 2023. | Photo by Jonathan Palmer
BOTTOM LEFT: Karin Ceralde, left, answers questions about microgreens growing in aquaponics tanks at Eminence High School in Eminence, Kentucky, on Jan. 24, 2023. | Photo by Jonathan Palmer
RIGHT: Brad Hay harvests lettuce from an aquaponics system for processing by students at Simons Middle School in Fleming County, Kentucky, on Jan. 13, 2023. | Photo by Kris Chappel

Student SPOTLIGHT
Laterrica Spivey

Laterrica Spivey fell into agriculture— then she fell in love.

First she fell for Kentucky State University, when she attended the Summer Apprenticeship Program (SAP) while in high school. A three-week residential program, SAP exposes rising juniors and seniors to different opportunities in STEM fields.

Through that program, Kentucky State left "a great impression" on Laterrica. When it came time for her to choose a college, she was looking for a medium-sized HBCU. Then Kentucky State STEM coordinator Jeremy Sandifer, whom Laterrica had met at SAP, told Laterrica about the 1890 USDA scholarship, which offers a full ride to Kentucky State for students in agriculture and related fields.

Latterica hadn't necessarily planned to major in agriculture, but she said, "I'm going to try it out." She'd always had an interest in and passion for business, so agriculture business seemed worth trying.

"My whole family is affiliated with business, so that has always been my passion," Laterrica said. "I knew that I wanted to do something with business, and the opportunity was in agriculture, so I decided to just connect the two."

Now a junior at Kentucky State, Laterrica has learned so much about the agricultural industry and knows she made the right choice.

For a long time, Laterrica associated agriculture with working on a farm with cows and goats. Her education and farm visits have opened her eyes to how many different components there are to agriculture.

"I didn't really know what came into play when it came to agribusiness— the numbers, the land," Laterrica said. "I was so close-minded to agriculture, and now I'm in love with it. It's something I am truly falling in love with and I can see myself doing long term."

After graduating from Kentucky State, Laterrica plans to get a master's degree in agriculture business and attend law school. She's not sure exactly where that will take her, but she wants to work in agriculture policymaking.

Laterrica also wants to grow organic vegetables on her own farm.

"Heart problems and diabetes run heavy in my family, and so I definitely want to make sure that I can give healthy products to them and others," she said. "That is my passion, to grow organic vegetables and to have my own farm, and also to make policies within agriculture when it comes to the food and the products."

TOP: Laterrica Spivey poses for a portrait at Kentucky State University in Frankfort, Kentucky, on Jan. 23, 2023. | Photo by Jonathan Palmer
BOTTOM: Laterrica Spivey, current MANRRS president, hosts a meeting in the Cooperative Extension Building in Frankfort, Kentucky, on Dec. 8, 2022. | Photo by Aidan Thompson

Laterrica Spivey, center, hikes the Osage Trail with Kentucky State University employee Casey Bradley, left, and fellow student Simone Graham in Frankfort, Kentucky, on Feb. 3, 2023. | Photo by Jonathan Palmer

Partially because of health issues in her family, one of her favorite classes at Kentucky State University has been human and health and environment, in which she learned about diseases, biology, and "a whole mixture of things." Another of her favorite classes was Africana studies. She said she felt good going to class every day because she was "able to be vulnerable in a classroom and not be dismissed."

"Also, it makes me want to embrace my culture even more because of the things that I'm learning about my history," Laterrica said.

> ***"I was so close-minded to agriculture, and now I'm in love with it."***
>
> - Laterrica Spivey, *Student Spotlight*

That appreciation transfers to MANRRS; she is president of the Kentucky State chapter.

"We've been able to connect all races and ethnicities together to get the same opportunities," Laterrica said. "It has really been nice knowing that I'm not the only one in this. So seeing people like me makes me feel good and makes me feel comfortable."

Dr. Marcus Bernard, Kentucky State associate professor and faculty adviser to MANRRS, said Laterrica is one of his best students.

"From our first meeting, I've watched her mature into a student leader and budding young professional," Dr. Bernard said. "She is 'Thoro' and will make Kentucky State University proud."

Laterrica said she is a very hard worker, spurred on by difficult circumstances— such as losing her mother and grandmother about five years ago. She is dedicated and has a strong mindset.

"I'm one of a kind," Laterrica said.

A home away

FROM HOME

Nepali faculty, students build community at Kentucky State University

When Kabita Paudel flew to Kentucky, she didn't have to worry about who would pick her up from the airport.

After growing up and earning her bachelor's degree in Nepal, Paudel came to Kentucky State University for the Master of Science in Environmental Studies program (MES). Because Kentucky State already had a strong Nepali population, she had a ride from the airport and even a place to stay before moving in to her own apartment.

"In Nepali culture, we are really into helping each other," Paudel said.

Currently, about 15 employees and students at Kentucky State are from Nepal. When Dr. Buddhi Gyawali came to Kentucky State to be a professor in 2012, he was the only person from Nepal.

"After I came here, I brought one student, and it became like a chain reaction after that," Dr. Gyawali said. "It's growing."

After completing her bachelor's degree in agriculture, Paudel wanted to get a master's in the environmental sector.

"I was doing the university search, the professor search, and I stumbled across Dr. Gyawali's profile," Paudel said. "It's something I resonated with."

Paudel liked the program, which offered a holistic degree in environmental science, and that one of her professors would be Nepali.

Suraj KC, another MES student and graduate research assistant, had a similar experience. One of his Nepali friends was already at Kentucky State.

"It was easy for me to communicate and to know about Kentucky State and the environment here," KC said.

Neither student was overly shocked by American culture when they arrived, but there were still adjustments they had to make. One was to the cold—outside in the winter and even in the classrooms.

"I like the snow," Paudel said. "It makes my heart glow."

KC said there's more pressure and therefore more stress. Part of that is just being a graduate student with a lot of responsibility, but there's also the American emphasis on multitasking. People in Nepal— and maybe more broadly in Asian culture, Paudel said—aren't so concerned about time and being on time.

Another adjustment was the lack of public transportation and the need for a car and driver's license. When Dr. Gyawali came to the United States for graduate school in the late '90s, he had even more to get used to: what clothes to wear and laundry, credit cards and ATMs, even the Internet.

> ***"I was doing the university search, the professor search, and I stumbled across Dr. Gyawali's profile. It's something I resonated with."***
>
> - Kabita Paudel, *Nepali MES student at Kentucky State*

"Everything was new for me at that time," Dr. Gyawali said. "These guys are lucky, compared to my story."

KC said Dr. Gyawali's presence at Kentucky State decreased the culture shock that he may have otherwise experienced.

"It has helped that Dr. Gyawali is from Nepal, and he understands the transition that we have to go through and provided some tips and tricks to cope with it," Paudel said.

It also helps that Paudel and KC both spend a lot of time with their fellow Nepali students, creating a community of home here in Frankfort. This is especially important since Frankfort isn't a big city that has international spaces for eating and shopping.

Nepali students will gather for meals or to celebrate festivals back home. On special occasions, they cook goat meat— which Dr. Gyawali "cooks very well," Paudel said.

"That homely vibe has never gone off from me," KC said.

PREVIOUS SPREAD: Nepali students enjoy an authentic Nepali meal prepared by Dr. Buddhi Gyawali and his wife at their home in Frankfort, Kentucky, in August 2021. | Photo provided by Dr. Buddhi Gyawali
TOP: Graduates, friends and family celebrate at a graduation party at Kentucky State University in Frankfort, Kentucky, on May 13, 2022. | Photo by Kris Chappel
LEFT: Students gather for a graduation reception in the Kentucky State Student Center Ballroom in Frankfort, Kentucky, on Dec. 13, 2022. | Photo by Jonathan Palmer

Building COMMUNITY

Kentucky State hosted two Small Farms Conferences in 2022

Kentucky State University hosted two Small, Limited-Resource, Minority Farmers Conferences in 2022.

The statewide conference was held in Frankfort for the 24th time and for the first time in person since before the COVID-19 pandemic. For the first time, Kentucky State University took our conference on the road, and the "Western Kentucky Style" conference was hosted in Hardin, Kentucky.

Expanding west gave Kentucky State the opportunity to reach and serve more stakeholders. Conference attendees heard from representatives of multiple organizations, including U.S. Department of Agriculture, the Kentucky Department of Agriculture, Farm Credit, KCARD, and more. Attendees also visited the Hickman Community Center and saw the homeplace of Dr. Rufus B. Atwood, the longest-serving president of Kentucky State.

At both conferences, Veronica Womack of the Georgia College & State University's Rural Studies Institute delivered a keynote address. At the Small, Limited-Resource, Minority Farmers Conference in Frankfort in November, Kentucky State recognized David Miller as the 2022 Small Farmer of the Year and Jane O'Tiernan as the first ever recipient of the Women in Agriculture Excellence Award.

More than 200 people gathered in Frankfort for three days of education and fellowship. Attendees came to Frankfort from the western, central, and eastern parts of Kentucky, as well as from states including Indiana, Ohio and Michigan.

"This year's conferences have exceeded our expectations," said Dr. Allison Young, Interim Associate Extension Administrator for Kentucky State's Cooperative Extension Program. "Our stakeholders were very excited and grateful to be able to attend this year's conferences."

Edwin Chavous, Kentucky State Small Farm Outreach Training and Technical Assistance Coordinator, was pleasantly surprised at the great turnout. He was worried that the remaining risk of COVID-19 exposure would keep people away, but many seemed excited and comfortable to be in person again. Attendees had the opportunity to get their COVID-19 booster, as well as a flu vaccine, at the pop-up vaccination clinic hosted by SKIP-COVID on the final day of the conference in Frankfort.

> ***"This year's conferences have exceeded our expectations."***
>
> - Dr. Allison Young, *Interim Associate Extension Administrator for Kentucky States's Cooperative Extension Program*

The conference was a great opportunity for stakeholders to "build community with other small farmers," Dr. Young said.

Thirty-five percent of participants were attending the conference for the first time, and many were beginning farmers— defined by the USDA as anyone who has operated a farm or ranch for 10 years or less. On the first day of the conference, one of the tracks featured sessions geared to beginning farmers, including the basics of farm business planning and introductions to organizations like the National Resources Conservation Service.

"We're just getting our feet wet," said Tyler Buford, who purchased 200 acres in Owen County in 2020.

Buford and his wife Kristen have planted about 50 fruit trees, including apples, pears, peaches, blueberries, and fig. One thing he learned at the conference is the importance of a water treatment plan. What he learned, he said, "saved me from making some mistakes" on his farm.

The conference inspired him as a beginning farmer, he said, because he got "to network with other farmers, people who are doing it at this level."

At the conference, Kentucky State also continued its commitment to reaching women who are principal farm operators. Throughout the year, Kentucky State University's Land Grant Program prioritized reaching and serving more women who are principal operators of their farm or agribusinesses. On the first day of the conference, one of the tracks was for women in agriculture. The track featured presentations on small ruminant production, nutrition, and growing flowers.

Joanne Henry of Todd County said she appreciated the track for women farmers. She and her husband, who had been farming since childhood, operated 417 acres of oat, wheat, barley, corn, and granola. Since her husband passed away, she leases out the farm but still manages it.

She has noticed that she's far from alone as a woman in farming.

"A lot of women are coming into farming," Henry said.

For more information about the Small, Limited-Resource, Minority Farmers Conference, please contact Edwin Chavous at edwin.chavous@kysu.edu.

Fish are FRIENDS

Kentucky State encourages local tilapia production, consumption

Dr. Noel Novelo prepares a meal with Kentucky State-produced tilapia at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on Jan. 20, 2023. | Photo by Jonathan Palmer

Kentucky State University personnel want you to eat tilapia— because if more people in Kentucky eat tilapia, that means more Kentucky small farmers can profitably raise tilapia.

"This project was created with the vision that it would introduce diversification of farm products in existing farms," said Dr. Noel Novelo, aquaculture research associate at Kentucky State.

Dr. Novelo is the principal investigator of a USDA-funded grant titled, "Expanding Aquaculture and Healthy Food Choices to Reduce Economic and Health Disparities Affecting Minority and Limited-Resource Stakeholders."

Previous grants have funded Kentucky State's ongoing research to more effectively raise tilapia. This grant, funded for $250,000 from 2021 to 2024, is focused on bringing that information to farmers, businesses, and other stakeholders.

"At a time when there is practically no systematic tilapia production in Kentucky and when tilapia consumption is evident and dependent on importation, the tilapia Extension project will support tilapia hatchery production in Kentucky and other states," Dr. Novelo said. "In the long-term, the project seeks to strengthen local businesses and impact healthier living."

This project includes collaboration across areas: Dr. Novelo of aquaculture is joined by Nilima Mishra, Extension specialist for dietetics and human nutrition; Dr. Marcus Bernard, interim chair of the School of Agriculture, Food and the Environment; and Dr. Kristopher Grimes, associate professor and state specialist for nutrition and health.

"This is a really special project," Dr. Novelo said. "The principal leaders of the project come from a very different background."

Aquaculture Extension personnel can and do help farmers produce tilapia, but their production won't be profitable without a market to sell in and consumers who will buy tilapia. That's where marketing, economics, and nutrition come in.

"Tilapia has had some bad publicity," Dr. Novelo said. Some people label tilapia a man-made fish and refuse to eat it, but that's not true. "Tilapia is natural, tilapia is coming from the Earth."

Tilapia is a popular fish to eat across the world, but less so in the United States. Part of the goal is making people comfortable with handling and cooking the fish. The grant team is currently working on a series of videos that cover fish processing, making healthy recipes with tilapia, and more.

Graduate student Uchechukwu Ohajiudu, left, and Dr. Noel Novelo prepare meals with Kentucky State-produced tilapia at the Harold R. Benson Research and Demonstration Farm in Frankfort, Kentucky, on Jan. 20, 2023. | Photo by Kris Chappel

Dr. Novelo hopes that people will learn that tilapia is a good option, similar in many ways to catfish.

Mishra said the team is trying to educate Kentuckians about the importance of eating lean protein, since proteins are the "building blocks of our body." Most sources of animal protein are also rich in fats.

"We do not want more fats in our food but need more protein in every meal," Mishra said. "Tilapia fish is one such source of lean protein, with a much smaller fat percentage."

Several people will contribute tilapia recipes to the video series, to show stakeholders simple and healthy meal options.

Aquaculture graduate student Uchechukwu Ohajiudu did a cooking demonstration of pepper soup, a favorite recipe from his native Nigeria. He grew up in the kitchen with his mom as she made the soup. She learned not to leave him unattended, or else he would steal a taste.

"It's a very nice dish," Ohajiudu said. "It's simple to cook; it's easy to understand."

The dish can be made with any meat, including tilapia. The signature ingredient is pepper. Ohajiudu likes his soup to be spicy because he's used to spice, but others could scale it back when they make the dish.

"It reminds me of home," Ohajiudu said. "I get lonely, then I'll just get a few ingredients and then make it. Having pepper soup just takes my mind back home."

For more information about tilapia production, contact Dr. Noel Novelo at noel.novelo@kysu.edu.

Meet the MEDIA TEAM

Thank you for reading the ninth edition of AgKnowledge magazine, produced by the Media and Communications Team in collaboration with the rest of the Land Grant Program.

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