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X.J. Meng studies multiple life-altering viruses, like hepatitis E and coronaviruses. Meng is the founding director of Virginia Tech's new Center for Emerging, Zoonotic, and Arthropod-borne Pathogens, which will train the next generation of infectious disease scientists.

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MOLECULAR
VIROLOGIST

VIRGINIA TECH

SUMMER 2021

magazine

Water Matters

A stream of information about how Virginia Tech is working to protect and preserve an essential resource

CONTENTS



STUDY SPACE

In the spring, Bob Pillow, assistant director for user services for the University Libraries, and Enric Ruiz-Geli, professor of practice in the School of Architecture + Design, teamed up to create collaborative study spaces in Newman Library that would adhere to the physical distancing restrictions in place due to the COVID-19 pandemic.

"This was an opportunity for our students to take an active role in overcoming challenges in the pandemic," Ruiz-Geli said. "We want to show students that it is possible to be active, to search for solutions, and to be an architect activist. The students looked at air circulation, social distancing structure, and how they could reduce risk by changing spaces and the working environment."

Eight students in the College of Architecture and Urban Studies Living-Learning Lab took active roles in the experiential learning project, which included budget and project management, scheduling, concepting, milestone development, and final construction. Architecture student Chiravi Patel (pictured) helped install plexiglass dividers designed by the project team.

Learn more at vtx.vt.edu/articles/2021/04/univlib-caus-study-tables.

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The COVID-19 pandemic triggered changes to the workplace. Employers and employees are adapting to a new normal that includes increased opportunities for remote and hybrid work as well as changes in job recruitment methods and team interactions.

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As the population around the globe continues to grow and the effects of climate change become more far-reaching, water stress is a growing concern. Across Virginia Tech's campuses, leaders and scientists are developing strategies to protect and preserve this valuable resource.

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CREAM OF THE CROP: Strawberries are among the plants growing as part of a partnership that includes the Institute for Advanced Learning and Research, the Virginia Tech School of Plant and Environmental Sciences, and the Virginia Seafood Agricultural Research and Extension Center. The Controlled Environment Agriculture Innovation Center in Danville, Virginia, will leverage technology and research to accelerate advancements, economic development, and regional participation in the industry of indoor farming.





SCHOOL OF THOUGHT: During the June 7 opening session of the Virginia Tech Board of Visitors, President Tim Sands focuses on the information at hand.

PRESIDENT'S MESSAGE

TOGETHER AGAIN

Soon, Virginia Tech will launch a new academic semester.

Throughout the summer, we've been moving toward more in-person learning and experiences based on the commonwealth's guidelines and careful monitoring of COVID-19 in our communities. Vaccinations are the key, and a high level of vaccine-based immunity is an essential part of our ability to return to full-capacity, in-person operations.

In June, we debuted an online vaccine dashboard that provides up-to-date information about vaccination rates at our campus communities. You can visit ready.vt.edu to see our latest COVID-19 information.

In August, as students return to Blacksburg, Roanoke, and the greater Washington, D.C., area, our campuses will once again hum with activity. Together, we will kick off an exciting new semester and begin an 18-month sesquicentennial celebration that will reflect on the successes of the past 150 years and look forward to our future.

I can't wait to see Hokies fill the Drillfield and the rest of our beautiful campuses and shake Lane Stadium again as we jump to "Enter Sandman." Virginia Tech Athletics is coming back strong, launching the \$400 million Reach for Excellence campaign with a vision to be a championship contender in all sports.

Our world-class faculty members are gearing up for the return to in-person instruction, continuing their efforts to inspire the

leaders of the future to solve 21st-century problems, ranging from access to clean water, to pediatric cancer, to supply chain resiliency.

There is much to look forward to as we continue developing exciting new spaces for learning, research, and engagement, including the new Innovation Campus, which recently received the largest corporate commitment in the history of the university. Dave Calhoun '79, president and CEO of the Boeing Co., announced the corporation's historic commitment during an online event in May.

The experiences of the past year were unprecedented, impacting the way students learn and interact, the way professors connect with their students, the way employees work, and the way our campuses and communities work together across the commonwealth.

The strength of Hokie Nation allowed us to persevere. Your support and dedication made it possible for us to continue advancing our land-grant mission when the community, the commonwealth, and the nation needed us most.

Take pride in what you've accomplished, take care of yourselves, and enjoy the remaining few weeks of summer.

Be committed. Be well. Thank you, Hokies! ■

Tim Sands is Virginia Tech's 16th president.

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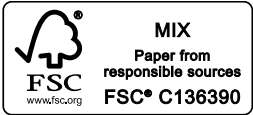
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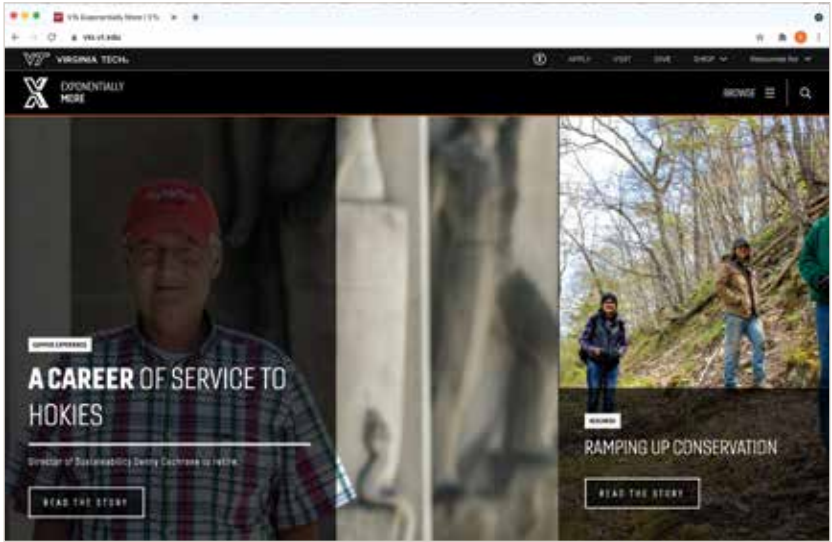
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SOMETHING TO SAY?
Send us a message at vtmag@vt.edu.

LETTERS

FROM THE EDITOR



EXPONENTIALLY MORE

In May, Virginia Tech launched an immersive digital storytelling experience: VTx, a website that highlights Virginia Tech News and stories, videos, and more.

VTx replaced the existing sites for VT News and video.vt.edu, weaving together all of the content—such as campus news, features, notices, and videos—that readers are accustomed to seeing.

I am excited to announce that beginning with the summer 2021 edition, VTx will also feature all Virginia Tech Magazine content.

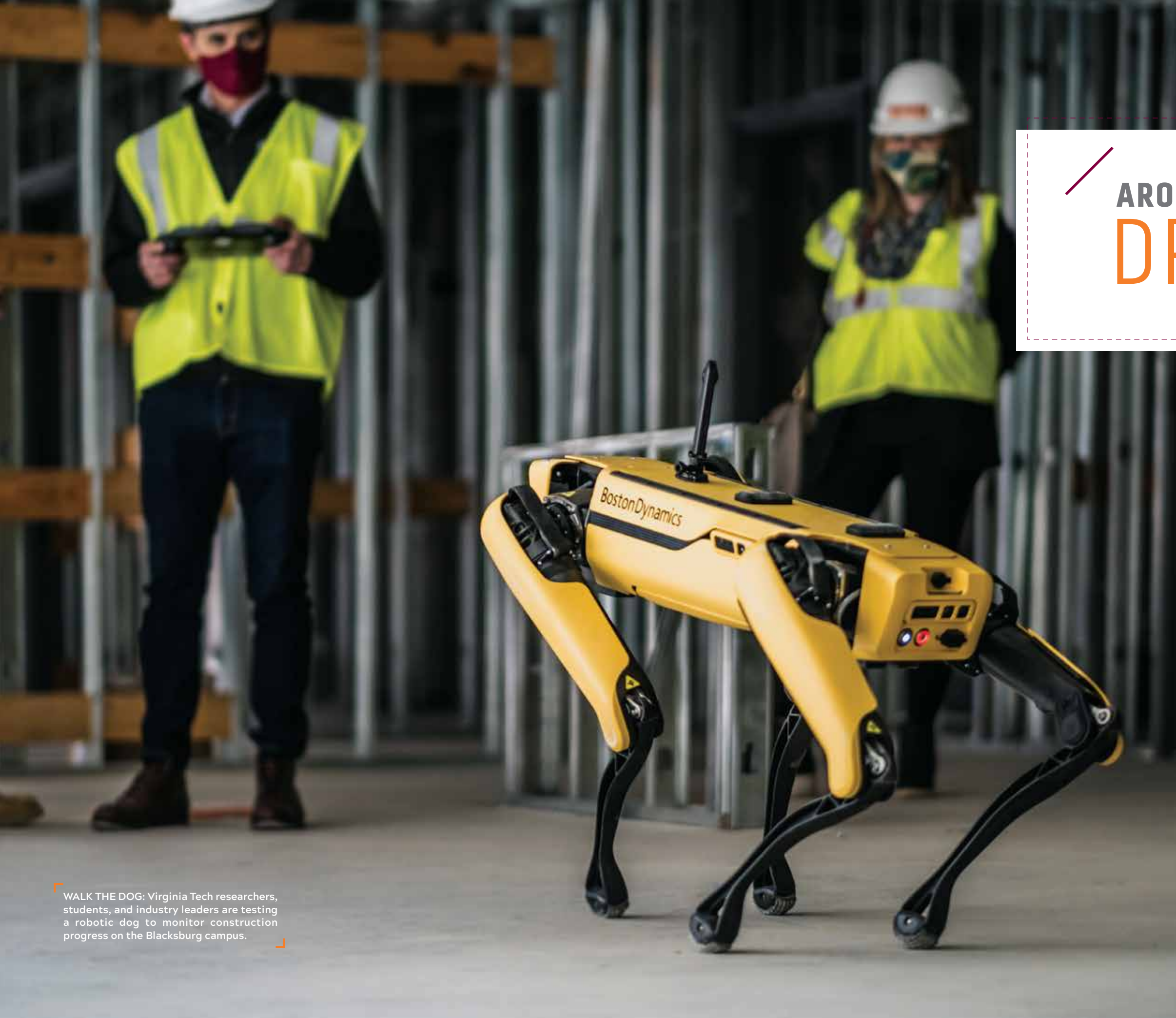
"VTx is the starting point to learn about the priorities that matter most to Virginia Tech," said Tracy Vosburgh, senior associate vice president for university relations. "The site is at the intersection of all types of content, so viewers will be able to find exponentially more than they had first expected—hence the 'x' in VTx."

The development of VTx was based on extensive surveying and audience testing. Going forward, the University Relations team will continue adjusting the site based on user behavior and needs.

WHAT DO YOU THINK?

To find all of your favorite magazine departments, Class Notes, and in-depth feature stories, as well as extra related content online, visit vtx.vt.edu/magazine.

Email us at vtmag@vt.edu to let us know what you think about the new site and to share your updates for Class Notes and ideas for stories you're interested in reading online or in future print editions.



WALK THE DOG: Virginia Tech researchers, students, and industry leaders are testing a robotic dog to monitor construction progress on the Blacksburg campus.

AROUND THE DRILLFIELD

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NEWS

MEET SPOT, THE ROBOTIC DOG

VIRGINIA TECH RESEARCHERS ARE UNLEASHING AN AUTONOMOUS robot dog on university construction sites to investigate how such machines might monitor construction progress.

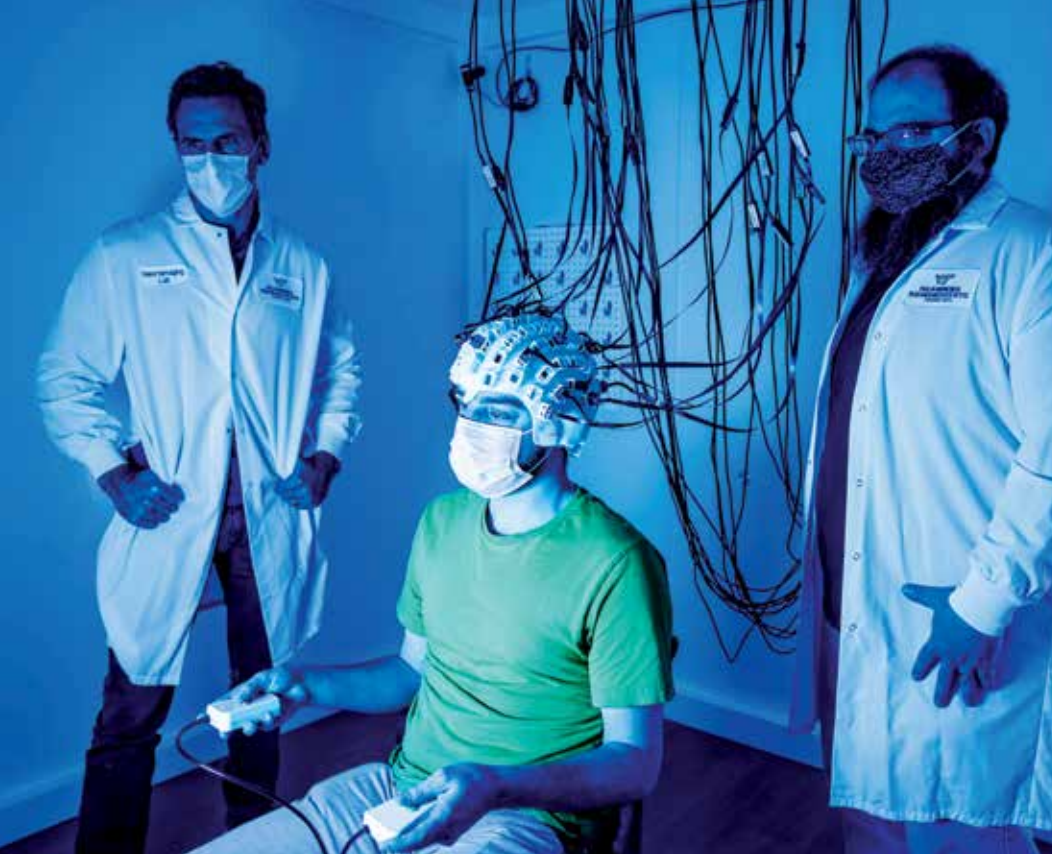
Faculty and students from the Myers-Lawson School of Construction are partnering with the Division of Campus Planning, Infrastructure, and Facilities and industry sponsor Procon Consulting to deploy Spot, a mobile robot dog developed by Boston Dynamics.

The ongoing experimental investigation explores whether construction progress monitoring—a traditionally human-dependent, labor-intensive, and error-prone process—can be improved by using autonomous robotic technology to lead the collection of data on a construction site.

“Introducing robotic technologies on construction sites can offer many exciting opportunities,” said Kereshmeh Afsari, assistant professor in the Myers-Lawson School of Construction and the project’s principal investigator. “The ability to monitor construction progress remotely through autonomous means is a prime example. Other opportunities are improving the accuracy of data collection, accessing hard-to-reach or hazardous job sites, and diverting human capital capacity to other tasks.”

Three capital construction sites on the Blacksburg campus are serving as the study’s backdrop: the Creativity and Innovation District Living-Learning Community, Holden Hall, and the Student-Athlete Performance Center. ■

SARAH MYERS



YOUR BRAIN IN MOTION: Read Montague (left), professor and director of the Fralin Biomedical Research Institute at VTC Center for Human Neuroscience Research, and Stephen LaConte (right), associate professor at the institute, work with research assistant Chris Huck to demonstrate the new optically pumped magnetometry technology.

VIRGINIA TECH LAUNCHES ‘NEXT GENERATION’ HUMAN BRAIN IMAGING LAB

AS YOU READ THIS, YOUR BRAIN’S cells are generating electrical currents that emit small magnetic fields. Now, Virginia Tech scientists can measure them using a new brain imaging technique called optically pumped magnetometry.

Researchers at the Fralin Biomedical Research Institute at VTC received a \$2.4 million grant from the National Institute of Biomedical Imaging and Bioengineering, part of the National Institutes of Health, to measure the brain’s subtle magnetic signals in two research volunteers simultaneously during face-to-face social interactions, capturing the rich complexity of the brain’s signaling in real-time.

Optically pumped magnetometry devices are wearable, lightweight headsets that measure brain activity while research volunteers move around, interact, and sit upright. The device, which looks like a hat with wires

connected to it, uses quantum sensor chips to measure the strength and originating location of magnetic fields produced by the human brain.

Unlike noisy, cramped MRIs, which require participants to lie down and stay still, the new headset allows for movement. This opens up new doors to study babies and children while they’re awake and in motion, as well as research volunteers who have movement disorders.

“We’re giddy to get people outside of magnets and into a setting where we can study social interactions, humans of all ages and sizes, and people in motion with fewer environmental limitations,” said Read Montague, principal investigator on the grant and director of the Center for Human Neuroscience Research at the Fralin Biomedical Research Institute. ■

PROFESSOR LANDS FELLOWSHIP, MONTH-LONG RESIDENCY AT FAMED POET’S HOME



THE NEW ENGLAND BREEZE WAFTS through the open windows. Maybe it is mid-summer or early fall 2021. In this imagining, Carmen Giménez Smith’s laptop is open, and she feels residual energy from the poets who have come before her, inspiring new poems.

Yet this is more than a daydream; it’s a perk from her most recent literary honor, an Academy of American Poets Fellowship. Not only does the fellowship come with a \$25,000 stipend, but it also includes a month-long residency at the summer home of renowned poet T.S. Eliot.

Giménez Smith, a professor in the Virginia Tech Department of English and director of the Master of Fine Arts in creative writing program, received the fellowship for her newest poetry book, “Be Recorder.” The Academy of American Poets provides support for American poets at all stages of their careers and encourages an appreciation of contemporary poetry. Giménez Smith joins the ranks of other academy fellows, who include Robert Frost, Gwendolyn Brooks, and Tracy K. Smith. ■

RESEARCHERS IDENTIFY A MISSING PIECE OF THE LYME DISEASE PUZZLE

VIRGINIA TECH ASSISTANT PROFESSOR Brandon Jutras and his lab have identified a missing piece to the puzzle of Lyme disease by showing how the bacterium *Borrelia burgdorferi* can cause inflammation and disease.

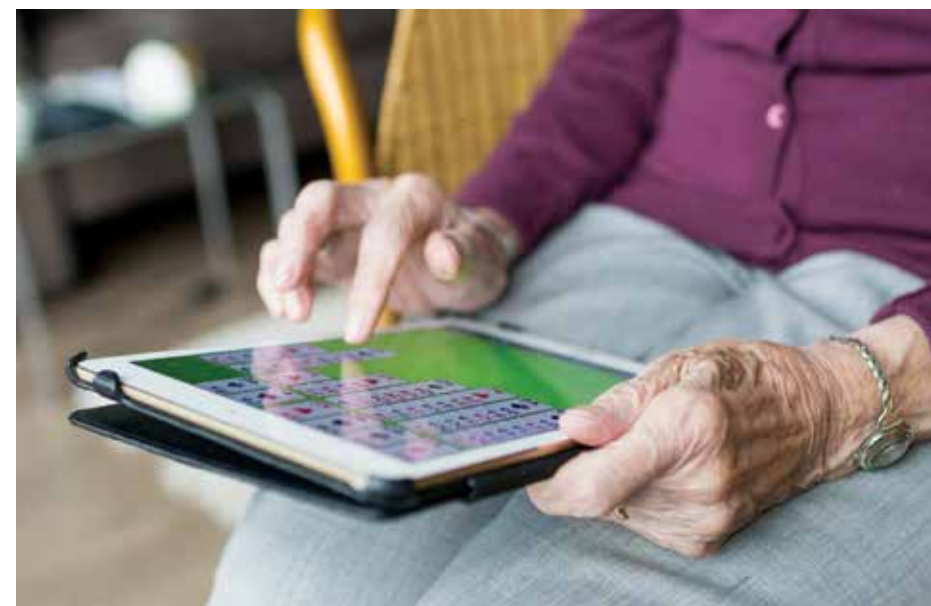
Jutras’ lab discovered a protein associated with peptidoglycan, the mesh-like bag that protects the inside of cells, and plays an amplifying role in causing inflammation in Lyme arthritis patients. The protein, called NapA, acts as a molecular beacon that antagonizes the patients’ immune system.

The lab’s findings were published in PLOS Pathogens, a peer-reviewed open-access medical journal.

With this new piece to the puzzle, Jutras plans to add to his lab’s current efforts to improve the diagnostic testing and treatment of Lyme disease.

“From a prevention and diagnostic perspective, it’s possible that the combination of peptidoglycan and NapA could be a novel target for diagnostics,” Jutras said. “It could, in theory, be a possible avenue of vaccine development as well.” ■

ALEX CROOKSHANKS, COURTESY OF PIXY.ORG



BUDDY SYSTEM: Students who are COVID Companions provide older adults with conversation and technology in an effort to curb feelings of isolation.

STUDENTS SERVE AS COVID COMPANIONS FOR COMMUNITY

KIRIN ANAND PLACES AN AMAZON Fire high-definition tablet on the front steps of a house and rings the doorbell. Then he walks back to his car and makes a phone call. His COVID Companion answers and, after a brief conversation, she opens the door to retrieve the new tablet from her doorstep.

The companion looks out at her street and waves at Anand, a biological systems engineering major at Virginia Tech. Half an hour later, he will call his companion again. Together they will navigate how the device connects to Wi-Fi; how applications, such as Zoom and FaceTime, work; and how to use the web browsers. Amid the technical discussion, they will talk of grandchildren, new recipes, and the COVID-19 vaccination.

COVID Companions is a new partnership among Virginia Tech’s Public Health Program and Center for Gerontology, the

Virginia Tech Corps of Cadets, the New River Valley Public Health Task Force, the Blacksburg Police Department, and the Montgomery County Health Department. This buddy program connects older adults with a friend within the New River Valley community and includes weekly phone calls, video calls, pen pal correspondence, and technology assistance to help aid connectedness.

The initiative is the brainchild of Emily Hoyt and Laura York, both graduate students in public health and a certificate program from the Center for Gerontology.

“We know many older adults are isolated, but the pandemic is shedding more light onto their needs,” Hoyt said, adding that her hope is for COVID Companions to remain a viable program that shifts as the pandemic recedes, because the need for more resources for older adults in rural areas remains high. ■

CLAYTON METZ, COURTESY OF CARMEN GIMÉNEZ SMITH





A CLEAR PURPOSE: Jaclyn Abramson, a Master of Public Health student, models a TransparenSee mask.

TEAM CRAFTS CLEAR MASKS TO IMPROVE COVID-19 COMMUNICATION

THROUGHOUT THE CORONAVIRUS pandemic, face masks have proven to be effective barriers to hinder the transmission of COVID-19. But for people who rely on facial expressions and lip-reading to communicate, masks can be barriers to understanding.

A group of four students in Virginia Tech's Master of Public Health (MPH) program decided to design a solution. Along with a graduate engineering student, the group produced a clear, fog-resistant face mask to allow for better communication with the deaf and hard of hearing community. They call themselves TransparenSee.

The team entered the TECH Together Campaign, a campuswide monetary prize competition that called upon Virginia Tech students' creativity and innovation

to fight coronavirus. TransparenSee was among the winners. They used the \$4,000 in prize money in the fall and winter of 2020 to fund experimentation and testing of the masks at nearby NanoSafe Inc.

Once the final design was approved, the team went into full-scale production, as well as marketing and packaging supplies so that they could make the mask available for free to anyone who wanted one. TransparenSee has overseen the design, manufacture, and distribution of more than 1,400 masks to schools and families as far away as Wisconsin.

"We wanted to use this project more as a community service rather than a business model," said Hannah Reed, one of the TransparenSee students. ■

SOIL JUDGING STUDENTS EXPLORE GROWING CROPS ON THE MOON

COULD RADISHES GROW ON THE moon? Some Virginia Tech students decided to find out.

This spring, the School of Plant and Environmental Sciences Soil Judging Team entered a NASA global competition to try their hands at growing vegetables in lunar soil simulant. After 10 weeks of work, the team submitted its report as part of the Plant the Moon challenge.

The team's big challenge was determining how to make the fine lunar soil work for growing plants, especially in greenhouse pots. They decided to mix it with treated human waste, a biosolid that could be readily available on a lunar surface. They also used powdered vinegar to facilitate vegetable growth because it lowers the pH of the soil.

The team chose radishes because they didn't know how the mixture's compaction properties would work and because people can eat the roots and the vegetation.

"Agriculture on other planets can help us to grow here on Earth because we face some of the same issues," said Jaclyn Fiola, a horticulture Ph.D. candidate and team coach. "High pH and low nutrient soil are something we face more and more often. We need to come up with innovative solutions to these challenges." ■



COURTESY OF TRANSPARENSEE, RY

MANAGING A FOREST: STUDENTS DESIGN PLANS FOR TREES

IMAGINE AN ACRE OF FOREST. NOW expand that one acre to 80 acres and imagine trying to document all of it and then formulating a strategy for managing it.

That work—developing a forest management plan—is the task assigned to teams of seniors enrolled in the Integrated Forest Management Practicum, a capstone course for forestry majors in the College of Natural Resources and Environment.

"What this class is doing is taking all of our classes and bringing them together in one project," said Leah Wood '21, then a senior pursuing dual degrees in forestry and wildlife conservation. "It's a challenge, but we've already done inventory and plotting and other forestry work in labs, which has made the transition to taking on a big project easier."

With COVID-19 restrictions making group travel difficult, students have stayed closer to campus than normal, with teams working on private land in Blacksburg and on land owned by the New River Resource Authority in Floyd County.

Each team has different landowner objectives to consider, from creating an outdoor education and recreation area, to determining how to produce and maintain marketable timber, to enhancing wildlife habitat. The task of working directly with a landowner to put knowledge into action is a crucial experience for aspiring foresters. ■

COURTESY OF THE UNIVERSITY OF MOSUL



SPELL CHECK: Virginia Tech launches an English language training center in Iraq as students return to the University of Mosul.

VIRGINIA TECH PROVIDES ENGLISH LANGUAGE TRAINING FOR IRAQI UNIVERSITY

THE LIBRARY AT THE UNIVERSITY OF Mosul was once among the finest in Western Asia, housing more than a million books, maps, and rare historical materials. But in 2014, when Islamic State forces captured the Iraqi city, the grand library and about 80 percent of the sprawling, tree-lined campus were destroyed. Many faculty members were slaughtered or forced to flee.

Today, more than three years after the militant group was finally ousted from Mosul, students are returning, the library and other buildings are being rebuilt, and faculty members are re-establishing links with the international community.

The Virginia Tech Language and Culture Institute is contributing to that staggering task by helping launch an English language center at the University of Mosul. The institute is providing virtual train-

ing in English language instruction and assessment and relevant administrative procedures to faculty members in Iraq.

"The goal is for our Iraqi colleagues to learn what they need to be able to open and operate a center that will serve their university community," Director Donald Back said. "We also hope to build lasting relationships with faculty members there, especially around academic publishing."

The English language center will be the first of its type in Iraq, said Wafa Al-Daily, associate director for global initiatives at the Language and Culture Institute, part of Outreach and International Affairs at Virginia Tech.

"Through this project, Virginia Tech will be one of the first universities outside Iraq to really leave its footprint in the rebuilding of the University of Mosul," Al-Daily said. ■



HEALTH CHAMPION: Dakota Buhrman received a 2021 Excellence in Public Health Award recognizing her efforts to help remove health barriers for refugee and immigrant communities.

MEDICAL STUDENT RECEIVES NATIONAL PUBLIC HEALTH AWARD

DAKOTA BUHRMAN, A FOURTH-YEAR medical student at the Virginia Tech Carilion School of Medicine, received the prestigious 2021 Excellence in Public Health Award, a national award from the U.S. Public Health Service Physician Professional Advisory Committee that recognizes medical students who are public health champions addressing public health concerns in their community.

Buhrman has focused her efforts on health disparities, particularly for refugees and immigrants. She volunteers with the Roanoke Refugee Partnership and is a co-founder of the Refugee and Immigrant Medicine Association at the medical school. She is also a member of Asylum Seeker Support Group Roanoke, formed to distribute resources equitably to families

seeking asylum. Her main role is to help families access medical and dental care.

Buhrman said she felt even more driven to the cause after meeting an 8-year-old pediatric patient during an international clinic night at Bradley Free Clinic. His family had taken asylum in the United States from Honduras, and he was complaining of knee pain.

“I was trying to figure out what could cause this when he told me he had walked here all the way from Honduras. I will never forget this,” Buhrman said. “There are so many stories like that. They have gone through so much, finally think they’re safe, and it’s going to be an easier life. That’s often not the case. For me, once I was meeting these patients, I can’t not help them now.” ■

CENTER SIPs A SWEET MOUNTAIN STAPLE

FOR GENERATIONS, FARMERS IN the mountains of Appalachia have harvested sorghum and then slowly cooked it down into a sweet amber syrup, perfect for mixing with butter and slathering on hot biscuits.

Once a staple of every Southern kitchen, sorghum is now harder to find, losing space on store shelves to much cheaper refined sugar or molasses. But hands-on testing at the Virginia Tech Catawba Sustainability Center is showing that sorghum production could help small-scale farmers expand and diversify their farms.

Manager Adam Taylor planted a half-acre plot of sorghum at the 377-acre farm property in Roanoke County to study whether the labor required to grow, harvest, and process it could be profitable for local farmers.

“We are trying to find crops that would benefit farms in the region. Our half an acre of sorghum plants yielded about 5 gallons of syrup, which then sells for up to \$18 per quart,” Taylor said. “Sorghum doesn’t need a lot of land or much maintenance. Once value is added by processing it into the syrup, it can actually be fairly profitable.”

The center plans to plant more sorghum and keep perfecting its process. That knowledge will then be shared with local farmers. ■



RYAN ANDERSON, EMILY MAHER



CARING CULTURE: Three 2021 graduates, Prem Sai Sarvisetty, Siddhant Kekal, and Chinmayee Schandra, celebrate commencement and the end of the spring semester at a Cranwell International Center event.

RECORD-SETTING GENEROSITY BENEFITS VIRGINIA TECH

THE CRANWELL FAMILY HAS SPENT decades supporting Virginia Tech’s diverse and vibrant international student population, and their legacy continues with transformative generosity totaling \$7 million to benefit the Cranwell International Center. This represents the largest gift in the history of Student Affairs.

The family’s record-setting generosity developed from Bill Cranwell’s desire to contribute to the university’s Boundless Impact Campaign in support of international students. After Bill ’57 and his wife, Ellen, made a record commitment, they encouraged their family members to give. Cranwell’s brother, Bob ’60, and sister-in-law, Susie, joined in with a significant gift of their own.

The Cranwells’ philanthropy positions the center that bears their name to expand the breadth of its institutional impact through initiatives that support international students and advance intercultural competence in all students. Currently, the center supports more than 4,000 undergraduate and graduate

students from over 100 countries.

“Our family wants international students to know how valued they are by the entire Hokie community,” Bill Cranwell said. “Their contributions to Virginia Tech help make our university and the Southwest Virginia region the special place that it is. These gifts represent our family’s promise to international students that the university is committed to building a welcoming community where they can thrive.”

The family’s support began when, as a student, Bill Cranwell learned of the tragic death of an international student during winter break. Greatly affected, he considered how all Hokies could help create a campus environment for international students that felt like a second home. This began a lifelong dedication to Virginia Tech’s international students.

“The Cranwell family has been instrumental in shaping the Hokie community’s core message to international students: You are welcome here and you belong here,” said Frank Shushok Jr., vice president for student affairs.

The gifts already have enhanced current initiatives, including pre-departure programs, intercultural trainings, and the Mozaiko Living-Learning Community. Additionally, one gift will endow a full scholarship for as many as five years of study, to benefit one undergraduate international student at a time.

“These gifts will allow us to accelerate the advancement of a holistic model for international student success that is rooted in our vision of building lifelong relationships with students,” said David Clubb, director of Cranwell International Center.

As the center’s team looks to the future and the global impact that these gifts will make, they know it will be the Cranwell family’s generosity that made it possible.

“The center’s support makes it feel like someone at Virginia Tech cares about us,” said Jianuo Huang ’20, a master’s degree student in mechanical engineering who has been involved with the center since he was an undergraduate. “The team spends a lot of effort making Virginia Tech a second home for all international students.” ■

J. SCOTT PARKER

VETERINARIANS AND ENGINEERS TEAM UP TO TREAT OSTEOSARCOMA

A DYNAMIC COLLABORATION

between researchers in the new Animal Cancer Care and Research Center and the Department of Biomedical Engineering and Mechanics has attracted substantial funding for a unique approach to treating osteosarcoma, a notoriously painful and aggressive bone cancer that primarily afflicts large-breed dogs, children, and adolescents.

The team is working to refine a type of ultrasound technology, histotripsy, for the treatment of various canine cancers. Treatment for osteosarcoma typically requires amputation of the affected limb and chemotherapy.

Histotripsy uses ultrasound beams to non-invasively create cavitation bubble clouds, mechanically breaking down cells inside a defined area. When the ultrasound technology breaks apart the tumor cells, they release proteins, and the body's immune system begins to recognize them as invaders. A strong enough immune response could even begin to recognize and attack metastatic growths or regrowth of the same tumor.

"Even though this is what I do every day, I still think it sounds like sci-fi to be able to destroy tumors without making any incisions," said Eli Vlasisavljevich, a biomedical engineer and assistant professor in the College of Engineering. ■



ANDREW MANN

NEWS REEL

VIRGINIA TECH VIDEOGRAPHERS HAVE BEEN HARD AT WORK CAPTURING THE UNIVERSITY'S NEWS AND EVENTS. CHECK OUT THIS SAMPLING AND MANY OTHERS AT [VTX.VT.EDU/VIDEOS](https://vtx.vt.edu/videos).



SPRING COMMENCEMENT

Graduates walked across the stage as their names were called during 16 in-person ceremonies held at Lane Stadium May 10-16.



HELPING HORSES

Volunteers help to care for the university's horses through the Equine Volunteer Program.



BREWING LESSONS

Students in the applied malting and brewing class receive an all-encompassing look at beer brewing during this hands-on class.



TUNNELING WIND

The College of Engineering's Stability Wind Tunnel has served as a teaching and research facility for decades, bringing state-of-the-art capabilities to undergraduate students.

“WE ARE DEEPLY GRATEFUL FOR THE REMARKABLE SUPPORT WE HAVE RECEIVED FROM HOKIES EVERYWHERE. THEIR GENEROSITY AND ENGAGEMENT INSPIRE US AS WE SEEK TO ADVANCE AS A LEADER IN HIGHER EDUCATION AND HAVE A POSITIVE IMPACT ON COMMUNITIES IN VIRGINIA AND AROUND THE GLOBE.”

Tim Sands
Virginia Tech president

EXTRAORDINARY ENGAGEMENT AND GENEROSITY

DURING 2020-2021, HOKIE NATION STEPPED FORWARD IN A BIG WAY IN SUPPORT OF THE UNIVERSITY, MAKING A TREMENDOUS IMPACT THAT WILL FUEL ACCOMPLISHMENTS FOR YEARS TO COME.

45,913 alumni engaged through events, philanthropy, and volunteering.

20% undergraduate alumni giving participation.

77 new scholarships created.

8,975 student donors.

24,554 participants across 385 online events put on by the Advancement Division.

50 states and **29** countries are home to alumni who gave.

12,397 Giving Day participants.

17,894 first-time donors.

give.vt.edu

\$200.3 million in new gifts and commitments—THE MOST EVER!

57,742 donors in all!

RECORD GIFT HELPING NEW CAMPUS

TAKE FLIGHT

BOEING COMMITS \$50
MILLION TO INNOVATION
CAMPUS TO BECOME
FIRST FOUNDATIONAL
PARTNER

ILLUSTRATION BY VIVEK DURGAM

TRANSFORMATIVE INVESTMENT WILL help diversify the technology industry and bolster the Washington, D.C., region as a global innovation hub. Boeing has made that kind of investment and as a result has been named as the first foundational partner of the Virginia Tech Innovation Campus in Alexandria, Virginia.

A \$50 million, multiyear commitment from the company will help jump-start Virginia Tech's effort to create the most diverse graduate technology campus in the United States. Boeing's commitment will provide student scholarships, foster the recruitment of world-class faculty and researchers, and fund STEM pathway programs for underserved K-12 students looking to pursue a college degree and enter high-tech career sectors.

"We are extremely grateful to Boeing for this extraordinarily generous show of support," Virginia Tech President Tim Sands said. "This is a milestone moment in our university's history, and it will propel our work to help establish the greater Washington, D.C., area as the world's next major tech hub."

Boeing's investment in the Innovation Campus, which equals the largest gift ever made to the university, builds on a relationship between Boeing and Virginia Tech that spans more than 70 years.

"Virginia Tech has a bold and unique vision to unlock the power of diversity to solve the world's most pressing problems through technology, and we are proud

to help make that vision a reality," said Boeing President and CEO David Calhoun, a Virginia Tech alumnus. "Boeing is dedicated to advancing equity and inclusion, both within our company and in our communities, and we look forward to partnering with Virginia Tech to build a robust and diverse STEM talent pipeline to drive the future of aerospace."

Sen. Mark Warner (D-Va.) said Boeing's support is great news, not only for Virginia Tech but also for the entire country.

"The U.S. must maintain international leadership in advancing technology, and talent is our most critical resource," Warner said. "It's exciting to see a world-class company like Boeing invest in a program that will help bolster the depth of our nation's tech talent and drive economic growth in the Washington, D.C., region."

Nationally, computer science and information technology fields were projected to add 531,200 jobs from 2019 to 2029, according to the U.S. Bureau of Labor Statistics. To help meet this demand, the Commonwealth of Virginia has committed to creating 31,000 new computer science and computer engineering graduates over 20 years through its Tech Talent Investment Program agreements with 11 universities.

The Virginia Tech Innovation Campus, which will anchor a 65-acre innovation district in Alexandria, is a major component of Virginia Tech's commitment to that program.



Lance Collins

“We launched this campus with an ambitious vision to diversify the talent in high-tech fields. It takes partners like Boeing to help us achieve such big goals.”

Lance Collins
vice president and executive director of the Virginia Tech Innovation Campus

Lance Collins, vice president and executive director of the Virginia Tech Innovation Campus, aims to develop the most diverse graduate technology program in the country.

“We launched this campus with an ambitious vision to diversify the talent in high-tech fields,” Collins said. “It takes partners like Boeing to help us achieve such big goals. This gift allows us to begin initiatives now that would otherwise take years to start. We are honored to receive this record gift, and we look forward to delivering on what it has empowered us to do.”

Along with supporting the creation of a dynamic new physical campus located in Alexandria—a nexus of government, industry, and research—Boeing’s investment will go toward scholarships, fellowships, and a variety of academic programs.

New financial aid for students made possible by Boeing will include:

- Full scholarships to attract, retain, and propel a diverse cohort of master’s degree students.
- Additional scholarships for potential future students looking to complete prerequisite courses and qualify for Innovation Campus admission.
- Ph.D. fellowships to attract a highly skilled and diverse cohort of researchers.

Boeing’s support will enable new pro-

grams and initiatives to be launched through the center, including:

- A data-driven approach to inclusion- and diversity-focused student recruitment that can serve as best practice for higher education.
- A student success center, providing wraparound academic support.
- A new technology leadership program to equip students with the knowledge and skills needed to reshape the culture of the technology center.
- A unique, project-based curriculum that embeds students with industry mentors.
- Collaborative research projects focused on strategic learning domains.
- Programs that provide opportunities for nontraditional undergraduates, including veterans, to eventually enroll and succeed at the Innovation Campus.

The impact of Boeing’s support will also stretch beyond higher education, through outreach from the Innovation Campus that will include:

- A scalable, K-12 STEM engagement program that will drive the future of diversity in the technology sector.
- Funding for a K-12 program director who will develop, implement, and lead a strategy to expand access to technology-related disciplines.

Letitia Long, current rector of the Virginia Tech Board of Visitors, an alumna of Virginia Tech’s College of Engineering, and a resident of Alexandria, complimented Boeing for its support of the Innovation Campus’ vision to broaden access to higher education in high-tech fields.

“Alexandria and the entire D.C. region are very diverse,” Long said. “I hope every talented student who has an interest in computer science or computer engineering sees themselves at this campus one day. Boeing’s generous and strategic gift is a big step in realizing the Innovation Campus’ vision.” ■ AR/MS



David Calhoun

COURTESY OF BOEING



Letitia Long

“Alexandria and the entire D.C. region are very diverse. I hope every talented student who has an interest in computer science or computer engineering sees themselves at this campus one day.”

Letitia Long
rector, Virginia Tech Board of Visitors



NEW VISION: Vice President for Research and Innovation Dan Sui and his wife, Feng Xu, and granddog, Rosie, pose for a portrait at their home.

CHAMPIONING RESEARCH

JAN. 7, 1993, WAS ONE OF THE MOST profound days both professionally and personally for Dan Sui.

On that date 28 years ago, Sui, who was completing his Ph.D. at the University of Georgia in Athens, Georgia, would not only receive his first job offer, but also celebrate the birth of his daughter, Alice.

The job offer would take the young family from Athens to College Station, Texas, the first step in a professional trajectory that would include opportunities at The Ohio State University in Columbus, Ohio, and the University of Arkansas in Fayetteville, Arkansas, before bringing Sui to Virginia Tech in 2020.

"It was a pivotal moment in my life," said Sui, Virginia Tech's vice president for research and innovation. "Pushing my daughter in her carriage while I held hands with my wife, Feng, as we walked onto Texas A&M's campus to start my first job."

Born in northeast China, also known as Manchuria, Sui's grade school academics involved rigorous scholastic training. Chinese students were required to take a seven-subject test called the National College Admission exam and place in the top of their class in order to be admitted to a university. Sui excelled. He attended Peking University in Beijing, China, earning undergraduate and master's degrees in remote sensing and geographic information systems (GIS). Sui later earned a Ph.D. in geography from the University of Georgia.

Now an internationally renowned researcher in the area of GIS-based spatial analysis and modeling for urban, environmental, and public health applications, Sui has been called one of the greatest visionaries in the field of geographic information and ranks among the first scientists to recognize the importance of geographic location information in social media.

Most recently, Sui led the University of Arkansas' research enterprise, contributing to a \$2.2 billion economic impact for the state of Arkansas. After a national search, in the fall of 2020, Sui was selected to lead Virginia Tech's research enterprise. The university is ranked in the top 5 percent of higher education institutions in the nation for research expenditures with approximately \$556 million, and the conglomerate organization encompasses six institutes, several university centers, more than 3,000 faculty who conduct research, and approximately 700 employees.

"What excites me about Virginia Tech research is that it has a strong foundation of researchers who have exceptional work ethics and thrive in a culture of collaboration. We are well-positioned and recognized for our diverse research portfolio. But, we must take it to the next level—from national excellence to global eminence—and champion our strategic

intellectual priorities and intentionally invest resources," Sui said.

Active in his own research, Sui's recent work includes co-editing a peer-reviewed book, "Mapping COVID-19 in Space and Time: Understanding the Spatial and Temporal Dynamics of a Global Pandemic," an international collaboration with 40 researchers representing 15 countries and three continents.

"To have a better understanding of how disruptive global events, such as COVID-19, impact public health and economic decision, we examined how technological advances, like smart cities, GIS, and the current political environment, can be used as a medium to impact both the development of policy and the spread of misinformation," Sui said.

At Virginia Tech, Sui is not only thinking about applied research, but also the fundamental concepts learned in the classroom. This coming academic year, Sui will be teaching an honors course dedicated to the future of work that will include discussion about the sometimes-controversial topic of the intersection of humans and machines.

Between teaching, his own research, and supporting Virginia Tech's research community, Sui has established a well-rounded lifestyle that he finds enormously gratifying. "At the end of the day, when goals have been set, obstacles overcome, and big things have been accomplished with my team, that's when I know exciting changes are taking place," he said. ■

Lindsey Haugh is the director of marketing and communications for Virginia Tech's Office of Research and Innovation.

MEMORY LANE: Niesha Savory studies the mechanisms of memory in the lab of Shannon Farris, assistant professor, at the Fralin Biomedical Research Institute. Savory recently won an award from the National Institute of Mental Health to support her research.



FRONTIERS

Virginia Tech's research enterprise inspires intellectual, innovative, and creative activities within and across disciplinary boundaries through building and sustaining a culture of collaboration.

The university is invested in major research initiatives bringing together diverse expertise that transcends traditional discipline boundaries, in partnership with industry, government and foundations, to address emerging challenges and opportunities that seek to improve the human condition and create a better world for all. These research areas are Frontiers.

ARTIFICIAL INTELLIGENCE FRONTIER *Harnessing Artificial Intelligence for Intelligence Augmentation*

Building on expertise in AI and data science, systems engineering, neuroscience, human factors, robotics, immersive visualization, and education, among others, to accelerate human-technology partnerships toward seamless augmentation, ethically and sustainably.

HEALTH FRONTIER *Leading the One Health Initiative to Achieve Whole Health*

Changing the focus on disease and symptoms to one of whole health, integrating intersections of animal, environment, and human health and building in communities and systems to empower multifaceted well-being.

SECURITY FRONTIER *Innovating for a Secure and Resilient America*

Ensuring communities are prepared to face global threats, from climate change to cybersecurity to national defense through advances in preparation, defense, mitigation, and recovery.

QUANTUM FRONTIER *Advancing the Quantum Leap*

Using an unparalleled transdisciplinary focus to accelerate the integration of quantum technologies across society, realizing unprecedented computing and communication capabilities and restructuring our social framework.

SHOW YOUR *HOKIE PRIDE*

ON YOUR RIDE WITH AN OFFICIAL
VIRGINIA TECH LICENSE PLATE.



vt.edu/plates

A portion of the sale of each Virginia Tech plate will go directly to student scholarships. Pick your favorite, show your support, and help students afford college. **Get your Virginia Tech license plate today.**

CORPS OF CADETS



STANDBY, FIRE!: Jillian Skahill fires Skipper, the Corps of Cadets' cannon, at the start of the Hokies' game against Old Dominion University in 2019.

DEFINED BY DEDICATION

JILLIAN SKAHILL HAS BEEN AN INTEGRAL part of Virginia Tech football games for four years.

But you probably didn't notice her. Dressed in the Virginia Tech Corps of Cadets' uniform, Skahill looked like every other member of Skipper Crew, the cadets who fire the corps' cannon during home games.

She found joy in the experience. She also embraced the responsibilities of timing, communication, leadership, and safety. What made her blend seamlessly at football games is exactly why Skahill stands out to her peers.

"She is simply the most dedicated cadet that I have seen in my eight years here," said Command Sgt. Maj. Dan Willey, the senior enlisted advisor for 1st Battalion and advisor for the Skipper Crew. Skahill was the crew's top junior during the 2019-20 academic year and the gun captain this past year.

Skahill graduated in May with a degree in political science from the College of Liberal Arts and Human Sciences and commissioned as a second lieutenant into the U.S. Army's Military Police Corps. In November, she will head to her first duty station in Germany.

"As she continues to hone her knowledge and combine it with her work ethic, she will continue to be the type of officer that makes Virginia Tech proud," said Lt. Col. Curtis Armstrong, executive officer of Virginia Tech's Army ROTC unit.

Raised in Delaware, Skahill always wanted to be a police officer. She joined the Junior Reserve Officer Training Corps program at her high school and discovered the military and its promise of college scholarships and a job after graduation.

She earned leadership positions within the corps, ROTC, and Skipper Crew, honing her time-management skills and adaptability.



Most importantly, she learned how to take care of people after she was asked to take a leadership position in a unit that was struggling. "It took me away from the idea that my job was to enforce standards and made me focus on how people fit into the mission," she said.

Skahill is proud of that unit today, so much so that it rivals Skipper Crew as her best experience at Virginia Tech. ■

Shay Barnhart is the Corps of Cadets' communications director.

COURTESY OF MAJ. GEN. RANDAL FULLHART, COURTESY OF ADREA THOMAS PHOTOGRAPHY

REACH FOR EXCELLENCE

BOLD VISION OUTLINED FOR HOKIE SPORTS TO BECOME PREMIER PROGRAM IN ACC

“

“ATHLETICS IS AN IMPORTANT PART OF THE VIRGINIA TECH EXPERIENCE, SUPPORTING THE UNIVERSITY AND OUR LOCAL ECONOMY AND CREATING NATIONAL VISIBILITY THAT ENGAGES OUR WORLDWIDE COMMUNITY OF ALUMNI, FRIENDS, AND FANS.”

Tim Sands
Virginia Tech president

IN FEBRUARY, VIRGINIA TECH announced a \$400 million fundraising campaign to propel Hokie sports to the forefront of the Atlantic Coast Conference, prepare generations of student-athletes for success, and raise the university's profile nationwide.

“Athletics is an important part of the Virginia Tech experience, supporting the university and our local economy and creating national visibility that engages our worldwide community of alumni, friends, and fans,” Virginia Tech President Tim Sands said while highlighting the Reach for Excellence campaign alongside Athletic Director Whit Babcock and other university leaders. “Whit and our roster of talented coaches are doing a great job. To take Virginia Tech Athletics to the next level of competitiveness, we need

to resource athletics in the top-third of the ACC and the Power Five programs. To reach that level, we are committing to enhancing support from all sources, including significant private support from this campaign.”

The Reach for Excellence campaign will leverage the momentum of recent successes on the field and in fundraising, such as adding about 10,000 more Hokie Club members in the past five years and opening the Student-Athlete Performance Center thanks to a record gift. Still, leaders acknowledged that the athletics enterprise needs an infusion of revenue in order to compete at the top of the ACC.

Reach for Excellence is the largest ever campaign for Hokie sports and is part of a broader, \$1.5 billion fundraising ini-

tiative known as Boundless Impact: The Campaign for Virginia Tech. The goal of Reach for Excellence is to have raised \$400 million for athletics by the time Boundless Impact closes in December 2027.

“This is an exciting day and the culmination of years of careful planning,” Babcock said during the Reach for Excellence announcement. “We know that our athletics program plays a central role in the student experience and the strong bond our wider community has with Virginia Tech. The past year has seen financial challenges due to COVID-19 and other factors, but we are confident in our long-term vision and our path to achieve it. We appreciate the university's show of support and commitment to excellence across Hokie sports. We also appreciate all the donors who have already stepped forward to help—and the many more who will.”

Pillars of the Reach for Excellence campaign include:

- A football enhancement fund to build a program that consistently competes at the top of the ACC, by

allotting \$30 million over time for recruiting, assistant coaches' salaries, quality-control coaches, player development, and capital needs.

- Renovations to improve Cassell Coliseum, with at least \$50 million to be raised privately.
- The Drive for 25 initiative to increase Hokie Club membership to 25,000 and raise \$20 million annually for student-athlete scholarships.
- Striving for comprehensive excellence for all sports by providing operating expenses, facility improvements, nutritional and strength and conditioning programs, and more.
- Increasing the number of student-athlete scholarship endowments to expand capacity to support students and broaden reach in recruiting.

Multiple Virginia Tech head coaches were present at the Reach for Excellence announcement.

Head Football Coach Justin Fuente stressed the importance of philanthropy

to his team's ability to win. “We have a responsibility to this university and to this football team to give these young men the resources and support that their peers across the ACC and other Power Five programs currently receive,” he said.

Carol Robertson, whose women's golf team this past season made its first appearance at the NCAA Championship, expressed confidence that Reach for Excellence will empower her and other coaches to build programs that win on a national scale. “I'm confident that our fan base will join in because we need them,” she said. “Giving isn't about making a donation—it's about making a difference.”

Babcock affirmed the aspirations for the future of Virginia Tech Athletics, which in the past has had annual operating budgets of roughly \$100 million. “We can either invest in a program that competes for championships across the board, or we can be average,” he said. “Our collective answer is clear: Our investment in athletics should match our aspirations.”

■ AR/JR



HOKIE MAKEOVER: Part of the contributions raised from the Reach for Excellence campaign will go toward the renovation of Cassell Coliseum, which could look something similar to this rendering when completed.



PLAYBOOK: Head Women's Golf Coach Carol Robertson, Athletic Director Whit Babcock, Virginia Tech President Tim Sands, and Head Football Coach Justin Fuente at the April announcement of Reach for Excellence.



MOMENT

TO THE RESCUE

“

I ACTUALLY DIDN'T EXPECT TO RECEIVE ANY RECOGNITION FOR THIS BECAUSE I KIND OF JUST STEPPED INTO ACTION LIKE ANYONE WOULD DO.”

Morgan Harvey
student

THE ROPE SWING OVER THE WATER was tantalizingly tempting.

In August 2019, Morgan Harvey, 17 years old and about to start her senior year of high school, rowed with four teammates and two coaches across Lake Joyce in Virginia Beach to an island to try the swing.

They'd gotten permission from their parents to try it out. Rowing coach Mark Winters went first. After his successful plunge, each team member took a swing.

When it was Winters' turn again, he swung out and let go. What happened next would nearly cost the 64-year-old family physician his life. Winters hit the water feet first, smashing into a submerged log. Coming up for air, he called for help. The team scrambled to pull him to the island's steep bank. Winters' ankle was broken in multiple places. Bone punctured his skin, and a severed artery was bleeding out.

The assistant coach, also a physician, and the team worked to stabilize Winters and called 911. They worried that rescue personnel wouldn't be able to find them.

With her rowing partner, Harvey returned to the property where they'd put in—the home of Tom Ackiss '64. Ackiss and his daughter, Emily Ackiss '99, a nurse practitioner, rushed to the island.

“I'm sure the kids were wide-eyed,” Ackiss recalled. “But they got to it. [They] got him

to the shore, helped stabilize him, kept talking to him to make sure he didn't get too panicked.”

Paramedics finally arrived, triaged Winters, and transported him to the hospital.

The accident took place while Harvey was working to fulfill requirements for the Girl Scouts of America (GSA) Gold Award. She invited Winters to attend the February 2020 presentation ceremony, where he shared the story of her role in his rescue. As a result, the local GSA director recommended that Harvey be considered for the GSA National Life-Saving Award. Harvey, who recently finished her first year at Virginia Tech, received the award on May 15.

“I actually didn't expect to receive any recognition for this because I kind of just stepped into action like anyone would do,” Harvey said.

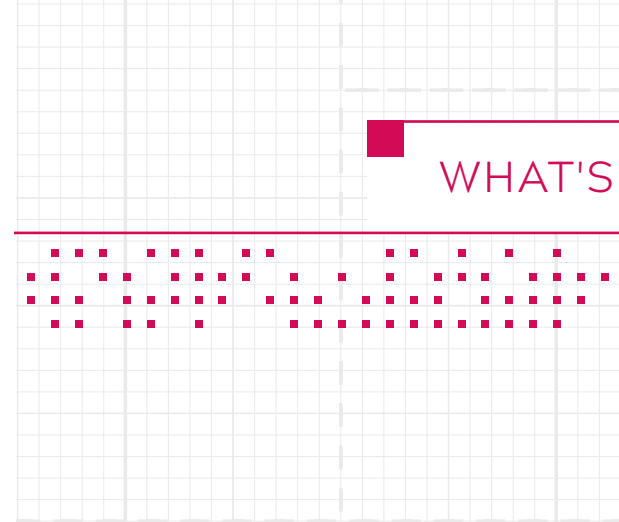
Winters has undergone bone grafts, an ankle replacement, surgeries to flush out infections from the lake water in his wounds, and countless therapies.

Reflecting on his years as a rowing coach—and the day it all ended—he said, “It's just a real honor to have ridden with them and coached them. They've helped me as much or more than I've helped them. Y'all should be proud she's at Virginia Tech.” ■

Michael Hemphill is a freelance writer working from Roanoke, Virginia.

COURTESY OF MORGAN HARVEY

RY, MARY DESMOND



SELF-ASSESSMENT

THE TEAM AT COOK COUNSELING Center believes in assessments as tools, especially when it comes to evaluating themselves.

“We're constantly assessing our services,” said Bethany Rallis, clinical psychologist. “We want to constantly be learning about students' needs and how they change from year to year. We're really intentional about how we're designing our services to meet student needs.”

The center is committed to connecting students to services that enhance mental health, removing barriers that may affect academic performance or influence the overall Virginia Tech experience, and improving learning opportunities for the next generation of mental health professionals. Cook ranked No. 1 for Best Counseling Services in the 2021 edition of the Princeton Review's Best 386 Colleges.

During the past five years, the center has expanded and reorganized, relying on self-evaluations and student feedback to inform its work. The center's leaders have added 21 clinicians, including psychologists, counselors, social workers, nurse practitioners, and support staff.

In fall 2020, Cook debuted a flexible, multifaceted approach to meeting student needs. Rather than waiting for a clini-

cian to become available for a traditional patient intake, the Cook Connect Model invites the student to meet with a connection professional to review specific concerns, explore available resources, and tailor an individual action plan.

Rallis, who coordinates the center's self-assessments, said the new model not only decreased students' wait time, but also increased student satisfaction. Wait times for first appointments ranged from two to four days in fall 2020, down from 18 days in late October 2019, and 80 percent of students reported improvement with their symptoms resulting from the services recommended.

Cook Connect recommendations for services vary based on individual circumstances, but may include:

- Access to vetted mental health resources.
- Referrals to campus resources outside of Cook.
- Workshops on specific mental health-related topics.
- Animal-assisted programs.
- Support groups.
- Academic support.
- Therapy groups.

- Individual therapy.
- Psychiatry.
- Crisis consultation.

The well-rounded approach is designed to address a variety of needs and aligns with the universitywide mental health campaign, #VTBetterTogether. ■ TW



FOUR-LEGGED FRIENDS: Virginia Tech's Cook Counseling Center therapy dogs—Derek, Wagner, and Josie—enjoy spending time on Blacksburg's campus.

HOW TO STOP THE SPOTTED LANTERNFLY



EVERY YEAR, INVASIVE PLANTS, animals, and pathogens travel into the United States from all over the world. Insects like the spotted lanternfly (SLF) are among the most troublesome invaders. They colonize quickly, disrupt native ecosystems, and potentially cause problems to human health and agriculture.

Armed with a clear understanding of the risks of infestations and knowledge about how to identify and monitor the pests, people can become citizen scientists right in their own backyards. With help from Virginia Tech entomologists, Virginia Cooperative Extension, and the local community, localities across the commonwealth are teaming up to ensure these unwelcome visitors bug off.

GET TO KNOW THE RISKS
Spotted lanternflies represent a threat to Virginia agriculture, specifically the grape industry, and can potentially affect trees that grow in the state. Much like the recent Brood X periodical cicadas that emerged this spring in Northern Virginia, SLF can heavily infest

an area. In the peak lanternfly season, late summer to early fall, thousands can swarm on the sides of buildings or in backyards. Although annoying, the insects pose no threat to humans. The true threat is their economic impact on businesses reliant on import and export of goods between states.

Fears about spreading the SLF infestation have led to quarantine procedures for goods shipped in and out of some infested regions. Anxiety about the invasive insect may limit business transactions where proper control measures are lacking, which could cause economic and overall hardships for businesses and farms in Virginia.

AVOID FREE RIDES
SLF is an expert hitchhiker, traveling with people in vehicle wheel wells, on lumber, aboard moving pallets, or along with other plant material. The transportation of just

one female adult lanternfly can spread the infestation to a new area. To make matters worse, a favorite host plant of SLF is tree of heaven, another invasive species found along many highways across 30 different states. The prevalence of the tree allows SLF to easily find a home in a new area.

TRACK THE SPREAD
Originating from China, SLF was first found in Pennsylvania in 2014. From there, it spread to Winchester, Virginia, where it was discovered by the Virginia Department of Agriculture and Consumer Services. Although various state agencies quickly took action in an attempt to contain the pest, SLF has spread to at least seven counties in Virginia and has reproduced in each location.

CONTROL THE PESTS
For the past four years, Frederick County Extension Agent Mark Sutphin has headed up the Spotted Lanternfly Citizen



COURTESY OF THERESA DELLINGER AND ERIC DAY OF VIRGINIA TECH



Science Detection program. The project works with established Virginia conservation and education programs, such as the Extension Master Gardener and Virginia Master Naturalist volunteers, to monitor and increase awareness of SLF.

Sutphin describes the detection program as “a great way to involve the public, engage volunteers, increase awareness about a new invasive insect, and assist with early detection and notification.”

Sutphin’s colleague, Virginia Tech entomologist Theresa Dellinger, has developed online courses for people looking to learn more about stopping this pest. These modules are available for anyone interested in SLF and offer helpful information on topics ranging from identification of SLF in all its life stages to overview of the insect’s life history and how to control it. The modules can be found online at ento.vt.edu.

DESTROY, DOCUMENT, REPORT
Spotted lanternfly is harmless to humans and pets, but if you believe you have found this pest, kill it. Take a picture if you can, and report what you found. Remember that even one female lanternfly could cause a new infestation in your area. Pictures of your insect can be sent to your local Extension office or to the Virginia Tech Insect Identification Lab.

Virginia Cooperative Extension has set up an online form at ento.vt.edu to easily report any suspected lanternfly sightings. Your local Virginia Extension office has free services designed to help the public with issues just like this. Find your local office online at ext.vt.edu.

KEEP AN EYE OUT FOR BUGS
If you have SLF in your area and you are worried about spread, carefully inspect plant materials, wood, debris, metal, plastic, or any other item that has been stored outside before transporting them elsewhere. If you plan to travel out of your area, be sure to check your vehicles so that SLF isn’t able to hitch a ride with you.

TEAM UP WITH TECH
With the help of the local community, Virginia Tech researchers and Extension professionals can make a real impact in protecting our state from further infestation. Dellinger praised the success of the Spotted Lanternfly Citizen Science Detection program: “We couldn’t keep a watchful eye for spotted lanternfly across Virginia without the help of our vigilant Master Gardeners, Master Naturalists, and the public.” ■


James Mason is the communications coordinator for Virginia Tech’s Department of Entomology.

BUGGING OUT: (top left) The spotted lanternfly destroys plants and can harm a state’s economy. (bottom left) Extension Agent Mark Sutphin and Entomology Professor Douglas Pfeiffer are working on plans to stop the non-native species. (above) Early detection is key to stopping these pests, which have an ability to move from different locations quickly. Shown are spotted lanternfly nymphs.



“
A GREAT WAY TO INVOLVE THE PUBLIC, ENGAGE VOLUNTEERS, INCREASE AWARENESS ABOUT A NEW INVASIVE INSECT, AND ASSIST WITH EARLY DETECTION AND NOTIFICATION.”

Mark Sutphin
Frederick County Extension agent

 **INTRUDER ALERT**
Learn more about how to keep invasive pests out of your community by visiting ento.vt.edu. For even more information, find your local Extension office at ext.vt.edu.



HOW TECH TICKS

CELEBRATING THE CLASS OF 2021

“

IT WAS A **MARATHON!**”

Anthony Watson
director of buildings and
grounds at Virginia Tech

OVER SEVEN DAYS IN MAY, MORE than 6,000 Hokies celebrated the culmination of their college journeys.

Graduates, along with family and friends, flocked to 16 small in-person commencement ceremonies at Lane Stadium, held separately to follow pandemic public health guidelines. Included was a ceremony for students from the Class of 2020, who could not graduate in person last year because of COVID-19.

Viewers also tuned in to a virtual universitywide ceremony, complete with guest

speakers, the revealing of the graduating HokieBirds, music, and more.

Planning and hosting all commencement ceremonies, both in person and virtually, was a monumental task. The effort involved personnel and support from all parts of campus, from buildings and grounds staff to production services and the Special Events team.

“It was a marathon,” said Anthony Watson, director of buildings and grounds at Virginia Tech. ■ JKB

DID YOU KNOW?

Joe Merola, a professor of chemistry at Virginia Tech, read the names of 6,424 undergraduates and 1,291 graduate students for a recording to accompany the virtual ceremony. In all, Merola recorded 24 hours of name reading. An additional two hours were recorded by readers for the Corps of Cadets/ROTC program.

PREPARATIONS

For three days, a crew of about **30 people** who work in buildings and grounds set up the stage and chairs on Worsham Field at Lane Stadium. They also used gaffing tape to mark areas of the stadium stands for physically distanced seating. Groups of four people were placed **10 feet** apart.

The Virginia Tech production services team spent a total of **20 hours** setting up and testing audiovisual equipment for the outdoor ceremonies. The team also installed **24 speakers** throughout Lane Stadium. **Five computers** ran various tasks for livestreaming, image magnification, and captioning.

TICKETS

Tickets were required for in-person ceremonies. Approximately **6,000 student** tickets and **20,000 guest** tickets were issued.

About **36 employees** in Student Engagement and Campus Life and Student Affairs worked more than **60 hours** to set up and manage ticket operations.

THE CEREMONIES

Approximately **400 events staff and volunteers** worked during the ceremonies.

The total production and editing time for the virtual ceremony, handled by Midway Production Services, was **250 hours**.

Family and friends submitted **53 celebratory video messages** for individual graduates that were shown before the start of the virtual ceremony.

University Relations videographers shot a total of **4 hours and 15 minutes** of video for use in the virtual commencement ceremony.

CLEANING

Before and after each ceremony in Lane Stadium, house-keeping staff disinfected all seats with an electrostatic spray cleaner that kills COVID-19 in **1 minute**.

About **25 Virginia Tech staffers** monitored the stadium during the ceremonies, cleaning public areas between events and removing trash.



YOUR WELLNESS

OUR COMMITMENT



CONGRATS



2021 GRADUATES!



CF, PETER MEANS, RY

A BIRD'S-EYE VIEW

IN A SPECIAL VIRGINIA TECH TRADITION, at least one graduating senior unveils a secret identity during commencement each spring. Wearing enormous orange feet underneath the traditional graduation gown, they stand out in the crowd. These are the dedicated student personalities behind the university's beloved mascot, the HokieBird.

Jane Nunn and **Ben Woody** unveiled their bird identities during the 2021 commencement ceremonies.

Being the HokieBird was like having a secret part-time job, said Woody, who earned a bachelor's degree in hospitality and tourism management.

Before the pandemic, the pair traveled across the Drillfield and around the country, spreading Hokie Spirit at sporting events, orientations, campus crawls, and random classroom drop-ins. In their time as Virginia Tech's mascot, they led crowds of more than 60,000 in countless renditions of "Let's Go, Hokies!" and they were part of the historic Hokie football win against the University of North Carolina after six overtimes.

But when March 2020 rolled around, bringing with it unprecedented restrictions and a shift to fully online learning, the students behind the HokieBird found themselves facing a new set of challenges.

"Morale was lower than it was in previ-

ous years, and we were here to fix that," Woody said. "It's sad we can't hug everyone we see, but we definitely made a bigger impact this year than ever before."

The HokieBird exists to build community and spirit, so Nunn and Woody found new ways to do just that. When keeping the community safe meant encouraging students to wear masks, the HokieBird spread that message, donning a mask over his own beak to prove his commitment to the cause. Though the bird never speaks, he always is the loudest in the room, proving his loyalty to the community through action.

"The HokieBird is a representation of the university, the athletics program, and most of all, the students," said Nunn, who majored in national security and foreign affairs. "We have to make sure that every student feels heard and represented. The HokieBird always stands up for what is right."

"The HokieBird is not any one person," Woody said. "He is just the HokieBird. He is the tradition. That's what makes it so special." ■

Rosie Hutchison '21 was an intern with Virginia Tech Magazine.



“

THE HOKIEBIRD IS A REPRESENTATION OF THE UNIVERSITY, THE ATHLETICS PROGRAM, AND MOST OF ALL, THE STUDENTS. WE HAVE TO MAKE SURE THAT EVERY STUDENT FEELS HEARD AND REPRESENTED. **THE HOKIEBIRD ALWAYS STANDS UP FOR WHAT IS RIGHT.**

Jane Nunn
2021 graduate



BIG REVEAL

Watch a video about the Class of 2021 HokieBirds who were revealed during the university's online commencement, on May 14, by visiting vtx.vt.edu/videos/k/2021/05/1_7oof9yy3.



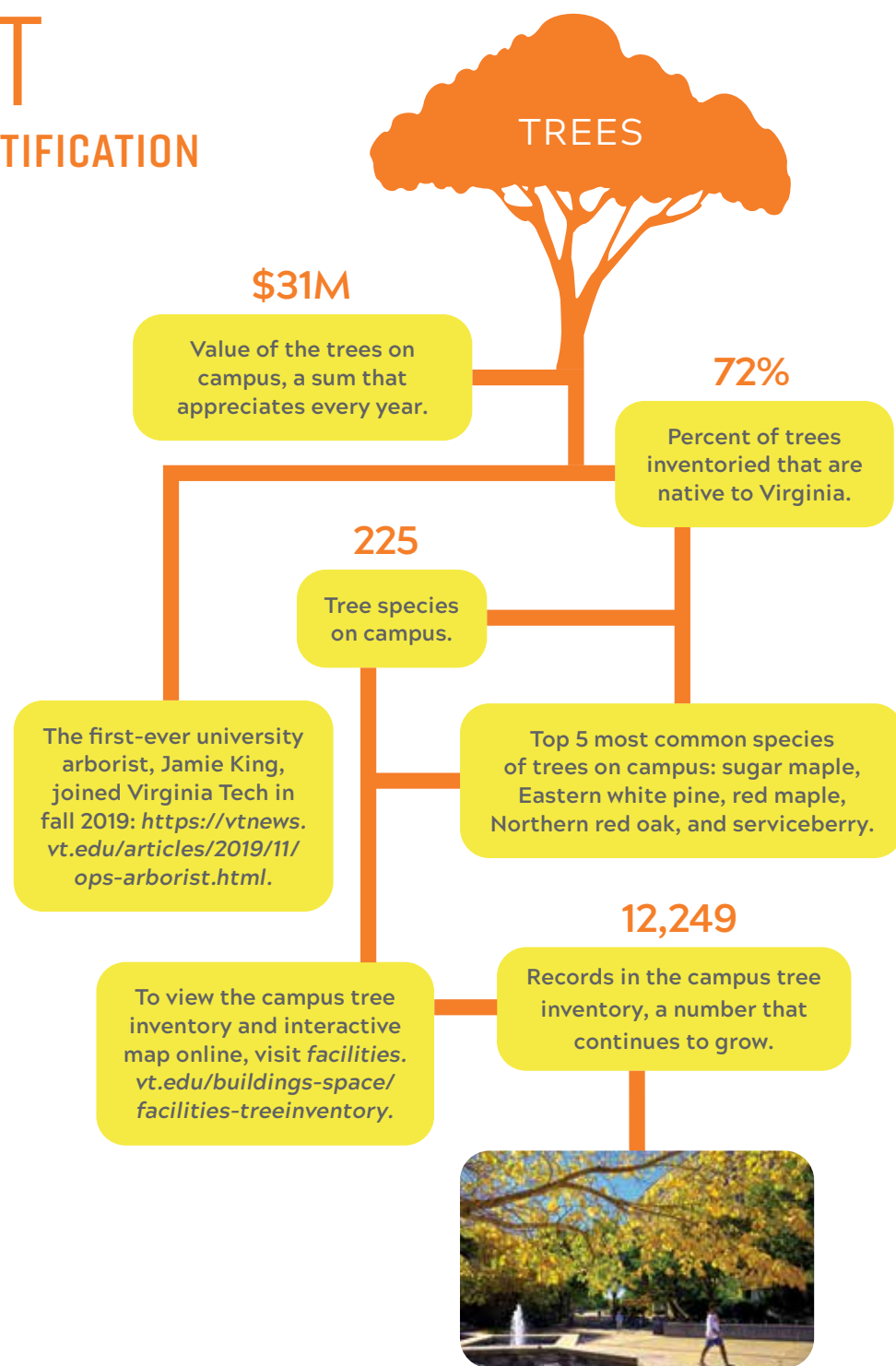


THE DIRT ON CAMPUS BEAUTIFICATION

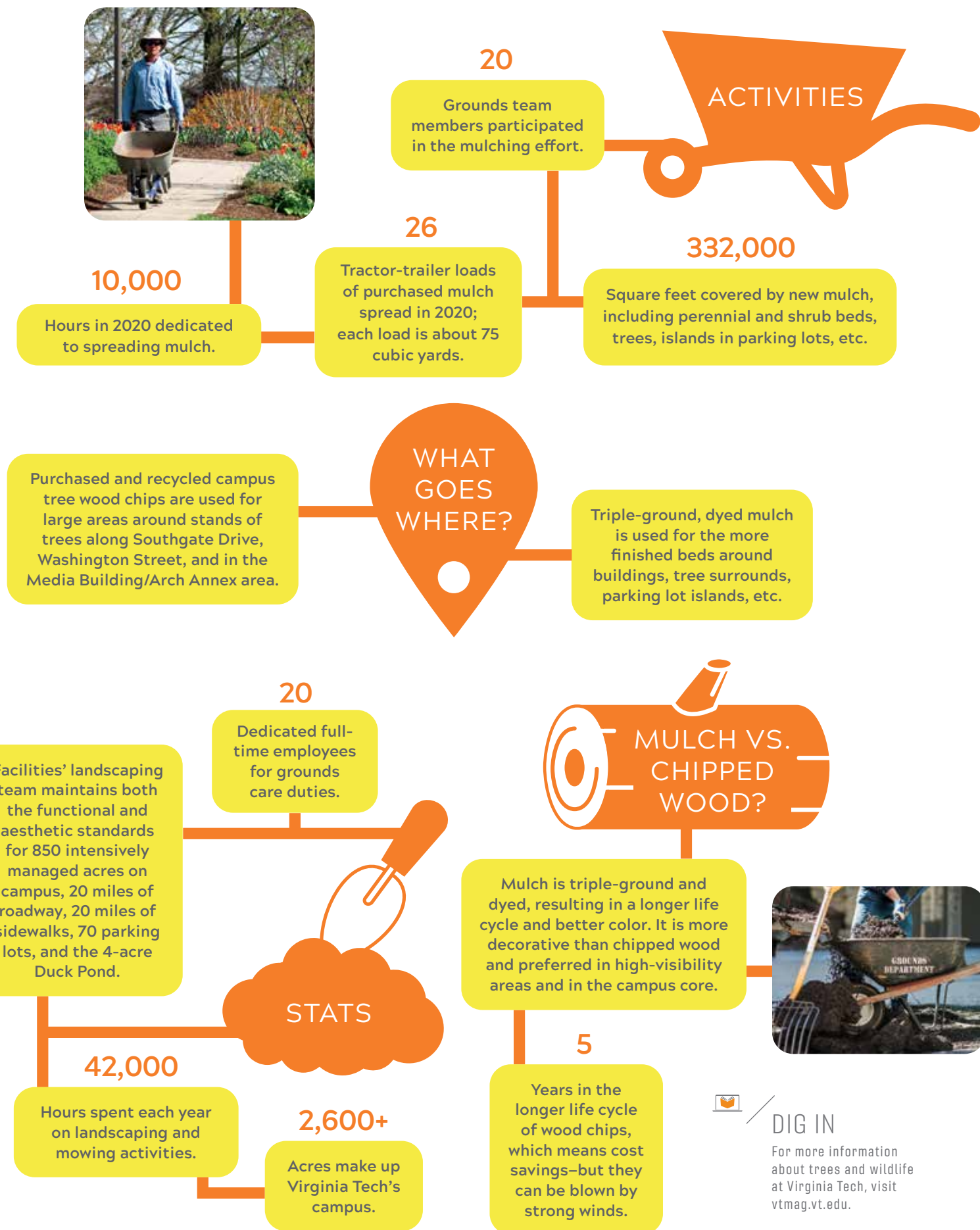
ASK ANY ALUMNUS, PROFESSOR, student, visitor, or Blacksburg resident what makes Virginia Tech special, and the answers will be as varied as the people themselves. Yet, more often than not, amidst responses that may include meaningful research, commitment to service, experiential education, or sense of community, most people will mention the beauty of the Blacksburg campus. The iconic Gothic architecture, Hokie Stone, and numerous monuments like the Pylons, along with outdoor green spaces like the Drillfield, Stroubles Creek, and the Duck Pond, create an inviting backdrop that changes with each season.

Keeping Virginia Tech beautiful begins with careful planning and research and involves many hours of outdoor labor. A dedicated grounds team in Facilities Operations is responsible for keeping outdoor spaces healthy while maintaining sidewalks and other structures. The team not only executes the strategies, but also works to better understand how human activity, buildings, and other manmade structures affect the natural resources on campus. ■

Alexa Briehl is the director of communications for Business Affairs, Division of Campus Planning, Infrastructure & Facilities, and Safety & Security.



SARAH MYERS, RM



SKYLER TAUBE, SARAH MYERS

DIG IN
For more information about trees and wildlife at Virginia Tech, visit vtmag.vt.edu.

OUT OF OFFICE

BY JENNY KINCAID BOONE

When public health authorities around the globe enacted restrictions designed to mitigate the spread of the coronavirus, many employees took their work home, setting up remote offices that allowed them to maintain physical distance, while continuing to meet their professional responsibilities. In many cases, the change enabled employees and employers to achieve a new level of flexibility, bolster work life balance, and rethink the concept of remote or hybrid work.

The results of this forced experiment have led many businesses and industries to reconsider the modern workplace permanently. For new Virginia Tech graduates, as well as those who have been in the workforce for many years, succeeding in this new landscape requires new skills.

NAVIGATING THE CHANGE INVOLVES BOTH OPPORTUNITY AND CHALLENGE.

Glenn Feit starts and ends his days on the water.

The daily routine is not exactly what he expected when he landed his first full-time job as an associate product manager at LinkedIn. Feit was offered the position in late 2019, when he was a senior at Virginia Tech, just months before the COVID-19 pandemic. He planned to move to San Francisco following his graduation in May 2020.

The coronavirus pandemic changed his route. Feit learned that rather than starting the new job in an office, he would be working remotely. He decided to make the most of it.

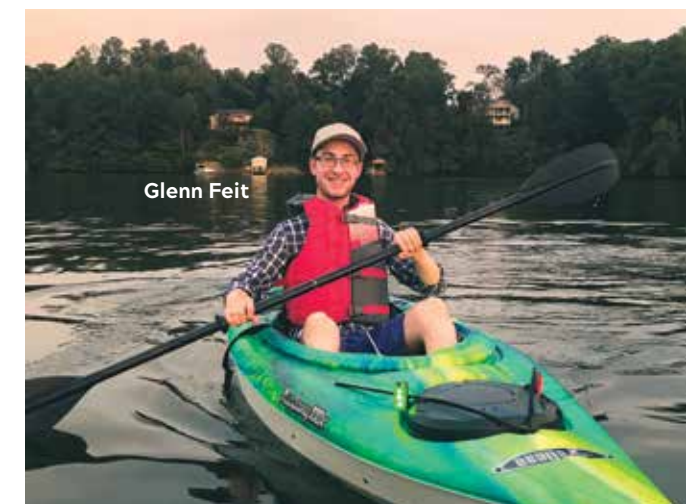
Rather than relocating to an expensive apartment in San Francisco, he opted to stay in Virginia, find a temporary home on the water, and buy some kayaks and a jet ski. Now, he logs on each weekday from a small cottage-like home rental at Smith Mountain Lake, where his work schedule mostly follows West Coast time.

“The rent at Smith Mountain Lake is cheaper than it would be in a studio in the Bay area, even with all the discounts, so I could save money, live at the lake, and still be in the same area where my friends are,” said Feit, who is from Northern Virginia and majored in management at Virginia Tech. “It was the best decision I made, period, during the pandemic.”

But in September, Feit’s East Coast lake lifestyle will end when he moves to San Francisco to begin working in a hybrid format for LinkedIn. Although he has loved living at the lake, Feit said he wants to feel more connected with his co-workers, and he’s looking forward to living in a large city.

“It’s hard to meet people,” Feit said. “You have to be intentional about it. You have to schedule 30-minute meetings with people over Zoom instead of asking them if they want to grab lunch, so it’s a very different experience.”

Of the millions of Americans who spent at least some time working remotely during the past year, many started a new job during the pandemic. Like Feit, they’ve found pros and cons to navigating careers outside traditional work settings.



COURTESY OF RACHEL ALBRECHT

A WORK IN PROGRESS

ESTABLISHING A REMOTE OR HYBRID WORK ENVIRONMENT TAKES PRACTICE AND CREATIVITY. CONSIDER THESE TIPS FOR SUCCESS:

- 1. SCHEDULE BREAKS.** Set an alarm to remind yourself to move around or stretch every hour or so. Move away from your computer to take your lunch break.
- 2. SET HOURS.** Working from home should not mean working all of the time. Establish “at work” hours. Some businesses may be flexible with schedules for remote work, but be sure that you communicate with your supervisor if you want to adjust your work schedule.
- 3. CREATE A DEDICATED WORKSPACE.** While it’s okay to move around in your home or take advantage of the patio on a nice day, it’s also important to acknowledge and account for distractions. Be proactive with your space to avoid interruptions and to separate work from home.
- 4. OVER-COMMUNICATE.** Promptly respond to emails, calls, and voicemail messages. Keep your colleagues and your supervisor apprised of your goals, accomplishments, and challenges.
- 5. SOCIALIZE.** Find opportunities for casual communications. Set aside a little time before or after meetings to catch up with colleagues. Text with co-workers. If appropriate, use an instant messaging system to share stories and find out how people are doing.
- 6. BE PROFESSIONAL.** Pay attention to your background when you attend virtual meetings. Continue to dress for the office—even if the office is at home.

The COVID-19 pandemic changed everything about how people find jobs, interview for jobs, start jobs, and interact with co-workers. And some of these changes are likely to stick around after the pandemic, according to career experts at Virginia Tech.

“We keep hearing people say, ‘We can’t wait until we go back to the way it used to be.’ That world is not going to exist,” said Jim Henderson, associate director of employer relations for Career and Professional Development at Virginia Tech. “Some employees will be fully onsite, some will be hybrid, and some will be virtual.”

FINDING A JOB—VIRTUALLY

Career advisors at Virginia Tech work with students to guide them through the employment process. For the past year, much of their support has involved preparation for virtual job and internship interviews as well as advice for maneuvering a remote work environment.



HELP WANTED: Smith Career Center is making changes to ensure that students seeking employment in a post-Covid-19 environment have access to the technologies and services needed for virtual job searches.

Due to the increases in virtual job interviews, the university is installing computer monitors in its 27 interview rooms located in the Smith Career Center. These spaces will give students access to a professional environment, with reliable WiFi, for virtual job interviews and networking.

During the past year, Career and Professional Development also assisted colleges and departments with the software required to host a variety of virtual job events. These events attracted companies from California to Florida.

“[Businesses and industries] didn’t have to fly 15 recruiters to campus,” said Donna Ratcliffe, director of Career and Professional Development. “It really broadens the possibilities for recruiting.”

The current trend suggests that employers will continue to scale back travel to college and universities. Preparing spaces that are conducive to virtual interviews will be essential as students navigate the job market.

General tips for the best virtual interviews and meetings include ensuring a strong internet or phone connection, positioning the webcam so that it is level with the face, preparing an uncluttered background, and eliminating surrounding noises.

Career and Professional Development offers tools, such as educational videos with advice directed at acing the virtual interview on its website, along with resources to practice mock interviews.

Job seekers need to be proactive now more than ever, said Hannah Landers, career services and employer relations manager with the Pamplin College of Business. Candidates should be quick to follow up via email or LinkedIn after a virtual job event, she said.

“It takes even more proactive energy to make sure they [the job seekers] are being noticed,” Landers said.

With the continued push for virtual interactions, traveling to another site or city for a job interview may not be an option. Ratcliffe encourages Hokies to reach out to fellow alumni who live in cities where they are looking for jobs to ask questions about the area or the company.

One way for students and alumni to connect is through Hokie Mentorship Connect, an online platform that pairs students with alumni mentors. For more information about how to get involved as a mentor or a mentee, or to learn more about available services, go to mentoring.career.vt.edu.

MAKING IT WORK—REMOTELY

At LinkedIn, Feit is part of a cohort of six new product managers recruited from all over the world. At least once every two weeks, the six meet up remotely to chat and get to know each other. It’s been a helpful way for Feit to feel connected with his colleagues, but “it’s not the same as going to happy hour after work,” he said.

Similarly, Haley Cummings ’20, an account coordinator for 300Brand, a public relations and marketing company in Alexandria, Virginia, has attended virtual coffee dates. But since she started working for the company remotely in June 2020, Cummings has never met most of her co-workers in person. She interviewed virtually for the job during the spring of 2020.

There is a plus to her remote-work lifestyle. “I did not have to buy a new work wardrobe or deal with commuting traffic,” she said.

Creating connections to a company while working remotely takes extra effort, and some businesses are better at helping new employees feel welcome than others, Henderson said. For example, certain workplaces may offer virtual coffee hours or lunch meetings that help build relationships among employees who work from home or at other decentralized locations.

Generally, “the burden usually is on the company to make you feel welcome into that work environment,” Henderson said. “If the company doesn’t do that, [the new employee] has to be proactive in reaching out to people.”

It’s also helpful for new employees to find mentors within a company to help them acclimate. Landers encourages students whose first jobs are remote to communicate regularly with supervisors by scheduling virtual meetings often. They should respond quickly to emails and other communication and be open to all social invitations to meet co-workers virtually.

There’s a silver lining to these changes in work life, Henderson said. People often are finding more flexibility to create their own opportunities. He encourages the students with whom he works to make suggestions to employers or internship supervisors about what they can offer, both in-person and virtually.

“All of the rules are kind of up in the air,” he said. “For the folks who are proactive, there’s an opportunity to really succeed in this marketplace. In some ways, you’re uncoupling where you work and where you live, and that’s pretty exciting.” ■

WATER IS A COMMON PART OF EVERYDAY LIVING IN THE UNITED STATES. WE DRINK IT, PLAY IN IT, COLLECT IT, COOK AND CLEAN WITH IT. AT VIRGINIA TECH, WATER IS EVEN CENTRAL TO THE ACTUAL DESIGN AND STRUCTURE OF THE CAMPUS.

WATER IS AN INORGANIC COMPOUND CONSISTING OF HYDROGEN AND OXYGEN. THE ODORLESS, TASTELESS, AND NEARLY COLORLESS SUBSTANCE IS CRITICAL FOR SOCIO-ECONOMIC DEVELOPMENT, ENERGY AND FOOD PRODUCTION, HEALTHY ECOSYSTEMS, AND FOR HUMAN SURVIVAL ITSELF.

AS THE POPULATION AROUND THE GLOBE CONTINUES TO GROW AND THE EFFECTS OF CLIMATE CHANGE BECOME MORE FAR-REACHING, WATER STRESS IS A GROWING CONCERN.

ACCORDING TO A NEW REPORT FROM THE WORLD HEALTH ORGANIZATION AND UNICEF, IF CURRENT TRENDS PERSIST, BILLIONS OF CHILDREN AND FAMILIES WILL BE LEFT WITHOUT CRITICAL, LIFE-SAVING WATER, SANITATION, AND HYGIENE SERVICES AS EARLY AS 2030.

ACROSS VIRGINIA TECH'S CAMPUSES, LEADERS AND SCIENTISTS ARE FOCUSED ON DEVELOPING STRATEGIES TO PROTECT EXISTING WATER RESOURCES AND FINDING SOLUTIONS TO RELATED PROBLEMS THAT RANGE FROM AGING WATER INFRASTRUCTURE AND STORMWATER MANAGEMENT SYSTEMS TO IMPROVED ACCESS TO CLEAN WATER AND PRESERVATION OF FRAGILE ECOSYSTEMS.

BECAUSE EVERY DROP COUNTS.

Water Matters

A stream of information about how Virginia Tech is working to protect and preserve an essential resource

By Travis Williams and Erica Stacy

**Numerous individuals contributed to this feature. Please refer to the listing on page 3 for the additional names.*

A Matter

of Campus and Land-Use Planning

Virginia Tech alumni and students often refer to the university and the Blacksburg campus as a piece of heaven on earth. But long before achieving that status, the region's abundant resources and natural beauty were likely the allure that attracted early inhabitants and settlers.

"The geography of the region made it sort of like a Garden of Eden," said Hugh Campbell, Professor Emeritus of Mathematics and author of "The Blacksburg Drama: A History in Three Acts."

"And it all goes back to the water," Campbell said.

The Tutelo/Monacan people are the historic custodians of this lush region, which experienced an influx of settlers from Europe beginning in the mid-1700s. Campbell speculates that when former British sea captain James Patton explored Blacksburg during that period, he was captivated by the landscape. The relatively flat valley, surrounding mountains, and Stroubles Creek watershed likely contributed to Patton's decision to found Draper's Meadows, the outpost that eventually became Blacksburg.

"When he [Patton] found this place, he quickly recognized its potential," said Campbell, a former editor of The Smithfield Review.

Over the next 300 years, Stroubles Creek played a major role as Draper's Meadows grew, changed its name, and eventually became home to the university now known as Virginia Tech. And while the creek's influence on the history of the community and the university is clearly evident, the waterway continues to shape the present and affect plans for the future.

"The town of Blacksburg is largely here because of Stroubles Creek," said W. Cully Hession, a professor of biological systems engineering. "So, really, the university's here because of the creek."

Hession is the director of Virginia Tech's StREAM Lab, which focuses on studies related to stream rehabilitation efforts. One of the goals of the associated research is removing Stroubles Creek from the Clean Water Act's list of impaired waters. Impaired waters are bodies where the pollution controls are

considered insufficient for maintaining water quality. The lab operates alongside several other projects with similar goals, including the Stroubles Creek Improvement Partnership and Stroubles Creek Coalition.

Located downstream of campus, the StREAM Lab operates multiple monitoring stations to analyze water quality and record flood data. As director, Hession's work involves learning as much as possible about the creek, including its historic relationship with the university.

"Everything is where it is because of where the creek is," Hession said.

Efforts to study Stroubles Creek aren't new. Hession's research uncovered a 2010 report from the Virginia Water Resource Research Center that revealed Virginia Tech faculty and students have studied the natural waterway for more than 100 years.

According to the report, the 12-mile creek primarily originates from various springs in Blacksburg, which create streams that merge at different locations. The creek divides into two watersheds—Upper and Lower—with the Duck Pond acting as the midway point. A watershed is an area of land where streams and rainfall drain to a single outlet. What flows into Stroubles Creek, heads to the New River, then to the Kanawha and Ohio rivers before merging with the Mississippi River and heading to the Gulf of Mexico. A blue line crossing Blacksburg's South Main Street near Sunset Boulevard marks the Eastern Continental Divide, the separation line for waters running east to the Atlantic Ocean and west toward the Mississippi River.

In the Campus Master Plan, Beyond Boundaries 2047, the hydrological patterns of Virginia Tech are said to be defined by the three branches of the creek—the Central Branch, Webb Branch, and South Tributary. The Central Branch enters campus near the intersection of College and Otey streets and is channeled beneath the Graduate Life Center, Eggleston Hall, and the Drillfield before daylighting near the Duck Pond. The Webb Branch enters near the intersection of Prices Fork Road and Stanger Street, where it daylightes briefly and is then piped

"Everything is where it is because
of where the creek is."

- W. Cully Hession
professor of biological systems engineering

under campus to eventually merge with the Central Branch at the Duck Pond. The South Tributary parallels Southgate Drive before merging with Stroubles Creek near U.S. 460.

Stroubles Creek was even a consideration when Blacksburg founder William Black laid out the town's original diamond-shape 16-square grid in 1798. The design established a central space situated amid the tributaries of the Central Branch, with strong springs located near the northeast, southeast, and southwest corners.

"You don't often realize how water in the early days was so important to life," said Donna Dunay, the G.T. Ward Professor of Architecture and lead researcher of the 1986 report, "Blacksburg: Understanding a Virginia Town."

"The 16 squares, its orientation, we decided, was determined on the basis of water," Dunay said.

Over time, urbanization and university growth led planners to cover or divert much of the upper watershed. The expansive development also prompted increased water monitoring and prompted recommendations for change regarding creek usage by the area's growing population.



ACTION PLAN: In 2007, Virginia Tech professors, W. Cully Hession and Tess Thompson discuss the Stroubles Creek restoration project with Preston Bryant, who was then serving as the secretary of natural resources for Virginia.

COURTESY OF CULLY HESSION

JOHN MCCORMICK

Troubled Waters

Stroubles Creek runs through the town of Blacksburg, Virginia, and underneath the campus of Virginia Tech. Since 2002, the creek has been designated an impaired waterway by the Virginia Department of Environmental Quality and U.S. Environmental Protection Agency.

Several projects and programs have been established to address problems, such as agricultural runoff, sewer overflows, pollutant buildup on impervious surfaces, lack of streamside forest, and improper disposal of grass clippings and trash, to make the changes needed to improve the health of the waterway.

Blacksburg residents can help protect Stroubles Creek, and you can protect your local waterways, in the following ways:

- Repair oil and fluid leaks on your car.
- Dispose of used motor oil at recycling centers.
- Discard litter in trash cans or recycling containers.
- Pick up pet waste and dispose of it in trash cans or toilets.
- Follow application and storage directions for fertilizers and other chemicals.
- Volunteer to get involved with campus or community groups that organize cleanup days or plant streamside trees.



A 1911 report from the Virginia Health Department detailed the creek’s lack of a sanitary sewer system and prevalence of “unsanitary privies” constructed over the creek both in town and on campus.

“It basically said they were using the creek for their waste and drinking from it,” Hession said. “And they had massive typhoid outbreaks.”

Hession said he’s unsure exactly when the area first erected a system for sewage treatment, but a facility for such a process was referenced in a 1913 report.

During the university’s earliest days, the Central Branch stretched alongside an agricultural experiment station. That field, in which a variety of crops grew, was prone to flooding. Dunay speculates the resulting marshy conditions motivated campus planners to locate buildings around the area, rather than in it.

By 1937, this tract between buildings had been expanded to 1.2 million square feet. Dedicated as the Drillfield for the Corps of Cadets, the site became the central organizational element in the campus plan.

Around the same time, a dam was built where the Central and Webb branches merged to create a small recreational pond that would later become known as the Duck Pond.

“I think the Drillfield, how it is today, is really a gift from the water,” Dunay said.

When the Drillfield expanded, the Central Branch of the creek, which had been visible, was diverted underground.

“It [the creek] is the reason Virginia Tech is here, yet thousands of students walk across the Drillfield every day and never know it’s there,” said Nicholas Polys, director of visual computing for Virginia Tech’s Advanced Research Computing.

Polys is working with a cross-disciplinary group of researchers, engineers, and artists to increase awareness of the creek’s historical importance and to spotlight potential for future impact by creating an immersive virtual watershed experience. Their work is funded by an Institute of Creativity and Innovation grant.

An offshoot of the 3D Blacksburg project, an initiative to create a comprehensive three-dimensional model of the town of Blacksburg, the virtual watershed project uses 30-plus years of climate change data, LiDAR (light detection and ranging) technology, and the Institute of Creativity and Innovation’s 360-



UNDERGROUND WATERWAY: Sections of Stroubles Creek were covered and now run under parts of Virginia Tech’s campus.

degree cameras to offer audiences a first-hand experience with the creek and watershed.

“It’s about actually taking people to the place, so they can identify with it, empathize with it ... so they experience its story,” Polys said.

Polys said the project is designed to appeal to a wide range of audiences, including schoolchildren. In fact, it has been aligned with parts of the Virginia Standards of Learning. The project team hopes the experience will engage participants with topics that range from from history and social studies to biology and environmental science.

“Water is a great cross-cutting theme. It’s the perfect kind of medium or topic to unpack a lot of different issues,” Polys said. “You can find a way for anyone to connect to it, and it serves as a great foundation from which lots of interests can grow.”

The project already has resulted in a three-dimensional game that builds familiarity and environmental awareness by tasking users with navigating Stroubles Creek’s watershed in search of Blacksburg’s iconic 16 frogs, frog statues that can be found throughout town and the surrounding area to call attention to the freshwater under and around the streets and buildings of downtown Blacksburg. Aspects of augmented reality on campus and in town are expected to be added to the project in the near future.

Bringing awareness to the university’s watershed is also a major goal of Katelyn Muldoon ’15, ’17, a water resource specialist and administrator of the university’s Municipal Separate Storm Sewer System permit from the Virginia Department of Environmental Quality (VDEQ).

“I don’t think people realize that everything left on the ground or put near a storm drain is more than likely going to wash into

Duck, Duck, Goose

Artificially created in the mid-1930s when a dam was built where the Central and Webb branches of Stroubles Creek merge, the Virginia Tech Duck Pond has become a beloved campus landmark.

Over the years, a number of classes have supported projects to benefit the Duck Pond. Funds for an overall restoration of the area, including the numerous benches scattered around the area, were contributed by members of the Class of 1943, and the classes of 1988 and 1989 helped build the gazebo where students, alumni, and visitors can study, feed the birds, or enjoy the seasonal beauty of the natural area.

The Duck Pond is home to a variety of wildlife, including such waterfowl as Canada geese and mallard and Muscovy ducks. And the waters of the pond provide a habitat for common carp, mosquito fish, black bullheads, and other species.

Solitude, the house located adjacent to the Duck Pond, is the oldest structure on the Blacksburg campus and is believed to date back more than 200 years. A large black willow tree that grows by the Main Branch of Stroubles Creek near the point where the branch enters the Duck Pond has become a favorite of students, alumni, and arborists statewide. The tree is included in the 2008 book "Remarkable Trees of Virginia" by Nancy Ross Hugo, Professor Emeritus Jeff Kirwan, and Robert Llewellyn.



JUST ADD WATER: Student interns from the water team in Virginia Tech's Office of Sustainability encourage sustainable lifestyle practices during Earth Week 2021.

our rivers, oceans, and waterways," Muldoon said. "They don't think about the fact that every time it rains, everything [in the path of the runoff] gets carried to our waterways."

VDEQ permit requirements include educating Virginia Tech faculty, staff, and students about waterways and the environmental impacts of stormwater each year. However, Muldoon and her team within Site and Infrastructure Development in the Division of Campus Planning, Infrastructure, and Facilities regularly go above and beyond the requirements by engaging the public through such efforts as their stormwater-focused Facebook page. During previous school years, they also have been able to offer outreach education to as many as 750 students from Montgomery County Public Schools.

"My theory is these are the kids who are going to go home, and they're going to talk to their parents about what they learned," she said. "It [water] doesn't just stay on campus. It flows through campus and leaves, so it makes sense that it's a much bigger audience than what VDEQ says I have to reach."

Muldoon said Virginia Tech students' willingness to help teach the younger audiences remained key to the outreach success. Between the stormwater field trips and an initiative to plant trees along Stroubles Creek, Muldoon estimated that about 1,000 Hokie students volunteer each year.

According to Muldoon, there are two primary categories of concern connected to stormwater quantity and quality. To maintain the VDEQ permit, Muldoon helps ensure that projects across the Blacksburg campus have addressed both during and after work takes place.

Campuswide concerns related to stormwater and the campus' hydrological patterns are also top of mind when the university is planning, and beginning to build, for the future.

"Every project we do, we think about it [water]," said Liza Morris, assistant vice president for planning and university architect. "It's always sort of been a factor, but now it's much more integrated in planning. Some of that is the requirement for water quality and water quantity measures, but also it's the right thing to do when we're looking at creating a more sustainable campus and more sustainable buildings. ... Water is a very important part of that conversation."

When the Campus Master Plan was approved by the Board of Visitors in November 2018, best practices for managing stormwater and enhancing natural water sources were woven throughout the more than 370-page document. And a section entitled Landscape Framework specifically addresses the connection between stormwater management, the health of Stroubles Creek, and the work of the StREAM Lab.

"Virginia Tech's campus can serve as a national showcase for innovative and holistic stormwater management while creating opportunities for student learning, hands-on research, and landscape amenities," reads the plan.

Morris said the most recent plan is the most thorough and robust to date and included deep dives into areas that most traditional land-use plans exclude.

"[The plan] looks into a lot of areas and one of those, really for the first time, is thinking about water-receiving landscapes for the main campus," Morris said. "We often address this on a project-by-project basis, but the master plan pulled back from that and asked, 'What does the whole campus look like as a system?'"

Morris said this newer approach reflected the shift in societal thinking about management and manipulation of water. The new plan seeks to better recognize the threat posed by water's natural pattern of collecting, gathering, and moving downhill, while leveraging those needs in ways that further enhance the campus' already iconic water-related landscapes.

"Combining things that naturally want to be together, such as water and greenspace, you're addressing the issues and creating amenities," she said.

One clear example of this approach is open green space planned in the Creativity and Innovation District, which would be partly

located at the current site of the Graduate Life Center addition to Donaldson-Brown. Built over the Central Branch of Stroubles Creek, the center has experienced ongoing problems related to flooding, most recently on July 1. When the university is able to demolish the addition, a water-receiving landscape would provide for more extensive stormwater management during storms and serve as an attractive community amenity, a place to gather during non-storm times.

"This allows us to address the current issues with the Graduate Life Center, acknowledge Stroubles Creek, and address some of the stormwater challenges we face as we continue to grow and develop campus," Morris said.

Other recommendations in the long-term plan include daylighting a portion of Stroubles Creek between the Drillfield and West Campus Drive and the removal of paved areas from the Stroubles Creek floodplain to reduce the percentage of impervious landscape.

Perhaps now more than ever, the impact of Virginia Tech on Stroubles Creek is being considered and the impact of Stroubles Creek on Virginia Tech is being celebrated. And the combination is resulting in a conscious, universitywide effort to ensure an ambitious future for both.

"We'll continue, with every project, to move toward a better situation overall," Morris said. "We just have to chip away at it one project at a time."



BETTER BY DESIGN: In 2017, members of the university's Board of Visitors review a presentation of the Campus Master Plan in the Cube at the Moss Arts Center.

A Matter of Education



Sustainably managing water resources is a complex challenge, with issues that range from developing efficient water systems for individual households to understanding the far-reaching effects of global climate change on water availability regionally, nationally, and globally.

Finding long- and short-term solutions to address water access, use, conservation, pollution, and other problems requires knowledge from a broad spectrum of academic disciplines. The study of water has long been an integral part of the curricula for students in a variety of majors across Virginia Tech's campuses, from engineering and science to agriculture and forestry.

One example is a dual program between the College of Agriculture and Life Sciences and the College of Engineering, housed in the Department of Biological Systems Engineering (BSE), that includes water-focused study. BSE applies concepts from biology, chemistry, and physics, along with engineering science and design principles, to solve problems associated with environmental protection, conservation of natural resources, environmentally sound production of renewable resources, and conversion of these resources to value-added products, such as food, pharmaceuticals, polymers, and biofuels.

And faculty members in environmental and resources engineering, which is part of the Department of Civil and Environmental Engineering, are dedicated to water-related engineering projects and research, including such areas as hydrology, environmental fluid mechanics, water treatment, sustainable infrastructure, and applied environmental microbiology. Some of the studies connected to this group include the recent campus wastewater testing to track COVID-19 and the Occoquan Watershed Monitoring project in Northern Virginia.

"The focus on water education at Virginia Tech came about for a variety of reasons," said Stephen Schoenholtz, professor of forest hydrology and soils in the College of Natural Resources and Environment (CNRE) and director of the Virginia Water Resources Research Center at Virginia Tech. "Water is essential. Many aspects of our lives depend on water resources,

KNEE-DEEP: A student from Tess Thompson's stream restoration course takes notes in Stroubles Creek at the STREAM Lab.

from food production to industrial processes to environmental health. Water even plays a role in the areas of equity and social justice. And our mission as a land-grant university is to prepare a new generation of leaders—to provide students with the opportunities to become complex thinkers with skills to help solve big problems. Water is right at the top of that list."

So six years ago, the university took the study of water to a new level after the State Council of Higher Education for Virginia approved an undergraduate degree in water at Virginia Tech in December 2014. The comprehensive Bachelor of Science degree program—called water: resources, policy, and management (WRPM)—is believed to be the first of its kind at the undergraduate level in the United States.

The degree blends courses in water science with those in water policy, law, economics, management, and related social sciences.

"Students in this major cultivate expertise in a field, such as international water management or hydrology, while developing a broad understanding in many areas that can impact water policy and use," Schoenholtz said. "In order to sustainably manage this resource, understanding the human side of water is as important as understanding the science."

The degree's academic home is the College of Natural Resources and Environment's Department of Forest Resources and Environmental Conservation. Four other Virginia Tech colleges—Agriculture and Life Sciences, Architecture and Urban Studies, Engineering, and Science—are partners in the program, reflecting its interdisciplinary nature.

Students in the water major select one area of focused study from a choice of water science specializations (aquatic ecosystems, hydrology, or water quality) and one area of focused study from a choice of water policy specializations (water, climate, energy, and global issues; or water policy, planning, and economics).

The program addresses expected strong job growth in positions requiring a comprehensive understanding of expanding water issues.

"In order to sustainably manage this resource, understanding the human side of water is as important as understanding the science."

- Stephen Schoenholtz
professor of forest hydrology and soils in the College of Natural Resources and Environment and director of the Virginia Water Resources Research Center at Virginia Tech

"People from government agencies, private industry, international aid groups, and more are all saying they want to hire people who understand both the science and the human dimensions related to water, including policy, communication, and stakeholder issues," Schoenholtz said.

But, concepts like sustainability and conservation are not linked to a specific discipline. Instead, the solutions for tomorrow require that today's students learn how to think across disciplines, derive insights through a range of perspectives, and develop the confidence to work collaboratively with others.

Virginia Tech's Pathways to General Education curriculum includes more than two dozen Pathways minors—thematic, cross-disciplinary programs that allow students to examine important topics from a variety of perspectives while completing general education requirements along the way.

"If we've learned anything from the past year, it's that the challenges, experiences, and questions of today cannot be solved with a single set of tools," said Stephen Biscotte, director of the Office of General Education. "By completing a Pathways minor,



WATER SAMPLE: Stephen Schoenholtz, director, Virginia Water Resources Research Center, works with students gathering samples from campus waterways in 2013.

Did You Know?

Approximately 97 percent of the water on Earth is salt-water. Only 3 percent is freshwater.

Water is the only substance that is found naturally on Earth in three forms—liquid, solid, and gas.

Around 66 percent of the human body consists of water. The brain is about 75 percent water, and blood is about 83 percent water.

A person can live for up to a month without food, but only about a week without water, depending on conditions.

According to the EPA, approximately 400 billion gallons of water are used in the U.S. each day.

Simple ways to save water include turning off the tap while brushing teeth, keeping water in the refrigerator to avoid letting the tap run, and maintaining pipes and faucets to avoid drips.

In just one day, 200 million work hours are consumed by women collecting water for their families.

785 million people lack access to at least basic water services, and more than 885 million people do not have safe water to drink.

The World Health Organization (WHO) reports that contaminated drinking water is estimated to cause 485,000 diarrheal deaths each year.

According to the WHO, by 2025, half of the world's people will live in countries with high water stress.



POND LIFE: 2018 Outstanding Senior in the College of Natural Resources and Environment, Kylie Campbell, takes water samples at the Duck Pond.

our students graduate with knowledge and perspectives that complement their major and broaden their skill set, details that prepare them for—and set them apart in—a job market that is increasingly connected and diverse.”

One of the newest Pathways minors is the blue planet minor, a CNRE 20-credit hour minor that focuses on water policy, planning, science, and sustainability among other water-related topics.

“My path has always been in soil and agriculture,” said Aaron Price, a senior who is enrolled in the blue planet minor. “A lot of what I do is science-heavy, but this minor has been useful in grasping the applications side of the field, particularly in regard to policy.”

Virginia Tech students may also choose the watershed management minor, which integrates existing programs and courses from five colleges and 12 departments to provide a substantive understanding of watershed science, policy, and decision-making.

Virginia Tech also offers opportunities for graduate students who are interested in expanding their water knowledge. The university offers a watershed management graduate certificate program and graduate studies in water resources that span programs and courses from five colleges. And, according to Schoenholtz, additional graduate opportunities are under consideration.

In 2016, the White House Office of Science and Technology selected Virginia Tech as one of 150 invitees from across the nation to attend a special water summit. During the summit, Schoenholtz explained that the water emergency in Flint, Michigan, sounded an alarm across the nation and throughout the world.

“Citizens now know what scientists have been trying to tell policymakers for years—that the quantity and quality of our water

can no longer be taken for granted anywhere on the globe. Flint’s problems are our wake-up call. And the White House Water Summit is one catalyst for action and solutions for the spectrum of water challenges,” Schoenholtz said.

“When you think about water as a basic human right, you begin to ponder the value of human access,” Schoenholtz said. “And then the issues begin to emerge. How do you charge people for water? But if you don’t, how do you ensure clean water access or discourage waste? Diversity, inclusion, women’s issues, conservation, security, economic stability. It’s all in there.

“Water is about as complex as it gets. It’s an important resource that no one can ignore, but we take it for granted. But its importance just continues to grow. There is no substitute for water. So the more our students know about water, the better off we all are.”

To date, 62 students have graduated with the WRPM undergraduate degree.

One of the first WRPM students, Maggie Carolan, served as a member of the Virginia Tech team led by Marc Edwards that uncovered the water crisis in Flint. Edwards, the Charles Lunsford Professor of Civil and Environmental Engineering in the College of Engineering, helped lead the effort to assess the extent of the city’s water crisis and continues to support water efforts in Flint and other affected communities.

As a sophomore, Carolan received the Alumni Presidential Scholarship, along with two scholarships established by Jeff Rudd ’83: the Stephen H. Schoenholtz Water Undergraduate Research Fund and the George M. Simmons Water Scholarship. Both of these named awards were created to provide support for qualified students and to recognize the academic and research contributions of Schoenholtz and Simmons, Alumni Distinguished Professor Emeritus of biological sciences.

“Water is one of the most important fields of the 21st century,” Rudd said. “The field offers a vast range of opportunities for work and study, such as establishing policies and engineering processes to conserve and recycle water, researching supply and consumption to assess the cost of water, and crafting strategies to help resolve stakeholder conflicts about ownership and use of water. The degree bridges the gaps between science and policy and theory and practice—and Virginia Tech is leading the way.” Carolan finished her undergraduate studies in 2018 and is now a pursuing a master’s in civil and environmental engineering at the University of Iowa. She researches the distribution and treatment

of naturally occurring radioactive material in drinking water.

Another 2018 water grad, Kylie Campbell, is using her education to help protect water resources for future generations.

“I grew up playing in the creek in my backyard all the time, and I’ve always had a strong connection to streams and rivers,” said Campbell, the College of Natural Resources and Environment’s 2018 Outstanding Senior. “I’m passionate about protecting water resources for both people and wildlife.”

After graduation, Campbell headed to Colorado for a 10-month term of service with AmeriCorps. Partnering with American Conservation Experience and the U.S. Fish and Wildlife Service, she traveled to wildlife refuges across the country to help with the National Visitor Survey project. In 2019, she joined the United States Forest Service in Sheridan, Wyoming, as a hydrologic technician. Today, Campbell is a hydrologic technician at the United States Geological Survey in Grand Junction, Colorado.

“I’ve gotten a strong background in the science, but I’ve also been able to take policy, law, and economics courses so that I can understand all sides of the issues around water resources,” she said. “That background will allow me to communicate with diverse stakeholders and policymakers about how to sustainably manage our water resources to meet the needs of people, the economy, and the ecosystem.”

And so children can still grow up playing in the creeks.



DIRTY WATER: Maggie Carolan ’18 served on the Virginia Tech team that traveled to Flint, Michigan, to collect samples for lead testing.

A Matter of Research and Outreach

Population growth and climate change in combination with increasing industrial and agricultural water needs, aging infrastructure, and poverty are contributing to what some scientists predict may become a global water crisis within the next decade.

Across Virginia Tech's colleges, institutes, and units, researchers are engaged in studies to solve a wide variety of problems connected to water.

"Water is the one resource for which there is no substitute," said Schoenholtz, explaining that tackling these issues requires an all-hands-on-deck effort. "You can't look at water quality and supply in terms of one set of values. You have to take many things into account to solve these complex problems."

Consider the Virginia Cooperative Extension.

Extension agents Theresa Pittman and Ursula Deitch are connecting growers on the Eastern Shore with opportunities for funding from the commonwealth that will help them implement agricultural best management practices (BMPs) on their farms. These BMPs aim to improve water quality in the Chesapeake Bay Watershed by tempering nutrient-carrying runoff from agricultural operations that might reach the bay.

In Augusta County, Extension agents Matt Booher and John Benner are working with livestock managers in the Shenandoah Valley to incorporate water conservation into their operations. They help managers adopt stream-exclusion practices and introduce them to cost-share programs that help cover expenses associated with practices that protect streams, like installing fences, planting vegetative buffers, and cross-fencing.

And when Extension Master Gardener Linda McConahey moved to the Northern Neck in 2001, she noticed that the water in her well was salty from inundation by the Chesapeake Bay, docks once used to launch boats were flooded far from shore, and the invasive weed called phragmites seemed to be taking over local wetlands.

McConahey helped organize a community of other Master Gardeners, and together they worked to help homeowners become

more environmentally-conscious. Nearly two decades later, Northern Neck Master Gardeners, working closely with partners at the Virginia Institute of Marine Science and county governments, have built the Shoreline Evaluation Program, an educational outreach effort that has provided hundreds of property owners with recommendations for improving upland stormwater management, pollutant and sediment runoff, and shoreline erosion.

But water research isn't limited to agriculture conservation or coastline protections.

Venkat Sridhar, associate professor of biological systems engineering, studies water resources all around the world. He develops complex mathematical models by layering and weaving together existing datasets, with information gleaned from NASA, the National Oceanic and Atmospheric Administration, and others, to predict future precipitation, temperature, snowmelt, streamflow, soil moisture, droughts, and floods.

"Our very future depends on having clean, reliable water sources," Sridhar said. "I believe we can use big data and modeling to help us ensure we have the water we all need."

How much is too much?

In July, a series of thunderstorms dumped several inches of rain on Virginia Tech's Blacksburg campus. The storms resulted in flash flooding. The water affected several campus buildings. But one Virginia Tech researcher is tackling studies that suggest sometimes flooding can be good.

There's a tendency in modern America to think of all flooding as bad, a threat to homes, farms, roads, and bridges. But flooding is a natural phenomenon that can benefit wildlife habitat and has been crucial for human civilizations for hundreds of years. History shows that ancient peoples relied on the flooding of the Tigris, Euphrates, and Nile rivers for crop irrigation.

Durelle Scott, an associate professor of biological systems engineering and affiliate of the Global Change Center at Virginia Tech, is the lead author of a paper published in Nature Com-

"Our very future depends on having clean, reliable water sources."

- Venkat Sridhar
associate professor of biological systems engineering

munications that examines flooding in the continental United States. Scott and his co-authors looked at "everyday" flooding in streams and rivers of all sizes, using data from 5,800 flood monitoring stations operated by the United States Geological Survey. Among the paper's findings: smaller streams flood more often than larger ones, but for shorter durations. The more frequent flooding means that smaller streams serve as a conduit between the landscape and the adjacent stream.

What happens if you live in a home without running water?

According to the World Health Organization/UNICEF joint monitoring program, 884 million people lack access to even basic drinking water. More than 2 million Americans are included in that number. The count includes around 250,000 people in Puerto Rico and 500,000 homeless, but the biggest chunk—around 1.4 million people—live in homes without adequate plumbing. They are clustered in five areas: California's Central Valley; predominantly Native American communities near the four corners of Utah, Colorado, Arizona, and New Mexico; the Texas-Mexico border; the Mississippi Delta region in Mississippi and Alabama; and central Appalachia.



FLOOD OF KNOWLEDGE: Durelle Scott, associate professor, and a graduate student take water samples on the New River as part of a study to examine how climate change has affected flooding.

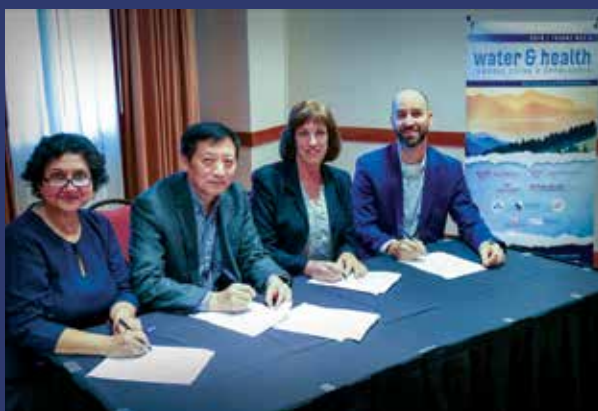
Collaborative Research Across Continents

Inadequate access to safe drinking water remains a substantial problem for low-income rural communities from central Appalachia to rural China. On Oct. 4, 2019, Virginia Tech faculty and students joined officials from the Chinese Center for Disease Control and Prevention and researchers from UC Berkeley during the first-ever Water & Health in Rural China & Appalachia Conference.

Alasdair Cohen, assistant professor of environmental epidemiology in the Department of Population Health Sciences and Virginia Tech Public Health Program in the Virginia-Maryland College of Veterinary Medicine, organized the event. Previously, Cohen worked at UC Berkeley as a project scientist and research director for The Berkeley/China-CDC Program for Water & Health, which he helped create in 2016.

During the event, faculty from Virginia Tech and Berkeley signed a memorandum of understanding to mark the restructuring and expansion of the water and health research program to include Virginia Tech.

The newly expanded program is called The Berkeley / China / Virginia Tech Program for Water & Health. More information can be found at ruralwaterhealth.org.



Leigh-Anne Krometis, associate professor of biological systems engineering and one of the foremost experts on water quality and availability in Appalachia, has authored a series of studies targeting water quality and availability in the Appalachian region.

Krometis' studies have examined the use of "straight pipes"—pipes that carry untreated sewage into an unlined hole in the ground, which drains either directly or indirectly into a stream—and the effects of such wastewater disposal on drinking resources. Some people in Appalachia drink untreated water from springs or streams, which can be contaminated by untreated sewage.

Krometis says that addressing these interrelated problems isn't easy. For example, options created for developing countries, such as public water kiosks or small water or sewer treatment devices installed for individual homes or clusters of homes exist, but political and cultural obstacles stand in the way of using those solutions in the U.S. Leaders are hesitant to fund water and sewer systems for the residents of Appalachian mountain hollows or California's farm towns that appear substandard when compared to those available for Americans living outside of these remote locations.

Although Krometis understands that hesitation, she recognizes that many poor Americans are going without any access to reliable, clean water. "I see both sides of the coin," she said. "The problem is we're not even having that debate."

In towns and cities with access to water, what about the path that water takes from municipal systems to homes?

As part of a five-year project funded by the U.S. Bureau of Reclamation, a team of researchers has compiled and analyzed data from more than 500 U.S. water utilities and 100 federal facilities to provide a picture of the health of the country's pipeline infrastructure systems. The team identified 985,000 miles of water distribution lines in the U.S. and found water pipeline infrastructure in need of replacements projected to cost \$3.6 trillion over the next 25 years. These findings are among dozens of key insights distilled into reports on pipeline performance, risk, and economics drafted by the team.

Sunil Sinha, a professor of civil and environmental engineering at Virginia Tech, said the reports will lay the foundation for a longer-term effort to bring the data and its analysis online. The team is building the Pipeline Infrastructure Database, or PIPEiD, a secured, standardized, and easily accessible online database that can help

water utility managers better monitor pipeline infrastructure systems. Sinha hopes PIPEiD can enable water utilities to learn from the local, regional, and national patterns it presents through modeling and visualization, using tools like artificial intelligence and GIS mapping. It will allow users to run queries that provide helpful analysis for decision-making, like estimating the life of a pipeline.

As people move into desirable areas, how does it affect water resources?

Infrastructure also is affected by population growth. As the demand grows, sometimes the systems become overtaxed. For instance, in the City of Fredericksburg and the nearby counties of Stafford, Spotsylvania, King George, and Caroline, population is projected to increase more than 40 percent by 2040.

Two teams of researchers from Virginia Tech are investigating water quality issues connected to the Rappahannock River and linked to rapid growth and development in the region.

David Sample, a professor in the Department of Biological Systems Engineering, leads a project to monitor urban runoff quality from Fredericksburg's local sub-watersheds and assess stormwater controls. Lee Daniels, a professor in the School of Plant and Environmental Sciences, tracks the formation of strongly acidic soils in the area and evaluates solutions to mitigate their effects.

Both researchers' projects are supported by the nonprofit Resource Protection Group and by Buck Cox, an environmental engineer and entrepreneur who studied biology at Virginia Tech and received his doctoral degree in environmental engineering in 1981.

"By working together with researchers and Virginia Cooperative Extension, we can build partnerships that are a model on how to protect watersheds in Virginia and in the world," said Cox. "Private citizens, industry, and researchers need to invest time and resources in order to solve these grand challenges."

Can water managers monitor changes in real time?

Cayelan Carey, associate professor of biological sciences, and Quinn Thomas, associate professor in the Department of Forest Resources and Environmental Conservation, both associated with the Global Change Center, have developed a method for forecasting in aquatic ecosystems. The forecast resembles a weather forecast, but instead of predicting weather, it forecasts 16-day water quality conditions that can be shared with water utilities, drinking water managers, and other decision-makers.



APPALACHIAN SPRING: Leigh-Anne Krometis collects water samples from springs that some rural Appalachia residents use as a source of drinking and household water.

The forecasting system deploys open-source software called Forecasting Lake And Reservoir Ecosystems (FLARE), which was developed in collaboration with Renato Figueiredo, a computer scientist at the University of Florida. FLARE has proven to be useful for Roanoke's drinking water utility, the Western Virginia Water Authority. A new grant has allowed the researchers to scale the operation to 10 different lakes in the U.S. and one in Ireland.

How do water issues affect animals?

Freshwater mussels are among the most imperiled animals on the planet. Scientists with the Institute for Creativity, Arts, and Technology (ICAT) and The Freshwater Mollusk Conservation Center are developing an educational program to highlight the plight of the mollusks.

"Benthos 360 is an immersive storytelling project to document the people and environment around the collapse of freshwater mussels in Southwest Virginia," said Tanner Upthegrove, media engineer at ICAT.

Justin Perkinson, assistant professor of cinema, leads the team in collaboration with Jess Jones, restoration biologist and co-director of the mollusk center, and Jessica Robinson, graduate assistant, to create the project designed for the Cube in Virginia Tech's Moss Arts Center.

"The idea behind the program is to give people who may not be able to participate physically in the activity at the river a chance to learn about and experience the science virtually," said Matthew Hull of ICAT.

The program will target scientists, prospective students, and community members, as well as K-12 students. ■



Kwame Alexander

AROUND THE HOKIE NATION

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- 69 Family

CHAPTER AND VERSE

KWAME ALEXANDER AND NIKKI GIOVANNI REMEMBER
a decades-old grade a little differently.

“She will tell you to this day that I never got a C,” said Alexander ’89 of his grade in Giovanni’s course. “She will tell you that, but she did give me a C.”

And the former Virginia Tech student is correct, at least in part.

“Now he says I gave him a C, but I can’t imagine giving him a C,” said Giovanni, University Distinguished Professor of English. “He always had his head down taking notes. He was always a good student, I just wanted him to work a little harder.”

The truth of the grade is perhaps best left to lore, but the positive result of the friction it caused is clearly evident.

“She challenged me in a way that caused me some turmoil to the point that I think we clashed,” Alexander said. “That [grade] was the worst thing you could do to this super-confident, well-adjusted, a bit cocky writer who’d been raised on literature.

“And it was the best thing you could do because it challenged me in a way that made me say, ‘Oh no, I got this.’”

More than three decades later, Alexander is an award-winning poet and New York Times bestselling author of 35 books, including the novel, “Becoming Muhammad Ali,” which he wrote with James Patterson, the world’s bestselling author; “The Undeclared,” a Caldecott Medal-winning picture book; and “The Crossover,” a Newbery Medal-winning novel that has been greenlit for development into a television series by Disney+.

COURTESY OF KWAME ALEXANDER



“
EVEN THOUGH BLACK
STUDENTS WERE ONLY LIKE 1
PERCENT [OF THE POPULATION
AT THE UNIVERSITY], I NEVER
FELT ALONE.”

Kwame Alexander '89

Alexander was also a featured guest at Virginia Tech's 2021 spring commencement. He delivered a poem (page 58) dedicated to the graduating class, following in Giovanni's footsteps, after she gave a similar gift to the Class of 2020 during the virtual ceremony last spring.

"I would not be the writer I am without my literary mother, Nikki Giovanni," Alexander said. "Virginia Tech gave me the opportunity to sit at the feet of one of the greatest writers to walk the planet, which I did for three consecutive years. It's unheard of to have that opportunity."

Alexander grew up in Chesapeake surrounded by books and poetry thanks to his parents, Barbara and E. Curtis Alexander, who were also educators and accomplished storytellers, poets, and authors.

He said he chose to attend Virginia Tech because it was just far enough away from home, and friends enrolled at the university offered only positive feedback.

Alexander's first experience in Blacksburg, a summer transition program for Black students, allowed him to explore campus, take classes, and meet fellow students, many of whom became life-long friends.

"Because of that [summer program], we felt like we belonged," Alexander said. "Even though Black students were only like 1 percent [of the population at the university], I never felt alone. My best friend, Marshall Johnson, and I often reminisce of our time there. We never felt like 1 percent. We had a tight-knit community."

Alexander enrolled at the university with plans to study biochemistry in order to become a medical doctor, but encounters with two women altered his path.

"Junior year, it was the week before school began. I was walking in the Upper Quad, and I saw this woman who I knew from the previous year. I remember going back to my efficiency apartment, which was a retrooled trailer—a trailer that had been divided into three parts—and I wrote her a poem," he said.

Around the same time, Giovanni became a visiting professor at Virginia Tech, and Alexander, who grew up with her works in his home, immediately took notice.

"I knew who she was. I'd read her books. My sister was named after one of the characters in her poems," Alexander said. "So, I took her first class. It was called Advanced Poetry ... and that class with her, that was a defining moment for me."

As poetry and writing began to become an even larger part of his life, so too, did activism, especially related to apartheid in South Africa.

"I spent a great deal of my last year and a half [at Virginia Tech] writing poetry, organizing rallies, and planning events, all in an effort to get Virginia Tech to be more aware of what was happening in the world and ultimately just to do things that were right," Alexander said.

At the time, Alexander was also a columnist for the Collegiate Times, where he often wrote about the intersection of social issues and the university. He said there was much resistance to his advocacy.

"That experience was one I found a bit stressful, but necessary," Alexander said. "I've always felt our efforts weren't necessarily appreciated while we were there marching and protesting on campus."

He said being asked to speak during commencement helped fill that void.

"When I got asked to deliver this, to write a poem, it felt like that acknowledgment. Like my contribution to Tech mattered. Like I matter. All of me," Alexander said. "Not just the Newbery. It's those rallies, it's Nikki, it's all of it, together. And that's all that you want in this world. You want to be seen. You want to be heard. You want to be recognized. You want to be appreciated."

Alexander found a similar peace with Giovanni a few years after graduating.

"We sat down at her table in Christiansburg and ate grilled tuna and scalloped potatoes and brussels sprouts—this was my first time eating brussels sprouts—and I apologized for us clashing. The tension that I sort of acted out on," Alexander said. "She looked at me and said, 'Kwame, I didn't give that stuff a second thought. My goal was to help you become the writer and the man that you needed to be.'"

Leading up to that conversation, Giovanni had continued to help Alexander as his

career climbed to new heights and evolved into different arenas. In 1996, she invited him to submit a poem for her book, "Grand Fathers," and in 2004, she recommended him as her stand-in to speak to the New York State English Council.

"What was monumental about that is I had been trying to break into the world of authors speaking at conferences because it was a way to promote your books and make the gatekeepers of children's literacy—teachers and librarians—aware of you," Alexander said. "So, she recommended me for my first paid gig. I remember I got paid \$2,000. It felt like a million dollars to me."

Years of writing and speaking took place prior to Alexander's breakout book, "The Crossover," in 2014. He often compares this period of his career to an airplane awaiting takeoff while the people he surrounded himself with helped keep the plane's motor running.

"Nikki was one of those people who was just constantly giving opportunities and opening doors, which I was walking through happily more and more," Alexander said. "All artists deal with self-doubt, but in the midst of all that, there's this philosophy I learned from Nikki about saying yes. You say yes to opportunities even if you don't know what's on the other side of the doors you're walking through ... You say yes to the opportunities, and then you figure it out."

Saying yes to joining Alexander's circle of supporters is something Giovanni has had little trouble doing.

"I find it hard to believe that it's been 30 years that he and I have kept in touch," she said. "We've worked together, but mostly, I just think we like each other."

She recalled many important moments, including the time she was hospitalized

when Alexander learned he won a Newbery Medal, an annual award given since 1922 for the most distinguished contribution to American literature for children.

"He stopped everything he was doing and came and sat by my bed until I woke up," Giovanni said. "So, the first person I saw when I opened my eyes was Kwame, and he said, 'Nikki! Nikki! Guess what?! I won the Newbery! You have to get well; I won the Newbery!' It was just so wonderful."

Giovanni recovered in time to make the trip to California to see Alexander receive the award. She said his emergency bedside visit illustrates what sets him apart from others both as a writer and a person.

"He's a good writer, let's start there, and he has a good story to tell. There's lots of love. If you just look at 'The Crossover,' there's a lot of love in it," Giovanni said. "And he's kind to everyone, and I think that's important, too, because it's one thing to be talented, but it's another thing to be kind. To be polite. To care."

While the pair of poets may remain in polite disagreement about Alexander's course grade, they both seem to agree on the results of the accompanying hard work and their appreciation for one another.

"[Without Giovanni's influence] I may not have pushed myself. I may not have worked as hard as I needed to prove myself to myself," Alexander said. "My parents introduced me to literature, to books, and Nikki showed me how to make a living as a good writer."

"What pleases me is that he's always thinking ... he's always thinking of the next thing," Giovanni said. "And I like that he continues to find other ways to touch people. He's a flower that grows no matter what the weather is." ■ TW

CLASS NOTES

Alumni, we want to hear what you’ve been doing. Mail career, wedding, birth, and death news to Class Notes, Virginia Tech Alumni Association, Holtzman Alumni Center, 901 Prices Fork Road, Blacksburg, VA 24061; email the information to classnotes@vt.edu; or submit the news online at vtmag.vt.edu/submit-classnote.php, where photos may also be uploaded for consideration. For assistance, call 540-231-6285.

’64

CAREER **William Evan Thomas**, Culpeper, Va., completed nine years on the Germanna Community College Board representing Culpeper County, including three years as board chair.

’69

CAREER **Ralph A. Lorenzetti**, Harper’s Ferry, W. Va., has been designated Scouting’s 2021 Distinguished Citizen of Jefferson County, W. Va.

’75

CAREER **Bill Michael Cook**, Melbourne, Fla., was recently appointed chair of IDEX Corp. He also serves as the chair of Neenah Inc. and as a director of Axalta Coating Systems.

’76

CAREER **Samuel Kevin Barger**, Dawsonville, Ga., retired as senior assistant direct attorney and retired USAF, and recently accepted an appointment to the bench as associate magistrate judge for Dawson County, Ga.

’77

CAREER **Richard Kenneth Perkins**, Richmond, Va., was named director of architecture and Richmond regional vice president for Raymond LLC, a full-service architecture and engineering firm.

’83

CAREER **Daniel Joseph Murray**, Mill Creek, Wash., was promoted to chief engineer of the P-8 Poseidon Program at The Boeing Company.

Mary Summers Thomas, Alexandria, Va., joined the Institute for Defense Analyses (IDA) as an adjunct research staff member in the Information Technology and Systems Division of IDA Systems and Analyses Center.

’86

CAREER **Mark Brian Dowty**, Rural Hall, N.C., was named a Fellow of Mechanical Design at Raytheon Technologies, capping a 35-year career in aerospace and ocean engineering.

Elizabeth M. Fazzi Smith, Round Rock, Texas, is the first woman to be named a Geo-Institute Cross-USA Lecturer.

’91

CAREER **Jennifer Poff Cooper**, Christiansburg, Va., was named the 2020 Writer of the Year for the Roanoke-based Valley Business FRONT magazine and has been promoted to senior correspondent for the publication.

Christopher Wayne Gallant, Alexandria, Va., was named chief financial officer of McLean Mortgage Corp., the fourth largest mortgage banking company in the Washington, D.C., metro area.

When the world is not
So beautiful
Close your eyes
open the window
of your mind, be a seed
of hope, climbing out
embracing tomorrow
with discovery
and Hokie pride.

Be a friend
Be an ally
Be a dreamworker
Be a pocketful of plans
Be prepared for some to fail
Be okay with that
Be patient
Be resilient
Be a million laughs
Be cotton candy on a rainy day
Be an empty page
Be the truth
Be a poem
Become a poem
that is contagious
let your words
scream and whisper
join and fight
live and learn
dream and dare
to be kind
to be sad
to be brilliant
to be grateful
for how far you’ve come
for this new place you are headed
and what a delight it will be
when you turn that key
when you walk through that door
when you fall in love
with the world
and become yourself

KWAME ALEXANDER

APRIL 30, 2021
LONDON, ENGLAND

Be a song
A soft symphony
a booming bass
A bouquet of jazz
that blossoms
in the coldest winter
that lifts your voice
for the nouns
that matter

Be a tree, dependable
and upstanding,
swaying in conversation
with the winds
of change,
always stretching
your roots.

Be a silent sea
chasing the sun
or a mighty river
with bold vision
that flows
toward a dazzling new horizon
of possibility
and the promise
to serve
that we have bestowed
upon you.

Be a flower,
Ready to bloom
Reaching for the orange sky
Better yet, be the whole garden
bursting with food
for the soul
a community of knowledge
a commonwealth teeming with innovation
a gathering of goodness

be a love supreme
a moonlight Serenade
to someone special
a first kiss
the sweet thunder
of a second
a flamethrower
a firestorm of desire
a noun that knows your heart
and makes it blaze
like a morning bugle call
on Upper Quad

A POEM OF CELEBRATION FOR THE CLASS OF 2021
THE ST. LUCIAN POET, DEREK WALCOTT, WROTE THAT A NOUN
IS NOT A NAME YOU GIVE SOMETHING. IT IS SOMETHING YOU
WATCH BECOMING ITSELF, AND YOU HAVE TO HAVE THE PATIENCE
TO FIND OUT WHAT IT IS.



Kristine Fallon

SETTING THE RECORD STRAIGHT

Kristine Fallon ’77, the author of “The AEC Technology Survival Guide: Managing Today’s Information Practice” (Wiley: 1997), has had a groundbreaking career in architecture, pioneering the use of information technology to augment traditional approaches to architectural and engineering practice and founding her own company in 1993.

Encouraged by her involvement in the International Archive of Women in Architecture (IAWA), a joint effort between Virginia Tech’s University Libraries and the College of Architecture and Urban Studies, she has since worked to preserve women’s contributions to architecture.

Her work led to establishment of IAWA’s Kristine Fallon Prize, the first of which will be award-ed in March 2022 at the organization’s annual symposium. The \$5,000 award will help extend research focused on women in architecture who have made significant contributions to the field.

COURTESY OF KRISTINE FALLON

'92

CAREER **Robert “Bo” Monroe Dyess**, Fort Eustis, Va., was elected to the Board of Directors of the Virginia War Memorial Foundation.

'93

CAREER **Katherine Mary Lecos**, Fairfax, Va., has joined the Institute for Defense Analysis as a manager, Division Administration in the Strategy, Forces, and Resources Division.

Tom P. Shen, Falls Church, Va., received Washington Business Journal's 2021 Diversity in Business Award in March.

'94

WEDDING **Daniel J. Ferguson**, Centreville, Va., and Zamira Ferguson, 10/17/20.

'96

CAREER **Florah Luseno**, Crete, Ill., is the chairperson of the Department of Advanced Studies in Education and faculty member in the special education program at Chicago State University.

'97

CAREER **James Luther Moore III**, Lorton, Va., has been recognized for four consecutive years as one of the top 200 education researchers and scholars in the U.S., who shape educational practice and policy. He was also selected to receive Virginia Tech Graduate School's Distinguished Alumni Award.

Gladys West, Ph.D. '00, Dahlgren, Va., was featured in a story on the Forbes website in recognition of her contributions related to GPS.

'98

CAREER **Beth A. Costine-Bartell**, Mechanicville, N.Y., was awarded a five-year grant by the National Institutes of Health entitled “Identification of Potential Therapeutic Targets for Abusive Head Trauma.”

'00

CAREER **Kirby Wayne Hartle**, Ashburn, Va., is celebrating the five-year anniversary and ongoing success since founding Top Level Engineering,

a Northern Virginia-based structural engineering firm.

'02

CAREER **Christopher W. Genheimer**, Colfax, N.C., has been named a director at Carruthers & Roth law firm in Greensboro, N.C.

Rajendra Vaidya, Tampa, Fla., has been welcomed by Woodard & Curran as chief technologist for the Drinking Water Practice.

CHILDREN **Erik D. Unger**, Kernersville, N.C., a daughter, 5/8/21.

'03

CAREER **Edward John Barry Jr.**, Honolulu, Hawaii, is the commanding officer of the USS Mississippi.

Aaron Miles Horst, Los Angeles, Calif., has been promoted to associate at CO Architects in Los Angeles.

James E. Walrod, Virginia Beach, Va., was named Top 40 Under 40 in Hampton Roads, Virginia, for 2020.

'05

CAREER **Kristin L. Maglia McKernan**, Simpsonville, S.C., is a program manager for Data Center Infrastructure Operations at Google.

Chris R. Waskiewicz, San Diego, Calif., was promoted to chief engineer at Booz Allen Hamilton.

CHILDREN **Clara Cullen Sharp**, Chappaqua, N.Y., a daughter, 10/14/20.

'06

CAREER **Manish Verma**, Frisco, Texas, was selected to be covered under the Pathways section of the IEE Industry Applications Society Magazine and was honored with the IEEE outstanding young professional achievement award 2020 and Top 10 Pump professionals to watch 2020.

'07

CHILDREN **Christin Marie Filiaggi Koubek** and **Ryan Charles Koubek**, Ponte Vedra, Fla., a son, 07/27/20.

'08

CAREER **James Thomas Lancaster**, San Antonio, Texas, was named associate principal with Overland Partners Architecture + Urban Design,

SAVE THE DATES

Sept. 10-11

Corps of Cadets Reunion

Sept. 18

Welcome to the City

Sept. 25

Pamplin College of Business Tailgate

Oct. 9

College of Agriculture and Life Sciences Tailgate

College of Liberal Arts and Human Sciences Tailgate

Oct. 15-17

Homecoming Weekend

Highly-Tighty Reunion

College of Natural Resources Tent

College of Engineering Tent

College of Architecture and Urban Studies Tent

College of Science Tent

Student Affairs Tent

Office of Inclusion and Diversity Tent

Global Education Office Tent

Graduate School Tent

University Libraries Tent

Oct. 21-23

Class of 1970 50th Reunion

For more information, including a complete listing of events, visit alumni.vt.edu/events.

leading the firm's Visitor Experience area, developing market strategies, and serving as an expert in the areas of nonprofit, civic, and cultural work.

Manisha Pravinchandra Patel, Danville, Va., was named as a 2020 North Carolina Lawyers Weekly Leader in the Law and received Greensboro Bar Association's 2020 Pro Bono Award.

'10

CAREER **Thomas Beckwith Jr.**, Fleming Island, Fla., was one of only 10 selected internationally for the 2021-23 Class of Emerging leaders for NACADA-The Global Community of Academic Advising.

CHILDREN **Emily Hughes Hicks** and **Alan B. Hicks '11**, Arlington, Va., a son, 04/24/20.

Meghan Elizabeth Brady Merkert and **Eugene Hayes Merkert '08**, Lutherville-Timonium, Md., a daughter, 04/15/21.

'11

CAREER **Kelsey Anne Deitz Guth**, Williamsburg, Va., was designated a Fellow of the College of Optometrists by becoming board certified in vision development and vision therapy.

Olivera Jankovska, Houston, Texas, published the first set of the “My Homeland” book series for children of multicultural backgrounds and was appointed to be the City of Houston mayor's special advisor on education.

Kirsten Nicole Kube, Virginia Beach, Va., has joined Fox Rothschild LLP in Denver as an associate in the Litigation Department.

Susan Movassagh, Los Angeles, Calif., has been promoted to senior associate at CO Architects in Los Angeles.

'12

CAREER **Adam Wesley Ford**, Bridgewater, Va., wrote and published “The House Cooperation Built,” which is a corporate history book to celebrate Rockingham Cooperative's 100th anniversary in business.

'14

WEDDING **Matthew Jon Chandler** and **Emily Preisendanz '15**, Hamilton, Va., 04/25/20.

'17

CAREER **Maria Alejandra Rossi**, Fairfax, Va., published her first children's book, “I Am Loved,” with United House Publishing.

Jocelyn Lamb Zimmerman, U.S. Army, was awarded the Bronze Star Medal for her service in Afghanistan.

WEDDING **Jocelyn Lamb Zimmerman** and **Eric Michael Zimmerman '16**, Alexandria, Va., 11/02/19.

'19

CAREER **Charlotte Lanxi Cannon**, Blacksburg, Va., was named a 2021 graphic design student to watch by Graphic Design USA.

Alexis Danielle Rose, Mount Airy, Md., a Lanigan Ryan staff accountant, is now a licensed CPA in the state of Maryland.

WELCOME TO THE CITY

WELCOME TO THE CITY, HOKIE!

No matter where you land after graduating, you always can find a group of local Hokies.

Virginia Tech has active alumni chapters all over the world, and you're invited to meet Hokies in your new city.

Join us in September in areas across the country for our Welcome to the City events. They're a chance to connect with area Hokies.

Visit alumni.vt.edu/welcome to find an event in your area.

Mohsin Kazmi

Katlin Kazmi

CULTURES AND COOKING

Early in their marriage, the meals that Katlin '12 and Mohsin Kazmi '12 prepared encompassed both of their cultures.

“Katlin would prepare Appalachian nights, and I would cook Pakistani nights,” Mohsin said. “The third evening, we'd combine leftovers, and the results tasted so good.”

This discovery evolved into a side venture—the Pakalachian Food Truck, based in Abingdon, Virginia. The truck offers food blended from their two cultures, such as a Pakistani chicken curry with mashed potatoes.

Katlin, a middle school assistant principal, grew up in Castlewood, Virginia, in Appalachia. Mohsin, a conservation photographer and co-founder of an ecotourism company, Tamandua Expeditions, was raised in New Jersey by Pakistani parents.

“We're spreading an awareness of how cultures can come together through food,” Katlin said. “And that people have more in common than they realize.”

CF, COURTESY OF KATLIN AND MOHSIN KAZMI

STAY CONNECTED

Make sure the university has your up-to-date mailing address, phone number, and email address. You can easily check your information online and make updates. Visit alumni.vt.edu/contact.

You can also email your updates to alumnidata@vt.edu. Make sure you include your full name and class year in the email.



Tierra Price

DOCTOR OF DIVERSITY

**“DR. DOLITTLE,” A 1998 MOVIE, FEAT-
ured renowned Black actor Eddie Murphy
in the lead role, a veterinarian who could
talk to animals.**

For Tierra Price the movie provided much more than a few good laughs. The film inspired the young animal-lover to channel her passion into the pursuit of a career in veterinary medicine—even though she had never seen a Black veterinarian off-screen.

“I grew up thinking that I was going to be one of the first Black veterinarians, because I had never seen any,” Price said.

Price realized her dream in 2020 when she graduated from the Virginia-Maryland College of Veterinary Medicine at Virginia Tech. Price now works as a veterinarian in Los Angeles, California, where she continues to explore a wide array of interests, including emergency care, surgery, public health, and lab animal medicine.

As she pursued her education, however, Price uncovered another passion—help-

ing young Black college students work toward careers in veterinary medicine—an area in which she continues to receive national recognition.

As a veterinary student, Price recognized that her classes included few Black students. She recognized the opportunity to help diversify the field, organizing BlackDVM Network, a community “for Black veterinary professionals to grow, connect, and advance veterinary medicine.”

“My time in veterinary school was really the catalyst for starting BlackDVM Network because I felt isolated, and I felt like there weren’t many people that I could relate to,” Price said. “There were probably five or six of us. My experience [at Virginia Tech] was a good one, but even still, I lacked people who I could relate to, who understood my background and the things that I had been through.”

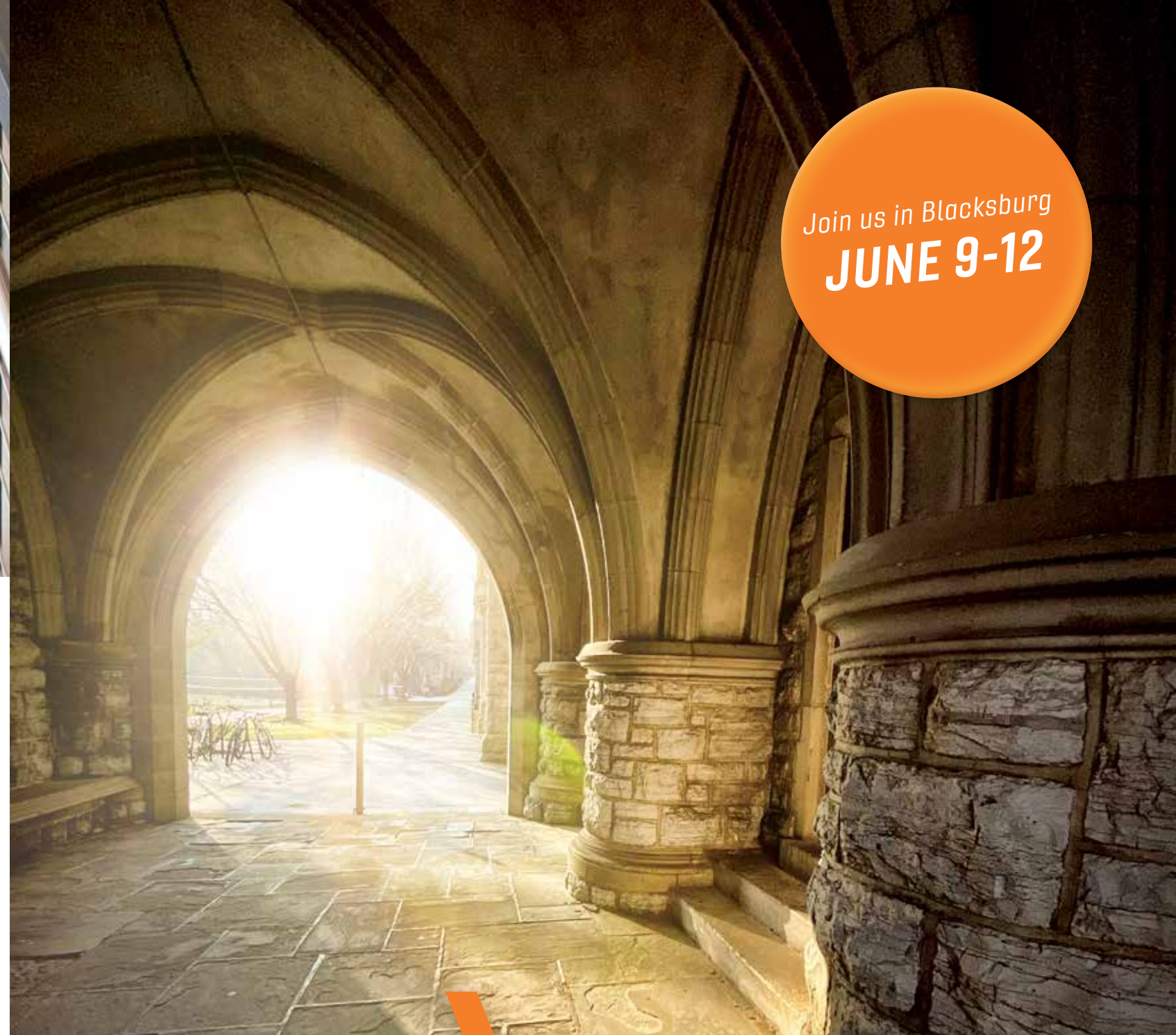
BlackDVM Network began as a simple Instagram account designed to spotlight the accomplishments of Black veterinary stu-

dents. Today, the network features a directory, a website, and pages on Facebook, LinkedIn, and YouTube that offer access to numerous resources for Black students and veterinary professionals.

The directory provides a way for Black students to connect with those with experience in the profession. The website offers a listing of job openings and externships. Also, there are subscription options that allow members to access private forums to build relationships; private events centered around medicine, wellness, entrepreneurship, and professional development; networking opportunities; relationships with mentors; and more.

“It started to grow,” Price said. “People wanted more resources. People want to connect in different ways. I was like, ‘We can make it grow. Whatever people need, I’m willing to put in the work to do it if that’s going to be helpful.’ ... We started to gain traction and meet different people and network in many different ways.” ■ JR

COURTESY OF TIERRA PRICE



Join us in Blacksburg
JUNE 9-12

IT’S DAWN IN BLACKSBURG

And you’re invited! Next summer, get ready for family-friendly fun, behind-the-scenes tours, and lots of (overdue) Hokie hugs.

Help us celebrate the classes of 1942, 1947, 1952, 1957, 1962, 1967, 1972, 1977, 1982, 1987, 1992, 1997, 2002, 2007, 2012, and 2017.

ALUMNI.VT.EDU/REUNION2022

VIRGINIA TECH.
REUNION 2022
WEEKEND

PUPS AND PODCASTS



CASSIE KRAUSE

AFTER WORKING IN HER DREAM job training dolphins at Gulf World Marine Park in Panama City Beach, Florida, Cassie Krause '10 took a position in which she was ... well, a fish out of water.

For the past five years, Krause has worked as a service dog trainer for Smoky Mountain Service Dogs (SMSD) in Lenoir City, Tennessee, training puppies for disabled veterans.

"It's something I'm good at that I didn't think I'd be good at," Krause said. "Dog training is a dream that I didn't know was a possibility. It's really cool to know that I can combine my passion for animals and give back to the military."

Krause, who earned a degree in wildlife sciences with a minor in biology and was an avid supporter of the Corps of Cadets during her time at Virginia Tech, serves as the organization's lead puppy trainer. She works with puppies ages 8 weeks to 1 year. After a year, the dogs advance to the next stage of training.

SMSD works mostly with Labrador retrievers and golden retrievers. These dogs innately know how to hold items gently in their mouths. More importantly, though, the breeds are beloved by society and help create an avenue for conversation between veterans and the public.

"Going into public places, strangers seeing a veteran who might be tousled-looking or has a sterner face, they may unfairly judge the veteran," Krause said. "But if they see a golden retriever or a lab companion with them, they'll be more

approachable. Those two breeds are the friendliest to look at and more likely to be accepted into places, and the veterans will feel more comfortable because the public perception is a positive one."

Krause said that service dogs require roughly two years of training, though that varies depending on the dog's personality. SMSD works throughout the process to pair a veteran with a dog that meets specific needs.

"It's not a cookie-cutter system in which there's a line of veterans waiting, and then it's first-come, first-serve with whatever dog is available," Krause said. "We try to really look at the veteran's lifestyle and how the dog that's ready to graduate will fit into that lifestyle."

Once the dogs pass all their evaluations at the training facility, they live with advanced foster volunteers for a period of time to apply all their learned skills in real-life situations—for example, picking up keys or a ringing cellphone. Eventually, the dogs return to the training facility for a client camp with the veteran.

COURTESY OF CASSIE KRAUSE

"We go through all the behaviors with the veteran and the dog just to build their relationship and their confidence with each other," Krause said. "At the end of their training camp, the veteran has the option of a live-streamed graduation ceremony, where volunteers and other members of the community may come and celebrate the veteran and their new service dog. It's a heartwarming time, where we honor the veteran and welcome them into the Smoky Mountain Service Dogs family."

Eligible veterans are paired with SMSD service dogs at no cost. Fundraising efforts and grant money cover the associated expenses, such as care, training, and staff salaries.

As for Krause, she is working her dream job—again.

"It's nice to watch them grow up and fulfill their destiny of being a great service dog," Krause said. "They're going to help somebody live such a different life that they didn't think was possible and make them so happy."

PAT FINN

PAT FINN '17 LOVES HIS JOB AS AN account executive for Salesforce, a cloud-based computer software company.

But he gets really excited about his side-line gig as a sports podcaster on the "Sons of Saturday," a podcast about Virginia Tech sports that he and two others founded almost two years ago.

"Sons of Saturday' is the passion project," Finn said.

The original idea came from Billy Ray Mitchell '17, a former Virginia Tech foot-

ball player who wanted to expand his own podcast by bringing in Finn to talk about college football and Grayson Wimbish '18 to discuss entertainment and pop culture. But Finn and Wimbish expressed doubts.

"Both of us were very much lukewarm to the idea," Finn said. "The both of us kind of rejected it. We didn't know specifically what we'd like to talk about or how to build an audience."

Finn's attitude changed after joining Mitchell in Athens, Georgia, for a Georgia-Notre Dame football game in 2019. The pair enjoyed the incredible atmosphere, and when Virginia Tech announced future games with select SEC opponents, Mitchell convinced Finn and Wimbish to join him on a podcast to discuss the upcoming games.

"We talked about our SEC wish list," Finn said. "Who would we like to play? Whose stadium would we like to visit? How would we rank them?"

"That's how 'Sons of Saturday' podcast was born."

An independent venture unaffiliated with the university, the podcast focuses on Virginia Tech football and recruiting, with occasional visits from special guests—a list that includes Tampa Bay Buccaneers coach Bruce Arians '74, ESPN writer David Hale, Hokie basketball coaches Kenny Brooks and Mike Young, and Camille Schrier '18, Miss America 2020.

During the pandemic, the team used their extra time to expand operations. They formed an LLC, established a business checking account, filed a trademark, and built a website. They added sponsors and started selling merchandise. They brought aboard students and alumni to



write stories for the website and manage social media accounts, and added a webmaster and a graphic designer.

"Sons of Saturday" has accrued more than 6,000 followers on Twitter and 7,000 on Instagram, and now features additional podcasts—"Sons of Saturday Notre Dame," and "Sons of Saturday National," with Josh Parcell '12 and Ross Tudor '12 as the hosts, and the team wants to add podcasts for more Power 5 programs.

Leaning into the university's motto, *Ut Prosim* (That I May Serve), Mitchell, Finn, and Wimbish often promote the Hokie Club's fundraising efforts for scholarships and facilities, and they use their platform to encourage participation in community-related events.

"We never thought it would be this big," Finn said. "But it's been a blast."

The "Sons of Saturday" can be followed on social media, Spotify, and Apple Podcasts. ■ JR

COURTESY OF PAT FINN



FLEET-FOOTED: (above) Kristi Castlin became the first female Virginia Tech athlete, current or former, to win a medal when she earned a bronze in the 100-meter hurdles at the 2016 Olympics held in Rio de Janeiro, Brazil. (top) Todd Scully, (middle) Bimbo Coles, (bottom) Carmen Farmer, third in line.



GOING FOR GOLD

BETWEEN 1976 AND 2020, 13 VIRGINIA Tech students, alumni, and staff earned the opportunity to participate in the Olympic Games. Seven qualified this year for the 2020 Olympics, which were rescheduled due to the coronavirus pandemic and held July 23-Aug. 8, in Tokyo, Japan.

Men's swimmers, including **Ian Ho** '18 and current students **Antani Ivanov** and **Youssef Ramadan**, qualified for the Games, along with men's golfer **Scott Vincent** '15. Also, incoming women's track and field student-athlete **Barbora**

Malikova and **Irena Gillarova**, a javelin thrower from the Czech Republic and two-time national champion in the event at Virginia Tech, competed in Tokyo.

Marcel Lomnicky '13 became Virginia Tech's first three-time Olympian when he earned a spot on the 2020 Slovakian men's track and field team. Lomnicky, a two-time national champion while at Virginia Tech, competed in the hammer throw at the Games in 2012 and 2016.

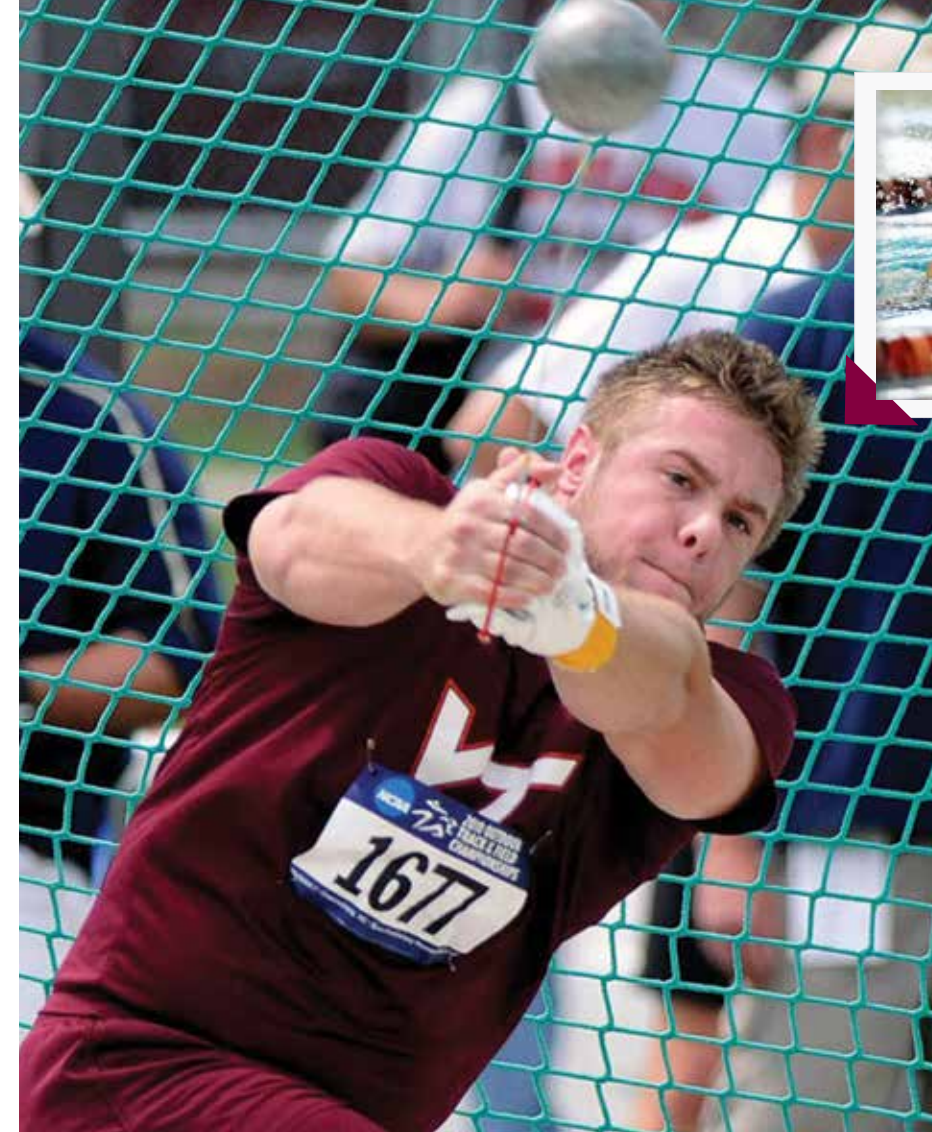
Ho competed in the 50-meter freestyle for Hong Kong, while Ivanov competed in the

100- and 200-meter butterfly for Bulgaria. Ramadan swam the 100-meter butterfly for Egypt.

Vincent played for the Zimbabwe national team and became the first Virginia Tech golfer to qualify for an Olympics.

Here's a look back at some of the Hokies who've been a part of Olympic history.

Todd Scully, a one-time coach of Tech's cross country team, is Virginia Tech's first known Olympic athlete. He served as an alternate on the U.S. Olympic race-



walking team in 1972 and competed in 1976. In 1980, he was a Tech graduate student when he again was selected for the Olympic team, but the U.S. boycotted the games that year, so technically he never competed while studying at Tech.

Bimbo Coles '90 was the first Hokie to medal in an Olympic event. The all-time leading scorer in Virginia Tech men's basketball history, Coles led the U.S. men's basketball team to a bronze medal at the 1988 Summer Olympics in Seoul, South Korea.

Kristi Castlin '10, a seven-time All-American at Virginia Tech and a three-time NCAA silver medalist, won a bronze medal in the 100-meter hurdles in 2016. She became the first current or former female Virginia Tech athlete to win an Olympic medal.

Cleopatra Borel-Brown '08, a former volunteer coach with the Virginia Tech track and field teams, threw the shot put for Trinidad and Tobago in 2008 and again in 2016.

Nare Diawara '07 made the 2008 Mali women's basketball national team, but she did not play because of an injury.

Carmen Farmer '03, a former Virginia Tech softball standout, picked up rugby and went on to qualify for the U.S. rugby Sevens team that finished fifth in Brazil in 2016.

Katarina Filova '14 made the Slovakian national women's swimming and diving team and competed in two events at the 2012 Summer Olympics in London, England.

Queen Harrison '10, a three-time national champion hurdler while at Vir-



DREAM-CHASING: Thirteen students, alumni, and/or staff members with Virginia Tech ties have competed in an Olympics and six newcomers were added to the list after competing in this year's Olympics held in Tokyo. (left) Marcel Lomnicky, (top) Katarina Filova, (bottom) Queen Harrison.

ginia Tech, competed in the 400-meter hurdles in 2008.

Ieva Kublina made the Latvian national women's basketball team in 2008.

Norbert Szabo '20 qualified for the 2016 Hungarian national men's swimming and diving team.

Kaan Tayla '10 competed for his native country of Turkey, qualifying for the national men's swimming and diving team in 2004 and 2008.

Darrell Wesh '15 qualified for the 2016 Haitian national men's track and field team. ■ ES



FASTER, HIGHER, STRONGER

To learn more about Virginia Tech's Olympic athletes, go to vtmag.vt.edu.

Jim Humphrey



ALL ABOARD!

LIKE MOST BOYS GROWING UP IN THE '70s, Jim Humphrey loved to play with trains. Unlike most boys, he never abandoned them.

"I was interested in trains almost from birth," said Humphrey, 58. "It just seemed to be the toy I gravitated towards."

From high school days spent repairing the ride-on train at Wasena Park in Roanoke, Virginia, to his side hustle as a Virginia Tech student building models out of the back of his car, Humphrey's enthusiasm for trains—along with the size of the models—has continued to grow. Today, he is quite literally a titan in the industry.

As the founder and president of Titan Trains in Boones Mill, Virginia, Humphrey has built a niche business that ranks No. 1 in the U.S. in the manufacture of large, one-eighth scale ride-on trains, with customers in all 50 states and several countries. From a standard rail car to a 16-horsepower V-Twin gas motor locomotive powering a hydraulic drive system, Titan Trains caters to a broad spectrum of train enthusiasts.

Humphrey's mechanical aptitude led him to pursue engineering when he arrived at Virginia Tech in 1981, following the track

laid by his father, who had been a member of the Corps of Cadets in the 1950s. "It pretty quickly became obvious I wasn't great at math on an engineering level, so I changed course to study management in the [Pamplin] College of Business," he said.

Before Humphrey graduated, he put his business classes to use by founding Mountain Car Co., where he oversaw design, development, manufacturing, marketing, and sales of model railcars. In the pre-Internet and cell phone era, he relied on rail magazine ads, mailed flyers to rail clubs, nationwide cold calls, and word-of-mouth.

Humphrey debated switching tracks upon his 1986 graduation from Virginia Tech to pursue "a regular job." But in the end, he chose to keep chugging along.

During the 1980s and 1990s, Humphrey took on side jobs performing machine work to generate additional funds, a strategy he would not recommend to aspiring entrepreneurs. "[Many] people would say that you need to diversify, but I would say you need to head in a direction you're good at," he said. "Don't spread yourself thin in too many different directions."

Eventually Humphrey focused exclusively on growing his line of rail cars, loco-

tives, and accessories, as well as a loyal customer base. In 2016, Humphrey rebranded to Titan Trains (Mountain Car Co. was often confused as an automotive dealership) and a year later moved his now 12-employee company to Boones Mill.

"I've just always stuck with it and been tenacious, but it has not been easy," Humphrey said.

According to B.T. Fitzpatrick, town manager of Boones Mill, having the headquarters for Titan Trains across the street from the old train depot that Boones Mill saved from demolition fits perfectly with the railroad heritage that the town seeks to foster.

"Not only has [Humphrey] produced a lot over the years, but he's helped a lot in the town," Fitzpatrick said. Humphrey's acts of service, which align with Virginia Tech's tradition of *Ut Prosim*, include fabricating the steel letters for a new LOVE sign, part of the statewide "Virginia is for Lovers" campaign, and also setting up trains for free rides during local model train shows. Humphrey also never hesitates to give visitors a tour of his factory—one that wasn't always assured of success. ■

Michael Hemphill is a freelance writer in Roanoke, Virginia.

COURTESY OF JIM HUMPHREY



DANIELLE PANCIERA

1



ERIK UNGER

2



3

DOUG JOHNSON



COURTESY EMILY HICKS

4



KRISTIN GAMBINO

5

FAMILY

1 "The view of the Rappahannock has never been more beautiful." —Daniel Ferguson '94, Centreville, Virginia, who married Zamira Ferguson, 10/17/20.

2 "I'm excited to share the news of our daughter's springtime arrival with Hokie Nation." —Erik D. Unger '02, Kernersville, North Carolina, who welcomed a daughter, Aleah Mae Unger, 5/8/21.

3 "Hokie Love: We officially got married on 4/25/20 but had a proper wedding celebration on our one-year anniversary. Fellow alumni made sure a proper 'Enter Sandman' introduction was had and that maroon and orange spirit was sprinkled throughout the day." —Emily Preisendanz '15, Hamilton, Virginia, who married Matt Chandler '14, 4/25/20.

4 "What is a Hokie? Big brother Oliver knows, and he's been a big help explaining it to our new addition, Eddie." —Emily Hicks '10, Arlington, Virginia, who along with Alan Hicks '11, welcomed a son, Edward Hicks, 4/24/20.

5 "Hudson and Aviana Koubek are excited about welcoming their baby brother, Grayson, to the Hokie Family!" —Christin Filiaggi Koubek '07, Ponte Verde Beach, Florida, who along with Ryan Koubek '07, welcomed a son, 7/27/20.

STILL LIFE

LET'S CELEBRATE: From July 2021 through December 2022, Virginia Tech will observe the 150th anniversary of its founding. The first official sesquicentennial event, which is slated for October in tandem with Homecoming 2021, will be followed by ongoing celebrations that will extend across the commonwealth, nation, and even internationally. Feather flags and banners designed to commemorate 150 years are being installed in public areas, and Burruss Hall will be illuminated in orange and maroon as the campus dresses for the celebrations ahead. For more information about Virginia Tech's sesquicentennial celebration, including a calendar of events and special highlights, visit vt.edu/150. Photo by Ivan Morozov.





IN MEMORIAM

Listing includes notices shared with the university from Sept. 1 through Dec. 31, 2020.

'37

Henry H. Ferneyhough, Gainesville, Fla., 10/15/2020.

'42

Richard D. Kern, Winchester, Va., 10/1/2020.

'44

Edwin Henry Krug, Tucson, Ariz., 7/9/2020.

'45

Lloyd W. Craddock, Dayton, Ohio, 6/17/2020.

Robert A. Summers, Brick, N.J., 9/26/2020.

Howard V. Yarus, King George, Va., 9/7/2020.

'46

Frank Page Nelson, Columbia, S.C., 10/14/2020.

'47

Louis Collier Jr., Glen Allen, Va., 11/4/2020.

George L. Fischer, Midlothian, Va., 9/26/2020.

Robert H. Miller, Quarryville, Pa., 11/7/2020.

Sumner E. Perlman, Lexington, Mass., 9/26/2020.

Irving Weinstein, Newport News, Va., 10/5/2020.

'48

Sue Roberts Forbes, Suffolk, Va., 11/5/2020.

Macklyn Price Woodford, Moneta, Va., 8/28/2020.

'49

Harry L. Brown Jr., Harrisonburg, Va., 11/25/2020.

Carma Godsey Fauntleroy, Silver Spring, Md., 10/28/2020.

Eileen Conway Hensley, Dover, Del., 12/10/2020.

Mary Engleman Ligon, Richmond, Va., 10/11/2020.

George Byrom Vockroth, Terry, Miss., 9/2/2020.

'50

John Kenneth Butler Sr., Winchester, Va., 10/19/2020.

Andrew A. Farley Jr., Danville, Va., 9/17/20.

Ronald G. Miller, Greensboro, N.C., 9/23/2020.

John Thompson Walton Jr., Danville, Va., 11/14/2020.

'51

Joseph Alexander, Alexandria, Va., 8/30/2020.

William Bruce Conner, Kennett Square, Pa., 10/8/2020.

Clyde W. Hemp, Williamsburg, Va., 12/1/2020.

Russell H. Moore, Gladstone, Va., 11/8/2020.

Earl L. Shaw Jr., Winter Park, Fla., 11/4/2020.

Robert J. Wachter, Alexandria, Va., 8/16/2020.

'52

George A. Bonner, Palm Beach Gardens, Fla., 8/10/2020.

Charles Emory Fry, Saint Albans, W.Va., 12/7/2020.

Martha Brown Gladwin, Lake Havasu City, Ariz., 10/25/2020.

Archie Cade Holliday, North Chesterfield, Va., 10/20/2020.

Harriet Farrier Johnson, New Freedom, Pa., 9/6/2020.

Malcolm T. Kitson, Madison, N.J., 12/10/2020.

Gerald Walter Ledger, Lake Geneva, Wisc., 11/29/2020.

Leslie "L.T." Richardson Sr., Charlottesville, Va., 9/9/2020.

John Scott Wayland, Warrenton, Va., 9/30/2020.

'53

Jack Witten Cecil Sr., Lake Wales, Fla., 3/19/2020.

Robert W. Chambers, Port Lavaca, Texas, 9/24/2020.

Benton Brown Lindamood, Howell, Mich., 8/26/2020.

'54

Buford "Bo" L. Driskill Jr., Lynchburg, Va., 9/20/2020.

William E. Duncan, Springfield, Va., 11/1/2020.

James "Don" D. McGhee, Lynchburg, Va., 8/26/2020.

Robert F. Moss Jr., Rockingham, Va., 12/5/2020.

Raymond F. Obenshain, Christiansburg, Va., 11/25/2020.

'55

Lawrence W. Boitnott, Roanoke, Va., 9/4/2020.

James Harrison Haren, Sarasota, Fla., 11/20/2020.

Forrest Hill King Jr., Nashville, Tenn., 10/20/2020.

John M. Lineweaver, Sarasota, Fla., 11/8/2020.

Adolphus "Pete" Lloyd Lotts, Knoxville, Tenn., 11/19/2020.

'56

Charles W. Matt, Richmond, Va., 10/28/2020.

Robert E. Scruggs, Harrisonburg, Va., 11/19/2020.

'57

John LeRoy Bowman, Suffolk, Va., 10/6/2020.

Kenneth E. Calvert, Danville, Va., 9/27/2020.

Bobby Merritt Coggsdale, Suffolk, Va., 7/26/2020.

Carl Morrison Hylton, Kingsport, Tenn., 10/12/2020.

Oscar W. Kennedy Jr., Ashland, Va., 11/10/2020.

Robert M. Lynch Jr., Pooler, Ga., 8/28/2020.

Samuel M. Page, North Garden, Va., 10/28/2020.

Randall C. White, Bridgewater, Va., 10/27/2020.

'58

James "J.B." Bernard Jones Jr., Blacksburg, Va., 11/7/2020.

James P. Boone, Charlotte, N.C., 11/17/2020.

John Robert Gillespie, Annandale, Va., 11/23/2019.

Richard Evan Harris, Charleston, W.Va., 12/3/2020.

Arthur Thomas Hart II, Stafford, Va., 11/2/2020.

Jack W. Hurd, Vero Beach, Fla., 11/16/2020.

Robert C. Jones, Souderton, Pa., 11/8/2020.

Donald "D.G." Glenn McCants, Glen Allen, Va., 11/22/2020.

Robert Hunt McGeorge, Roanoke, Va., 11/7/2020.

Henry Pfeil Jr., Ocala, Fla., 6/8/2020.

Dominick Donald Ruggiero, Marmaroneck, N.Y., 12/1/2020.

Hubert E. Sites, Pilot, Va., 9/24/2020.

'59

Elmo Graham Chandler, South Hill, Va., 9/19/20.

Robert R. Cosby, Powhatan, Va., 12/5/2020.

Thomas M. Gathright II, Batesville, Va., 8/30/2020.

Robert Vernon Lawrence, Colonial Heights, Va., 8/24/2020.

Henry "Hank" A. Long Sr., Warren-ton, Va., 12/8/2020.

William N. Martin Jr., Fayetteville, N.C., 12/9/2020.

Thomas M. Roane, South Chesterfield, Va., 9/8/2020.

Charles F. Vaught, Anniston, Ala., 11/24/2020.

'60

Richard I. Cooley, Timberlake, N.C., 9/18/2020.

Richard Lane Francis, Manakin Sabot, Va., 10/4/2020.

Donald R. Grubb, Roanoke, Va., 9/20/2020.

Julian Dale Hart, Roanoke, Va., 11/22/2020.

Raymond Parker Howell, Boone, N.C., 12/1/2020.

Ray Edwin Lester Jr., Riner, Va., 11/14/2020.

William Randolph May, Staunton, Va., 9/14/2020.

James Ernest Moye, Chesterfield, Va., 12/1/2020.

'61

Thomas Wayne Arthur, Danville, Va., 11/22/2020.

Paul Meredith Coleman, Scotts-ville, Va., 12/9/2020.

David Lawrence Cooksey, Thom-asville, Pa., 10/26/2020.

Edward P. Drudge Jr., North Top-sail Beach, N.C., 10/29/2020.

Kenneth V. Herndon Jr., Big Stone Gap, Va., 10/28/2020.

Jane Porterfield Murley, Blacks-burg, Va., 10/23/2020.

Robert James Phipps, Huddleston, Va., 10/31/2020.

'62

Lewis West Cox, Erie, Colo., 11/14/2020.

Charles Franklin Hines, Blacks-burg, Va., 12/5/2020.

David W. Jackson, West Hartford, Conn., 9/26/2020.

Carl Abijha Mann, Covington, Va., 9/4/2020.

John Lewis Parker, Huntsville, Ala., 7/5/2020.

Arthur Emory Pruett, Richmond, Va., 11/8/2020.

Randolph Lee Turner Jr., Blacks-burg, Va., 11/2/2020.

'63

William Julius Clark III, Batavia, Ill., 10/12/2020.

James Earl Jones, Kettering, Ohio, 9/16/2020.

Gerald Eugene Lawton, Blacksburg, Va., 6/30/2020.

Gerald Francis McKeever Jr., Richmond, Va., 11/30/2020.

James M. Searce Jr., Roanoke, Va., 10/7/2020.

'64

Ronald Anderson Hahn, Washing-ton, Pa., 10/22/2020.

William Early Kirkland, Stras-burg, Va., 2/7/2020.

Charles Henry Martin Jr., Rich-mond, Va., 12/1/2020.

William H. May, Villa Park, Calif., 10/10/2020.

'65

Alfred Rawls Butler IV, North Gar-den, Va., 11/21/2020.

Dennis Francis Collins Jr., North Reading, Mass., 11/16/2020.

Garland Bennett Garrett Jr., Wilmington, N.C., 9/12/2020.

Edward Litton Hall Jr., Chesa-peake, Va., 12/4/2020.

Bernard Meredith Winn Jr., Hen-rico, Va., 9/18/2020.

'66

Elizabeth Rivers Keville Kennedy, Norfolk, Va., 10/17/2020.

Glen Hortin Lemon, Fort Worth, Texas, 11/21/2020.

Joseph A. Loveless Jr., Hilton Head Island, S.C., 10/17/2020.

Donald Earl Moore, Colonial Heights, Va., 12/1/2020.

Robert Roy Schalles, Manhattan, Kan., 6/19/2020.

Charles Alfred Williams, Peters-burg, Va., 9/10/20.

'67

Robert "R.D." Donald Floyd Jr., Lynchburg, Va., 11/8/2020.

William Stuart Floyd, Williams-burg, Va., 12/8/2020.

Salvador Garcia Jr., Sloansville, N.Y., 8/17/2020.

Gary Frank Martin, Keswick, Va., 10/27/2020.

Robert Starkweather Miller III, Virginia Beach, Va., 12/3/2020.

Earl "Chic" C. Silver II, Urbanna, Va., 8/30/2020.

'68

William Lane Dungan, Wilming-ton, N.C., 11/16/2020.

Garland Ewing Earhart Jr., Drap-er, Va., 11/30/2020.

Robert Wheeler Frantz, Freder-icksburg, Va., 11/20/2020.

Bobby Joe Hall, Kitty Hawk, N.C., 12/4/2020.

James Everett Lawson, Kerners-ville, N.C., 9/22/2020.

Sterling "Pete" Lee Morrison, Chapin, S.C., 11/30/2020.

Walter Stephen Reggel, Pinson, Ala., 11/1/2020.

Gary Andrew Waugh, Modoc, S.C., 10/31/2020.

'69

Andrew Swanson Anderson Jr., Cluster Springs, Va., 11/2/2020.

Maurice "Marty" Roger Baker, Morgantown, W.Va., 12/2/2020.

William Valentine Collins, Rich-mond, Va., 10/23/2020.

Wilbur "W.W." Wayne Frye, Lexington, Ky., 9/27/2020.

Charles Dent Pinkard Sr., Collins-ville, Va., 10/31/2020.

Charles Hugh Risner, Mocksville, N.C., 8/27/2020.

Lawrence "L.W." Wade Stimpson, Farmville, Va., 9/18/2020.

Thomas Lee Watschke, University Park, Pa., 11/18/2020.

'70

Natalia Maria Hoenigmann-Lion, Salisbury, Md., 7/7/2020.

Larry Allen Lynch, Salem, Va., 10/24/2020.

Gerald Stephen Mosolgo, Cedar Bluff, Va., 10/13/2020.

James "J.R." Phillips, Pulaski, Va., 11/27/2020.

Charles Atkinson Read II, Talla-hassee, Fla., 11/12/2020.

William Hassell Wilson IV, Pen-hook, Va., 9/18/2020.

William "W.E." Edward Zorumski, Taos, N.M., 11/20/2020.

'71

Virginia Osborne Ackerman, St. Augustine, Fla., 10/31/2020.

Thomas Perry Barrett, Danville, Va., 11/10/2020.

William Louis Bridgforth Jr., Midlothian, Va., 10/7/2020.

Robert Yates Butts, Morgantown, Ind., 9/13/2020.

Richard Marshall Taylor Jr., Mont-pelier Station, Va., 9/18/2020.

'72

Mack Leslie Walls, Spring Grove, Va., 8/26/2020.

'73

Frank Richard Gastley, Warren-ton, Va., 9/12/2020.

Donald Ralph Jones, Glen Allen, Va., 9/19/2020.

James Hal Matthews, Chesapeake, Va., 11/14/2020.

David Bruce Narrie, Bogart, Ga., 10/24/2020.

Adrian Leslie Parris, Salem, Va., 10/13/2020.



Deborah Clarice Rice, Alexandria, Va., 9/29/2020.

Delphine Lindemann Senn, Alexandria, Va., 10/19/2020.

’74

Robert Allen Ferrebee, Berryville, Va., 11/7/2020.

Janice Freeman Roback, Ocala, Fla., 9/30/2020.

Naomi Dainese Nunn Selvey, Henrico, Va., 10/20/2020.

Theodore McKinley Thomas Jr., Farnham, Va., 10/7/2019.

Calvin Wade, Chapel Hill, N.C., 9/4/2020.

Steven Alexander Yancey, Waynesboro, Va., 11/24/2020.

’75

Jay H. Benson, Annapolis, Md., 11/16/2020.

Wilkie Willis Chaffin, Midlothian, Va., 11/25/2020.

Sanford Reid Cohen, Columbia, Md., 10/19/2020.

Jesse Bruce Coleman, Oak Ridge, N.C., 9/6/2019.

Alan Keith Farley, Pawleys Island, S.C., 9/1/2020.

Alice Emma Shelton Gourley, Danville, Va., 12/5/2020.

Harvey D. Luce, Mansfield Center, Conn., 10/5/2020.

’76

Ralph Joseph Barbano, Mount Dora, Fla., 10/4/2020.

Lawrence Ward Broomall Jr., Moneta, Va., 9/14/2020.

Samuel Alan Carlan, Hendersonville, Tenn., 12/1/2020.

Robert Kirk Dent II, Tucson, Ariz., 9/13/2020.

Eugene Thomas Hassler, Salem, Va., 9/8/2020.

Richard Keith Kelly, Harrisonburg, Va., 11/17/2020.

Mark Francis Perry, Occoquan, Va., 8/30/2020.

’77

Philip Anthony Campbell, Portsmouth, Va., 10/17/2020.

Peter Wheaton Devereaux, Los Angeles, Calif., 7/31/2020.

Margaret L. MacMackin, Kathleen, Ga., 12/1/2020.

Joan Alison Mattingly Neely, Virginia Beach, Va., 10/24/2020.

Norma Jean Peters, Daleville, Va., 12/15/2020.

Mary Winburn Rumsey, Norfolk, Va., 12/1/2020.

’78

Elizabeth “Libby” Cure Calvera, Blacksburg, Va., 5/20/2020.

’79

Thomas Ove Andersen, Brevard, N.C., 10/24/2020.

James Von Brannock, Glen Allen, Va., 9/21/2020.

James Allen Butler, Stephens City, Va., 10/6/2020.

Ella C. Davis, Virginia Beach, Va., 10/29/2020.

Mark Allen Pearl, Middletown, Md., 8/24/2020.

John Robert Schoener, New Richmond, Ohio, 9/23/2020.

’80

John Louis Dobra, Reno, Nev., 9/25/2020.

Harold Ellis House, Nokesville, Va., 11/13/2020.

Dennis W. Newman, Riner, Va., 11/7/2020.

George Michael Rowland, Chesterfield, Va., 10/22/2020.

Randall Louis Sherman, Christiansburg, Va., 10/12/2020.

’81

John Michael Collins, Midlothian, Va., 9/17/2020.

Sylvia Roper Custer, Newport News, Va., 12/15/2020.

’82

John Vincent Barham, Glen Allen, Va., 8/5/2020.

’83

Robert Stuart Noel II, Christiansburg, Va., 8/22/2020.

’84

Marcella Cameron Aldridge, Durham, N.C., 11/22/2020.

Lisa A. Byers, Chambersburg, Pa., 11/4/2020.

Elizabeth A. Barker Cheeks, Talladega, Ala., 11/20/2020.

Barbara Clare Richter, Chapel Hill, N.C., 11/1/2020.

Stephen Clark Smith, Radford, Va., 10/21/2020.

Stephen Paul Waible, Nashua, N.H., 11/12/2020.

’85

Edward Alan Davis, Beckley, W.Va., 10/22/2020.

James Blair Gardner IV, Hayes, Va., 9/27/2020.

Jane Neel Mitchell, Christiansburg, Va., 12/7/2020.

Martin VanBuren Nichols, South Ozone Park, N.Y., 11/15/2020.

Daniel Edward South, Branford, Fla., 11/27/2020.

’86

Lillian Stuessy Duffey, Richmond, Va., 8/11/2020.

Mary Jo Horan, Sarasota, Fla., 9/18/2020.

’87

Martha Anderson Eborall, Blacksburg, Va., 11/30/2020.

Jonathan Clyde Elliott, Langhorne, Pa., 11/23/2020.

’88

Mark Crowell, McLean, Va., 9/27/2020.

Wallace G. Driggers, McLean, Va., 11/24/2020.

Sandra Joy Vidler McSwain-Jones, Fleetwood, Pa., 12/1/2020.

Coleen Zahnke, Big Stone Gap, Va., 8/30/2020.

’90

Laura Ellyn Bogert, Cape Coral, Fla., 9/14/2020.

Melissa “Missy” Moon Coleman, High Point, N.C., 10/22/2020.

Wayne Emerson Ellis, Herndon, Va., 9/17/2020.

’91

Arvind Kumar Singh Chaudhary, Racine, Wisc., 9/19/2020.

Kathleen Ida Guglielmo, Wilmington, Del., 11/9/2020.

Cheryl Knight Miles, Norfolk, Va., 10/27/2020.

’92

Joanna Mitchell Elpers, Alexandria, Va., 11/25/2020.

’93

Jason Robert McHenry, Decatur, Ga., 11/19/2020.

Don R. Rich, Midland, Mich., 8/31/2020.

’94

Lisa Marie Decker Alvey, Baltimore, Md., 11/16/2020.

’95

James Brock Springer, Blacksburg, Va., 11/28/2020.

’96

Waide Lee Robinson, Glen Allen, Va., 10/30/2020.

Carolyn C. Modlin, Boykins, Va., 10/21/2020.

’97

Jason P. Price, Mason, Mich., 11/1/2020.

’98

Angel Hollis Vaccaro, Mclean, Va., 10/9/2020.

’99

Charles Patrick Allebaugh, Santa Monica, Calif., 9/29/2020.

’01

Karly A. Green, Tempe, Ariz., 9/5/2020.
Heather Ellen Vehrs, Blacksburg, Va., 11/6/2020.

’02

Paige Rachelle Koudelik, Salem, Va., 9/12/2020.

’03

David Melville Schumpert, Annapolis, Md., 9/30/2020.

’04

Maegan Pauley Hoy, Churchville, Va., 10/24/2020.

Bryan E. Mitchell, Roanoke, Va., 8/23/2020.

Carrie Lynn O’Connor, Boston, Mass., 9/14/2020

’05

Jessica Hynson Cruise, King George, Va., 9/7/2020.

’06

Joseph Michael Vernaci II, Manassas, Va., 9/28/2020.

’07

Laura Harris Brumsey, Sterling, Va., 8/21/20.

Kristin Marie Patterson, Greensboro, Ga., 10/16/2020.

’08

William David Drake, Blacksburg, Va., 9/29/2020.

Chao Han, Raleigh, N.C., 10/21/2020.

’09

Andrew Galelan Yeshnik, Herndon, Va., 11/10/2020.

’10

Shirley Topp Deen, Forest, Va., 9/19/2020.

’13

Jonathan Matthew Carpenter, Blacksburg, Va., 10/13/2020.

’20

Alexander Onyekachii Nwogu, Alexandria, Va., 10/5/2020.



OBITUARIES

Ryland Edwin Webb, professor emeritus and former head of the Department of Human Nutrition and Foods (HNF), died Feb. 23. In 1963, Webb joined Virginia Tech’s Department of Biochemistry as an assistant professor whose research focused on the interactions of nutritional status and pesticides and pesticide resistance and metabolism. Ten years later, he became head of HNF, serving from1973 to 1982.

Gustavus Galloway Williamson Jr., World War II veteran and retired professor of history, died Jan. 2. He spent most of his teaching career at Virginia Tech. Williamson encouraged progressive thinking and an understanding of history with regard for both positive and negative actions of the past. He took great pride in the achievements of all the young people whose lives he touched through teaching and in scouting.

Donald Yates, an instructor in the Virginia Tech Department of Sociology, died Feb. 14. Over his 40-year career, Yates taught sociology and criminal justice in several colleges and universities prior to joining Virginia Tech in 2019.

FACULTY/STAFF

William Glenn, an associate professor of educational leadership in the Virginia Tech School of Education, died Jan. 30. Glenn’s work and research focused on the effects of legal, economic, political, and school-level variables on student achievement, with an emphasis on narrowing the achievement gaps related to race, poverty status, and gender.

Robert Schulman, a professor emeritus in the Department of Statistics and a member of the Virginia Tech community since 1974, died April 27. During his career, he taught an estimated 170 classes to approximately 8,300 students. Schulman was elected to the Virginia Tech Academy of Teaching Excellence in 1980.

Easley Stone Smith ’48, M.S. ’60, associate professor emeritus of agricultural engineering (now known as biological systems engineering) at Virginia Tech and World War II veteran, died on Feb. 2. Smith was a university faculty member for 28 years. His specialty was farm machinery, and he was instrumental in the development of no-till farming.

MARY DESMOND



Whit Babcock

END NOTE

REACH FOR EXCELLENCE, HOKIES!



DEAR HOKIE NATION,

On April 20, the Virginia Tech Athletics Department announced its Reach for Excellence campaign, in which we will raise \$400 million to propel Hokie sports into the upper echelons of the ACC and nationally.

The campaign's name comes from the sign at the end of the Avery Tunnel that leads onto the field at Lane Stadium. The sign reads, "For those who have passed, For those to come ... Reach for excellence." Football players see that sign before every home game, as do graduating seniors before commencement.

To realize our boundless potential for greatness, we are asking every member of the Hokie Nation—fans, alumni, donors, faculty, staff, and students—to Reach for Excellence. As a part of the university's Boundless Impact campaign, this athletics initiative will help propel our nationally renowned football program to new heights. It will advance our basketball programs to even greater levels of accomplishment. And it will



AHEAD OF THE GAME: Philanthropy made it possible to renovate the football program's weight room. "Having one space that has everything we need has brought us together," said tight end James Mitchell, pictured above. "The facility has had a great impact on that, so we're grateful for everything that it's providing us."

ensure excellence across the board for all of our sports and the amazing student-athletes who define them.

Your financial support can strengthen any of the five pillars of our campaign—the football enhancement fund for staff and facilities, a Cassell Coliseum renovation, the Drive for 25 initiative to increase Hokie Club membership to 25,000 and help pay for scholarships, endowments to assist with scholarships, and sport-specific giving to ensure comprehensive excellence throughout our program.

Our players and staffs produced amazing results over the past year despite facing some of the most challenging circumstances in the modern history of college athletics. The men's and women's basketball teams both made the NCAA tournament, the first time they have accomplished that in the same season in school history. Our men's track and field team captured another ACC indoor championship, while the wrestling, men's soccer, and women's golf squads all qualified for NCAA postseason competition. In addition, four football

players were selected in the NFL Draft, including two first-round picks (cornerback Caleb Farley and tackle Christian Darrisaw), while Daniel Pereira was the No. 1 overall pick in the Major League Soccer Draft.

Thanks to your gifts of all sizes, we've been able to raise \$150 million toward the \$400 million Reach for Excellence goal. Thanks to philanthropy, we were able to build a Student-Athlete Performance Center and renovate our football weight room and team position meeting rooms.

Now is the time to capitalize on all of this momentum. It's time to put a stake in the ground and never go backward. It's time to do something never before done at Virginia Tech—and we need your involvement. Instead of someone doing everything, we're asking everyone to do something. This vision will be realized only with your help.

It's time to move from a challenger brand to a champion brand. We need to take the hard-hat mentality and "try harder" attitude of Virginia Tech and elevate it to

the top. With limited resources, we have overachieved. Imagine what we can do when we overachieve with competitive resources.

It's time to go down the tunnel together, to jump, and to Reach for Excellence. We hope you'll join us. ■

Whit Babcock is the director of athletics.

REACH FOR EXCELLENCE

THE REACH FOR EXCELLENCE

CAMPAIGN ANNOUNCEMENT

IS HIGHLIGHTED ON PAGE 22.

FOR ADDITIONAL INFORMATION

ON THIS HISTORIC CAMPAIGN:

REACH.HOKIESPORTS.COM.