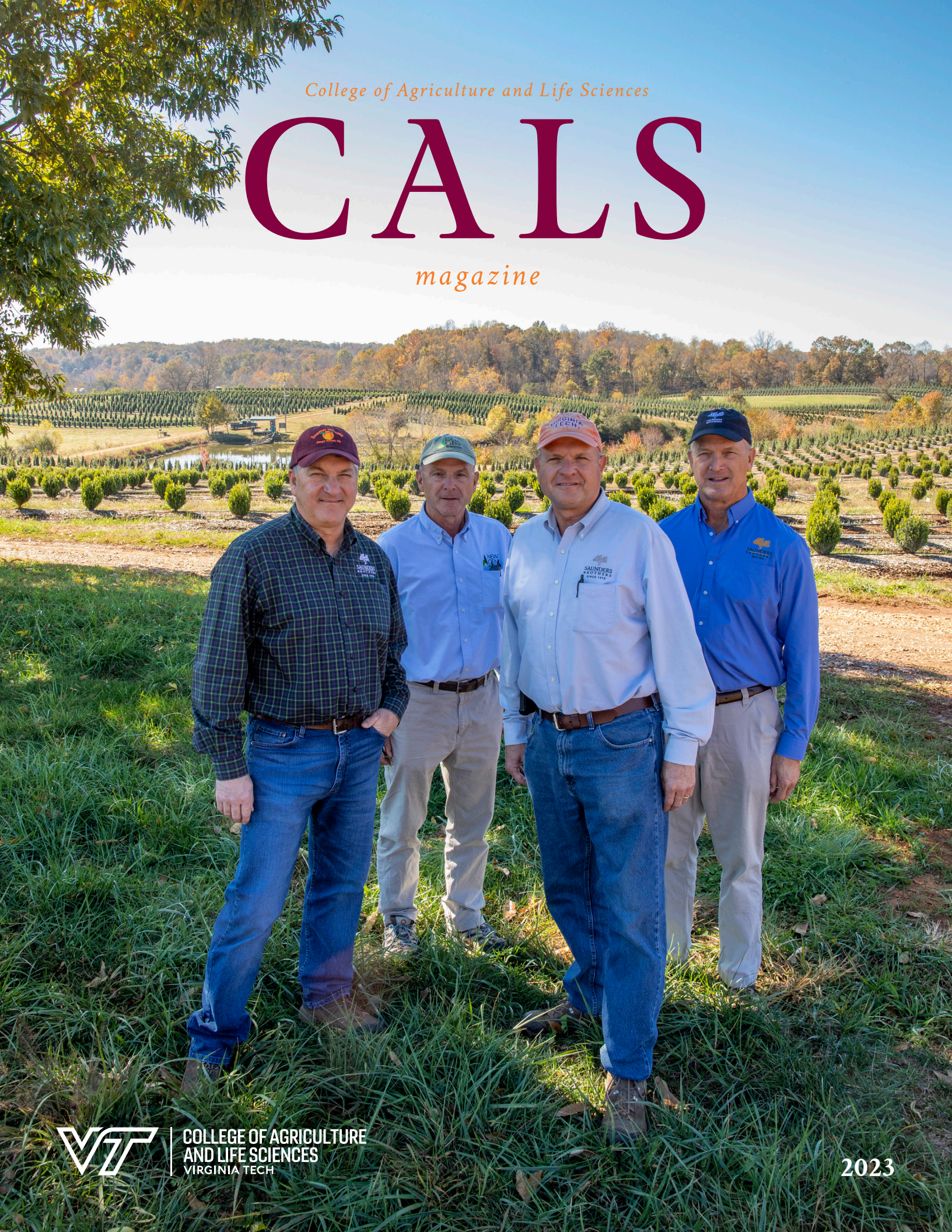
College of Agriculture and Life Sciences

CALS

magazine



COLLEGE OF AGRICULTURE AND LIFE SCIENCES
VIRGINIA TECH

2023

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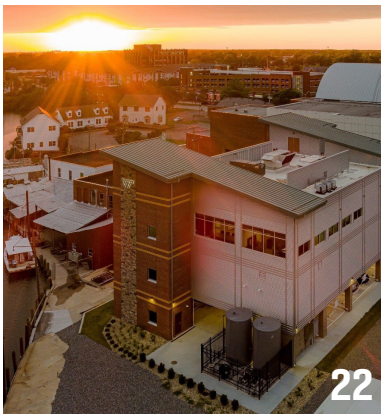
A Farmer's Family Legacy



CALS MAGAZINE Spring 2023 Vol. 5 | **EDITOR/WRITER** Max Esterhuizen '12 | **GRAPHIC DESIGNERS** Tim Skiles, Kayleigh Skiles | **WEB DESIGNERS** Max Esterhuizen '12, Lauren Shutt **PHOTOGRAPHERS** Tim Skiles, Sam Dean, Max Esterhuizen '12, Alex Hood, Keri Rouse, Phoebe McLaughlin, Jessica Agnew '19, '20, Brian Hairston, Ray Meese, Luke Hayes, Joshua Hoehne, Jon Eisenback, Jaclyn Fiola '22, Tessa Wannenburgh, Sally Entrekin, Lou Jean Groundwater, Dave Winston '87 '98, Saunders family, FFA, RRMM Architects | **CONTRIBUTING WRITERS** Zeke Barlow '18, Mary Hardbarger '08, Alex Hood, Keri Rouse | **ASSISTANT DEAN OF ADVANCEMENT** Vernon Meacham '83, '87 | **INTERIM DIRECTOR OF COMMUNICATIONS AND MARKETING** Max Esterhuizen '12 | **DIRECTOR OF ALUMNI RELATIONS** Jamie Lucero '21 | CALS Magazine is published by the Office of Communications and Marketing and the Office of Advancement in the College of Agriculture and Life Sciences at Virginia Tech.

Left to right: Cyril Clarke, executive vice president and provost, Tim Sands, president, and Alan Grant, dean of the College of Agriculture and Life Sciences

from the dean

CALS DATES TO REMEMBER

JUNE
8-11 Cornerstone and Alumni Weekend
19-23 FFA State Convention
27-30 Virginia 4-H Congress

AUGUST
24 CALSAO Social in Virginia Beach
24 Classes Begin

SEPTEMBER
9 CALSAO Tailgate

DECEMBER
16 Fall Commencement

JANUARY 2024
16 Classes Begin

Greetings,

Last year, many of you joined us to celebrate the 150th anniversary of Virginia Tech. CALS has been a cornerstone of the university since its founding, and we are excited to chart a bright course for the next 150 years.

Because of our continued investment in the land-grant mission with help from alumni and friends of the college, our commitment to improving the wellbeing of Virginians and people around the globe remains steadfast.

Inside the pages of this magazine, you will find stories illustrating the scope of our mission to help our communities thrive. Our talented faculty and staff continue to lead impactful research, teaching, and extension programs. Last year, the college and CALS Global received the largest award in Virginia Tech's history — an $80 million grant which will help agricultural producers across the country pilot and adopt climate-smart practices. The college is expanding its programs to support the growing controlled environment agriculture industry and is furthering the reach of our Center for Advanced Innovation in Agriculture. These and other projects provide more opportunities for students to engage in meaningful, hands-on learning experiences.

We hired Dr. Mike Gutter as the new director of Virginia Cooperative Extension, who will lead the organization so that it continues to make a positive impact in every corner of the commonwealth.

These stories also highlight the breadth of CALS, its programs to help both rural and urban communities, and the efforts to prepare students for fulfilling careers in agriculture and the life sciences.

Virginia Tech's sesquicentennial is just the beginning. The future holds tremendous opportunities for CALS!

Thank you for being a part of our storied past and our shared future.

Go Hokies!

Alan L. Grant, Ph.D.
Dean

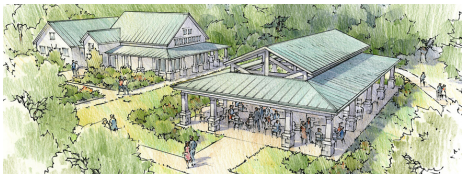
AROUND THE AG QUAD

NEWLY FORMED SCHOOL OF ANIMAL SCIENCES CEMENTS VIRGINIA TECH'S REPUTATION AS AN ANIMAL SCIENCES POWERHOUSE

During the fall semester, the departments of Dairy Science and Animal and Poultry Sciences were combined into a new School of Animal Sciences.

The new school, with nearly 700 students and more than 40 faculty members, is currently ranked fourth and sixth nationally in the number of grants and total grant dollars, respectively, secured for such programming.

The formation of the school also allows the College of Agriculture and Life Sciences to boast one of the largest dairy-centric faculties assembled in the United States.



HAHN HORTICULTURE GARDEN UNVEILS LONG-RANGE PLAN FOR EXPANSION

More event spaces and new gardens are among the improvements planned as part of a donor-driven $4 million fundraising effort to enhance the garden as a regional destination.

Elements proposed in the study, driven by gifts, would significantly upgrade the Hahn Horticulture Garden's amenities for holding events and vastly expand its array of gardens and sustainability features. Highlights proposed in the study include a spacious open-air marquee structure, a Japanese-style zen garden, a glass house, a formal garden, water-conserving rain gardens, and multiple spaces for teaching, learning, and relaxing.

NEW DIRECTORS NAMED AT TWO AGRICULTURAL RESEARCH AND EXTENSION CENTERS

Kevin Rice is the new director of the Alson H. Smith Jr. Agricultural Research and Extension Center in Winchester, Virginia. Rice has extensive entomology experience and a strong record of scholarship and graduate student mentoring. He previously served as an assistant professor of entomology in the Department of Plant Sciences at the University of Missouri.

Arash Rashed is the new director of the Southern Piedmont Agricultural Research and Extension Center. He comes to Virginia Tech from the University of Idaho, where he most recently served as an associate professor and the Idaho State integrated pest management coordinator in the Department of Entomology, Plant Pathology, and Nematology.

ANDREW SEIBEL NAMED PRESIDENT OF THE NATIONAL FFA ORGANIZATION

CALS student Andrew Seibel is the new president of the National FFA Organization. Seibel is a sophomore majoring in agricultural and applied economics.

The National FFA Organization, through an extensive interview process, selects six members to represent the organization as national officers. This year, Seibel ranked first among the 35 candidates. As national president, he will spend the next year traveling throughout the United States to advocate for the FFA.

VIRGINIA TECH LEADS TEAM USA TO VICTORY IN INTERNATIONAL SOIL JUDGING CONTEST

Virginia Tech students and faculty of Team USA are international champions. Nine different countries participated in the International Soil Judging Contest in Scotland, and Virginia Tech took first place.

"This contest and conference were experiences I am beyond grateful to have had," said Clare Tallamy, a senior from Leesburg, Virginia. "While we did get to see amazing soils that we don't have in our region of the U.S., I thought that the interactions we had with other young soil scientists were even more impactful. Getting to share ideas, languages, and conversations was a highlight of my time in Scotland."

GENEROUS SUPPORT FROM WINSTON '81 '83 AND MARILYN '82 SAMUELS MAKES INTERNATIONAL LEARNING EXPERIENCE A POSSIBILITY

CALS faculty and students, with the help of CALS Global, traveled to Cambodia to assist with the adoption of fortified rice that vastly improves the nutritional content of the most popular food in the country.

By working with a network of international partners, CALS Global creates opportunities for students which prepare them for the workforce while embodying Virginia Tech's *Ut Prosim* (That I May Serve) values. Work performed by CALS students and faculty as part of the program creates a global impact on pressing issues related to sustainable development.

Keep up with everything that's happening in the college and the commonwealth.

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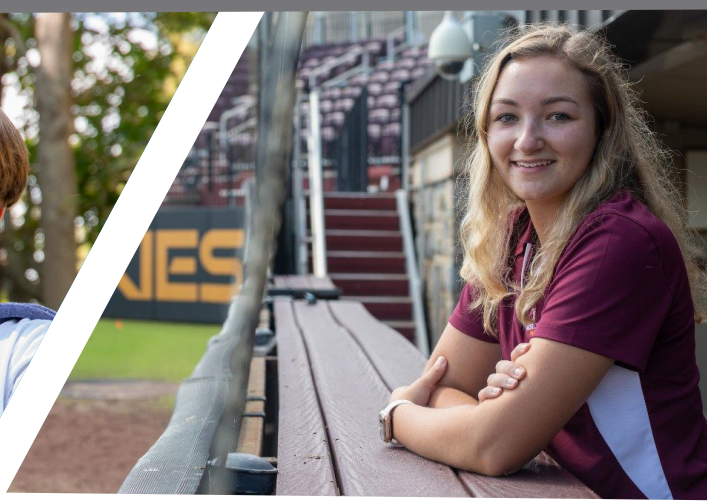


From top left to bottom right: Stella Volpe, HNFE department head, poses for a photo after practicing for field hockey at the Olympics. · A group of students pose during Hokie Hello. · Awardees for our Celebration of *Ut Prosim* event (from left) Andrew Miller, Angela Anderson, Kate Fiedler, Greg Estep, Dhamu Thamodaran, and Catherine Woteki. · Cathy Sutphin, 4-H alumni and VT students Brittanie Hairston and Charlie Sloop show off their 4-H pride during the 4-H scarf campaign. · Julie Kessler, a junior in agribusiness and graduate of the Agricultural Technology Program, stands in the softball stadium dugout.

PARTNERS FOR CHANGE

The record $80 million grant will fund a pilot program that will encourage producers to implement climate-smart practices on farms.

By Max Esterhuizen and Zeke Barlow

Virginia Tech recently received a record $80 million grant to help farmers implement climate-smart practices that could significantly reduce greenhouse gasses.

The College of Agriculture and Life Sciences will distribute more than $56 million of the largest grant in the university's history to producers to enact climate-friendly practices and serve as a pilot program for a national model. The grant will start summer of 2023.

The $80 million grant from the United States Department of Agriculture will pilot a program that pays producers to implement climate-smart practices on farms of all sizes and commodities, an initiative that could have significant impacts on curbing climate-changing gasses.

A three-year pilot program will be created in Virginia, Arkansas, Minnesota, and North Dakota that will test the feasibility of rolling out a similar program on a national scale. If scaled up nationally, the program could help producers reduce agricultural emissions by 55 percent and total emissions in the United States by 8 percent after 10 years.

"We are proud to lead this effort that gives agricultural producers incentives to enact climate-smart practices and the financial means to do so," said Tom Thompson, principal investigator on the project, associate dean of the college, and director of CALS Global. "This is a watershed program that helps the agricultural industry be a leader in addressing climate change."

According to Thompson, the credit for the pilot concept belongs to RIPE (Rural Investment to Protect our Environment), the lead Virginia Tech partner on the pilot program. The project will be known as the RIPE Partnership.

The pilot program will pay producers $100 per acre or animal unit for voluntary adoption of climate-smart practices that deliver more than that amount in public environmental benefits. Unlike previous cost-sharing programs that shared some of the financial burdens of adopting climate-smart practices on producers, this program pays producers more than the cost of implementation of these practices while also improving their bottom lines. In addition to RIPE, 15 state and national organizations will help to implement the RIPE Partnership.

> "This is an extraordinarily exciting time to be involved in agriculture."
>
> -Tom Thompson

The RIPE Partnership will reach an estimated 4,500 agricultural operations representing up to 500,000 acres in the initial four states. If scaled up nationally, as much as 80 percent of agricultural

producers could be enrolled in the program, which would make a significant impact on global carbon emissions. Only about 3 percent of producers currently participate in carbon reduction programs.

In tandem with tackling the issue of climate change, the project also targets boosting agricultural productivity in order to help feed a growing global population that is expected to reach more than 9 billion by 2050.

Producers will be able to market their climate-smart commodities to the American public through certificates with tracking numbers. Informed by feedback through a series of roundtables, the tracking system will include information needed by commodity purchasers to meet their sustainability goals.

The USDA "is delivering on our promise to build and expand these market opportunities for American agriculture and be global leaders in climate-smart agricultural production," Agriculture Secretary Tom Vilsack said in his announcement. "This effort will increase the competitive advantage of U.S. agriculture both domestically and internationally, build wealth that stays in rural communities, and support a diverse range of producers and operation types."

A website will soon be available to allow producers within the pilot states to apply and enroll in the program.

Virginia Tech researchers will create a model that selects participants to ensure program diversity. At least 40 percent of participants will be underserved and small producers, reaching at least 1,900 operations. A minimum of 500 operations with socially disadvantaged or limited resource producers will participate in the pilot project.

The grant will provide $2 million to both Minnesota and Virginia to pilot the implementation of high-value and high-cost climate-smart practices in animal feeding operations. The pilot's near-term impacts will be an estimated greenhouse gas benefit of 300,000 metric tons of carbon dioxide equivalent and a total environmental value of $200 million. The national program would have a benefit-to-cost ratio of 5:1, reaping a total environmental benefit of $415 billion (working under the assumption that multiple climate-smart practices are implemented on the same cropland acres and animal units after ten years of the program).

The program will rely heavily on research and programs at Virginia Tech, including the Global Agricultural Productivity Report (GAP Report) and insights from experts in the Department of Agricultural and Applied Economics, the School of Animal Sciences, and the Eastern Shore Agricultural Research and Extension Center.

There will be rigorous monitoring during the three-year pilot program to ensure the transaction costs associated with implementing the climate-smart initiatives are minimized and that there are few barriers for producers who enact such initiatives in their operations. Virginia Tech researchers will track the greenhouse gas savings of the initiative as they are implemented, quantify the benefits of other environmental impacts such as reduced soil erosion, and examine consumers' willingness to pay for products with climate-smart labels.

"This is an extraordinarily exciting time to be involved in agriculture," Thompson said. "Farmers have always been the great stewards of our land, and American agriculture has always been a productivity powerhouse. This pilot program will help them continue to do so for generations to come."

The RIPE partnership pilot will reach an estimated 4,500 operations representing up to 500,000 acres in the initial four states, which includes Virginia, North Dakota, Arkansas, and Minnesota.

Scan to see more

RIPE PARTNERSHIP

TRIAL BY FIRE

By Max Esterhuizen

Using metal as his canvas and fire as his brush, Michael Marciano turns molten steel into more than just works of art.

Two numbers illuminate how Michael Marciano earned his stripes as an elite farrier: 3,000 and 800.

As in 800 hours standing above a 3,000-degree forge over the course of eight weeks.

That's how long Marciano, a senior in the School of Animal Sciences, spent learning to become a farrier at the prestigious Heartland Horseshoeing School in the summer of 2021.

Those eight weeks training as a farrier – someone who makes and fits horseshoes, checks the horse's overall leg, foot, and hoof health, and trims and shapes the excess hoof growth – were among the hardest he's ever had.

Marciano started this path as part of his goal of becoming a large animal veterinarian for horses and cattle. But it also happened thanks to one of his mentors, Thomas Massie '91, '95, who has a veterinary practice in Rappahannock, Virginia, and their farrier, Travis Burns.

"When I become a veterinarian, I will work with farriers. I will be able to understand what a farrier thinks when approaching a problem. I'll be a much better teammate to that farrier and able to provide a better outcome for that horse under my care. That's the real goal," Marciano said.

To graduate, Marciano had to shoe a horse in less than an hour - trimming, clips, shaping the shoe, everything - all while following the American Farriers Association standards. Of the six people in the course, only two graduated. Marciano was one of them.

His time in farrier school helped him increase his collaborative learning opportunities at Virginia Tech. He was able to have these experiences because of scholarships, which include the Jacklyn W. and William R. Jones, Jr. Experiential Learning Scholarship, the Mary Louise Spann Scholarship, the Cyrus Hall McCormick Scholarship, and the Fred H. Scott '58 Memorial Scholarship.

"These scholarships have enabled me to have opportunities and experiences I otherwise would not have had," Marciano said. "They have allowed me to pursue my academic passions and gain experiences that have set me on the path to career success."

From the fires of the forge burned Marciano's new passion - the challenging hobby of blacksmithing. He has since joined the Blacksmithing Club.

"At least weekly, I'm training other people to blacksmith themselves," Marciano said. "It's a challenging subject, but it is incredibly rewarding. You can learn a lot about yourself through it. I try to pass on the process."

Scan to see more

ACHIEVING A CHILDHOOD DREAM

By Max Esterhuizen

Tessa Wannenburgh is taking advantage of every opportunity in the Agricultural Technology Program to set herself up for success.

Tessa Wannenburgh smiled when she thought back on when she got her start farming. The gooseberries, hay bales, and barns that lined the farm near her home in Cape Town, South Africa, gave her hands-on experience with agriculture at a young age.

"Looking back, it was there that agriculture found its way into my heart. And it never left," Wannenburgh said.

Wannenburgh made her way to Virginia Tech's experiential two-year Agricultural Technology Program to help her reach her goal of becoming a farmer.

"This program has all the practical information I need condensed into two years," she said. "It has everything about working in industry or starting and running your own business. The Agricultural Technology Program will push me forward in my farming career."

While specializing in livestock, one of her crop professors suggested to Wannenburgh that she apply for the Pratt Research Scholarship to study soil mineralization response to nitrogen.

The goal? To determine whether it is economically beneficial for those who use stockpiled tall fescue as a source of animal nutrition to apply nitrogen fertilizer to increase forage yields and quality.

"We're working on finding that sweet spot for nitrogen fertilizers," Wannenburgh said.

Using two plots at two locations, Wannenburgh and her research partner Rachel Mohler measure different amounts of fertilizers and randomize the 16 sampling sites within the plot for the amount of fertilizer each respective sampling site receives. Each block gets the same fertilizer, one of the four fertilizer amounts, except for the control block which receives no nitrogen fertilizer.

The duo then cuts the grass with shears and takes the clippings from the plot to grind into a fine powder after being dried at the agronomy farm. They repeat this process monthly.

This project wouldn't be possible without support. After finishing final exams in May 2022, one of Wannenburgh's professors encouraged her to apply for the Pratt Research Scholarship.

"Being selected for this research position was an honor and it has been an incredible experience," Wannenburgh said. "During my research, I used different tools and equipment I might not have otherwise used. This experience has been so valuable to my education and future career."

Scan to see more

SLOWING THE SPREAD OF MOSQUITO-BORNE DISEASES

By Mary Hardbarger

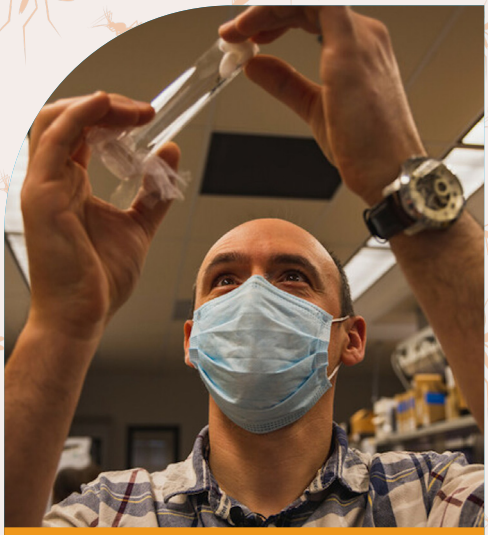
Scan to see more

A recent uptick in mosquito-borne diseases is leading to the belief that traditional methods of controlling mosquitoes, like insecticides, aren't as effective as they once were.

Research being conducted in the Department of Biochemistry is examining how sleep-deprivation may affect mosquitoes' ability to find human hosts, or even stop their ability to spread disease entirely.

The World Health Organization estimates 725,000 people die each year from mosquito-borne diseases.

= 10,000



"If we can better understand how sleep is important for mosquitoes and for disease transmission, maybe we can identify targets for sleep deprivation. We can even manipulate the molecular basis of their sleep so they are less efficient at finding us."

- Clément Vinauger
assistant professor of biochemistry

MAKE A DIFFERENCE. VOLUNTEER WITH 4-H

In 2022, Virginia 4-H held the 100th State 4-H Congress on Virginia Tech's Blacksburg campus.

4-H members from across the state participated in workshops, presentation competitions, made lifelong friends, and completed service-learning projects.

However, the impactful activities these 4-H'ers got to participate in wouldn't be possible without the selfless service of the volunteers that make 4-H's renowned programming a reality in communities across the commonwealth.

Volunteers help youth have opportunities to master life challenges, cultivate independence with guidance from caring adults, run local clubs, and ensure youth can participate in activities that emphasize learning by doing.

Help grow the next generation of leaders.

Volunteer with 4-H.

Scan to read more

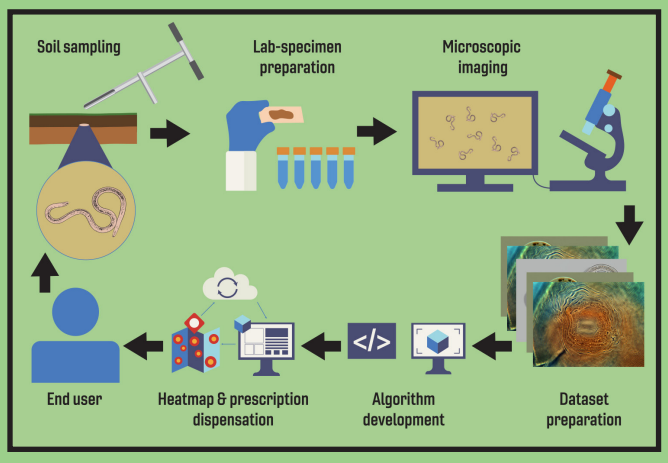
Using artificial intelligence to combat soybean nematodes

By Max Esterhuizen

Researchers at the Tidewater Agricultural Research and Extension Center are studying how to use artificial intelligence to identify the presence of plant-parasitic soybean nematodes that cause upward of $1 billion worth of soybean loss each year in the United States.

Current methods aren't able to process samples quick enough for growers and lead to an overuse of pesticides on crops.

Researchers in the College of Agriculture and Life Sciences are developing artificial intelligence algorithms for identification of nematodes and geographic information system infestation heatmaps to exponentially speed up processing of samples.



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Leading an engaged Virginia Cooperative Extension

Mike Gutter started as the new director of Virginia Cooperative Extension (VCE) in November 2022.

We sat down with him to talk about the journey that led him here, where he wants to lead Extension in the coming years, and his belief in the power of the land-grant mission.

Follow Mike at his blog:

@VCE_Director

Tell us a little about yourself.

I grew up in a family that was strong but lacked a lot of financial resources. So, it will not surprise you that with a love of psychology, I ended up studying family financial management and pursued a doctoral program that focused on family resource management (also known as family economics). I have now spent decades studying economic disparities and how they impact things from home ownership to health outcomes.

What led you to Virginia Cooperative Extension?

After being an Extension leader the past decade, I knew I was ready to lead a program of VCE's caliber. I have known and met many VCE faculty over the years and found them all to be incredibly impressive. Virginia is a beautiful place with a strong agriculture industry – where else would I want to be?

What do you see is the value of Extension?

We bring science-backed information to everyone in the commonwealth and provide opportunities for producers to improve their products, processes, and profitability. We give youth an opportunity to find their spark and help families manage their resources, nutrition, and health. We collaborate with communities to manage their resources and address common challenges. VCE continues to ask the questions: How can we help? What does Virginia need?

It has been my experience that including strategic partners and forming those relationships helps us be at the table for these issues. This way we are leveraging each other's resources, learning from each other, and pursuing lines of funding neither of us can obtain on our own.

Fast Facts

Education: Ph.D. from The Ohio State University in family resource management studies

Experience: Assistant Professor and Extension Specialist, University of Madison-Wisconsin; Professor and Extension Specialist, University of Florida

Family: Jessica, his wife and "rock," Ethan, his son and scuba partner, Brooke, his daughter and a volleyball player, and Chloe, his rescue rat terrier

Fun facts: Black shirt in Mixed Martial Arts and Blue Belt in Gracie Jiu Jitsu in addition to guitar

Could you describe Extension's future?

VCE is a strong extension program with a positive reputation among its many stakeholders and peers. I would like to see us continue to build on that strength, cultivating a reputation across campus and our commonwealth as the best resource to engage and work with our communities.

I know that together over the next decade, we will become the go-to partner for community-engaged work, technology transfer, workforce development, rural community social issues, and more.

Over the next half-century, we will be seen as the trusted partner, and more importantly, trusted source, by our communities.

A Farmer's Family Legacy

108 Years in the Making

By Mary Hardbarger

HOKIES THROUGH AND THROUGH

The most ideal way a writer could begin the storytelling of a decades-old farm just may be from the front seat of a slightly worn four-wheel-drive pick-up truck on a crisp fall afternoon.

On this particular day, the smell of freshly picked apples filled the air and the inside of Robert Saunders' truck, one that proudly, and unsurprisingly, wears some dried mud and a few scratches, as well as a license plate etched with "4EVER VT."

Downed windows welcomed the aroma and offered a clear view of the sprawling Saunders Brothers farm, located on "the sunrise side of Virginia's Blue Ridge Mountains," as they like to say. They, being Robert '86 and his three brothers, Tom '81, Bennett '83, and Jim '85, are the primary owners and operators of this multi-generational farm that was established by their grandfather, Sam, and his four brothers.

The farm has evolved into a large-scale and diverse horticultural business, formally called Saunders Brothers, Inc. A roster of employees that runs about 150 deep grow, sell, and ship woody ornamentals, annuals, perennials, boxwood, grafted trees, peaches, nectarines, apples, and Asian pears on more than 400 acres of farmland.

Several of the workers are Virginia Tech graduates, as are many in the Saunders circle.

The Saunders' family tree, like those that dotted the hilltops that breezy October morning, is richly decorated with maroon and orange. Virginia Tech has issued degrees - ranging from engineering to horticulture - to 32 members of their family, dating back to the 1950s. In addition to the brothers and many of their spouses and children, more than a dozen Hokies are now a part of the Saunders Brothers team.

"This place has Virginia Tech written all over it," said Robert Saunders as he drove past beds full of hydrangeas and rhododendrons being prepared for the winter months ahead.

As general manager, Robert Saunders oversees the farm's daily operations. Last fall, he represented his family and the commonwealth at the Sunbelt Ag Expo in Georgia, where he and the farm were named the 2022 Swisher/Sunbelt Southeastern Farmer of the Year.

Saunders said he and his family were humbled by the recognition, one that's been years in the making - 108 to be exact.

Left: Jim, Bennett, Robert, and Tom stand in front of one of their boxwood plots.

Robert, Tom, Paul, Jim and Bennett Saunders survey one of the orchards owned by the Saunders Brothers.

Virginia Tech alumnus earns national recognition as Southeastern Farmer of the Year

Virginia Tech alumnus Robert Saunders '86, representing the entire Saunders family, was named the 2022 Swisher/Sunbelt Southeastern Farmer of the Year in October at the Sunbelt Ag Expo in Moultrie, Georgia.

He is just the fifth Virginia farmer to earn the Swisher/Sunbelt Expo Southeastern Farmer of the Year recognition.

"This place has Virginia Tech written all over it."

-Robert Saunders

As general manager, Robert Saunders oversees the farm's daily operations.

ROOTED IN FAMILY LEGACY

"Humble" is a candid word to describe the start of the Saunders Brothers' legacy.

Although the farm, located in the small Nelson County community of Piney River, Virginia, is now equipped with modern-day farm conveniences, such as high-tech tillers and timer-controlled irrigation systems, this writer's curious set of eyes steered by a well-suited tour guide can easily spot and sense its storied history.

Rusted farming equipment, decades-old homesteads, and well-worked fields dot the sprawling landscape that has expanded extensively since the late Paul Saunders planted his first boxwood.

Saunders Brothers came to life in 1915 as brothers Sam (grandfather), Dick, Doc, Will, and Massie (great uncles) created a farm partnership, with tobacco as the primary cash crop. Times were tight for the large family through the Great Depression, but high peach prices during World War II helped them pay off debt. As family members left the farm, Sam, Dick, and Doc stayed behind and evolved the business's bounty.

The family's original house is located on a part of the farm called "Harewood," now inhabited by Bennett Saunders and his family. Next to the house is the Saunders' Family cemetery. How many are buried there, Robert Saunders hasn't a clue, but he is quick to point out a headstone with which he is very familiar: that of his father, Paul Saunders.

Paul Saunders, son of Sam, is responsible for the farm's now booming boxwood business. In a history of the farm authored by Paul, he wrote:

"I propagated my first boxwood in the spring of 1947 (as part of a 4-H project). A multi-talented science teacher and my mother showed me how to make cuttings for propagation. Intrigued, I chose the north side of the red clay, piney-thicket hillside near our current office as my propagation site. An 11-year-old friend helped me with the project. We stuck 77 slips into the red earth, which was cooled by its northern exposure and shaded by the pines. We watered them every few days from the little spring that was at the bottom of the hill. From this almost impossibly primitive beginning, 25 of the plants rooted. I was truly excited, and at the age of 13, bought out my partner."

Paul and his wife, Tatum Saunders, together had seven boys. He earned his degree from Virginia Tech in engineering and encouraged their children to do the same.

"My father loved Virginia Tech with an absolute passion," Robert Saunders said. "To him, there was no other school."

Six of the brothers, at one time or another, worked alongside their father on the farm, contributing the skills they learned and the degrees they earned from Virginia Tech.

Paul Saunders passed away in 2022, leaving Robert (general manager), Bennett (Saunders

Paul Saunders and Paul Whitehead, a Nelson County Extension agent. Circa 1952.

The Saunders Brothers roadside market sells fresh produce grown on the farm such as peaches, apples, and asian pears.

Genetics "NewGen" general manager), Tom Saunders (container production), and Jim Saunders (human resources manager) as the current owners. Paul Saunders worked and lived on the farm until he died, a long-standing wish fulfilled, his sons said. Tatum Saunders still lives on the farm in a house next to Robert Saunders and his wife, Pat '87.

On this particular afternoon, she was having lunch with five of her grandchildren, James '17, Annie '16, Marshall, Tye '15, and Price '20, the fourth generation of Saunders' to join the family business.

BUILT WITH COMMUNITY IN MIND

Years ago, the four brothers took a True Colors™ test, a popular form of a personality test that categorizes personalities by four different colors.

"Each of us were a different color," Robert Saunders said. "Not a surprise there."

Their multi-colored personalities match their varied skill sets.

Tom Saunders was the first to return to the Saunders Brothers farm in the early 1980s with a horticulture degree. Bennett followed with a degree in agricultural economics. Robert was next. He, like his father, earned an engineering degree. Jim, an animal science major, was the last to return after serving for several years as a Virginia Cooperative Extension agent.

Together, they have turned Saunders Brothers, Inc., into a thriving, community-centered business. A key to their success, Jim Saunders said, "We don't talk business at the dinner table." Those conversations are saved for weekly working lunches.

The farm's fruit operation covers 160 acres. Beyond common apple varieties like Gala, Honeycrisp, and Golden Delicious, the brothers are continually growing and testing new types. Some are so new or

[Continued on page 17]

Saunders Brothers is a family operation that includes Price, James, Tom, Annie, Robert, Marshall, Jim, Tye, and Bennett.

A BUDDING PASSION

By Max Esterhuizen

Lauren Gregory is a grower working for the Saunders Brothers, Inc. But not long ago, she didn't think she had a green thumb. At least not until a wilting houseplant found its way to her door.

It wasn't her fault. The plant was a gift. Nevertheless, it was dying.

It was up to Lauren Gregory '19 to save it.

With delicate and deliberate care in the spring of 2016, Gregory began the revival process. Slowly but surely, the plant began to reflect the love and effort put in by Gregory. Before long, it was thriving.

"It was one of those things, while simple, that was a coming-of-age experience. My grandpa was a sweet corn farmer that sold to local stores. My grandparents and parents all had gardens growing up. When I brought that plant back from the dead, I realized I had a knack for it, too," Gregory said, now a grower working at Saunders Brothers Farm in Piney River, Virginia.

Her hometown of New Kent, Virginia, nestled between Richmond and Williamsburg, is small. Gregory began her collegiate experience as a first-generation student at Thomas Nelson Community College in nearby Williamsburg before transferring to Virginia Tech's College of Agriculture and Life Sciences.

At Virginia Tech, Gregory wanted to truly understand the symbiotic relationship between plants, so she joined the School of Plant and Environmental Sciences while also choosing a minor in entomology - both areas that she uses daily in her career.

When Gregory initially toured Virginia Tech, she was introduced to the horticulture program by Alex Niemiera, a professor in the School of Plant and Environmental Sciences. Who she met and what she saw were magnificent.

"I met Holly Scoggins who further inspired me. Everything I saw - the professors, the facilities, the Hahn Horticulture Garden - it just pulled me in," Gregory said. "I had great mentors and leaders to look up to and had fantastic hands-on learning opportunities."

In college, Gregory saw how the soil interacts with the plants and how they pull nutrients from the soil. She saw how the soil layers, compaction, and oxygenation in the soil changes - and what makes those processes happen.

"I'm at a container nursery now, so we only really work with soilless media," she said. "But my classes at Virginia Tech changed how I approach this. I'm always looking at the outcome - how we can get the plants to be exactly where they need to be once at their final destination in the ground."

At Saunders Brothers, Gregory was a part of the team that helped the Saunders family earn national recognition as Southeastern Farmer of the Year.

Scan to see more

The Container Operation at the Saunders' Tye Brook Farm.

[From page 15]

top secret that they don't have official names yet. Others, like the customer-favorite, Piney River Gold, are gobbled up at the roadside market where the brothers sell their produce, plants, canned goods, ice cream, and a very tasty chicken salad sandwich. The market once served as the farm's sole packing shed. In the summers, it was a gathering space where employees along with members of the Piney River community would pack produce and pick a few tunes.

The wholesale nursery operation consists of about 100 acres of container production and 180 acres of field production. The green thumbs of Bennett and Tom Saunders have helped the farm gain notoriety as the first boxwood genetics company in the United States. Like the apples they grow, the brothers are also testing superior varieties of boxwood, or varieties that have a lower likelihood of disease and pest problems and are easier for growers to produce.

More than 1,100 products are shipped annually from the farm to garden centers, landscapers, and re-wholesalers throughout the mid-Atlantic region, including to Virginia Tech's Blacksburg campus.

To help manage the massive operation, dozens of employees are on hand 24-7-365 days a year. The plants may hibernate for the winter, but the Saunders Brothers farm never gets a deep sleep.

Rest occurs at lunchtime when employees take solace with lunch boxes at a comfy table or bench around the market building, surrounded by customers who scout out the produce and plants they harvested.

About 100 seasonal employees are hired through the H-2A Temporary Agricultural Workers program. They live and work on the farm from mid-February through the end of November. Many of these workers have been returning to the farm for the past 25 years.

The help of the surrounding Piney River community is also integral to the operation.

"They are some of our most loyal customers and employees," Robert Saunders said. "They have supported us from the very beginning."

As head of human resources, Jim Saunders reads through a lot of applications and asks a lot of questions to job candidates, a common being, "Why here?"

"Piney River is a very small town and not a lot of people live here," he said. "There's a Walmart 40 minutes away and one stop light in all of Nelson County. But they respond with, 'I've heard about who you are and what you do, and I want to be a part of it.'"

Jim (left) and Robert Saunders stand in the office of their late father, Paul. The office is filled with family photos and Virginia Tech memorabilia.

FAMILY AT THE CORE

Come mid-afternoon, the Saunders Brothers farm is full-on activity. A large building up the hill from the market is the main headquarters. Tractor trailers roll in and out, filled to the brim with product.

Years ago, Robert Saunders was in the middle of the controlled chaos, directing Joe to do that and Fred to do that, and so on. More recently, he's taken a step back from that role, mainly because his employees have mastered the craft.

"It's like clockwork to them," he said. "We've got so many good people, and I'm not required to be here every day. It happens this way now because of our steadfast customers and employees."

During normal business hours, Robert Saunders is oftentimes in the main office. Jim, Tom, and Bennett are also busy with their various tasks, but they welcomely take a break to talk about family.

"It's one of our most important core values," they said.

The others are faith, integrity, and passion.

Down the hall from Robert Saunders is an office, empty of human life yet still very much alive.

As the writer sets foot in the office of the late Paul Saunders, still intact and mainly untouched since his passing, one is immediately transported to the past and reminded of the farm's promising future.

Family keepsakes line the walls, along with plenty of Virginia Tech memorabilia.

Framed photographs, rows and rows deep of family and extended family, may be the most ideal way to end the storytelling of the Saunders Brothers farm.

Scan to see more

Gifts to Virginia 4-H create pathways to sustained success

By Max Esterhuizen

The Claude Moore Charitable Foundation focuses on health-based careers.

The Claude Moore Charitable Foundation is helping Virginia's youth find meaningful and lasting careers in health care by forging a partnership with Virginia Cooperative Extension and Virginia 4-H that will ignite a passion for life sciences.

The foundation's $750,000 gift allows youth to gain knowledge, be exposed to life skills, have a better understanding of future careers, and craft opportunities to start a journey toward lifelong learning in a variety of fields.

Specifically, the investment enables the creation of a mobile learning lab that targets rural youth and incorporates high-quality, experiential learning in life sciences to engage learning for youth using Virginia 4-H's renowned programming as the foundation.

"The mobile lab will serve as a foundation to continue lifelong learning for youth as they find their spark and interest in life and health sciences, as well as connect them with careers, mentors, and future opportunities," said Erika Bonnett, a Virginia 4-H education specialist.

Scan to see more

From left: Renae Pearson '90, Cynthia Hazel, J. Pearson '87, Bernice Pearson, and William Hazel pose at An Evening With Virginia 4-H on January 19 in Richmond Virginia.

J. Pearson wanted to do something to recognize his mother for everything that she did to raise him and his two sisters.

When John Dooley '94, '98, former CEO of the Virginia Tech Foundation, floated the idea of naming the Northern Virginia 4-H Educational Center's Performing Arts Complex for Bernice Pearson, J. Pearson was overwhelmed by the idea.

"It was just perfect. To give back and name it after Mom because of the performing arts she did all those years, it's just a dream come true," he said. "I'm living proof of her work in positive youth development. There is no way I would be in the position to give back to Virginia 4-H today without the efforts of my parents when I was growing up."

The gift from J. and Renae Pearson will fund a complete renovation and modernization of the performing arts complex and leave a lasting legacy of Bernice Pearson's impact on the youth of Virginia.

"It's because of people like Bernice, J., and Renae that 4-H can have such a meaningful impact on the lives of our youth, and this gift enables us to influence youth for years to come," said Jeremy Johnson '03, state 4-H leader.

After the renovations are complete, a second goal of the project is to provide 4-Hers at the center with hands-on learning in the performing arts.

"Performing arts technology has changed so much over the years," J. Pearson said. "We're putting in the technology to give youth the opportunity to get experience and training on current audio-visual equipment to give them a leg up as they begin pursuit of their careers."

Bernice Pearson was a longtime 4-H volunteer in Fauquier County. There, she ran a traveling 4-H performing arts group called Young Dominion. The group attended many competitions - including some out-of-state. Her work gave youth new experiences and helped kick-start an interest in the arts for many of them.

Because of the Pearson's gift, 4-H youth can run a sound system, microphones, an amplified singing and talking system, and stage lights. The center will provide multiple opportunities for youth to explore their performing arts interests and hone their abilities.

The gift also enables a lasting revenue stream for the center. The amphitheater has been available for the community to rent as an event space, but has been limited because of the available amenities. With the gift, the space's usability will dramatically expand, helping the center to raise additional money while also reaching the surrounding community in new and lasting ways.

Mastering an Ancient (*and Delicious*) German Craft: **Brewing Beer**

By Alex Hood

Students and faculty receive a tour of the Technical University of Munich's historic Weihenstephan campus located in the heart of the 1,200 year-old cathedral town of Freising, Germany.

The Practical and Theoretical Brewing Exchange program immerses students in Bavarian culture and gives them a taste of a timeless art form that predates the rise of agriculture.

Ethan Ball raised the tasting glass to his nose. The malted aroma of fresh bread, cloves, and banana filled his nostrils, and after a moment he took a contemplative sip and considered the unmistakable taste of the Bavarian wheat beer in his hand.

Flanked on either side by several other Virginia Tech students, Ball was seated at a short bar, on top of which sat a row of assorted beer bottles. On the other side of those bottles, a man with "TUM" embroidered on his shirt explained the difference between top-fermenting and bottom-fermenting yeast.

In the United States, such a scene might seem recreational, but for the students in that taproom on the edge of the Technical University of Munich's hilltop Weihenstephan campus, it was another day in class.

It was only the first week of the College of Agriculture and Life Sciences Department of Food Science and Technology's Practical and Theoretical Brewing Exchange, a study abroad program that sends a handful of Hokies to Freising, Germany each summer to learn about Bavarian brewing and culture.

"Like a lot of people, I got into brewing by homebrewing with my dad, and then of course I wanted to study brewing in Germany because there's no better place to study it," said Ball, a food science major from Richlands, Virginia.

But why send students to Europe just to learn about beer, especially to a small town of less than 50,000 in southern Bavaria?

The reason sits atop an enormous hill in Freising's center where the university's campus is crowned by the oldest continuously operating brewery on Earth. What began as a Benedictine monastic brewhouse in 1040 A.D. is now the Bavarian State Brewery of Weihenstephan, a government-owned brewery that produces globally renowned beer and serves as an educational facility for the Technical University of Munich's brewing and beverage manufacturing graduate studies program.

Following a tour of the university's verdant campus on their first day in Freising, the Virginia Tech students were welcomed to campus by their German counterparts with a Bavarian cookout. Over polka music, the sizzle of cooking bratwurst, and the patter of gentle rain, they mingled with students clad in traditional German lederhosen and dirndls and spoke about the places they wanted to visit.

The next morning, the students set off on a four-week whirlwind of classes, lab and brewery exercises, and excursions. They attended lectures and learned how the 1516 beer purity law – or Reinheitsgebot – limits the ingredients in German beer to only water, barley, hops, and yeast. They went on a guided historical tour of Munich and learned how the production of beer in the Middle Ages influenced city planning. They learned to operate the university's brewing systems mere yards from those that produce the millions of gallons of Weihenstephan beer that people all over the world enjoy. All of these activities culminated in a final project requiring them to devise a recipe for a new beer using their newfound knowledge.

Born out of the Department of Food Science and Technology's internationally-renowned fermentation degree option, the exchange originated when food science faculty members Brian Wiersema '98 and Sean O'Keefe met with the Weihenstephan faculty while in Germany evaluating new brewhouse equipment in 2015. The idea of a mutual exchange was proposed, and by 2018 the first Practical and Theoretical Brewing class was headed to Freising.

In another serendipitous twist, it was Wiersema and

“Going to Germany opens up their world to how people have done this for hundreds of years.”

-Brian Wiersema

O’Keefe’s time in Germany that inspired them to make Virginia Tech’s first licensed beer a Munich-style Helles. Fightin’ Hokies Lager now helps fund the exchange, with a portion of the beer’s sales funding a scholarship that pays for a student’s trip expenses each year.

The program is an extension of the department’s educational thesis – that experiential learning is just as important as classroom learning.

“Up to this point in their brewing education, our students have only been in the Blacksburg labs, brewing on our system, or going to craft brewers in our region,” said Wiersema, the exchange’s main faculty coordinator. “Going to Germany opens up their world to how people have done this for hundreds of years.”

Though they embarked upon the same journey, each student had a different reason for doing so. The exchange is open to all majors, so each class comprises a variety of academic backgrounds.

Nancy Tuguldur, a chemical engineering sophomore from Arlington, Virginia, knew that brewing was an increasingly common career choice for those in her field and saw the program as a chance to expand her repertoire of skills.

Chemical engineering student Nancy Tuguldur gazes up at the unfamiliar system she’s working on during a brewing exercise.

“Working at breweries is a very popular option for chemical engineers, and I wanted to explore what that side was like because I’ve got some chemical plant experience and wanted to see how different it was,” she said.

In the program’s second week, an instructor showed the students how to measure and add hop pellets to the brew, monitor its temperature, and check its gravity. It quickly became apparent that the German focus on perfection and refinement meant that the brewing system they were using included far more automation than the students were accustomed to, further emphasizing the importance of learning while embedded in another culture.

Little more than three weeks after the cohort sampled wheat beers in class that first Friday, the program concluded. Though their time there was short, they left with a wealth of new knowledge, friends, and stories to tell.

For Sarah Taylor, a senior in biological systems engineering from Chesapeake, Virginia, the trip allowed her to walk in her grandmother’s footsteps.

“My maternal grandmother is from Germany and actually owned and worked in a brewery years ago that no longer exists,” she said. “When I told her I was going to Germany to study brewing, she was like, ‘Oh, I have so many pictures I can show you!’ That was pretty cool to hear about.”

At the end of the program, Taylor returned with countless new pictures of her own.

Sarah Taylor joined the exchange because she saw brewing as a fusion of all of the individual skills she was learning in her biological systems engineering courses.

Scan to see more

NEW HOME, GREATER IMPACT

New Virginia Seafood Agricultural Research and Extension Center benefits the commonwealth and partners for decades to come

By Keri Rouse

From deep-water fishermen and Chesapeake Bay crabbers to seafood distributors and the booming aquaculture industry, the impact and extent of the commonwealth's seafood industry is vast. The Virginia Seafood Agricultural Research and Extension Center (Seafood AREC) is a vital source of information to help Virginia's industry thrive in an increasingly competitive global market.

And with its new three-story, 22,224-square-foot research facility in Hampton, Virginia, the Seafood AREC can serve up even more applied research and technical assistance than ever.

The center's location is at the heart of the Virginia seafood industry, surrounded by multigenerational companies while providing ample opportunity for collaboration with industry.

Let's take a tour of these state-of-the-art facilities.

Dive deeper! Explore the VSAREC facility and programs online in a virtual tour.

Food Safety Classroom

Food quality and safety are crucial ingredients at every stage of the seafood supply chain – from the farm or ocean all the way to the plate. Seafood producers and processors turn to the Seafood AREC for microbiological testing, technical support, and food safety training. The third-floor reception area opens to a multipurpose classroom which serves as a venue for cooking demonstrations, consumer education programs, and training opportunities in English and Spanish to teach industry members how to ensure the quality and safety of their products.

Food Safety Lab

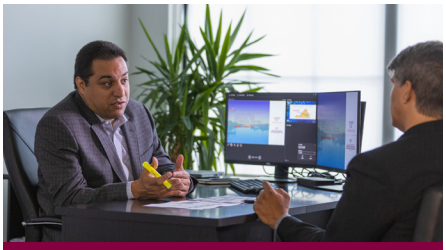
Many companies depend on the Seafood AREC for industry services such as microbial analyses to help ensure their products' quality and safety while keeping associated costs to a minimum. New laboratories enhance support for these services. When Dickie's Seafood developed a new frozen crab cake, Seafood AREC food quality experts brought samples into the lab to perform shelf-life studies, which led to increased marketability of the product. Now twice its previous size, the microbiology lab has been upgraded to a BSL-2 laboratory, which allows scientists to work with human pathogens and expand the bounds of their food quality and safety research.

Bioprocessing Lab

An ancient grain with low environmental impact, sorghum and other alternative protein sources are poised to play a big role in the future of sustainable animal feeds. Researchers are at the forefront of this movement, using bioprocessing technologies to develop a recipe for a protein concentrate which will be used in SmartFeeds in partnership with the United Sorghum Checkoff Program. Specialists also provide critical engineering assistance, helping businesses increase revenue through process optimization and value-added product development.

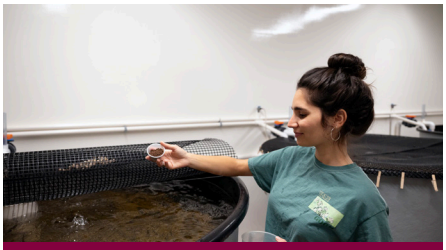
Cellular Agriculture Lab

Researchers at the Seafood AREC help usher in the era of lab-to-table protein at a time when the agriculture industry is racing to keep up with growing demand. Cultivated meat research is creating new possibilities to fill the gap in supply. Using artificial intelligence, machine learning, 3D bioprinting equipment, and the expanded cellular agriculture facilities at the new center, lab technicians differentiate animal cells and grow muscle and fat cell types in vitro that can then be formed into anything from oyster meat to salmon filets.



Economics and Marketing

Working closely with aquaculture growers and seafood companies, economics and marketing researchers examine consumer preferences, business development, and regulatory obstacles faced at the farm level. Armed with sound economic data, farmers advocated on behalf of their industry and successfully demonstrated their need for vital assistance in the face of the pandemic. In a study conducted by Seafood AREC researchers, the economic contributions of the Virginia seafood industry were found to exceed $1 billion for the commonwealth in 2019.



Research

Water drawn directly from the nearby Hampton River is pumped into the building for use in the recirculating aquaculture systems on the center's second floor. Here, researchers can conduct fish feed trials and other studies while safely elevated above the flood zone. The new aquaculture research facilities are highly adjustable and responsive to stakeholder needs. Numerous fish, crustaceans, and bivalves are studied here. The facility has the capacity to operate freshwater, brackish, and saltwater systems.

Partnerships

Whether developing climate-smart production strategies for oyster hatcheries or testing new fish feeds, Seafood AREC research is driven and fueled by partnerships. Hybrid striped bass swim in tanks, with some equipped with new, advanced purification systems developed by Pancopia, an environmental engineering company. Aquaculture specialists test its effectiveness in treating bad taste and odor compounds that can accumulate in production systems and negatively impact marketability and profit for producers.

Built on 48 years of programmatic support for the seafood and aquaculture industries, the enhanced facilities will help keep pace with the needs and opportunities confronting businesses that deliver seafood to dinner tables in Virginia and beyond.

Propelling controlled environment agriculture into the future

By Mary Hardbarger

The Virginia Tech-affiliated Controlled Environment Agriculture Innovation Center in Danville, Virginia, is leading the charge in indoor agriculture and attracting global leaders in CEA to the commonwealth.

"Creative collisions."

That's the phrase Michael Evans, the director of the School for Plant and Environmental Sciences, often uses to describe the many partnerships which have made the Controlled Environment Agriculture Innovation Center a growing success.

The center is part of the SmartFarm Innovation Network, a platform of Virginia Tech's Center for Advanced Innovation in Agriculture.

In the four years since the Controlled Environment Agriculture Innovation Center's creation, it has exploded with activity and advancement in the areas of research, technology development, outreach, and economic impact, all related to the art of controlled environment agriculture. Also known as CEA, this fast-growing form of farming encompasses a range of technology-driven practices, such as hydroponics and vertical growing.

With the value of global indoor farming expected to reach $122.3 billion by 2030, according to a study by Grand View Research, Inc., there has been a rapid increase in this method of farming.

Megan Pollok, a sophomore in the College of Agriculture and Life Sciences, is researching the resistance of winter wheat to the disease to help save producers from its deadly effects.

While there is currently not an exact count of the number of indoor vertical farm operations in Virginia, Evans said southern Virginia, where several global CEA companies located this past year, is a hotspot.

Several of these "creative collisions" have helped position the innovation center as a lead driver for controlled environment agriculture. One such occurrence last year at the Indoor Ag-Con in Las Vegas, Nevada, the country's largest CEA trade show and conference.

The west-coast-based conference was looking for an east-coast collaborator, and in late October, the Controlled Environment Agriculture Innovation Center co-hosted the first-ever CEA Summit East. The event attracted more than 200 participants from 28 states, Canada, and Puerto Rico to the Danville complex to network and discuss the future of CEA.

"A perfect example of a creative collision," Evans said.

Common themes of the inaugural summit and overarching goals of the innovation center are workforce development and economic impact.

As Virginia continues to attract global CEA companies, such as Plenty Unlimited, Inc., and AeroFarms, the demand will increase for trained employees to fill these positions, Evans said.

Plenty and AeroFarms arrived in Virginia in 2022. New Jersey-based AeroFarms established the world's largest aeroponics farm in Pittsylvania County. The facility is capable of growing more than 3 million pounds of leafy greens a year. Similarly, California-based Plenty, a Bay Area indoor agriculture company, plans to build a $300 million vertical farming campus in Chesterfield County.

Both companies are partners of the innovation center, where faculty are continually conducting research to keep up with the latest CEA technology. Student and faculty researchers in different fields work on projects related to genetics and breeding, the reduction and recycling of waste, and microbiology and beneficial bacteria. Many of these projects are a result of the 2022 USDA Specialty Crop Block Grant Program announced by Virginia Gov. Glenn Youngkin last year, a testament to the center's impact on the commonwealth's growing interest in CEA.

Beyond research and technology, the center has amped up its Virginia Cooperative Extension efforts, Evans said. Bringing resources such as workforce training and experiential learning to local communities will help foster the growth of CEA.

Virginia Secretary of Agriculture and Forestry Matthew Lohr spoke of these advances as a keynote speaker at the summit. He called for further collaboration to support the commonwealth's desire to be "the CEA capital of the world."

"Virginia will be the center for high-tech agriculture," Lohr said. "We have made progress, and I am even more excited about what the future of farming looks like."

Scan to see more

Bringing Home The Bacon

For the first time in the Meat Center's history, a staff of all-female students lead Virginia Tech Meat Center into uncharted territory.

Meet the women of the Virginia Tech Meat Center

By Max Esterhuizen

It's 12:50 p.m. on a Friday.

A line snakes from the door of the Virginia Tech Meat Center to the far reaches of the parking lot. As each minute passes to the center's opening at 1 p.m., the line pushes that boundary to its limits. The anticipation is tangible for each person waiting in line at the Meat Center, a campus staple since 2016.

This semester, though, is the first time these doors open to a center that is staffed entirely by young women.

Working in the meat center is no small feat. Staff members hoist more than 60 pounds of carcasses, using heavy equipment originally intended for use by large people, and long, sharp blades to carve the perfect cut of meat.

"It's very powerful," said Meggie Bertucci, the assistant manager of the Meat Center and graduate student in the School of Animal Sciences. "There are stereotypes that we can't do this because we're girls. That's unequivocally false and we prove them wrong each day by having products on the shelves. We're capable and it's important to surround yourselves with people who push you."

The Mobile, Alabama, native found her way to what she called the "perfect position" in the Virginia Tech Meat Center from her time at the Auburn University Meat Lab, where she was a student lead. Her time in that meat center made Bertucci instantly know this was what she wanted to do for her career - and the position opened at Virginia Tech at the perfect moment.

"For me, this is exactly what I am supposed to be doing and I love every second of it. I am passionate about what I do here and the impact I can make on the students through teaching," Bertucci said.

One student that works closely with Bertucci and Jordan Wicks, the Meat Science Center coordinator, is Davida Rimm-Kaufman, the student lead of operations. She is often the liaison between the employees at the meat center and both Bertucci and Wicks.

"Jordan gives me instructions as to what needs to be accomplished and I'm the one that works with the employees to make sure everything is done right," said Rimm-Kaufman, who is from Charlottesville, Virginia, and a senior in the Department of Agricultural, Leadership, and Community Education. "I teach the kids small skills, such as which bag to use, how to properly label, break down equipment correctly, and use knives correctly."

At the Meat Center, Rimm-Kaufman truly loves learning and teaching. So much so that at a recruiting dinner with Tyson Foods, she was asked what her favorite part of working at the Meat Center. Her response? That she just loved to learn everything.

“A recruiter there said I could be honest and Jordan jumped in and said, ‘No, that’s truly her favorite part. She loves learning and teaching,’” Rimm-Kaufman said.

She also wants to be an inspiration for others who may be interested in this industry.

“I want to show women that you can be in a male-dominated industry and thrive,” Rimm-Kaufman said. “You’re more capable than you think you are. That’s a lesson for everyone in my lab - we’re learning every single day on an individual and group level.”

One of the other students setting history is Ashlyn Clemmer, the student lead. In this position, Clemmer helps manage the crew that works in the back of the store and helps take the product through every phase before it is sold.

“Jordan helped me find my potential and realize that I can overcome challenges I didn’t think were possible,” said Clemmer, a senior in the School of Animal Sciences. “Working at the center has instilled critical thinking skills into everyday actions.”

Clemmer, an animal and poultry sciences major who was heavily involved with FFA growing up, has had her job help her reach a better understanding of animals as she studies to become a veterinarian, intending to help large animals.

From left: Davida Rimm-Kaufman, Shelby Raber, Alexis Wivell, Jordan Wicks, Ashlyn Clemmer, and Meggie Bertucci prepare various cuts of meats to be sold at the Meat Center Storefront.

The Millbrook, Virginia, native gained a better understanding of the anatomy of different species, how animals are built, and how their muscles perform by working with animals every day.

As a member of the first all-female staff, Clemmer has played a vital role in turning the traditionally male-dominated industry on its head.

“We want this staff to give people the encouragement to get out there and do what they want - to enjoy what they do,” Clemmer said. “It doesn’t have to be the meat industry. It can be anything. It’s just important to have a passion for your work regardless of what it is.”

And the passion of the meat center’s all-female staff is available to customers at the center’s storefront, led by Shelby Smith of Stroudsburg, Virginia.

Smith makes sure that the store is stocked and ready to go when doors open to the general public on Friday afternoons, serving about 200 people - a massive increase from the 40 served when the storefront initially opened.

“We get ourselves hyped up when those doors open because it’s exciting for us and our customers who come in because they know we have great products,” said Smith, a senior in the Department of Agricultural and Applied Economics. “Knowing that we have such an impact on the Blacksburg community means so much to us. We make connections with our customers and are excited to chat and check in on them each week. They’re more than just customers to us.”

And that feeling extends beyond the customers. The entire Meat Center staff is a family.

“I’m speechless when I think about it. I never would have thought I’d be a part of a family like this,” Smith said. “We’re not only making a difference in the industry but also coming together and surrounding ourselves with people who want us to be at our best.”

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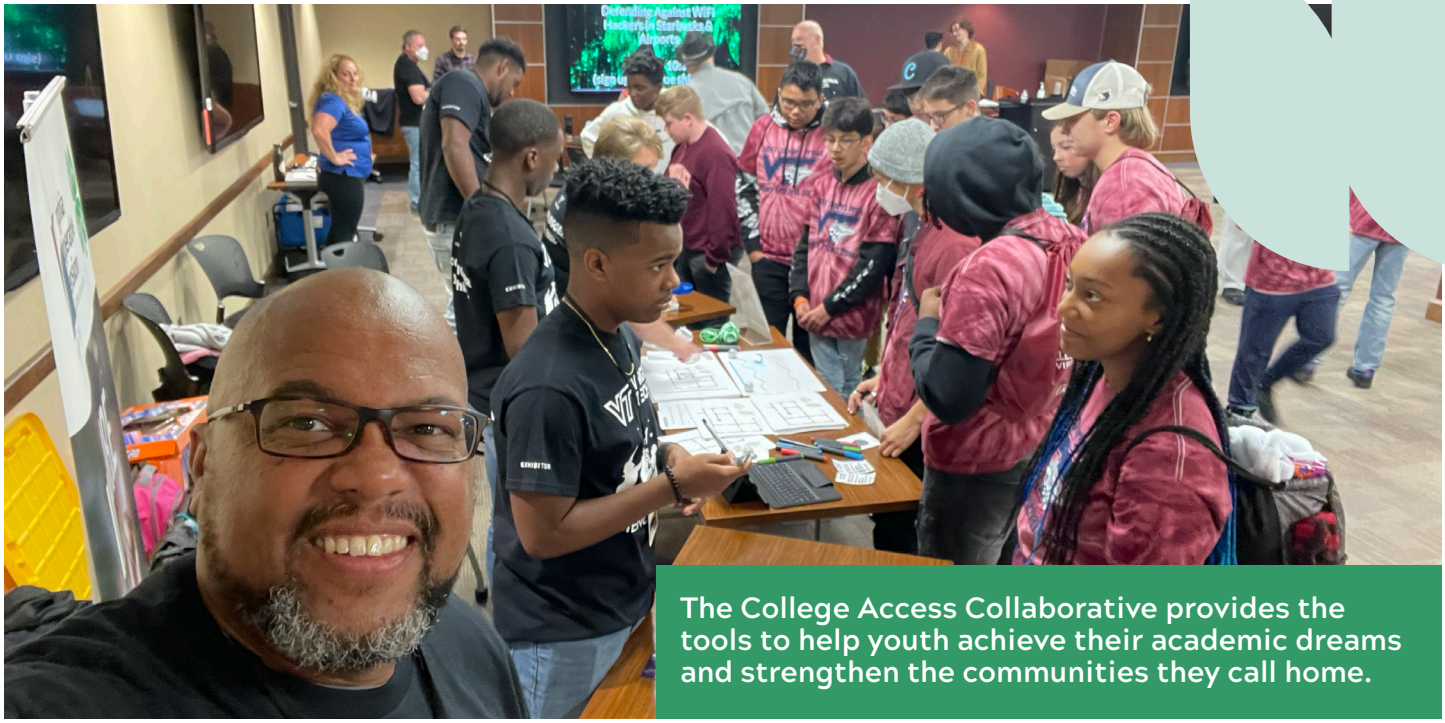

The College Access Collaborative provides the tools to help youth achieve their academic dreams and strengthen the communities they call home.

Opportunities through education

By Max Esterhuizen

During her first unofficial college visit, Dickenson County native Rachel Moore looked up and saw the sprawling, Gothic architecture that surrounded her.

As she stepped off the bus, a giant banner festooned across the architecture showcased the spirit of Blacksburg. “LET’S GO HOKIES” was draped across the famous Hokie Stone.

“I took a picture of it,” said Moore, a freshman in the College of Agriculture and Life Sciences and a longtime 4-H’er. “When I saw that sign, something clicked in my head.”

Her first experience of Virginia Tech’s Blacksburg campus was made possible by the College Access Collaborative, a program at Virginia Tech that increases academic preparation, access, and affordability for first-generation, low-income, underrepresented minorities, women, and students from rural and inner-city communities.

“Educated communities are stronger communities,” said Karen Eley Sanders, the associate vice provost for College Access. “Higher levels of education are correlated with better health, lower unemployment rates, and civic engagement. Educational attainment is a proven strategy to lift individuals and families out of poverty. Education literally pays, transforms lives, and uplifts communities.”

It’s a program that’s proven extremely valuable for 4-H and Virginia Cooperative Extension agents across the commonwealth, including Dickenson County agent Kelly Rose ’17, who has used it to organize trips to Virginia Tech. The trips are an experience youth in the rural county would not otherwise have.

“I feel very strongly about giving kids in far southwest Virginia the opportunities that their peers have in other parts of the state,” Rose said. “A lot of the time, one of the barriers is just getting the kids on campus. Many are geographically isolated and have limited means. A lot of the kids here don’t get to travel outside of the area and taking them on a trip where they can see what a college campus looks like is invaluable.”

The Science Festival, held annually on Virginia Tech’s Blacksburg campus, is one of the tools utilized by the College Access

“Educated communities are stronger communites.”

Collaborative and by Rose, which helps students have the same opportunities as others in the commonwealth.

“If they have never stepped foot on a college campus before, it’s hard for them to envision themselves at college,” Rose said.

Being geographically isolated is a challenge for the youth and agents of far southwest Virginia. For example, it takes about three hours to get to Virginia Tech’s Blacksburg campus from Dickenson County. And to Richmond? That’s at least a six-hour trip.

And that’s the purpose of the College Access Collaborative Program - to bridge those distances and remove hurdles to allow youth such as Moore the opportunity to experience a college campus.

Moore was involved with 4-H in her county for years with her father. Rose spoke with both Moore and her father and mentioned that trip to the Science Festival at Virginia Tech.

“Kelly said that we could enjoy the exhibits with our parents because they could be chaperones, walk around with you, and basically get a free tour of the campus,” Moore said. “I’m really into science, so it was a win-win. When it came time to choose a college, familiarity was a big factor for me. I had a great experience on the trip and it was a deciding factor for me.”

What helped Moore make college more affordable is a platform called RaiseMe, a program that helps high school students earn scholarships starting in ninth grade. These scholarships - called “micro-scholarships” - are earned for various achievements, from earning an “A” to community service and other extracurricular activities. With Virginia Tech as a partner institution, Moore took advantage.

Every “A” and activity added up, and Moore earned more than $9,000 toward tuition through the platform.

Volunteers Christian Millner (left) and Ty Hairston help at a College Access Collaborative event for youth.

“It financially freed me up,” she said. “Every dollar was less of a financial burden for me.”

The impact of the College Access Collaborative can be felt across the commonwealth.

Brian Hairston, a 4-H agent in Henry County, has used the opportunities provided by the College Access Collaborative for years, including attending the Science Festival. But a new tool Hairston found this year was Junior MANRRS (Minorities in Agriculture, Natural Resources and Related Sciences), an organization that helps students interested in an exciting future in science, technology, engineering, agriculture, mathematics, or related careers.

“The College Access Collaborative has been an incredible partner in our mission to provide a diverse array of resources to the youth who need it most,” Hairston said. “The program has given us the ability to transform lives and give opportunities to those who otherwise might not have had them.”

Hairston utilized Junior MANRRS and even had an intern to help develop localized programming from the ground up.

Jillie Wilkins, Hairston’s intern, developed an escape room where students had to use different clues to move to the next station and ultimately leave the room by using reading and math skills - as well as collaboration with each other.

“I thought that the escape room would be an interesting activity for students to complete and it would feel like a game instead of just work, but it would also challenge them to think,” Wilkins said.

Wilkins was involved with 4-H in her county “as long as she could remember.”

“I thought this would be a great opportunity for me to see the different students in our community and be able to work with them on different skills,” she said. “I think that I gained a deeper understanding of what students enjoy and how we really are the people they look up to and to them our opinion or advice matters.”

Wilkins used the skills she gained and harnessed her passion for young minds to become a teacher at Stanleytown Elementary, where she works with Hairston to bring 4-H programming to her classes.

Scan to see more

TURNING FOOD WASTE INTO BIODEGRADABLE BIOPLASTICS

Researchers in the college received a $2.4 million USDA grant to create affordable bioplastics and reduce plastic waste remaining both on land and in the sea.

The three-year grant will test the scalability and feasibility of the conversion of these wastes into bioplastics on a national and global scale, with the target of keeping costs for the produced bioplastics as low as possible. These bioplastics are made from biological elements such as plant or animal oils and naturally degrade in compost and waterways.

Scan to see more

under the microscope

research from around the college

Effects of ultra-processed foods

Scientists are investigating the effects of ultra-processed foods on the human body using a variety of research tools.

Researchers will use three grants received by the Department of Human Nutrition, Foods, and Exercise to study ultra-processed foods' impact on reward processing and energy intake in adolescents, vascular health, and glucose homeostasis in mid-life adults.

Assessing how salt in freshwater streams impacts aquatic ecosystems

Researchers were awarded a National Science Foundation grant to investigate how changes in headwater stream salinity from mining impacts aquatic food webs in the Appalachian Mountain region.

Sally Entrekin, associate professor in the Department of Entomology and one of the lead researchers on the project, is examining aquatic biodiversity to understand how the environmental change is affecting the natural carbon cycle. Changes to salinity could impact waterborne organisms' survival, and lead to cascading food chain failures.

Addressing methods for measuring on-farm food loss and waste

Three faculty members in the Department of Agricultural and Applied Economics received a grant from the USDA's National Institute of Food and Agriculture to fund a four-year research project on the economics of food loss and waste.

"Reducing food loss and waste may have implications on agriculture's environmental impact and on food prices," said John Bovay, an assistant professor of food and health economics. "The environmental costs are mostly generated by fertilizer, water, pesticides, and fuel to produce, market, and purchase food that eventually goes uneaten."

The specially equipped treadmill at the MARE Center is used as a tool to help researchers better understand muscle recovery in horses. · Hokie Tracks, the first ice cream of the Hokie Nation, is available at grocery stores and specialty shops across Virginia. Virginia Tech alumni and friends enjoyed the treat as the cheer on the women's basketball team in the Final Four! · Take flight! Attendees at the 2022 Virginia Ag Expo get an inside look at how drones are used in agriculture.

Oh, the things we've explored.

Bees? James Wilson offers an in-depth explanation on honeybees. · Julia Basso and Rachel Rugh test their electroencephalography caps before starting a research project that studies how dance can affect those with autism spectrum disorder.

CALSAO highlights

CONNECT ▪ ENGAGE ▪ SERVE

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Alumni represented the college at Capital Pride Parade and Equality VA dinner

CALSAO and Students for Cultivating Change at Virginia Tech partnered with the College of Liberal Arts and Human Sciences Alumni Advisory Board and Ex Lapide to host a booth at the Capital Pride Festival in Washington, D.C. in June 2022.

Students for Cultivating Change at Virginia Tech sponsored one of three Virginia Tech tables at the Equality Virginia's 19th Annual Commonwealth Dinner in Richmond in August 2022.

Get involved on a CALS Alumni Organization committee

Our programs offer a number of ways for alumni to engage with students, faculty, and fellow alumni both on and off campus, in-person and virtually. We're looking for a variety of individual talents and a wide range of time commitments. Complete our volunteer survey at https://www.cals.vt.edu/alumni/serve.html

Celebration of Ut Prosim

Learn more about the award recipients above

Alumni elected to CALS Alumni Organization Board for 2022-2025

Directors:

Adam Anderson, '14 A.AG. Agricultural Technology, '16 B.S Agricultural Sciences

Katherine Carter, '90 B.S. Animal and Poultry Sciences, '17, M.S. Agricultural and Life Sciences

Will Fiske, '12 A.AG. Agricultural Technology, '14 B.S. Animal and Poultry Sciences

Jessica Jones, '04 B.S. Secondary Education, Agriculture, B.A., Interdisciplinary Studies

Hunter Spiers, '17 B.S. Agricultural and Applied Economics

Ahn Tran, '06 B.S. Biochemistry

Graduate Student Representative:

Elizabeth 'Bodie' Fletcher, '18 B.S. Crop and Soil Environmental Sciences

If you have an interest or would like to nominate fellow alumni to serve on the CALSAO Board of Directors, please reach out to calsadvancement@vt.edu.

Alumni and stakeholders appointed to CALS Dean's Advisory Council

John Newby, Virginia Bio

Dennis Pearson, '83 Animal and Poultry Sciences, Soldiers' Hill Angus Farm

Keith Phillips, '76 Animal and Poultry Sciences, First Bank and Trust Company

Cliff Williamson, '08 Animal and Poultry Sciences, Virginia Agribusiness Council

Hunter Hilbert, '21 Agricultural Sciences, Virginia Tech Career and Professional Development

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Join our Virginia 4-H Alumni and Friends Network

We are forming the Virginia 4-H Alumni and Friends network. Stay connected about upcoming 4-H Alumni and Friends events, statewide 4-H programming efforts, volunteer opportunities and much more. Sign up to receive information from Virginia 4-H.

Emerald Clover Award

John G. Rocovich, Jr. '66, the distinguished Virginia Tech alumnus and former rector of Virginia Tech's Board of Visitors, was honored with Virginia 4-H's Emerald Clover Award for his longtime work with Virginia 4-H at the recent An Evening with Virginia 4-H ceremony celebration.

Friend of 4-H Award

In recognition of the Pearson family's many contributions to Virginia 4-H, Bernice and her son, J. '87, and Renae '90, were presented with the Friend of 4-H award at the recent An Evening with Virginia 4-H event, which recognizes a citizen or organization for outstanding contributions to Virginia 4-H.

Engage with Virginia Cooperative Extension and Virginia 4-H. Join us for virtual programs, volunteer opportunities, events, and much more!

cals.vt.edu/vce-engage

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The college is focused on providing hands-on, experiential learning opportunities to students of all the college's majors through the Bridge Experience Program.

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