THE magazine

Volume 20, No. 1

College of Agriculture, Food and Environment

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Generating Knowledge and Service For All

As dean, I spend a lot of time thinking about what it means to be the College of Agriculture, Food and Environment in a land-grant university. Sometimes I explain it to neighbors and the business community in Kentucky. Sometimes I remind elected officials we are the folks who do the unbiased research and assessments, and we are the folks who provide every Kentucky county with up-to-date information for making vital decisions. Being a land-grant college means we are all about service, and we can back that up!

In the midst of the Civil War, Senator Justin Smith Morrill had a vision for a people's university that could provide a general education but be rooted in agricultural and mechanical arts. Supported by President Abraham Lincoln and the U.S. Congress, it was a revolutionary system designed to provide access to those who couldn't afford education. The doors they opened, however, admitted mainly white men. In 1890, a land-grant act for African-Americans, again predominantly male, expanded the educational offerings. Today, with the system well into its second century, we are expanding our educational offerings and our commitment to an ever more diverse population of students, faculty, staff, and Kentuckians all around the state.

Our connections to the Cooperative Extension Service and the U.S. Department of Agriculture makes us part of a long-standing, national system while also doing work that specifically benefits the commonwealth. Out of this long-term tradition of education, research, and outreach has grown our passionate culture of service. In this issue, we tell the stories of some of our great teachers, extension agents, and students. The legendary Lori Garkovich and the newer faculty member Lou Hirsch dedicate their service and enthusiasm to students at UK and beyond. From our Letcher and Harlan county agents comes a new income stream and the potential for a stronger local

economy. Professors Uneeda Bryant and Lisa Vaillancourt are committed to opening up opportunities to a diverse student population. And bioenvironmental engineer Bill Ford continues our commitment to improving our water systems.

We blend our three missions into a very effective generator of new knowledge that can be tested for value in the real world and directly transferred to our students and stakeholders. Together, the whole is way more than the sum of the three parts.

The College of Agriculture, Food and Environment walks the land-grant talk every day, and we have many more stories besides those featured in this issue. We stand on the shoulders of those who came before us. It is in our DNA to keep serving and discovering new ways to improve our world.

–Nancy Cox
Dean, College of Agriculture, Food and Environment

It starts with us

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Adulting 101

If you need a blueprint for moving out of your mom's basement, University of Kentucky Cooperative Extension has it—#Adulting 101, a pilot program that teaches life skills to an audience from high school through young adult.

"It provides young people with the skills they would need to be successful in everyday life," said Jennifer Hunter, the interim assistant director of family and consumer sciences extension.

Dayna Parrett came up with the idea after watching YouTube videos.

"Kids these days are struggling with adulting," said the Hardin County family and consumer sciences extension agent. "They are going on Twitter, using the hashtag #adulting, and putting up all the things they are struggling with: burning meals, changing their oil, changing a tire, balancing a checkbook."

Extension has the means to address those needs, so Parrett decided to host a series of classes to teach those everyday life skills. She called it #Adulting, Life Is Hard, Learn How It Can Be Easier. Class topics include cooking, money, sewing, laundry, and cleaning. The free program was first offered in the fall of 2016 at the Hardin County Extension office with about 17 people participating. The classes now are offered in some other counties as well. The response was phenomenal when Parrett posted it to the Hardin County Extension Facebook page, where it reached an audience of more than 300,000 people and had 200 shares.

"Kids used to learn these things as they grew up," Parrett said. "The reality is, not everyone is anymore."

—Jeff Franklin

Westward Ho

Beef Integrated Resource Management was first introduced to Kentucky in 1981. Since then it has evolved, but the goal remains: to help Kentucky cattle producers improve the management of their cowherd through better record keeping, leading to more profitability.

"We want to take producers from point A to point B through hands-on, boots-in-the-dirt style instruction," said Les Anderson, UK extension beef specialist and chair of the Beef IRM team.

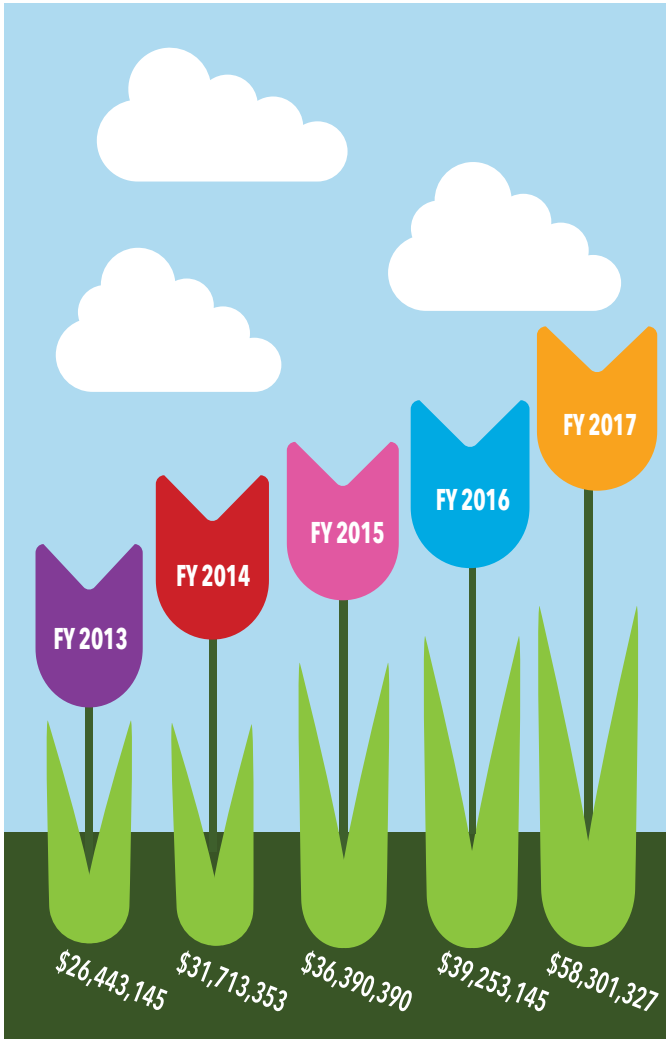
The IRM Farm Program, begun in Northern Kentucky, has concentrated much of its efforts in Eastern Kentucky. Last year the Beef IRM Farm program was expanded into Western Kentucky. There are more than 140 farms and 6,000 cows now enrolled in the program, which includes traditional classroom educational programs like Master Cattleman, Applied Master Cattleman, Grazing School, and Beef Quality and Care Assurance.

The cost-share program is a five-year commitment for producers.

—Jeff Franklin

CAFE Grants & Contracts

Our reputation for cutting-edge research means CAFE grants continue to grow.



SPOTLIGHT
Lori Garkovich

Growing up, Lori Garkovich moved about every five years before landing in Missouri for high school and college. In 1976, she joined UK's faculty, and after 42 years, the professor in Community and Leadership Development will be retiring at the end of this semester.

MATT BARTON

Q: What first attracted you to the college?

A: I wanted to teach at a university level. I started with a research and teaching appointment, but I was doing some demography/population trends and started getting calls from towns to come talk about my work. I like to travel, so I said, "Sure." My passion is working on things that are useful to real people. I would have left, if I hadn't been afforded the interaction with the real world.

Q: Throughout your career you have received many awards for teaching and advising. What do you like most about teaching?

A: That's easy; it is the kids. All students can succeed, if they are supported and want it. All they need is someone to believe in them and convince them to believe in themselves. Seeing their successes is just amazing.

Q: Your work often takes you to communities across Kentucky. What is most rewarding about that work?

A: It's when they don't need you anymore, or when they call you three or five years later with their accomplishments and are ready to do more. After I retire, I have told them that I am starting a consulting business – Food for Thought. Feed me, and I will come!

Q: What do you like most about the college?

A: It's real. With my position, I have to keep one foot in the real world. I have learned that if you cannot explain something without the use of academic speak and jargon, then you don't really know what you are talking about. I love working with the students and communities. I've been really happy with my life. I cannot believe I get paid to do it. I love it so much.

Q: What do you plan to do next?

A: I'm active in several groups in Woodford County, and I plan to continue to be involved. I also will stay busy with my farm, and I plan to train my golden retriever, Ariel, to participate in the Reading to Dogs program and perhaps as a therapy dog to take to nursing homes. I've seen how important that work can be to residents.

Drones Over Africa

The hum of drones overhead is a welcome sound to people in Benin interested in improving agriculture and reducing poaching. The sound, and the relief it could potentially bring, come courtesy of UK doctoral student and native son, Abdelaziz Lawani.

Benin is a small, sub-Saharan country in West Africa with an abundance of natural diversity. Within its borders are coastal plains, mountains, valleys, mangrove fields, and lagoons. Its people primarily rely on subsistence farming and growing cotton for export.

A couple of years ago, Lawani came up with an idea: use drones to keep up with animal numbers and to track poachers within the WAP, a complex of protected areas, the W, Arly, and Pendjari, that covers three West African countries, Burkina Faso and the Republics of Benin and Niger. It is home to a number of species that have disappeared completely from other areas of West Africa and boasts the largest population of elephants in the region. But poaching, agricultural encroachment, over-fishing, and illegal harvesting of trees still take place within the preserve and are taking their toll. The elephants, in particular, are in danger of extinction within our lifetimes, if poaching is not controlled.

"One thing we noticed when we were working with drones for conservation is that people who are poachers are farmers. One of the reasons they rely on poaching is because the farming activity is not successful," Lawani said.

That discovery sparked another idea.

"If we can provide the state with drone services and help (farmers) improve productivity, they will be less likely to depend on natural resources," he said.

From the flyover, Lawani and his team can create a map using multispectral sensors technology. The maps give them better information about crop health and actions the farmer needs to take to increase yield.

"We are giving them information about the land and the crops," Lawani explained. "Basically, at this point, we can only give them information about the stress the crops are facing. The stress can be related to water, it can be related to disease or pests, or it can be related to the lack of nutrients."

PHOTO PROVIDED BY ABDELAZIZ LAWANI

Abdel Lawani examines water-sensitive papers while testing the efficiency of drone-sprayed pesticide vs. manual spraying.

Lawani has been training locals to use the drones, and in the process, he has formed a new business, Global Partners, to keep up with the demand.

The Technical Centre for Agricultural and Rural Cooperation is working with Lawani's company to provide these services to Benin's farmers. Lawani is also working with Airinov, a French company that is a leader in providing farm services to European farmers. The project has also benefited from the support of UK's Department of Agricultural Economics, the UK Student Sustainability Council, Development Initiatives Inc., Clinton Global Initiative, IdeaWild, GIZ, the Pendjari park administration, and the Beninese National Centre for Management of Wildlife Reserve.

Lawani said the technology is not limited to farmers in developing countries; it can also be applied in the United States. A Kentucky farmer with a few thousand acres in crops could get an aerial view of their entire operation, evaluate the size of the biomass, learn what fields might need extra help, and monitor protective barriers in wetlands. Lawani said the technology has many applications.

"A lot of countries depend on agriculture. It's a major contributor to the gross domestic product. We think if we can help farmers, it's not only going to help them increase their livelihoods, but it's also going to help the countries."

Lawani is currently working with Michael Sama, assistant professor in the college's Department of Biosystems and Agricultural Engineering, to compare the efficiency of remote pesticide application by drone versus manual application.

"We think, if we can apply the pesticide by drone, it will lessen farmers' contact, which will decrease the harmful effects they may suffer from the (pesticide) solution," he said.

Lawani, who graduated on May 4, said, "My objective is to keep working on this after I get my degree, because it has such a great impact on people's lives."

—Carol Lea Spence

PHOTO PROVIDED BY ABDELAZIZ LAWANI

Lawani's company in Benin, Global Partners, has trained more than 300 local rangers, students, and teachers to use the drones.

The Proof is in the Poop

Equine veterinarians need an easy way to identify and count parasite eggs in fecal samples. With the Poop2Proof app, they have results in less than five minutes.

Veterinarian Martin Nielsen, a researcher for CAFE's Department of Veterinary Science, teamed up with adjunct faculty member and biochemist Paul Slusarewicz and Eric Hauck, an entrepreneur working with veterinarians on new products.

"Paul had some ideas of how we could biochemically stain and detect parasite eggs within a sample, so we tried it out," Nielsen explained.

The team secured initial funding and then a Small Business Innovation Research Grant from the U.S. Department of Agriculture that allowed them to proceed. The egg-staining protein is made in the UK College of Medicine's Department of Molecular and Cellular Biochemistry with the help of student interns.

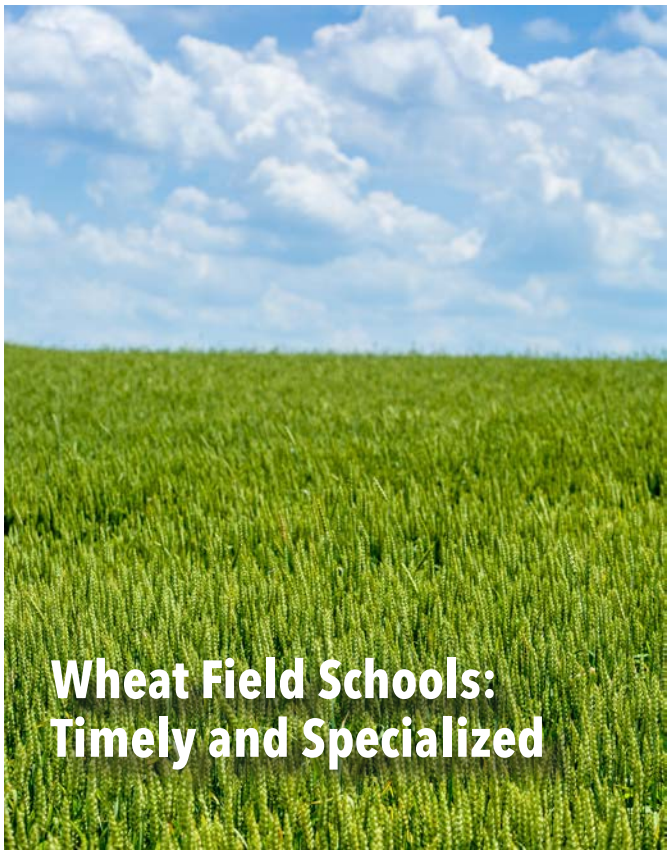
The system consists of a sample prep unit, a reagent dispenser unit, and an imaging unit. Veterinarians install the app on their mobile device. The app generates a picture of the samples with all the eggs circled. Nielsen said veterinarian response has been overwhelming.

"A large animal health company licensed the technology from us. They are looking to provide it in their product line for companion animals," Nielsen said. "Meanwhile, we are developing a product for equine usage."

—Aimee Nielson

The Ag Mag is GOING DIGITAL!

This spring issue of The Ag Magazine will be the last print version, but rest easy. You'll still be able to keep up with all of the college's cutting-edge research, education, and outreach activities. Beginning with the Fall 2018 issue, we're going all digital with a fresh website that will include new elements like more photographs, videos, improved searchability, and the ability to share your favorite stories. Wherever you go, The Ag Magazine will be no farther away than your phone, tablet, or computer. On Nov. 1, visit the new and improved magazine at http://www.ca.uky.edu/agmagazine. Need a reminder? Subscribe to The Ag Magazine listserv by sending an email to UKAGMAGAZINE-SUBSCRIBE-REQUEST@LSV.UKY.EDU. Include the word "subscribe" in both the subject line and the body.



Wheat Field Schools: Timely and Specialized

Growing any crop is a risky venture, and there are times when even experienced producers second-guess their decisions.

That's why UK Grain and Forage Center of Excellence specialists, led by soil extension specialist Edwin Ritchey, created the Wheat Field Schools in 2017 with funding, in part, from the Kentucky Small Grain Growers Association. The schools are a series of in-depth, hands-on trainings targeted toward experienced producers and crop consultants. They occur at vital, decision-making times during the growing season and feature real-time scenarios.

In the program's first year, participants from across Kentucky, as well as five other states, attended at least one of the schools. Logan County producer Stephanie Halcomb was one of the participants to attend all three.

"I found the schools to be very valuable learning opportunities," she said. "It brought the wheat growing season full-circle, from considering varieties and seeding rates in the fall, to fertilizer application in early spring to fungicide application in late spring."

It is the goal of Ritchey and other specialists at the center to offer producers more specialized, timely educational opportunities such as these schools and the Emergency Wheat Freeze Damage Training, which was also offered in 2017.

—Katie Pratt

College of Agriculture, Food and Environment

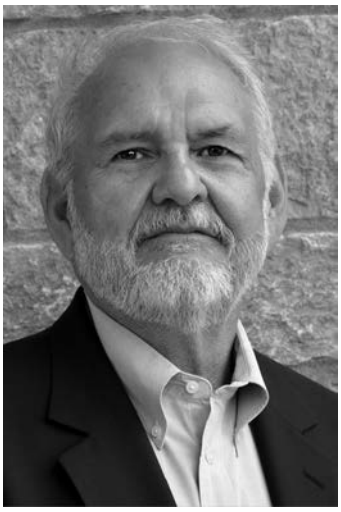
The College of Agriculture, Food and Environment inducted five new members into its Hall of Distinguished Alumni, the highest honor the college confers.

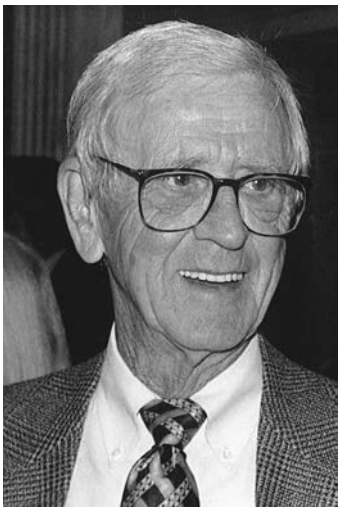
Alice Baesler, '63, received her degree in home economics from UK in 1963 before embarking on a lifelong journey influencing issues and programs that affect agriculture. She started her career as a teacher and then joined the Kentucky Department of Agriculture, where she led the state's Agriculture in the Classroom program. She took over management of their 400-acre farm when her husband Scotty was elected to Congress and continues to operate it today, She is also part of the state's hemp research efforts. Baesler is a leader on farm labor issues and has served on many task forces including the Kentucky Consortium for Hispanics/Latinos, Migrant Network Coalition, and Kentucky Farm Workers Program. She is the co-founder of the Kentucky Women in Agriculture organization. Baesler continues to give back to her alma mater and to the community. She has served as a 4-H leader and chair of the Bluegrass Area Extension Council.

George Duncan, '61, MS '64, PhD '79, became an agriculture engineering specialist with the Cooperative Extension Service in 1966 and served as a specialist and professor until his retirement in 2007. During this 41-year career, he helped improve structural and environmental facilities for both animals and agricultural crops. Duncan is credited with helping the tobacco industry transition from the hand-tying packaging system to bales, saving farmers both time and money. For this work, Progressive Farmer Magazine named him the 1983 Man of the Year in Kentucky Agriculture. He also holds three U.S. patents for various tobacco-related equipment. Duncan was part of a team that developed the first 4-H computer project series, which earned a U.S. Department of Agriculture 1986 Superior Service Award. Through the years, he worked on many 4-H related projects. He is a member of the Kentucky 4-H Foundation and a recipient of the Kentucky 4-H Youth Development Distinguished Leadership Award.

Jewell Deene Ellis, '51, MS '58, embarked on a distinguished 57-year career in education after receiving her bachelor's degree from UK in home economics. While teaching at Nicholas County High School from 1951 to 1960, Ellis developed a reputation for innovative practices. In 1960 she left secondary education to become a traveling teacher-trainer for Murray State University. In 1971, she moved to the Kentucky Department of Education, where she took on a wider role in vocational education for the state, serving in a

Hall of Distinguished Alumni 2018 Inductees





variety of leadership roles until her retirement in 2008. Among her many accomplishments is the development of the first national standards for family and consumer sciences education. She was also co-founder of the Family and Consumer Sciences Education Coalition, an advocacy and public policy alliance. UK presented her with an Honorary Degree of Humane Letters during Commencement in December 2017. Ellis continues to be an advocate for her profession, a UK supporter, and a mentor to countless professionals.

William E. Seale, MS '69, PhD '75, worked in the education and financial sectors for nearly 40 years. The Fayette County native earned his undergraduate degree in chemistry then earned both his master's and doctorate in agricultural economics. He taught in the community college system, was a county extension agent, and then served on the staff of Kentucky's U.S. Sen. Walter Huddleston before becoming government relations vice president of a New York futures exchange. Former President Ronald Reagan appointed Seale as commissioner of the Commodity Futures Trading Commission, where he served for five years. He later joined the faculty at George Washington University, serving as chair of the Department of Finance and senior associate dean of the business school. After retiring from the university, Seale founded the ProFunds Group, a Maryland-based mutual fund investment firm. He remains a principal in the firm.

Dallas Milton Shuffett, '48, MS '51, PhD '56, lives on through the lives of his students who credit him with setting them on paths to successful careers. After serving in the U.S. Army during World War II, the Green County native returned to the farm before he decided to pursue his education at UK. He joined the college's faculty in 1953 as an assistant professor in agricultural economics and continued to move up the ranks to associate professor and professor. He served as vice chair and chair of the Department of Agricultural Economics and was the college's associate dean for research and associate director of the Kentucky Agricultural Experiment Station from 1987 to 1992. Shuffett was one of the world's top specialists in tobacco policy, during a time when tobacco was the leading crop in Kentucky. In 1978, he was named the Outstanding Tobacco Economist by the Tobacco Merchants Association of New York. Mr. Shuffett passed away on Jan. 13.

For more information about these honorees, visit http://alumni.ca.uky.edu/hall-of-distinguished-alumni

Maple Fever

By Jeff Franklin
Photography by Stephen Patton

As the first break in daytime temperatures hits Eastern Kentucky in late winter, sap rises in the area's many red and sugar maples, and maple syrup season begins in earnest. If a group of producers has their way, the Bluegrass State will be known for something other than horses, bourbon, and basketball; it will be maple syrup country, as well.

Formed in 2017, the Kentucky Maple Syrup Association, with its roughly two dozen members, would like to add the sweet stuff to the state's identity as a niche product. Keith Moore of Savage Farms in Lawrence County, Seth Long of SouthDown Farm in Letcher County, and Woody Hartlove of Hartlove Farms in Harlan County, helped form the organization. They see unlimited potential for maple syrup in Kentucky.

"We are trying to bring this maple industry to the forefront here in Kentucky," said Moore, who says he is arguably the state's largest producer of maple syrup. His Savage Farms is located near Fallsburg in Lawrence County on the West Virginia border. "As Seth (Long) and I say, we have an untapped resource here in Kentucky, because we have a ton of maple trees, but we have not been utilizing them."

Red maples are fast growing trees, and forestry management experts often recommend removing them in favor of other hardwoods. However, those tapping the trees for the sap say not so fast.

"Because so many of our woodlands have not been managed well after strip mining, what comes up are these fast growing maple trees," Long said. "Some of my best trees are on strip-mined land."

(L to R) Shad Baker, Seth Long, and Jeremy Williams discuss the season's collection. Here, a collection tank holds sap from multiple trees at Long's Southdown Farm in Letcher County. From the tank, the sap will run downhill to the sugarhouse, where the Longs will boil it down to syrup.

Using a refractometer, Keith Moore checks the sugar content of the maple sap in his holding tank at his Savage Farms in Lawrence County.

Opposite page: Woody Hartlove demonstrates how to tap a maple tree during the 2017 Kentucky-Virginia Maple Syrup School held at the Letcher County Extension office.

Extension Agents Doing Their Part

The founders of the Kentucky Maple Syrup Association credit the University of Kentucky Cooperative Extension Service with supporting their organization's formation. Agriculture and natural resources agents, Shad Baker in Letcher County, Harlan County's Jeremy Williams, and Virginia Cooperative Extension agent and colleague Phillip Meeks started the Kentucky-Virginia Maple Syrup School in 2016.

"The school was a great success in 2016, and those in attendance said they wanted to have one each year," Williams said. "After that first school ended, a group of interested individuals met to discuss the possibility of having a maple syrup association."

The men were still talking about it when they met this past fall to plan the second maple syrup school. The second event attracted even more participants—more than 50 producers and interested people from a four-state area, including Ohio and West Virginia. A few weeks later, the Kentucky Maple Syrup Association became a reality, with the extension agents playing the role of facilitators.

Sheryl Long, Jerry Williams, Jeremy Williams, and Shad Baker discuss production techniques around the evaporator in the Long's sugarhouse at Southdown Farm in Letcher County.

"Once you start, you get the bug. Call it maple fever," Long said. "It's like an addiction. You can't stop, you want to do more."

"Forming this maple syrup association is an opportunity for us to get together and learn and educate," Moore said. "And not only that, but to educate our state about this new product in Kentucky."

Before the association and the school came into being, interest was running high concerning maple syrup production in Kentucky. Extension agents and several woodland owners journeyed to maple syrup country in winter 2015. They visited several New England maple syrup operations going from small (Grandpa Joe's Sugar House in Maine, with 450 to 500 trees tapped) to one of the largest (Bascom's Maple Farms in New Hampshire, where 84,000 taps produce 40,000 gallons of syrup).

"What we brought back was a knowledge of how to do this at every level," Baker said. "It doesn't have to be anything complicated, and it doesn't have to be expensive. We feel like this is something that really has potential for Kentucky in general, and specifically for Eastern Kentucky."

Meeks, a former Kentucky extension agent, said Eastern Kentucky and Wise County, Virginia, have similar needs and expectations.

"We set as one of our goals here in Wise County to do more ecotourism-type work," he said. "That lines up with what goes on in Eastern Kentucky on a lot of small farms. There are now maple syrup festivals in Virginia that go on in March during maple syrup season."

Meeks said he could envision people coming to the area in March to tour some of the sugarhouses to watch the maple sap being boiled down to make syrup. There are also value-added products to buy such as maple popcorn, maple nuts, and maple candy.

Statewide Potential

Since forming the maple syrup association, Moore said they are learning about other maple syrup producers across the state that have sizable operations. The association is working to bring everyone together.

"We have to reach out and find the people who are the backyarders, but wanting to grow," Moore said. "There is no doubt that the maple industry is going to become viable in Kentucky, because the resource is right here; we just need to get people to understand it. And just for the record, if you make a drop of syrup, you will sell it, because people want it."

Ideally, the best time for sap collection in Kentucky is when nighttime temperatures are below freezing, and

daytime highs are in the 40s or above, usually mid-January to mid-March. Depending on weather conditions and a tree's age, size, and health, one tap could yield on average 10 to 20 gallons of sap. It generally takes 40 to 42 gallons of sap to make one gallon of syrup.

Long calls Moore, who has been doing it for 20 years, the pioneer of maple syrup in Kentucky. Going into 2018, Moore already had 1,000 taps on maple trees, drawing the sap out by way of a mechanical vacuum. Long had 95 taps last year and was shooting for 250 in 2018.

"Once you start, you get the bug. Call it maple fever," Long said. "It's like an addiction. You can't stop, you want to do more."

There's Help Available

Grant money is available from tobacco settlement funds to help offset costs for those who want to get started in the maple syrup business. The Kentucky Agricultural Development Board awards money to limited income, low-resource producers. Every grant is worth $5,000 with a $10,000 lifetime cap. Kevin Gurtowski from Kentucky State University works with the small-scale farm grant and spoke with producers at the maple syrup school.

"There are four-categories that we mainly fund. One is value-added maple products, which covers maple syrup," Gurtowski said. "We cover canning, breads, jams, lotions—basically anything you take from an agricultural product and turn into something of more value."

The grant program renewed for 2018. A Kentucky State University committee evaluates and scores the applications.

Sweet notes of syrup waft past your face inside Long's steamy sugarhouse, where Long's wife, Sheryl, is cooking down the sap. The Long family used a $5,000 grant to build their sugarhouse, where they made maple syrup for the first time this year. Another husband and wife team, Amy and Channing Richardson, certified organic farmers at Forgotten Foods Farm in Carter County, also received a

Channing Richardson at Forgotten Foods Farm in Olive Hill in Carter County fills their new evaporator with maple sap.

$5,000 grant to erect a building for a commercial kitchen and walk-in cooler. They have 200 to 300 taps on maple trees and cook the sap outdoors in a temporary shelter with a custom-made evaporator. The Richardsons plan to build a sugarhouse and expand their operation.

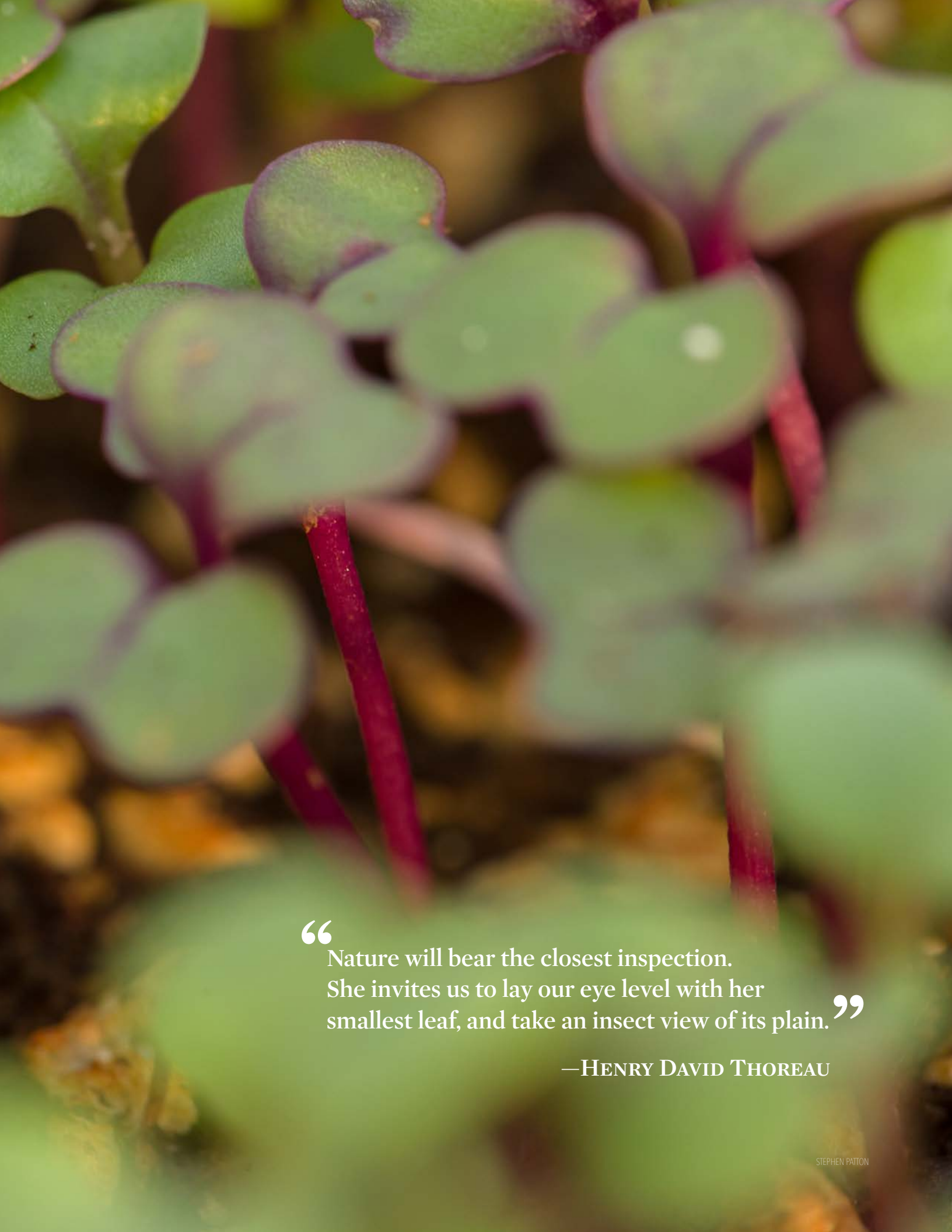
"We have a couple thousand trees on the farm, and my neighbors have trees I would be willing to lease," Channing Richardson said. "We definitely want to upscale."

Moore said this is just the tip of the iceberg for maple syrup production in Kentucky, and if more people get involved producing it, they can sell all they can make. That's why he believes it's important for producers to band together and join the maple syrup association so they won't compete against one another.

"We are keeping those dollars right here in Kentucky," Moore said, "and if you taste the maple syrup we are making, you will buy it, because it is an unbelievable product." ◆

Maple Syrup Grades (L to R): golden, amber, dark, and very dark.

Microgreens sprout at the Horticulture Research Farm.



“Nature will bear the closest inspection.
She invites us to lay our eye level with her
smallest leaf, and take an insect view of its plain.”

—Henry David Thoreau

STEPHEN PATTON

Ready and *(more than)* **Able**

By Katie Pratt
Photography by Matt Barton

Each fall, college freshmen leave their homes to come to the University of Kentucky with the goal of furthering their education and making a better life for themselves.

In the College of Agriculture, Food and Environment, students refine skills that will help them in their career or find talents and passions they never knew they had. Some develop into exemplary leaders with a heart for giving back. Others develop lofty goals for changing the world. CAFE is where students get the tools they need to positively impact tomorrow.

"With the mentorship of world-class faculty, students throughout our college are using their studies to solve complex 21st century issues," said Larry Grabau, associate dean for instruction. "From dinner tables to hospital labs, the young leaders profiled in this story are improving lives across the commonwealth and beyond. We are proud to foster such a rich, family atmosphere where students can realize their potential and make a lasting mark on the world."

Angela Wei: Future Physician Scientist

It was during a conversation with CAFE's agricultural and medical biotechnology advisors, entomologist Bruce Webb, plant pathologist Michael Goodin, and academic coordinator Esther Fleming, that Angela Wei first learned she could combine her passions for mathematics and science into a fulfilling career.

At the time, Wei, now a junior with a double major in agricultural and medical biotechnology and mathematics, was torn between the two.

"I'm really glad I joined the ABT major, because I don't think I would be on the same path," she said. "We have such great faculty and a great support system."

The Lexington native was familiar with UK before becoming a student. A graduate of Paul Laurence Dunbar High School's Math, Science, and Technology Center, Wei has conducted research under the advisement of Dr. Peter Nelson in UK's Sanders-Brown Center on Aging since she was a high school junior. Nelson's lab studies a disease similar to Alzheimer's that results in the deterioration of the brain's hippocampus. Wei was listed as a co-author on a research paper before ever entering college.

"She is intellectually curious and learning a lot of different experimental methods," Nelson said. "She now has her own experimental project, which is progressing nicely. She is a strong thinker in her own right and works well as part of the team."

Wei's lab experience has earned her competitive summer internships. She spent the summer after her freshman year at Indiana University-Purdue University Indianapolis as part of the National Science Foundation's Research Experience for Undergraduates. There, she tried to determine what happens in the body when dopamine release is hindered by antidepressant drugs that are reuptake inhibitors.

The summer of her sophomore year she spent at Dartmouth University, studying how DNA methylation is associated with breast cancer risk factors.

These experiences are stepping stones toward fulfilling her dreams of a career in cancer treatment and research. Wei plans to pursue a doctor of philosophy degree as well as a medical doctorate, so she can do both.

Fabian Leon: Future Hunger Fighter

UK junior Fabian Leon plans to end world hunger.

Leon's work has repeatedly gained the attention of The World Food Prize Foundation. He was selected for the foundation's Global Youth Institute and received its prestigious Borlaug-Ruan International Internship while still a high school student. That opportunity landed him in Peru studying sweet potato viruses at the International Potato Center.

Since coming to UK, he has received the foundation's prestigious Wallace Carver Fellowship. He spent summer 2017 at the U.S. Department of Agriculture's National Laboratory for Agriculture and The Environment studying how climate change factors affect row crops and also agronomic principles farmers can use to manage crops that are facing various stressors.

While the Nicholasville native did not grow up on a farm, he developed his passion for agriculture from his parents and on his family's annual visits to their farm in Mexico. He got involved in FFA in Jessamine County early on to learn more about agriculture.

"It worked out really well that UK had the perfect major for me," said the agricultural and medical biotechnology major. "It is exactly the field I have wanted to get into since middle school. I have been capitalizing on every opportunity they give me."

During his freshman year, Leon joined Professor Michael Goodin's plant pathology lab and began studying protein interactions for a strain of the potato yellow dwarf virus.

"It was clear very early on that Fabian excels at whatever activity he participates in," Goodin said. "Within a year of joining my lab, he had accomplished enough to be a contributing author on a publication in a top-ranked virology journal."

Not only does Leon excel in research, but he is a leader. Leon is the national parliamentarian for Minorities in Agriculture, National Resources and Related Sciences, or MANRRS. He is also president of UK's Latino Student Union and a college ambassador.

He plans to pursue graduate school and become involved with plant breeding to help develop resistant varieties of crops that are staples around the world.

Jaeana Gates: Future Inspiration

When Jaeana Gates started college, she wasn't sure if she was up to the task, but she wanted to try. Now, the first-generation college student is not only going to graduate, but she has developed into a multitalented leader.

Gates's story begins in Christian County. The youngest of three children born into a military family, Gates learned early to make the most of opportunities. That attitude served her well in college.

"She is, of course, an excellent student. However, what I think makes her stand out is her genuine love of the learning process," said Jessica Houlihan, lecturer in the Department of Dietetics and Human Nutrition and Gates's advisor. "She asks thoughtful questions and has a curiosity that drives her success as a student."

A human nutrition major with two minors, Gates wants to use her knowledge to help people live better quality lives. She has a scholarship and minor in music performance—she's an accomplished trumpet player, and has participated in several musical groups on campus. She also has a minor in plant and soil sciences.

"Music, nutrition, and the environment are all things that can be therapeutic," she said. "They are also something that everyone can relate to. I enjoy being able to share the gifts that I have with others and hopefully give them a moment of joy in their lives."

In addition to her studies, Gates is a national MANRRS officer, serving as the Region III undergraduate vice president.

"MANRRS has definitely pushed me to limits that I never would have pushed myself to," she said. "My first semester freshman year, I had 19 credit hours, but MANRRS helped me stay motivated." (continued page 16)

At UK, Gates has earned some high profile internships including one in integrative biosciences at Tuskegee University, another in data collection with the U.S. Forest Service, and one in John Deere's agricultural marketing and sales.

Gates hopes to pursue graduate school, and one day return to Western Kentucky to pay it forward to the area that has helped her get this far, perhaps as an extension agent.

Gracie Furnish: Future Voice of Agriculture

Gracie Furnish's agricultural experience began when she was just a few days old, when her parents took her with them while checking cattle on their Harrison County farm. Today, the University of Kentucky sophomore and ninth-generation family farmer speaks on behalf of and advocates for agriculture education as a vice president of the National FFA Organization.

"Anytime I've been to an agriculture-related event, or on the farm, or at UK, I have always left feeling like a better person, or that I have been challenged to do something new," said Furnish, an agricultural education major.

While caring for and playing with young animals as a child sparked Furnish's love for agriculture, the flame ignited as she completed 4-H projects, and it grew when she began participating in FFA in high school. From that time forward, she wanted to be involved in agriculture. With UK being a nearby land-grant university, she knew she would come to Lexington to further her education.

"Every time I came to UK Field Day here, I loved the atmosphere, and I loved that everyone was nice and that everyone cared," she said. "We always say that we're the College of Agriculture, Food and Environment family, and I truly felt that when I came to campus."

While she is a stellar student, Furnish's friendly and caring personality is contagious and sets her apart as a student leader, said Stacy Vincent, associate professor in the Department of Community and Leadership Development.

"During her freshman year, Gracie connected with a student who knew no one, and she was able to help them connect with friends and a social life," Vincent said. "That student has now flourished and serves on numerous leadership boards within the college."

Furnish is a college ambassador and was the treasurer of the Agriculture Education Society. She also works with the National Association of Agricultural Educators, located on UK's campus.

After her year of service to FFA, she plans to return to the college with a goal of continuing to educate others about agriculture.

"We always say that we're the College of Agriculture, Food and Environment family, and I truly felt that when I came to campus."

Michaela Mineer: Future Family Advocate

Family is Michaela Mineer's passion and the foundation of her future career.

"We are all who we are, because someone had an influence on us," she said. "The family unit impacts every part of society. It helps create the culture we live in, the norms, how we see ourselves and others, and our overall well-being."

A Fleming County native, Mineer grew up on a hobby farm, the older of two children and daughter of a UK alum. She joined the Department of Family Sciences as a major with the goal of positively impacting families.

"It would always break my heart when I would see a child or family struggling, because when a family struggles, it impacts everyone," Mineer said. "I want to help people recognize what is going on and find solutions."

Since coming to the college, Mineer has been known for her passion and achievements in the classroom.

"Michaela has a strong balance of academic and leadership skills," said Diana Haleman, senior lecturer and director of undergraduate studies in the department. "Her enthusiasm for gaining new experiences and her strong motivation to contribute professionally make Michaela a student to watch, as she moves forward into graduate studies and her subsequent career."

Outside of the classroom, Mineer is deeply involved with the Family, Career and Community Leaders of America, or FCCLA. In high school, Mineer was the organization's state president. Since coming to UK, she continues her involvement in the organization, receiving competitive internships at the state and national levels. She and another intern developed the Phase One program in 2016. It seeks to attract middle school students to family and consumer sciences and the FCCLA.

Mineer graduated in May and has already entered graduate school at American University in Washington, D. C., to pursue a master's degree in public administration. She hopes to one day have a career advocating for policies and causes that affect families. ◆

"The family unit impacts every part of society. It helps create the culture we live in, the norms, how we see ourselves and others, and our overall well-being."

CAFE Goes to School

By Carol Lea Spence
Photography by Matt Barton

Plant Pathology's Lou Hirsch introduces students from Garrard County High School to "everything from fungi to bacteria" during their field trip to his UK laboratory.

"We're able to take a really complex, in-depth project and incorporate high school students, so they can broaden their scientific knowledge and also make a meaningful contribution to important research."

–Lou Hirsch

It's quiet in the laboratory, where everyone is "intensely microscoping," as Lou Hirsch puts it. Whether or not that's a noun that deserves promotion to a verb, Hirsch accurately describes the activity of 20 or so Garrard County High School students during a daytrip to his lab in the Plant Science Building on the University of Kentucky campus.

They will examine "everything from fungi to bacteria," the UK plant pathology lecturer tells them. That's just a sample of what elementary, middle school, and high school students explore when the College of Agriculture, Food and Environment arrives at their schools or invites them to campus, giving them a taste of a university education long before they make future career decisions.

"I've made it my professional goal to broaden STEM (science, technology, engineering, and mathematics) curricula by introducing agriculturally focused laboratory modules into classrooms," Hirsch said. "I like to remind students that microbiology affects a lot more than (human) medicine. In agriculture, we do the same research that occurs in biology or medicine. We just focus on agriculturally relevant organisms."

Hirsch is fond of pointing out that agricultural organisms should be important to each student, because everyone has to eat. The organism Shannah Reynold's class examined during their visit to Hirsch's lab causes potato soft rot. Another can cause an apple disease, and yet another kills corn plants.

"Agriculture is huge in our area," Reynolds said. "In class, we focus on human microbes for the most part, but agriculture is a big interest for them."

Senior Morgan Miracle "loves this stuff," and though she is thinking about becoming a surgeon, she was having an "amazing" time examining fungi under the microscope.

"It's just amazing to me that this black, white, and green fuzz on this petri dish looks completely different under the microscope," she said. "It's just amazing to me what everything is created of at its smallest (level)."

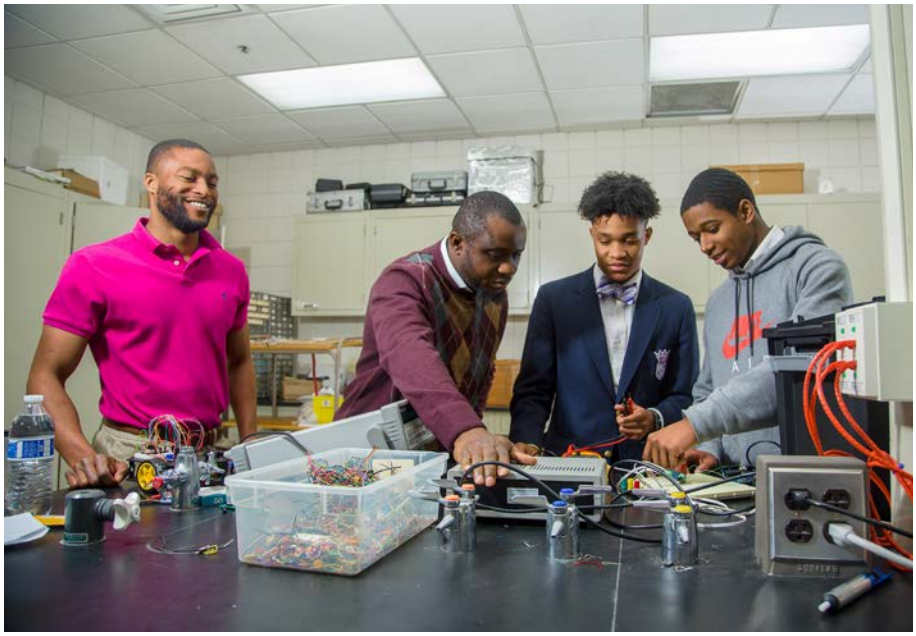
Morgan Miracle was fascinated by the fungi she examined in the plant pathology laboratory.

Hirsch also brings his expertise to area schools. He is part of an interdisciplinary group of scientists, including Plant and Soil Sciences' Rebecca McCulley and Tim Phillips, Plant Pathology's Chris Schardl and adjunct faculty member Pat Calie, who is also on the biology faculty of Eastern Kentucky University. Garrard County High School and Leestown Middle School in Lexington are collaborating with the team in a five-year field study of fungal endophytes in a common forage grass, tall fescue—a fungal presence that affects cattle health. Students at both schools will take grass samples from the fields, as well as count insects to look at how their populations change over time. Back in their classrooms, they will complete DNA analysis of the samples. If the data are high quality—and Hirsch expects them to be— the UK scientists will incorporate the results into research publications.

"We're able to take a really complex, in-depth project and incorporate high school students, so they can broaden their scientific knowledge and also make a meaningful contribution to important research," Hirsch said.

Garrard County teacher Morgan Brogli sees it as a "huge" advantage to have Hirsch teach some of her classes in preparation for their involvement in the tall fescue project.

"It gets them excited about real-world experiences they can have in a scientific field," she said. "The things they're learning now, the equipment they're getting to use, the research experience they're receiving, I'm very excited about."



(l-R) Ricky Mason and Akinbode Adedeji oversee Carter G. Woodson Academy students Jonathan Lott and Kristian Bolden as they build a system for improving the shelf-life of produce.

CAFE Goes to School

Learning After Hours

Jonathan Lott, 17, and Kristian Bolden, 16, finished the school day at the Carter G. Woodson Academy in Lexington and immediately headed to Assistant Professor Akinbode Adedeji's lab in the Department of Biosystems and Agricultural Engineering. There, Dr. Bode, as the teenagers call him, and Ricky Mason, engineer associate in BAE, guide the two young men in developing an inexpensive, tabletop system for improving the shelf life of fruits and vegetables. Using an ultraviolet light and a simple computer, Lott and Bolden learn aspects of electrical engineering, computer programming, food preservation, and nutritional content. Not bad for a couple of hours after school a few days a week.

Lott and Bolden are participating in a program that Professor Lisa Vaillancourt, Plant Pathology, started in spring 2017. It began as a way to encourage and support students for their science fair projects. Vaillancourt, who has judged many science fairs over the years, noticed that contestants had an advantage if they had parental connections to the university. She also noticed that there was very little diversity among the students. She believed she could offer that university advantage to young men of color at the Carter G. Woodson Academy by working with them in her lab.

That first year, three high school students worked with Vaillancourt and research specialist Etta Nuckles. All three did very well at their science fair; advancing from the Fayette County district fair to the regional fair and on to the state level.

Wanting to include more students this year, Vaillancourt knew she needed to involve more CAFE faculty. She, Ken Jones, director of CAFE Program and Staff Development, and Quentin Tyler, former director of CAFE's Office of Diversity, successfully sought financial support from Kentucky EPSCoR. With participation from nine additional faculty members, more students were able to work with university researchers after school. Some of those students took their projects to this year's fair, where they continued to excel, while others presented their work at the national MANRRS, Minorities in Agriculture, Natural Resources and Related Sciences, conference in North Carolina in April.

It's been an enriching experience for Bolden and Lott, who both are fascinated by science and math. Bolden wants to go into biomedical engineering, and Lott plans to become an electrical engineer.

In the Gluck Equine Research Center, Maliq Trigg, 18, spends his afternoons in Professor Daniel Howe's laboratory looking for antibodies in serum from horses. He's tracking down parasites with guidance from research assistant Michelle Yeargan. He has learned some eye-opening facts.

"I've learned these parasites can get into a horse's spine and also make them lose muscle," he said. "The same parasite can get into a goat, and the goat won't be affected at all. It's bizarre."

UK veterinary pathologist Uneeda Bryant takes great pleasure in exposing students to different areas of veterinary science. Here she guides students at Elkhorn Crossing School through an exhibit of parasites.

(I-R) Maliq Trigg spent the spring semester honing his lab skills in Daniel Howe's lab in the Gluck Equine Research Center.

Trigg has decided to major in business when he goes to college next year, but he still appreciates what he's learned in the program and what he shared at the MANRRS conference.

"To be able to share with other people from around the country what I've learned about horses and horse parasites was a lot of fun," he said. "This program has allowed me to learn more about science than I knew before."

Scientific Road Show

Opening students' eyes to the possibilities of a career in science, and particularly a career in a veterinary medicine specialty, is Uneeda Bryant's goal when she takes her traveling caravan of animal body parts and parasites into local schools. Bryant is an associate professor in veterinary pathology at the UK Veterinary Diagnostic Laboratory. Visiting schools and talking about her profession is Bryant's passion. That's obvious as she stands before members of the Health Club at Elkhorn Crossing School in Georgetown.

"There are so many different things veterinarians are doing," she said. "That's why I like to come to schools to educate young people about different career paths. What I do is a nontraditional career path in veterinary medicine."

To give students an idea of the type of work they could expect in the field, Bryant brings along a videotape showing a necropsy of a horse. It's vivid, and there are a few groans from the audience, but many of them eagerly lean forward as they view the piece. Then comes the highlight of the morning: a chance to walk among, and touch, items in Bryant's traveling exhibit.

On a table lies an expired ocelot and alligator. Glass containers are filled with an array of parasites. A hair ball from a cow and a renal stone from a horse both compete for attention with a rather sizable stomach stone from a llama. Hearts and eyes and different animal fetuses crowd the tables. So do the students, as they angle to get a good view of the items.

"These are the things you might be able to Google or see in a book, but being able to pick it up and really examine the detail is very beneficial, especially for students who are interested in going into a similar field," Bryant said.

Kaitlynn Stephens and Mallory Thompson, both seniors and both part of the school's Health Sciences Village, organized Bryant's visit. They are thinking about careers in human health fields, but Bryant's talk was enlightening.

"I thought it was incredibly interesting," Stephens said. "I know there are pathologists, but I never thought about animal pathologists."

And that's Bryant's reason for making these excursions out to the schools.

"I like to encourage kids and introduce them to new ideas and more options. They just need to realize they can do anything they want to do, as long as they stick to it, have a passion for it, and work hard."

It's a quickly evolving world, where career options can change rapidly. College of Agriculture, Food and Environment personnel enthusiastically lay a trail of educational bread crumbs that they hope will prepare the next generation for successful careers in science – satisfying careers that will also benefit others.

"Through activities like these we fulfill our land-grant mission of broadly disseminating knowledge and opportunity to people throughout Kentucky," Hirsch said.◆

"I like to encourage kids and introduce them to new ideas"

–Uneeda Bryant

Empowering Their Future

A lifetime interest in the outdoors persuaded Danny L. Koon, B.S. ′77, M.S. ′79, to study forestry, but he didn′t take a traditional path. After graduating from Buckhannon-Upshur High School in West Virginia, Koon went to electronic school in Baltimore, then got a job with AT&T in Washington, D.C., before he was drafted in 1966.

"I made my first trip to Kentucky when I went to basic training at Fort Knox," he said. "After basic, we rented a car and drove back to West Virginia. I was really impressed with the Bluegrass and the horses—the beauty of it kind of stuck in my head."

After Koon got out of the Army, he saved up enough money to supplement his GI Bill and returned to the Bluegrass to attend the University of Kentucky. He earned a bachelor′s degree in forestry and a master′s in agriculture.

Koon took several business courses during his time at UK, and although he didn′t end up directly working in forestry, he believes the college prepared him for the rest of his life.

"It was a really diverse degree that prepared me for anything I wanted to approach in life," he said. "While still finishing my master′s thesis, I moved to Madisonville to work at Madisonville Community College. Then I began starting businesses."

His first was a lawn-spraying business. From there, Koon ventured into surface mine reclamation, eventually started a manufacturing consulting business, and also dove into real estate development. Now retired in Florida with his wife Beverly, Koon still has a few real estate projects going.

Thinking back to his time at UK as an older, non-traditional student, Koon said he appreciated all the help he got from faculty and staff in the college′s family atmosphere. He wanted to empower current and future students to attain their college and career goals.

"I believe education is absolutely the key to anyone′s future," he said. "I have a real soft spot in my heart for forestry students."

Because of the success he has attained, Koon began funding scholarships for deserving forestry students. He has included the forestry department in his estate plans, providing education and opportunity to forestry students for years to come.

"It′s unbelievable the confidence I gained through college," Koon said. "I worked hard and had a lot of great professors that were very caring. It has served me throughout all of my life. To be able to help give that to students now is near and dear to my heart."

—Aimee Nielson

Photo provided by Danny L. Koon

A Bloomin' Problem

Algal blooms are not the delicate flowers their name might suggest. In fact, they are just the opposite. Algal blooms can contain cyanobacteria, which not only turns water green, but may release a toxin that contaminates water and causes skin irritation. Blooms stretch great distances; a toxic algal bloom in 2015 covered more than 650 miles of the Ohio River.

Bill Ford, University of Kentucky assistant professor of bioenvironmental engineering, in conjunction with professors at UK, Murray State University, and Marshall University in West Virginia, is studying ways to prevent the formation of these harmful blooms. The research is funded by a $4 million National Science Foundation grant.

Ford has built sensor platforms and models to determine the role of nutrient runoff in bloom development. He is particularly focused on watersheds spanning from Central Kentucky to West Virginia that ultimately flow into the Ohio River.

He hopes to understand how nutrient runoff varies in different types of landscapes and in urban and agricultural areas with the changing of the seasons and with different amounts of rainfall.

"Currently, water treatment plants are able to remove the harmful bacteria and toxins using treatment techniques such as activated carbon additions; however, these procedures are costly," Ford said. "Instead of placing the burden on the water treatment plants and consumers, we are building toward an understanding of how these systems behave and, ultimately, towards remediation strategies that limit bloom formation."

Bill Ford teaches students at his study site in West Virginia.

In addition to water quality research, the project is educating local young people throughout Kentucky and West Virginia about the work and inviting them to participate in monitoring and undergraduate research experiences. The hope is to spur their interest in their local environment so they pursue careers in water-related fields.

—Katie Pratt

Tough Turf Talk

Because Kentucky is situated between the North and the South, with hot summers and cool winters, no single grass is suitable for all situations and locations. The majority of the turfgrasses that are appropriate for use here are cool-season grasses.

Tall fescue is an excellent choice for home lawns as well as utility areas and golf course roughs. It has excellent heat and drought tolerances compared to other cool-season grasses. It will also tolerate moderate amounts of shade. Kentucky bluegrass, on the other hand, prefers full sun. While it is frequently used as a turfgrass in Kentucky, it does not possess tall fescue's heat tolerance and struggles during a hot, dry summer if irrigation is not provided.

Perennial ryegrass is occasionally used on lawns, golf courses, and athletic fields in Kentucky. Due to the shiny appearance of this species, it stripes very easily when mowed. Because of that, as well as its wear tolerance and rapid germination rate, it is sometimes used on athletic fields.

For more information about turfgrasses of Kentucky, visit http://www2.ca.uky.edu/agcomm/pubs/AGR/AGR216/AGR216.pdf

—Gregg Munshaw

WARP AND WEFT: Amit Jain

Amit Jain, B.S. '95, knows the warp and weft of a strong fabric. He also knows success. His company, Shingora Textiles Limited, is India's largest brand, manufacturer, and exporter of shawls and scarves. Though his story began and continues in the industrial center of Ludhiana, in northwest India, Human Environmental Sciences contributed some the weft threads in his life's rich fabric.

As a teenager, Jain dreamt of leaving India to study. He applied to schools in the United Kingdom, but the cost was out of his reach. A friend who was studying at the University of Kentucky suggested UK. Since HES offered a degree in merchandising, apparel, and textiles, now in the Department of Retailing and Tourism Management, Jain agreed to have the friend look into it for him.

It was arranged. If Jain could pay for his first semester and keep his grades up, the Office for International Students promised to see what they could do to help him finish his bachelor's degree.

"My mother literally sold her gold bangles to buy my airline tickets and my first semester fees," he said.

Arriving in Lexington on the first day of orientation, Jain landed in a world utterly foreign to the one he knew.

He loved it.

"I think that's what made me who I am today. Sometimes I wish that our kids (Jain and his wife have a son and daughter) could get that kind of exposure to getting thrown into the deep end of the ocean and fending for themselves. And I was lucky I was in a place like this that was very friendly. I didn't feel like an outsider."

The late Karen Ketch, Jain's advisor, made his transition easier. She helped him select the right courses and tailored his college requirements to prepare him for a successful career after graduation.

"That first semester was tough. It was hard to get used to the pace and the way it worked here," he said.

Jain started to get the hang of it during his second semester, and because his grades were good, he received a scholarship to continue his education.

Adding to the depth of his education, he was able to take a variety of courses, such as merchandising, color theory, history of theater design, and art history. In the textile labs, he learned about setting up the product.

"This is the most amazing thing, and this is why I want my kids to study in the U.S.—the flexibility one has in terms of picking courses that you really like. These things have helped me a lot."

After graduation and an eight-month internship with The J. Peterman Company, where he set up a quality control program, Jain returned to Ludhiana to help his mother with the business she had started 10 years before.

MATT BARTON

"When I joined the company, it was a very small business. It was hand looms, like a micro-business," he said. "My mother and I built it up to where it is today."

In 20 years, Shingora has gone from 20 employees to 900. Jain said it took a lot of hard work and faith in himself.

"At every point, somebody is going to come and tell you, this is never going to work. When we imported the first Italian and German machines to make this product, everyone said, 'It's stupid, because nobody's ever used these machines for these products; it's not going to work, it's going to fail.' Those machines cost us more than all the fortune we had in the family, so it was a big risk," he said.

It was a risk that paid off.

Today, Jain is a member of Retailing and Tourism Management's advisory board.

"His presence on the board is much needed, since his view is an international one," said Kimberly Miller-Spillman, associate professor in Retailing and Tourism Management. "Plus, his life story mirrors many RTM students who are struggling to pay their way through a degree at UK."

To Jain, it's a way of helping the department that meant so much to him.

"One needs to give back; that's the other thing I learned at UK," he said.

Along those lines, he and his wife have set up a foundation in India for the education of young girls. Currently, they have 55 girls in a program that takes care of all their educational needs.

One day, some of those girls might end up studying in the College of Agriculture, Food and Environment. That would please Jain greatly.

—Carol Lea Spence


Roundup
September 27
It starts with us
Join the University of Kentucky College of Agriculture, Food and Environment Alumni Association for it's 45th annual Roundup! Enjoy live music, a pep rally led by the UK cheerleaders and pep band and fellowship with alums. Followed by Kentucky vs. South Carolina at Kroger Field.
Visit alumni.ca.uky.edu/roundup for more information.

University of Kentucky
College of Agriculture, Food and Environment

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Nearly 2,000 4-H and FFA teens from Kentucky, Ohio, and Indiana converged on campus in April for the 48th annual UK Field Day. The best and brightest young men and women interested in pursuing agricultural-related careers talked with UK students, staff, and faculty and competed in various 4-H and FFA contests.