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.

That’s his role. Claim yours... vt.edu
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.

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.

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.
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.

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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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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 common-wealth’s guidelines and careful monitoring of COVID-19 in our communities. Vaccinations are the key, and a high level of vac- cine-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 pro- vides 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 beautiful campuses and shake Lane Stadium again as we jump

forward to our future.

The experiences of the past year were unprecedented, impact- ing the way students learn and interact, the way professors con- nect with their students, the way employees work, and the way our campuses and communities work together across the common-wealth.

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 your- selves, and enjoy the remaining few weeks of summer.

Be committed. Be well. Thank you, Hokies!

Tom Sands is Virginia Tech’s 16th president.
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.

WALK THE DOG: Virginia Tech researchers, students, and industry leaders are testing a robotic dog to monitor construction progress on the Blacksburg campus.
Optically pumped magnetometry devices can measure the brain's subtle magnetic signals emitted by neurons and into a setting where we can study 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, changing the location of magnetic fields produced by the human brain.

“...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.

“...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 peptidylglycan, the mesh-like bag that protects the inside of the cell, and plays an amplifying role in causing inflammation in Lyme arthritis patients. The protein, called NapA, acts as a molecular beacon that antagonizes the patient’s 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.

“...a possible avenue of vaccine development as well.”

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 on 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.
MSU graduates are leading the effort to make Michigan more competitive internationally and position Lansing as a significant destination for the next generation of global leaders. "We are committed to preparing students for leadership roles in a rapidly changing world," said President Lou Anna Simon. "This includes equipping them with the skills and experiences they need to succeed in a global marketplace." The MSU Global Fellows program offers students the opportunity to study abroad, gain international work experience, and develop leadership skills that will enable them to make a difference in their communities and the world. "MSU students are rising to the challenge of preparing for a global society," said Select Professor of Journalism and MSU Global Fellows coordinator John Coates. "They are enthusiastic, curious, and determined to make a positive impact in the world." Through the program, students gain hands-on experience in diverse cultural and economic settings, which helps them develop a global perspective and the ability to navigate complex and rapidly changing global environments. The program also provides students with the skills and knowledge necessary to succeed in the global marketplace, including language proficiency, cultural competence, and cross-cultural communication skills. The MSU Global Fellows program is one of the many initiatives that MSU is implementing to prepare students for the demands of the global economy and to position the university as a leader in global education and research. "Our goal is to ensure that every MSU graduate is globally competent and prepared for leadership roles in an increasingly interconnected world," said Select Professor of Global Studies and Dean of the College of Social Science R. Gerald Turner. "We are committed to equipping students with the skills and understanding they need to make a positive impact in the world."
CAREING 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’s ’37 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 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 Mozakzo 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. “I consider someone at Virginia Tech a friend 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.”

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.

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 recognizing her efforts to help remove health barriers for refugee and immigrant communities.

Seeker Support Group Roanoke, formed at Virginia Tech, was the co-founder of the Refugee and Immigrants Partnership and is 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 local farmers.

“I can’t not help them now.” said. “There are so many stories like that. I will never forget this,” Buhrman walked here all the way from Honduras. Last spring semester at a Cranwell International Center event.

I can’t not help them now.”

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.
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 Bio-medical Engineering and Mechanics has attracted substantial funding for a unique approach to treating osteosarcoma, a notoriously painful and aggressive bone cancer that primarily affects 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 Vlaisavljevich, a biomedical engineer and assistant professor in the College of Engineering.

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.

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

57,742 donors in all!

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Tim Sands
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ANDREW MANN
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Tim Sands
Virginia Tech president

ANDREW MANN
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, 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 programs 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.
- Programs that provide opportunities for nontraditional undergraduates, including veterans, to eventually enroll and succeed at the Innovation Campus.

“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.”

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. 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
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 $356 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.
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.

vt.edu/plates

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.
"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 initiative 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.”

"REACH FOR EXCELLENCE"

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

[Virginia Tech president's quote]

[Tim Sands's quote]

[Details about the Reach for Excellence campaign, including goals and milestones]
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, splashing 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. 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.
Spotted lanternflies represent a threat to Virginia agriculture, specifically farms in Virginia. 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 infected 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 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.

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 ext.vt.edu. For even more information, find your local Extension office at ext.vt.edu.

COURTESY OF THERESA DELLINGER AND ERIC DAY OF 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.

**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, housekeeping 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.
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 previous 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.
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.

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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.
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—VIRTUALY**

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.

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 Ratchiffe, 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. Ratchiffe encourages Hokies to reach out to fellow alumni who work from home or at other decentralized locations.

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 uncopling where you work and where you live, and that’s pretty exciting.”
A stream of information about how Virginia Tech is working to protect and preserve an essential resource

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.

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.


“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 daylights briefly and is then piped 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 your 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 discussed the Stroubles Creek restoration project with Preston Bryant, who was then serving as the secretary of natural resources for Virginia.
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 build up 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-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
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 gazebos 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 Moscovy ducks. 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, Muldoon estimated that about 1,000 Hokie students volunteer each year.

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 impermeable 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.”
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 and director of the Virginia Water Resources Research Center at Virginia Tech. “Water is essential. Many aspects of our lives depend on water resources, 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 Environment. 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.

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, people who understand both the science and the human dimensions related to water, including policy, communication, and stakeholder issues,” Schoenholtz said.
Did You Know?

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

Water is the only substance that is found naturally on Earth in three forms—liquid, solid, and gas. Around 86 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. The World Health Organization (WHO) reports that contaminated drinking water is estimated to cause 485,000 diarrheal deaths each year.

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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. 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 it’s 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.

“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 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, Kylee 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.
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 cost-share programs that help cover expenses associated with practices that protect streams, like installing fences, planting vegetative buffers, and cross-fencing.

In Augusta County, Extension agents Matt Booher and John Bennner 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. Dock 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, snow-melt, 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," Sridhar said.

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 Communications 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.

In the case of floodwaters, it’s easy to see how climate change might affect storms, and therefore the frequency and intensity of flooding. Across Virginia Tech’s colleges, institutes, and units, research—spearheaded by Venkat Sridhar, 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 Communications 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.

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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 2010.

During the event, faculty from Virginia Tech and Berkeley signed a memorandum of understanding to mark 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 2010.

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 infrastructures. 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.

A two teams of researchers from Virginia Tech are investigating water quality issues connected to the Kappahannock 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 Frederickburg'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?

Carylan 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.

Infrastructure also is affected by population growth. As the demand grows, sometimes the systems become outdated. 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.

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 Rosnoke'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 Uthepgove, 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 at ICAT.

"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 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 Undefeated,” 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+.
Alexander was also a featured guest at Virginia Tech’s 2021 spring commencement. He delivered a poem (page 56) 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 my literary mother, Nikki Giovanni, who were also educators and accomplished storytellers, poets, and authors. Many of whom became lifelong friends. The pair of poets may remain in 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 retooled 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, Nikki, it’s all of us, 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 brussel sprouts—that 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 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.”
To find out what it is, watch becoming itself, and you have to have the patience. Is not a name you give something. It is something you.
The St. Lucian poet, Derek Walcott, wrote that a noun
is not a name you give something. It is something you
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

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 fall
Be okay with that
Be patient
Be resilient

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
for 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

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Kwame Alexander
April 30, 2021
London, England

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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 540-231-6265.

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 awarded 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.

Class Notes | Hokie Nation | 59
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 limited to meeting 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.

Welcome to the City

Save the Dates

Sept. 10-11 Corps of Cadets Reunion

Sept. 19 Welcome to the City

Sept. 25 Pamplico College of Business Tailgate

Oct. 9 College of Agriculture and Life Sciences Tailgate

College of Architecture and Urban Sciences Tailgate

Oct. 15-17 Homecoming Weekend

High-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

Global Education Office Tent

Office of Inclusion and Diversity Tent

Global Education Office Tent

Graduate School Tent

Global Education Office Tent


WEDDING Maria Alejandra Rosé, Fairfax, Va., published her first children’s book, “I Am Loved,” with Unbound Reel Publishing. Jocelyn Lamb Zimmerman, U.S. Army, was awarded the Bronze Star Medal for her service in Afghanistan.


WEDDING Charles L. Carson, Buckhag, Va., was named a 2021 graphic designer to watch by Graphic Design USA.

WEDDING Alexia Danielle Rose, Moor, Ariz., Ma. L., a Lansing law staff accountant, is now a licensed CPA in the state of Maryland.

CAREER Robert ‘92’ Morse Elwyn, Fort Davis, Va., was elected to the Board of Directors of the Virginia War Memorial Foundation.

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

Tom F. Shaw, Falls Church, Va., received Washington Business Journal’s 2021 Diversity in Business Award in March.

CAREER James Thomas Lancaster, San Antonio, Texas, was named associate principal with Overland Partners Architecture + Urban Design, a Northern Virginia-based structural engineering firm.

CAREER Christopher W. Gannheimer, Collins, N.C., has been named a director at Carruthers & Baird law firm in Greensboro, N.C.

Rajendra Vaidya, Tampa, Fla., has been welcomed to Wooded & Curten as chief technology for the Drinking Water Practice.

EDUCATION Erik D. Unger, Kernersville, N.C., a daughter, 05/21.

EDUCATION Edward John Barry Jr., Honolulu, Hawaii, is the commanding officer of the U.S. Mississippi.

Aaron Miles Henc, 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.

EDUCATION Kristen L. Maglia McKernan, Simpsonville, S.C., is a program manager for Data Center Infrastructure Operations at Google.

Chris R. Waskiwowski, San Diego, Calif., was promoted to chief engineer at Siemens Melbourne.

EDUCATION Clara Colton Sharp, Chappaqua, N.Y., a daughter, 09/14/20.

EDUCATION Mariam Yermou, Frisco, Texas, was selected to the council under the Fairways section of the IEEE Industry Applications Society Magazine and was honored with the IEEE outstanding young professional award 2020 and Top 10 Pump professionals to watch in 2020.

EDUCATION Christie Marie Filippaci Kruskal and Ryan Charles Kuskal, Poros Vedra, Fl., a son, 07/27/20.

EDUCATION Thomas James Lancellotti, San Antonio, Texas, was named associate principal with Overland Partners Architecture + Urban Design, leading the firm’s Visitor Experience area, developing market strategies, and serving as an expert in the areas of nonprofit, civic, and cultural work.

Mandi Prashar-Pandit, Davisville, Va., was named a 2020 North Carolina Governor’s Young Leader in the Law and received Groundbreaker Bar Association’s 2020 Pro Bono Award.

CAREER Thomas Beckwith Jr., Fleming Island, Fla., was one of only 10 selected internationally for the 2021-23 Class of Emerging Leaders for NASA’s GALAXY Community of Academic Advising.

EDUCATION Emily Hughes Hicks and Alan B. Hicks Jr., Arlington, Va., a son, 06/24/20.

Meghan Elizabeth Brady Merkert and Eugene Hayes Merkert, Leesburg, Va., a daughter, 09/21/21.

CAREER Sarah Anne Deitz-Guth, Williamsburg, Va., was designated a Fellow of the College of Optometrists for her service in Afghanistan.

CAREER Tom P. Shen, Chinese American National Museum in Washington, D.C., has been appointed to be the City of Houston mayor’s special advisor on education.

Carolyn Jankovski, Houston, Texas, published the first set of the “My Homeland” book series for children of multiracial backgrounds and was appointed to be the City of Houston mayor’s special advisor on education.

Kerine Nicole Kube, Virginia Beach, Va., has joined For Rokathad LLP in Denver as an associate in the Litigation Department.

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

CAREER Adam Wescley Ford, Bridgewater, Va., wrote and published “The House Cooperation Book,” which is a corporate history book to celebrate Rockefeller Cooperatives’ 100th anniversary in business.


CAREER Charles L. Carson, Hawkins, Va., was named a 2021 graphic designer to watch by Graphic Design USA.

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 both, and the results tasted so good.” This discovery evolved into a side venture—The Pakalachian Truck. 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.”
DOCTOR OF DIVERSITY

"DR. DOLITTLE," A 1998 MOVIE, FEATURED 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—helping 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 students. 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.”

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

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.
YOUNG ALUMNI

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 Marine Park in Panama City Beach, Florida, 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, the breeds are beloved by society and how the dog that’s ready to graduate will fit into that lifestyle.

“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.

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.

“Going into public places, strangers seeing a veteran who might be troubled-looking or has a stern 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.

“We try to really look at the veteran’s lifestyle and how the dog that’s ready to graduate will fit into that lifestyle.” 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 1 year. After a year, the dogs advance to the next stage of training.

“‘Sons of Saturday’ is the passion project,” Finn said.

The original idea came from Billy Ray Mitchell ’17, a former Virginia Tech football 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.

“The 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.
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 Virginia Tech, competed in the 400-meter hurdles in 2008.

Ieva Kupidina 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 ’15 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.

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

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, Humphrey has built a niche business that ranks No. 1 in the U.S. in the manufacture of rail cars, locomotives, 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 headquar- ters 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 open to the public until growing his line of rail cars, 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, locomotives, 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.

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Michael Hemphill is a freelance writer in Roanoke, Virginia.
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


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72

Macklyn Price Woodford, 10/14/2020.

Dayton, Ohio, 7/9/2020.


Winchester, Va., Midlothian, Va., IN MEMORIAM


Everett F. Eldred Jr., North Chester-field, Va., 8/26/17.


Thomas Lee Wake, University Park, Colo., 9/15/2020.

Virginia Osborne Ackerman, Jr, Augustine, Va., 10/11/2020.


James Hal McArther, Chesapeake, Va., 11/13/2020.


Adria Louise Parris, Salem, Va., 10/15/2020.


Charles Dean Pinkard Sr, Cullin-ville, Va., 10/6/2020.


Thomas Lee Wake, University Park, Colo., 9/15/2020.

Martha P. Waybright, Blacksburg, Va., 11/1/2020.


Martha P. Waybright, Blacksburg, Va., 8/30/2020.


Gary Andrew Waugh, Middletown, S.C., 10/30/2020.

Andrew Swanson Anderson Jr, Chester Springs, Pa., 11/12/2020.

Macon Eric Thomas, Maryland, Md., 11/12/2020.

Mary Eliza Stidfole, Middletown, Md., 11/12/2020.


Mary Margaret Warren, Glen Allen, Va., 11/13/2020.


Janice Frees, Berryville, Va., 10/30/2020.


Emily Lewis, Roanoke, Va., 11/21/2020.


John W. Chaffee, Roanoke, Va., 11/19/2020.


Mary Beth Hatcher, Roanoke, Va., 11/18/2020.

Mary Margaret King, Virginia Beach, Va., 11/17/2020.


Peter Wharton Deavers, Los Angeles, Calif., 11/17/2020.


Juan Antonio Martiñosy Nuey, Virginia Beach, Va., 10/24/2020.


Elizabeth L. Burke, Blacksburg, Va., 10/22/2020.

Thomas Ove Andersen, Novato, Calif., 10/22/2020.


Ellie C. Davis, Virginia Beach, Va., 10/20/2020.

Mark Allen Pearl, Middletown, Md., 10/20/2020.

John Robert Schonew, New Richmond, Ohio, 10/20/2020.


Harold Ellis House, Nokesville, Va., 10/18/2020.


John Vincent Barkham, Glen Allen, Va., 10/16/2020.


Laura Ellen Boice, Cape Coral, Fla., 10/15/2020.

Melina ‘Mandy’ Moon Coleman, High Point, N.C., 10/15/2020.

Wayne Emmerling Ellis, Herndon, Va., 10/15/2020.


Delphine Lindemann Sonn, Alexandria, Va., 10/14/2020.

Robert Allen Ferrell, Berryville, Va., 10/14/2020.

Janices Freeman Rockle, Blacksburg, Va., 10/14/2020.

Naomi Duine Nunn Selvey, Blacksburg, Va., 10/20/2020.

Theodor McKinley Thomas Jr., Farmville, Va., 10/19/2019.

Calvin Wade, Chapel Hill, N.C., 9/24/2020.


Wilkie Willis Chaffin, Midlothian, Va., 11/1/2020.

Sandra Reid Cohen, Columbus, Md., 10/30/2020.


Lawrence Ward Brownell Jr., Moneta, Va., 9/14/2020.


Mark Francis Perry, Occoquan, Va., 10/30/2020.

Philip Anthony Campbell, Pompton, N.J., 10/7/2020.

Peter Wharton Deavers, Los Angeles, Calif., 11/17/2020.


Juan Antonio Martiñosy Nuey, Virginia Beach, Va., 10/24/2020.


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Mark Francis Perry, Occoquan, Va., 10/30/2020.

Philip Anthony Campbell, Pompton, N.J., 10/7/2020.
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...
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.

CONTENTS

STUDY SPACE

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.