Virginia Tech is home for the curious, the bold, the inquisitive.
A thirst for knowledge propels us, a call for service unites us.
That’s our role. Discover yours... vt.edu
STANDING AT AN INFLECTION POINT IN HISTORY

STAYING CONNECTED TO AND involved with Virginia Tech makes the university—and our bonds as Hokies—stronger.

That’s why your engagement is such a crucial part of Boundless Impact: The Campaign for Virginia Tech. This comprehensive campaign is the university’s fourth, but it’s the first with an engagement goal. We are connecting with more Hokies than ever before, and our goal is to continue growing that number—expanding from 40,000 engaged alumni and friends to more than 100,000 over the course of the campaign.

There are ways for all Hokies to remain active in the life of the university.

When you volunteer, come to an event, or make a gift, you are making a difference. You are making our community stronger and the campus experience more relevant for current and future Hokies.

Give back by mentoring an undergradate student. Shape the university’s future by serving on a board. Help Hokies reconnect by pitching in as a reunion volunteer, or share your enthusiasm as a Giving Day ambassador.

Stay connected to Hokies and our campus by attending events. Expand your professional community by attending a networking event. Rekindle friendships at a reunion or meet Hokies in your neighborhood at a chapter event.

Purchase season tickets to the Moss Arts Center, men’s or women’s basketball, or football.

Being a Hokie is a part of who you are—and Hokies help the causes that matter most to them. With your help, we will move Virginia Tech forward.

We are poised to become an even greater force for positive change in the world. With an active network of alumni, we can seize this moment.

Join us to make this bold vision a reality.

Mike Moyer, the associate vice president of development for colleges, and Angela Hayes, the chief of staff for the vice president of advancement, are leading the Boundless Impact campaign.

VIDEO

Find out how you can stay connected, engaged, and move Virginia Tech forward.

TAGS

Boundless Impact, Volunteer, Giving Day, Alumni, Athletics, Athletics Data Science, Moss Arts Center, Rush Family, Youngkin Center, Critical Velocity Initiative, University Libraries, Brain Health Institute, Data Science, Athletics

IN OUR NEXT ISSUE

Data are individual units of information that can be analyzed and measured to aid decision-making in virtually every organization or activity, from research and business management to finance and governance. Virginia Tech inventively interweaves data science into its curriculum to inform students of its value across disciplines. In our spring edition, read about several graduate students who are analyzing data for athletics.

You can be a part of our next addition, too. We welcome story ideas from our readers and always enjoy hearing about your career and family news in our Class Notes section. Don’t forget to update your contact information and let us know what’s happening in your life. Visit vtmag.vt.edu to learn how.

END NOTE

STANDING AT AN INFLECTION POINT IN HISTORY
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Virginia Tech is leading the charge to harness technology to spark a new agricultural and natural resources economy. On the farm of the future, drones will communicate with robots. Sensors will upload data to guide crop and herd management. Plants will be biodesigned, and farm implements will include not only tractors but iPads as well.

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ON THE COVER: Brandon Bunn uses a drone, to oversee feed crops and to assist with cattle management on his family’s farm in Dublin, Virginia. (at right) Fitz and The Tantrums perform for a crowd of nearly 8,000 at a special concert held during a weekend of festivities to kick off Boundless Impact: The Campaign for Virginia Tech. Photos by Jeff Greenough.
Autumn is beautiful in Blacksburg, and the energy on the Virginia Tech campus is contagious as our newest students find their places in the Hokie community and alumni take part in our timeless traditions. While that may sound like “business as usual” for a new semester, I believe fall 2019 is a pivotal time in our university’s history.

We began the academic year with a new strategic plan, The Virginia Tech Difference: Advancing Beyond Boundaries. It establishes four priorities: Advancing Regional, National, and Global Impact; Elevating the Delivery Program in nearby Christiansburg, Virginia. Virginia Tech continues leading the way in shaping solutions for tomorrow’s autonomous vehicles and smart infrastructure.

Plans for the Innovation Campus in the greater Washington, D.C., area are moving forward. We’ve selected a prime location in Alexandria’s National Landing development, and our first class of master’s degree students begins studies next year as we step up our efforts to meet the commonwealth’s needs for tech talent.

The Fralin Biomedical Research Institute’s newest building in Roanoke will open next year, as Anthony-Samuel LaMantia, the institute, and Virginia Tech begins a university-wide cancer research initiative.

On Oct. 11, we announced our plans to fuel excellence across all university programs and advance our strategic priorities when we launched Boundless Impact: The Campaign for Virginia Tech. Our goals are ambitious, as we are seeking to engage 100,000 alumni in university programs and advance our strategic priorities when we launch Boundless Impact: The Campaign for Virginia Tech. Our goals are ambitious, as we are seeking to engage 100,000 alumni in the university’s mission to serve humanity and raise $1.5 billion to Virginia Tech campus is contagious as our newest students find their places in the Hokie community and alumni take part in our timeless traditions. While that may sound like “business as usual” for a new semester, I believe fall 2019 is a pivotal time in our university’s history.

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Virginia Tech Magazine
FINDING SANCTUARY

IN MARCH 2018, SHERIFF’S DEPUTIES AND ANIMAL control officials discovered 100 neglected horses barely alive in southeastern Maryland.

Corresponding media coverage caught the attention of Amiya Veatch, a member of the Advisory Council at Virginia Tech’s Marion duPont Scott Equine Medical Center (EMC) in Leesburg. A longtime rider and horse owner, Veatch responded with an immediate offer of help. When the organization handling the rescue effort eventually agreed to let her visit, Veatch instinctively decided to bring a horse trailer along.

When Veatch returned home to Alexandria, Virginia, she was joined by a pregnant mare that she later named Mona Lisa and a young chestnut male now called Peanut.

Not knowing when Mona Lisa might give birth or how the delivery might go, Veatch enrolled her in the Foaling Out Program at EMC. Mares in the program are attended primarily by EMC’s internal medicine service, but the center’s theriogenology service (reproduction and breeding) and the surgery and anesthesia team assist as needed.

In the absence of a medical history, clinicians carefully checked the mare’s body condition, administered the appropriate vaccines, and performed an ultrasound to evaluate fetal condition. Mona Lisa delivered a healthy foal, Picasso, about three months after arriving at EMC. To read more, visit vetmed.vt.edu/yearling.

HORSING AROUND: Amiya Veatch shares a moment with Peanut (left) and Picasso (right) on her farm in Fort Washington, Maryland. She is married to Jeffrey Veatch ’93, who serves on the university’s Board of Visitors.
Volunteering at the clinic is one of the patients. “I have learned so much patients. I have learned so much who started working at the clinic early. Meyha clinic is a pretty great place where you get medical conditions, as well as ways medical conditions. Everything is then presented to the preceptor, who oversees each patient encounter and makes the final decision on the course of treatment. Fourth-year student Mira Tanenbaum is a regular volunteer at the clinic. “The Free Clinic is a pretty great place where you get to really use what you’re learning to make a strong impact on the community,” she said. “It’s a service that I find really valuable, and I want to be able to contribute wherever I end up after medical school.”

The Virginia Tech Transportation Institute (VTTI) is partnering with Ford-owned micromobility company Spin to conduct a naturalistic driving study of scooter riders on campus. Currently, 300 e-scooters are available at university ride-share stations and may be checked out for short commutes across campus. As part of the pilot research initiative, VTTI is equipping 30 of the scooters with forward-facing cameras and other research equipment to record and analyze trends in rider behavior, interactions with other road users, and other valuable safety data. The cameras will record the area directly in front of riders. Also, with approval from the Institutional Review Board, up to 20 fixed cameras will also be placed in public places around campus to capture interactions with scooter riders. The scooters will be operational for 12 months.

For Mehdi Setareh and his research team, the simple task of walking across a pedestrian bridge can help make future bridges safer. Setareh, a professor in the School of Architecture + Design in Virginia Tech’s College of Architecture and Urban Studies and founder/director of Virginia Tech’s Vibration Testing Lab, studies vibrations caused by footsteps. Excessive vibration makes a pedestrian bridge uncomfortable for the user, and it can be expensive to fix.

To collect needed data, Setareh monitors volunteers as they walk across a pedestrian bridge. For several years, he has used the footbridge at the University Gateway Center.

Researchers realized they also needed to have groups walk in unison across the bridge, comparing the vibrations created with the more random patterns of people walking normally. So, Setareh turned to the Virginia Tech Corps of Cadets. Thirty cadets along with the Highly-Tighties, the corps’ regimental band, made 72 passes across the footbridge this fall.

Setareh’s research team used a series of vibration sensors mounted at the center of the bridge to map the cadet’s actions. The scooters will be operational for 12 months.

HokieNauts—hopes to change that. These Hokies, spanning a variety of majors, were among the 12 finalists in a national NASA-sponsored competition to design informational digital displays to fit inside an astronaut’s helmet. The design challenge—NASA Spacesuit User Interface Technologies for Students—calls on student teams to create an information system using Microsoft HoloLens, a software that gives astronauts instructions both audibly and visually. It uses a virtual reality headset and a transparent lens for an augmented reality look, which enhances real-world objects. Currently, all communication with an astronaut during a spacewalk is done by voice with a crew member, according to NASA. But voice commands are not always effective. NASA wants to create helmet-based visual displays for better communication.

This is the second year of the challenge. Samat Imamov, who developed the interface for the project, said he joined the group for the opportunity to work with NASA. “It’s a good résumé-builder,” said Imamov, a fifth-year senior who is majoring in computer science and was part of NASA Spaceflight 2018. The team plans to participate in the 2019-20 NASA SUITS competition, and they are looking for more students to join the group.
IN JUNE, VALARIE JOHNSON MCCULLAR, a Fraction descendant, stands outside the Fraction Family House at Solitude. The approved resolution was “in acknowledgement of the contributions of the Fraction family in the creation and emergence of Virginia Tech as a major land-grant university, and in accordance with the university’s efforts to transform the campus’s strategic location, on 15 acres just south of the Four Mile Run stream that separates Alexandria and Arlington, positions Virginia Tech and its future partners near the nation’s capital, diverse industries, and leading tech companies, including Amazon and its HQ2 project.”
PILOT PROJECT: Some consumers living in Christiansburg, Virginia, may choose to have qualifying purchases delivered to their homes via drone as part of study that emphasizes community feedback.

DRONE DELIVERY TAKES OFF

IN OCTOBER, IN EACH OF THREE SUB-urban yards in Christiansburg, Virginia, a drone zoomed into view, hovered over the lawn, and lowered a package neatly onto the grass.

The residential flights marked the launch of a unique air delivery service from Wing, an offspring of Google’s parent company Alphabet. Wing has been working with the Virginia Tech Mid-Atlantic Aviation Partnership (MAAP) since 2016 to bring drone delivery to the U.S.

This trial service is unfurling under the aegis of a federal drone-integration program that emphasizes community feedback. To help other struggling students, Addair and several classmates founded 1G@VT, a campus organization for first-generation students. Students came together to use their skills and determination to create something valuable to our communities.”

Over the coming months, Wing and MAAP will continue to work with the community, seeking feedback on what’s working well about the service and how it could be improved.

A FORCE FOR FIRST-GENERATION SUCCESS

GROWING UP IN A LOW-INCOME household in Rural Retreat, Virginia, JT Addair struggled to balance his studies with an unstable home life. He arrived at Virginia Tech in 2016 homeless, estranged from his family, and fretting over how he would pay for college.

“[Virginia Tech] was the first time I had structure in my life with a stable place to stay,” he said. “I felt relief and determination to make my life better than it was.”

Eventually, Addair found his niche as a public relations major, along with advisors, friends, and a path to graduation.

To help other struggling students, Addair and several classmates founded 1G@VT, a campus organization for first-generation students. Last year, the organization grew to approximately 100 students, staff, and faculty members. Students Affairs honored Addair with the Aspire! Award for Courageous Leadership, recognizing his advocacy on behalf of first-generation Hokies.

Frank Shushok, senior associate vice president for student affairs at Virginia Tech, will serve as the university’s interim vice president for student affairs when Patty Perillo departs for a position at the University of Maryland.

Shushok will work closely with Perillo to ensure a smooth transition before her departure at the end of the year.

A member of the Virginia Tech community since 2009, Shushok oversees several key student support areas in Student Affairs. He also is an associate professor in the higher education and student affairs when Patty Perillo departs for a position at the University of Maryland.

Shushok will work closely with Perillo to ensure a smooth transition in leadership before her departure at the end of the year.

For the past 10 years at Virginia Tech and throughout his career in higher education, Frank has been a respected student advocate who has demonstrated a commitment to student learning and success and a deep understanding of the student experience,” said President Tim Sands. “I am grateful he will transition into this important interim leadership role.”

First-generation student Taqi Harrison vividly recalls the day that he woke up unable to move. He had sleep paralysis. The experience inspired Harrison to help others understand the condition using University Libraries’ Virtual Environments Studio.

Virginia Tech veterinarians, veterinary technicians, and veterinary students worked with carpenters, contractors, and other volunteers to build 100 emergency shelters for dogs enduring substandard living conditions in rural areas.
Virginia Tech researchers are exploring the cutting edge of data analytics through the Discovery Analytics Center, the Virginia Biocomplexity Institute, and countless other pursuits. Here in Blacksburg, the architects and experts who plan for traffic on campus work in much the same arena.

These planners oversee the comings and goings of students, faculty, visitors, sports fans, and others. Their efforts help safely move tens of thousands of people, using a variety of different transportation methods, on and off campus daily.

In addition to around 33,000 students and more than 13,000 employees, an estimated 60,000 alumni, parents, and community members visit the campus each year. Personal vehicles are a popular transportation choice, with around 14,000 cars on campus every day, and more than 2,000 individuals are members of Zipcar, an on-demand car share service.

The university also supports programs that encourage car and vanpools. Beginning in the 2019-20 academic year, students had access to another alternative transportation option: 300 e-scooters available at university ride-share stations across campus. Virginia Tech Transportation Institute researchers are partnering with scooter company Spin to conduct a naturalistic driving study on campus.

Virginia Tech’s Campus Connect Bus provides a safe and convenient link between the university’s campuses in the Blacksburg/Roanoke and Ballston/Arlington areas. Each of the three Abbott Transportation buses in service is equipped with free Wi-Fi and has electrical outlets at each seat. The full-size charter buses have seatbelts, reading lights, reclining seats, and a restroom.

For more information, to purchase tickets, or to provide feedback:
Website: parking.vt.edu/alternative/regional/ncr-shuttle
Phone: 540-231-6141

Students are increasingly biking to campus. There were 3,073 visits to the Hokie Bike Hub over the past year, and Roam New River Valley’s bike share program recorded 8,337 trips taken in its first year.

Although pedestrian traffic has declined since 2014, numerous walkers navigate campus each day. Alternatives, such as skateboards, inline skates, unicycles, scooters, and more, allow people to move quickly from location to location.

During the 2018-19 academic year, Blacksburg Transit rides totaled 4,650,000. The number represents a 44 percent growth over four years. Mass transit options for regional, state, and out-of-state travel are also available.
A GOAL FOR GROWTH

WHEN MATT MABUTAS PUTS ON HIS Virginia Tech Corps of Cadets uniform, he thinks of all those who did the same before him.

“I feel extremely humbled,” said the sophomore, who is majoring in mechanical engineering in the College of Engineering, minoring in leadership studies in the College of Liberal Arts and Human Sciences, and is part of the Air Force ROTC. “The people who put this uniform on before I did, they were amazing. They built the corps into what it is now.”

Mabutas may have been speaking figuratively. But to a great degree, what he said is literally true. The Corps’ inspiring resurgence is a credit to the perseverance and generosity of alumni who, decades ago, recognized the tenuous position the program was in and decided to do all they could to help. Together, they have raised tens of millions of dollars toward cadet scholarships and served as volunteers to help ensure the program’s future.

Today, roughly 80 percent of cadets receive Emerging Leader Scholarships. Meanwhile, philanthropy is making possible a new Corps Leadership and Military Science Building near Lane Hall on the Upper Quad of Virginia Tech’s Blacksburg campus. Approved by the Board of Visitors in June, the $52-million, 75,500-square-foot building will bring together corps and ROTC programs now dispersed across several buildings. At the same meeting, the board also approved construction of a new Corps Leadership and Military Science Building near Lane Hall on the Upper Quad of Virginia Tech’s Blacksburg campus. Approved by the Board of Visitors in June, the $52-million, 75,500-square-foot building will bring together corps and ROTC programs now dispersed across several buildings. At the same meeting, the board also approved construction of a new residence hall for cadets, the third in June, the $52-million, 75,500-square-foot building will bring together corps and ROTC programs now dispersed across several buildings. At the same meeting, the board also approved construction of a new residence hall for cadets, the third

Albert Raboteau is the director of development communications at Virginia Tech.

SOUND INSPIRATION

ANDREW YOUNG GREW UP SINGING in the shower, playing Guitar Hero, and listening to his dad, a retired U.S. Army colonel who played in military bands and community musician groups, hang loudly on a drum set in the family’s basement. Young enjoyed dancing along to the beat. Eventually, he decided to pick up an instrument, a bass guitar, but there was one challenge. Young had been born without a left hand or forearm, the result of a congenital amputation. Young recalled announcing his musical intentions to his mom while holding a guitar, one of her hair ties, and a plastic spoon. “I’m going to give it a shot,” he said, using the hair tie to attach the spoon to the nub of his elbow and strumming the guitar with the utensil. For Young, music is about more than just entertainment. “[Andrew’s] whole life is a demonstration of creativity,” she said. “We learned from a very early age that pretty much Andrew would find a way.”

Young’s father learned to maneuver life with one hand of his own. “It’s a conscious decision, and I think everybody’s got it in them.”

Andrew Young student

Young played baseball and football, and he ran cross country in high school. He also learned to ride a bicycle, benefiting from modifications that included transferring all brake controls to the right handlebar and adding a bar on which to rest his shorter arm. Although Shriners Hospitals for Children provided a prosthetic hand with interchangeable ends for playing guitar or drums, Young, who taught himself to play acoustic electric guitar by watching YouTube, said he prefers a plastic spoon and a thick rubber band for strumming. At Virginia Tech, Young discovered his place by performing at open mic nights with Virginia Tech Expressions, a student organization that encourages creative expression, and entering competitions sponsored by the Virginia Tech Union, a campus group that promotes social and educational entertainment. A senior majoring in national security and foreign affairs in the College of Liberal Arts and Human Sciences, Young plays several gigs a week as a guitarist and singer at local restaurants and university events.
HOKIES LIVE FOR GAME DAY.

Whether it’s football in Lane Stadium, basketball in Cassell Coliseum, baseball at English Field, or any of Virginia Tech’s 22 intercollegiate teams, fans love to cheer on the athletes in maroon and orange.

And, while thousands of students attend Virginia Tech athletic events every season, behind the scenes, a select few also are hard at work on game day. They support Virginia Tech Athletics and HokieVision as photographers, ticket sellers, and marketing interns, and assist the sports medicine and strategic communications staffs.

On the sidelines, in the locker rooms, and on the fields and courts, these students develop valuable professional skills and gain the exposure and experience that will help propel their future careers.

GRACIE SMITH, a senior studying public relations, has been a Virginia Tech Athletics photographer since 2016. She has worked with various sports teams, including football, basketball, and wrestling.

“This is my dream job, and if I could do this for a professional sports team, I would,” said Smith, who interned with ESPN Radio in Richmond over the summer. “Even if I don’t do photography in the end, what I’m doing right now is giving me experience in other aspects of media.”

On a typical game day, Smith arrives at the event location up to five hours before game time to plan with coworkers. She also captures images of pregame festivities, such as the Hokie Walk down Beamer Way, and forwards early photos to social media personnel. She covers warmups, works with colleagues to record game action from start to finish, and attends the two-hour post-game conference.

DAVID KELSEY, a senior studying multimedia journalism with a sports media and analytics concentration, shoots videos and photos for HokieVision.

“Working for Virginia Tech Athletics has taught me more than I could have ever imagined,” said Kelsey. “HokieVision has given me the confidence in myself to go into the sports media field and know that I can succeed in my career on day one.”

On a typical football game day, Kelsey arrives at the office three hours before kickoff, where he prepares for his assigned event, which may involve manning a camera or working the video board controls during the game. Later, Kelsey will work the post-game press conferences or post highlights and news to the athletics website.

Kelsey hopes to work for a professional sports team. During the summer, he served as a videographer and editor for the Chicago Red Stars, a women’s professional soccer team.

MARY CATHERINE PENNINO, a senior studying marketing management, has been a marketing intern for Virginia Tech Athletics since 2018. Pennino works primarily with softball, women’s basketball, Football Fan Day, and Maroon and Orange Memories, which is a fan experience program.

“In this job, they really expect you to take charge, create ideas, and take the position seriously,” said Pennino. “When I am looking for a full-time job, hopefully in athletics, I can say I’ve done this. I wasn’t just running to get coffee.”

As an intern, Pennino interacts with fans, works with players, deals with merchandise, and helps with events. Walking through the tunnel with members of the football team tops her list of memorable moments.

MIGUEL PACHECO, a senior studying human nutrition, food, and exercise, serves as an assistant to the head sports medicine trainer for the men’s basketball team, working to prevent player injuries and assisting with rehabilitating those who are injured.

A typical game day for Pacheco lasts between eight and nine hours and involves tasks that range from setting up the taping section and offering hydration and towels to players to maintaining an emergency first aid kit.

“Virginia Tech has really taught me professionalism and maturity,” said Pacheco, who will graduate this fall and intends to pursue a career in physical therapy.

Haley Cummings, a senior majoring in public relations, is an intern with Virginia Tech Magazine.
Rooted in agriculture, Virginia Cooperative Extension (VCE) has grown into a valued resource for tapping into land-grant university research for all Virginians. With local offices in a combined 108 counties and cities, VCE provides needs-based programming and ample opportunities to connect with research-based solutions for a variety of issues that extend well beyond the realm of soil and livestock.

Here are just a handful of the hundreds of ongoing examples:

**Albemarle County**
Partnering with the Albemarle County Fair, Charlottesville Parks and Rec, and the Highland historic site, the Ag in the City program introduces youth to the agriculture community and helps develop the concept of where food comes from.

**Culpeper, Madison, and Orange Counties**
The Stone Soup Job Skills Training Program teaches food safety, nutrition, customer service, culinary, and shopping skills to low-income and developmentally and intellectually challenged individuals.

**Fairfax County**
The Master Food Volunteers program focuses on helping military families make healthy and affordable meals by providing recipes and nutrition education.

**Lee County**
A Farm and Land Transition workshop provided assistance for the process of making legal and personal decisions that protect farms, land, and resources.

**Rochingham and Franklin Counties**
A Risk Management Education Center grant has allowed for the development and implementation of curriculum and training related to mental health issues, stress, and suicide prevention for farmers.

**4-H Centers**
There are six 4-H Educational Centers located throughout Virginia. Each one serves a particular geographic region, providing camping experiences and a host of other unique learning opportunities.
Brandon Bunn uses technology like drones, feed meters, sensors, mobile phones, and robots to support pasture management on his family’s farm. (at right) Halter sensors, mobile phones, and robots are joining more traditional equipment on farms across the commonwealth.
Keeping an eye from the sky on 600-plus cattle is just one example of how the Bunn family uses advanced technology to manage their 1,000-acre farming operation in Dublin, Virginia. Although tapping into the technology trend isn’t a new concept for individuals and families in the agriculture industry, the opportunities for connectivity from the field directly to the research lab may lead to game-changing innovations for growers around the globe and right here in Virginia.

According to the Bunns, deciding to add some sophisticated digital devices to the more traditional tools of their trade grew out of their relationship with the Pulaski County office of the Virginia Cooperative Extension (VCE).

“The Extension service lets us know about lots of things that we really don’t know about,” Doug Bunn said. “When I first got into farming, cabs on tractors and air conditioning were the big things, and we didn’t have that. Now, you know, they’re coming out with drones that I think will eventually have sprayers on them and will go out and identify a weed on their own.”

ROOTED IN THE CAUSE
Bridging the gap between the latest research-based technology and the farmers in the fields fueled the mission of Virginia Agricultural and Mechanical Institute, today’s Virginia Tech, when it launched in 1872. Early on, that meant educating growers on the science of planting and pesticides and teaching producers about high-quality animal feeds and improved techniques for meat preservation. The addition of the Virginia Agricultural Experiment Station in 1886 and then VCE in 1914 bolstered these efforts.

In the 21st century, however, advancing the mission of the land-grant university involves tapping into innovations and technologies that improve sustainability, promote health and safety, and meet the food needs for a complex, rapidly changing population.

The Food and Agriculture Organization of the United Nations estimates the need for a 70-percent worldwide increase in crop production by 2050 on only about a 5-percent increase in farmable land. The impending need calls for intensifying crop production, increasing stewardship of natural resources, and leaning on technology to produce those results.

On the local farm, that translates to providing opportunities to expand from cows and plows to drones, global positioning systems (GPS), and wearable exoskeletons. It means embracing tools that capture big data and leaning on skilled researchers to translate and communicate information across the commonwealth in real time. It means working hand-in-hand with producers of all levels to discover practical applications for innovations and research that will allow farmers to work smarter, longer, and with a better quality of life.

And it means developing the SmartFarm Innovation Network. With about 120 interconnected locations that reach every corner of the state, the Virginia Tech-led SmartFarm Innovation Network will provide faster access to data; allow for real-time, geographically specific decision-making; and streamline statewide collaboration. The platform will allow researchers and industry leaders to weave together what happens in the fields and forests with emerging technologies in areas that range from biodesign and artificial intelligence (AI) to cybersecurity. And it provides a fertile ground for applying the advancements resulting from Virginia Tech’s growth in the greater Washington, D.C., metro area and the historic launch of the Innovation Campus, as well as the revolutionary biomedical work of the Fralin Biomedical Research Institute at VTC in Roanoke.

“As Virginia continues to grow and expand our reach into new economic and geographic areas, Virginia Tech is forging a stronger path to impact and improve life,” said Virginia Tech President Tim Sands during his State of the Uni-

When first got into farming, cabs on tractors and air conditioning were the big things, and we didn’t have that. Now, they’re coming out with drones that I think will eventually have sprayers on them and will go out and identify a weed on their own.

Doug Bunn farmer
Access to such information is important for companies like Novozymes Biological Inc. in Salem, Virginia, which is working to develop microorganisms that will optimize a crop’s ability to absorb nutrients, increasing both productivity and sustainability. “This is really an application of big data and data science agriculture at home, just like we are developing in other parts of the world,” said Chris McDowell ’92, head of operations for Novozymes. “The SmartFarm Innovation Network will provide the infrastructure and methodologies to run really meaningful experiments, get even more data, and discover how to leverage it to best improve agriculture.”

In addition to engaging researchers, the network will tap into the university’s students who are skilled in global system sciences, AI, and data analytics. This strategy encourages diverse perspectives and transfers fresh ideas to the network while equipping students with the information-gathering and problem-solving skills required by employers.

One such project, officially announced in June, connects the Virginia Agricultural Experiment Station with weather-intelligence provider WeatherSTEM. The partnership, which includes each of the ARECs as well as the Urban Horticulture and Turf Grass Centers in Blacksburg, will produce real-time, geographically pinpointed forecasts. Automatically uploaded to the cloud, the information will be accessible both online and via a mobile app. This will provide researchers, and students, with the public with up-to-the-minute weather information.

“Researchers who are involved in analyzing weather conditions and patterns through computer-simulated modeling, retrieving data from multiple sources in various locations across the state, is critical to understanding those patterns,” said Saied Mostaghimi, associate dean for research and graduate studies in CALS. Mostaghimi, who also serves as the director of the Virginia Agricultural Experiment Station, is excited to collaborate with Virginia Tech’s College of Natural Resources and Environment in the initiative. The WeatherSTEM site is expected to generate opportunities for students to assist with the installation and calibration of sensors and related equipment, among other learning experiences. It’s the type of experiential opportunity that mutually benefits students looking to enter the workforce and employers seeking qualified candidates to fill positions.

### CULTIVATING RESEARCH

Across the SmartFarm Innovation Network, Virginia Tech researchers recognize the potential impact of elevating and expanding their work across the state. “It’s the type of program that’s kind of limitless,” said Robin White, an assistant professor whose work has focused on the cross section of data and animal science for the past five years. Working at the Middleburg AREC in collaboration with colleagues from the College of Engineering, White plans to merge data from radio-transmitting halters on horses and cattle with information from sensors planted in the animals’ pastures. This sensor network collects authentic data without human or external interference, which is then transmitted to the cloud for use in animal behavior studies and to analyze the impact of herds on the environment in real time.

“This will help us better understand how livestock interact with their broader ecosystem,” said White, adding that the information gathered from these farms could also give insights to local and state agencies. “If we can better understand what’s happening, we can develop better tools and products to help agriculture.”

### LOCAL FORECAST

WeatherSTEM monitoring systems measure various weather conditions, record real-time imagery, and provide time-lapse visuals of associated weather patterns. (At left, top) Computer programs aid in the analysis of data to inform agricultural decision-making. (At left, bottom) Exoskeletons may allow farmers to prevent injuries and work more safely and effectively over longer periods of time.
would help identify production practices that benefit producers, animals, and the environment. Once fully operational, the SmartFarm Innovation Network will provide a platform for expanding such research to all ARECs. This will boost data collection, add the diversity of regional landscapes to the equations, and accelerate the timetable for turning research into working solutions for Virginia producers.

At the Eastern Virginia AREC in Warsaw, Virginia, Superintendent Joseph Oakes has already determined some early benefits of the SmartFarm Innovation Network. The real-time, site-specific forecasting and monitoring from the collaboration with WeatherSTEM have increased the efficiency of certain projects, such as Oakes’ research on the use of nitrogen as a fertilizer to maximize wheat and barley production. Using drones, Oakes is able, in minutes, to inspect large sections of wheat and barley in the field that would take hours to observe on foot. A multispectral sensor on the drones, which collects visible and nonvisible wavelengths of light, is able to pinpoint specific nitrogen needs for a particular area of growth.

“In the past, a person would have to go out on foot and count the tillers to determine how much biomass was present,” Oakes said. “You would count a square foot and create an estimate for the rest of the field.”

Surveying the entire field produces more accurate readings and results in a more environmentally and economically friendly use of nitrogen, with the added benefit of identifying pests that might otherwise go undetected.

“The sensors pick up bands from the infrared spectrum, so they have the potential to recognize a disease before it’s visible to the human eye,” Oakes said. Like White’s work, this project has the potential to be quickly disseminated through the AREC and VCE branches of the SmartFarm network. And while the heightened connection will benefit Virginia farmers, the expedited feedback from growers and producers will aid researchers concurrently.

“In a lot of ways, the technology then becomes a new tool for our Extension agents to do a better job of serving the stakeholders of the commonwealth, but this integration with stakeholders also helps our research,” White said. “We can design the perfect sensor tool, but if it does something unexpected, like scare the animal, it’s not going to work in real life.”

Collecting real-life feedback is a primary charge of Kim Niewolny, associate professor in the College of Agriculture and Life Sciences and director of the AgrAbility Virginia program. For the past 17 years, Virginia Tech has housed the AgrAbility Virginia program, which is funded by the U.S. Department of Agriculture (USDA) and is a partnership program with Eavers seals UCP to bring assistive technology and culturally appropriate education to farmers who identify with an injury, illness, or disability.

“My part of the work is to assess needs, provide education and assistive technology resources, offer trainings, and build organizational capacity across the rural rehabilitation network to ensure our farmers can farm safely and productively,” Niewolny said. “We have good ideas that involve the use of assistive technologies, but getting the farmers involved in the design and assessment of the technology is critically important.”

Consider Unionville, Virginia, farmer Ron Burleson ’81, who suffered a debilitating stroke while in his mid-50s. Teaming with the Blacksburg-based Torc Robotics and the university, AgrAbility helped equip Burleson with an all-terrain wheelchair that enables him to navigate his field and greenhouse.

Such devices are increasingly needed, as the average age of those working full-time in agriculture continues to rise. The most recent USDA census reported the average age of American farmers to be just over 59 years old, an increase of nearly 10 years over the 1978 census. But work to meet the need is for naught if the assistive technology is either too expensive or too cumbersome for farmers to actually use.

Recently, two National Science Foundation grants were awarded to Virginia Tech researchers to advance robotics and technology support for Virginia’s agricultural workers. AgrAbility is involved with both projects. Mechanical engineering assistant professor Alan Asbeck is developing a lightweight exoskeleton to relieve pressure on farmers’ backs and knees, and professor of mechanical engineering Alex Leonessa is generating a robotic glove to assist with gripping objects.

Asbeck and Leonessa collaborate with Niewolny and Divya Srinivasan, assistant professor of industrial and systems engineering, to ensure the resulting devices will be beneficial, and not harmful, for the wearers. Srinivasan said, “There’s a trend for technology to get designed by technologists, and often in isolation from the users that it gets designed for.”

Srinivasan said, “We’re trying to reverse that trend by saying we need the human piece right at the design stage.” According to Niewolny, VCE programs are an ideal conduit for information sharing and provide an access point for the feedback needed to implement useful, safe, and appropriate technologies. By expanding such programs across the commonwealth through the SmartFarm Innovation Network, data collection, and ultimately the delivery of better devices for the farming community, will be expedited.
HARVESTING AN IMPACT

Virginia Tech senior Tori Kegley Alley understands the varying facets of the university’s relationship with growers and producers on a personal level.

“I’ve seen how it goes on the farmer side, watching my dad work with (Extension) agents, but also from the agent’s side and seeing all the research and information that’s available,” said Alley, who will graduate in December with a degree in agricultural leadership. “Extension really just bridges that gap between the land-grant university and the farmers and producers.”

A third-generation Pulaski County farmer, Alley grew up heavily involved in her family’s dairy and beef operations. She also actively participated in 4-H programs. During college, she interned with the VCE office in Pulaski County, and her hope is to one day teach agriculture at the secondary level, a decision heavily influenced by her experiences.

“I was always in 4-H and FFA, and we’ve always participated in activities on campus in Blacksburg, so I didn’t even apply to other schools. I knew Tech was what I wanted,” Alley said.

Alley has firsthand knowledge of the benefits of VCE and the advantages of new agricultural-related technology. Her family’s 4,500-acre operation converted to an autonomous, or robotic, milking system in 2013.

The system includes a computerized milking apparatus that employs lasers to guide the teat cups after the udder has been automatically cleaned. Each heifer wears a collar equipped with transponders that not only trigger the milking process, but also identify each cow, record the amount of milk produced, and manage the comfort of the cows is central to the operation.

“You have to see it to believe it. It’s a little mind-boggling,” Alley said. “Now we’re milking fewer cows, but making more milk.”

Exposure to innovation, access to research, and assistance moving from concepts to working applications are advantages that many farmers throughout the commonwealth glean from the amalgam of Virginia Tech, the ARECs, and local Extension offices.

“I’ve used them greatly since I started farming,” said Jay Hun- dley, who has been producing some combination of corn, soy, wheat, and other products in Essex County since the 1970s. “Whether it’s chemical research or identifying a weed species, you could call and talk with them to try to make a plan to deal with it. I’ve always learned a lot from them.”

Hundley utilizes an array of precision agriculture technologies, including variable-rate fertilizers, section controls, GPS mapping, and auto-steer for tractors across his 9,000-acre farming operation. The devices are critical to pinpointing and managing specific needs across large chunks of land.

“It’s much more economical because we’re now farming by the acre and not by the whole field,” Hundley said.

Hundley’s experience with technology is common, according to Mike Broaddus ’89, Caroline County Extension agent.

“If you’re not using GPS, you’re either overlapping, or you’re not doing a good job covering,” said Broaddus about spraying crops. “This is also true for planting, where overseeding an area can not only create waste on the front end, but will produce lower yields than planned.”

“We’re doing a good job covering,” said Broaddus about spraying crops. “GPS-guided planting prevents both problems.”

“[The benefits] will more than pay for the equipment, but people don’t realize it,” Broaddus said.

Working with Broaddus to incorporate new farming techniques, Dennis Kish, a Caroline County farmer, has seen how technology can provide large returns. Kish said that the VCE proactively advocates for and promotes awareness about new techniques and technologies to keep farmers well-informed.

“There’s meetings everywhere about all of this, weekly crop health reports; it’s a great resource, especially for younger farmers,” Kish said.

Back in Pulaski County, the youngest farmer in the Bunn family, Wyatt, is already tapped into aspects of the SmartFarm Innovation Network through his ongoing participation in various youth programs. His grandfather, Doug Bunn, and father, Brandon Bunn, stay connected with Pulaski County Extension Agent Morgan Paulette to learn about new technologies and their applications. Recently, the trio helped Paulette gauge the usefulness of an unmanned drone capturing field images to study vegetation.

“I’m always asking, ‘Is this practical and useful on the farm?’” said Paulette. “They help us answer that.”

For the Bunn family, incorporating technology, such as GPS auto-steer on their tractors, has helped them recognize value of networking with Virginia Tech, the ARECs, and VCE.

“The first time I used it, I was sold on it. I tell you, it was the greatest thing since sliced bread,” Doug Bunn said.
The drone scours the field, collecting data on plant height using on-board cameras and landing as needed on the ground vehicle to recharge its battery.

Autonomous advancements have been extremely helpful in the soybean research of Song Li, a Virginia Tech assistant professor of Department of Plant and Environmental Sciences. Working in partnership with the College of Engineering (to be specific, the Department of Electronic and Computer Engineering), Li is using autonomous robots that can move through crops and drones that hover above the field to measure plant height and canopy coverage. The data collected will be used for selecting better varieties for breeding and for identifying genetic markers associated with desired traits.

"Traditionally, people would use measuring sticks and hand-held cameras to measure these traits. Walking the whole field and taking measurements of hundreds of plots are very labor-intensive, and the measurement is sometimes biased because each person may have a different way to measure the traits of interest," Li said.

Li is working with Assistant Professor Bo Zhang to use this technology to identify a variety of edamame that could be successfully grown in Virginia. Once it’s found, Virginia farmers can reap the benefits of tapping into a market that is currently dominated by imports from Asia.

"The examples of autonomous machines in farm life are boundless, and that makes sense," said Tokekar, "because the challenge posed by agriculture is a perfect match for engineers seeking to bring helpful technology to the fields.

"Agriculture has always been a very natural partner for robotics research because farms are not completely unstructured, like driving on the roads and so on. But they are not so structured that it's trivial from the robotics point of view," Tokekar said.

"The semistructured nature of these farms gave a good opportunity for people to actually go and deploy robots in the real world."

It's part of the same vision that was behind Virginia Tech becoming the first university east of the Mississippi River to provide an agricultural engineering curriculum in 1920, and it's the concept behind many futuristic projects today.

"We are not designing robotic systems to do the job of the farmers," said Alex Leonessa, a professor in Virginia Tech's College of Engineering. "What we are trying to do is make the job easier for the farmers."

AgBOT, a student team advised by Leonessa, leaned on this concept to develop robots that won first-place awards in the national agricultural competition, the agBOT Challenge, in back-to-back years.

In 2018, Virginia Tech’s agBOT team took the top prize by designing an autonomous harvester that rolls through a watermelon patch identifying melons, picking them up, slapping them to tell if they’re ripe, then harvesting them. This year, the team upgraded the autonomous ATV they used in 2018 by adding obstacle avoidance technology and a self-contained laboratory. As a result, the team took first place in the contest aimed at collecting, storing, and preparing soil samples for analysis.

Assisted harvesting is also a feature of the Department of Mechanical Engineering’s autonomous grape-harvester, which can delicately pick table grapes. These grapes are so fragile they must be individually wrapped in paper to prevent overexposure to the sun.

Compounding the problems, the grapes’ ripeness is difficult to discern for the human eye. Using cameras and computer vision algorithms, the robot can detect accurately when grapes are ripe, and human pickers can direct the robot to harvest.

Alleviating the farmer’s workload is also central to the work of Pratap Tokekar, assistant professor of electrical and computer engineering. Tokekar, an expert in the realm of collaborative autonomous vehicles, is building a combination drone and ground vehicle system that can monitor and help control the height of vegetation—crucial for plant and soil health.

The drone scours the field, collecting data on plant height using on-board cameras and landing as needed on the ground vehicle to recharge its battery.
Visit us online to read even more stories about your fellow Hokies, find links to events and campus activities, and stay up-to-date on university news.

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The Campaign for Virginia Tech

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Announced in October by university President Tim Sands, the Boundless Impact campaign will raise $100 million to fund new programs, initiatives, and capital projects. Together, we will propel Virginia Tech to greatness.

**Boundless Impact**

Every day, students, faculty, staff, alumni, and friends come together to make a difference. Your support will help Virginia Tech expand and enhance its programs to ensure that it continues to play a leading role in education, research, and service.

Every Virginia Tech college and many of the university’s campus programs are engaged in university-wide priorities. These priorities include developing a human-centered approach to technological innovation, engaging 100,000 Hokies worldwide, and ensuring Virginia Tech is a diverse and inclusive university. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

In every college, campus, and research center, the need to achieve the university’s land-grant mission is clear. As the commonwealth and the world face unprecedented global challenges, Virginia Tech is uniquely positioned to make a greater impact in mind. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

**Global Businesses and Analytics Complex**

Reimagining education is a strategic priority for the university. To strengthen this area, the university is focusing on innovative curricula and educational programs. Virginia Tech’s Discovery Analytics Center, where researchers have used machine learning to predict outcomes in fields such as health care and agriculture, is one example. The center is helping to create new educational opportunities and research partnerships.

**Global Health and Technology Complex**

Virginia Tech’s central role in a national clinical trial for a new cancer treatment is just one example of how the university is working to make a difference. The trial, led by the university’s Center for Biomedical Engineering and Innovation, is designed to test a new cancer treatment called immuno-oncology. The trial is one of many that Virginia Tech is leading to advance medical research and treatment.

**Global Research and Innovation Complex**

The university is taking major steps to deliver graduates who are prepared to solve today’s complex problems. This includes the Global Business and Analytics Complex, which aims to create new educational opportunities and research partnerships.

**Global Service and Philanthropy**

The university is committed to making a greater impact in mind. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

**Global Technology and Innovation Complex**

Virginia Tech is at the leading edge of adapting to new realities. This includes the Global Technology and Innovation Complex, which is designed to create new educational opportunities and research partnerships.

**Global Thinking and Innovation**

The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems. This includes the Global Thinking and Innovation Complex, which is designed to create new educational opportunities and research partnerships.

**New Era in Greater D.C.**

When Virginia Tech opened its new campus in D.C., it set a goal to become a leader in education, research, and service across a diverse set of disciplines. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

**Reimagining Education**

Today’s students no longer fit neatly into one area of expertise. Solving tomorrow’s complex problems requires a multidisciplinary approach. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

**Scholarships, Athletics, and Student Services**

The university is committed to making a greater impact in mind. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.

**Technology and Innovation**

The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems. This includes the Technology and Innovation Complex, which is designed to create new educational opportunities and research partnerships.

**The Future of Virginia Tech**

The university is committed to making a greater impact in mind. The campaign will also support efforts to deliver graduates who are prepared to solve today’s complex problems.
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Now is the time to make our mark on the world.
INTERSECTING IDEAS: Award-winning scholar Sylvester Johnson speaks during the kickoff event for Boundless Impact: The Campaign for Virginia Tech. Johnson is the founding director of Virginia Tech’s Center for Humanities and is the executive director of a new, university-wide initiative, Tech for Humanity. “Being at Virginia Tech at this moment in history is a grand opportunity to help prepare a new generation of students to guide our society through our technological challenges and yield a society most people will want to live in,” said Johnson. For more about Johnson and these initiatives, visit vtmag.vt.edu.
Two years ago, Pablo Tarazaga and his family of six left their house in Blacksburg’s Woodbine neighborhood to join 325 honors students in a residential hall on Virginia Tech’s main campus.

Tarazaga, wife Vanessa ’05, a son, three daughters, and a collie moved into a sunny, furnished faculty condo on the fourth floor of East Ambler Johnston Hall. The prolific researcher, associate professor of mechanical engineering, and Virginia Tech alumnus—M.S. ’04, Ph.D. ’09—hoped to use his new role as faculty principal in the Honors Residential Commons (HRC) to forge connections with students beyond the classroom.

“I never thought of the university as just a place for vocation and study,” said Tarazaga, a John R. Jones III faculty fellow. “It’s about the formation of the student as a whole, as a thinking person. My wife and I were really drawn to being part of these students’ lives and helping them walk through this challenging, formative time.”

Practically overnight, the Tarazaga clan morphed from a band of six into a tight-knit family of hundreds.
Students came by the dozens to join the Tarazagas for Tuesday dinners in the D2 dining hall, Friday Principal’s Tea, and Saturday ice cream socials. HRC residents and the Tarazagas children worked on homework assignments side-by-side. Spontaneous games of tag, hide-and-seek, kickball, and soccer with the kids became stress-reducing diversions for the college students. Tarazaga family movie nights swelled to 40-person affairs.

And the interactions continued to grow—in quantity, in attendance, and in creativity. Over Tuesday night Spanish Coffees, students and faculty practiced Spanish conversation skills. Tarazaga family holidays expanded to include students who remained on campus during breaks. Using a secure messaging platform, the family created a group called “Tarazaga Family Happenings” to invite residents to participate in daily activities like walks with the dog, outdoor games, visits to the farmers’ market, or crafts in the apartment. In an elementary school parking lot before one of the children’s soccer games, the students even staged a surprise tailgate party—complete with a grill, music, and a large Hokie cheering section.

And on the night before final exams last May, 50 students lined up inside the Tarazagas’ apartment where the family served a special meal hosted by the Pablo Tarazaga family.

“People said the idea that faculty might want to live with our students was crazy,” said Shushok, senior associate vice president for student affairs and associate professor of higher education. “What we’re finding is it’s having as profound an impact on faculty as it does on students. Many of our faculty are saying it’s the single most powerful and influential experience in strengthening the way they teach and their empathy and understanding of students. They love being invested in students’ lives in a longitudinal way.”

Today, 37 percent of the university’s on-campus students reside in living-learning programs (LLPs). Nearly 1,500 students live in the university’s three residential colleges: the HRC, led by Tarazaga; the Residential College at West Ambler Johnston, led by associate professor of history Dinna Agmon; and the Leadership and Social Change Residential College, led by assistant professor of landscape architecture C.L. Bohannon MLA ’04, Ph.D. ’14. Another 2,950 students live in living-learning communities (LLCs), student communities that unite residents in common interests and disciplines, like engineering, the arts, or the Corps of Cadets. Each offers ongoing opportunities for students and faculty to spend meaningful time together. For example, faculty and staff may join LLC students in the residential environment to teach a class, provide mentoring and advising, or participate in social and academic activities.

By 2025, Virginia Tech aims to provide living-learning programs for 65 percent of on-campus students. The university’s Master Plan includes the addition of eight new LLPs that will house 3,400 students over the next decade. In Virginia Tech’s Creativity and Innovation District, construction is underway for an LLP slated to accommodate 600 students with interests in the arts, technology, and entrepreneurship in 2021.

Shushok says living-learning programs not only blend academic and student life, but also enrich the university’s close-knit culture. “Residential environments on college campuses are often very underutilized resources,” he said. “When we move from sleep-eat environments to live-learn environments, this creates the groundwork for the kind of education that we espouse and deeply admire.”

Regarded as a pioneer in the field, Shushok successfully instituted residential colleges at Baylor University a decade before introducing them at Virginia Tech. He’s published numerous studies that affirm the benefits of living-learning environments—benefits that include improved student academic performance, co-curricular engagement, persistence toward graduation, and overall well-being—and he co-authored one of the first studies to examine the facility benefits.

Virginia Tech remains relatively unique among peer land-grant research universities for embracing residential colleges. The Residential College Society, founded in 2014 at the university, has blossomed into a national organization of universities exchanging best practices.

In a 2011 report, “Students as teachers: What faculty learn by living on campus,” published in the Journal of College and University Student Housing, faculty principals overwhelmingly said their roles as LLP mentors made their work more rewarding and additionally enriched their family lives.

“The transfer of knowledge goes both ways. I learn a lot from the students,” said Bohannon. Bohannon leads approximately 300 students as faculty principal in the Leadership and Social Change Residential College, which focuses on integrating sustainability, social responsibility, food equality, and environmental justice into daily life.

“My interactions with the students make me a better teacher in the classroom and help me be the instructor and advisor I wish I’d had as an undergraduate,” he said.

FROM CRAZY TO COVETED

When Frank Shushok introduced the residential college model at Virginia Tech in 2009, the reception was cautiously optimistic.

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A FAMILY AWAY FROM HOME

Students living in the Honors Residential Commons are universally effusive when it comes to their living-learning experience with the Tarazagas.

Nathan Schlundt, a junior from Los Angeles, said moving into the Honors Residential Commons improved his entire outlook. “My first year was kind of lonely because I was far from home and hadn’t found my niche yet,” said Schlundt, a computer science major, as he waited in line at the Tarazaga’s Breakfast for Dinner feast. “When I came to the HRC, it was a total 180. Dr. T and his family produce a great sense of community. They’re always bringing us together and inviting us into their home with events like this. Look at them—they’ll cook three hours just for us.”

Tyler Pugh, a junior double-majoring in industrial systems engineering and Spanish, said Tarazaga has become a mentor. “I really wish I had him as a professor,” said Pugh, who is also a resident advisor in the HRC. “Dr. Tarazaga is so invested in his students’ character. We get coffee every Saturday and talk about anything and everything. Sometimes I forget he’s an award-winning researcher. I want him to go back home for New Year’s with my family, which is a tradition we usually celebrate together. The Tarazagas invited me here. Another day over winter break, I had dinner with them. They bring the home into the dorm for us.”

Pugh said having kids and a dog around has also been a highlight.

“When I’m with them, I’m not a student anymore. I’m part of the family. I forget my tests and papers. This is my time to de-stress,” he said. “When you’re able to sit down and just color with them, it takes your mind off of being a student. You can enjoy just being a friend with these kids.”
According to Shushok, more than 900 students chose to return to their living-learning programs this fall—and about 2,700 entering first-year students applied to join one. At least a dozen faculty members have scheduled appointments to discuss becoming a faculty principal.

Tim Baird, associate professor of geography and senior fellow of the Institute for Creativity, Arts, and Technology, is interested in applying to become a faculty principal in the Creativity and Innovation District. His wife and three children are equally excited about the prospect.

“We think it would be good for our kids and will strengthen our family,” he said. “For me, this is what it means to be a professor in its entirety. When you’re ensconced in academics, student life, facilities, and all the facets of the university, you can see it more clearly and be more effective in contributing.”

For Shushok, the growing interest is validation that Virginia Tech is on the right path.

“We should take heart that we have the most student-centered faculty that are also amazing, productive researchers and scholars,” he said. “That says a lot about the education you can get at Virginia Tech. In many ways, our residence halls are exemplars of trans-disciplinary learning. Bringing together students, faculty, and staff of different acculturations and expertise to work together, think together, and dream together.

“At the end of the day, that’s pretty darn transformational.”

ENRICHING FACULTY FAMILIES

After moving into Ambler Johnston, the Tarazagas noticed the positive impact on their children right away.

“It’s an immersive living-learning environment for them, too,” said Vanessa, who homeschools all four children. “The campus is a wonderful, lively place to grow up. There’s always something interesting going on that we can integrate into their schoolwork. And the students are great role models. They study with them, play with them, and welcome them into their lives.”

The faculty principal arrangement isn’t without its drawbacks—like when the fire alarm went off 22 times during the semester after the Tarazagas moved in with a new baby. Sometimes upstairs neighbors need gentle reminders to tread more softly in the common area above the couple’s master bedroom, and more often than not, a quick trip out to walk the dog can evolve into a half-hour conversation with passing students, staff, or faculty. But the positives far outweigh the negatives, the family resoundingly agrees. Asked if he misses his neighborhood and backyard, the Tarazaga’s 11-year-old son is emphatic. “I have the biggest, best backyard right here,” he said, gesturing toward the Drillfield.

“PRETTY DARN TRANSFORMATIONAL”

The faculty principal position is a three-year commitment, which can be renewed just once. At the end of their first three-year term, the Tarazagas signed on again. The faculty principals in the other two residential colleges also chose to stay.

According to Shushok, more than 900 students chose to return to their living-learning programs this fall—and about 2,700 entering first-year students applied to join one. At least a dozen faculty members have scheduled appointments to discuss becoming a faculty principal.

Tim Baird, associate professor of geography and senior fellow of the Institute for Creativity, Arts, and Technology, is interested in applying to become a faculty principal in the Creativity and Innovation District. His wife and three children are equally excited about the prospect.

“We think it would be good for our kids and will strengthen our family,” he said. “For me, this is what it means to be a professor in its entirety. When you’re ensconced in academics, student life, facilities, and all the facets of the university, you can see it more clearly and be more effective in contributing.”

For Shushok, the growing interest is validation that Virginia Tech is on the right path.

“We should take heart that we have the most student-centered faculty that are also amazing, productive researchers and scholars,” he said. “That says a lot about the education you can get at Virginia Tech. In many ways, our residence halls are exemplars of trans-disciplinary learning. Bringing together students, faculty, and staff of different acculturations and expertise to work together, think together, and dream together.

“At the end of the day, that’s pretty darn transformational.”

TRANSFORMING BUSINESS EDUCATION

Students interested in global business, international affairs, entrepreneurship, and data and analytics will have a new place to call home on Virginia Tech’s campus in a few years.

Over the summer, the Virginia Tech Board of Visitors approved a request for $84 million to build two additional living-learning communities.

These communities are included in the overall plan for a Global Business and Analytics Complex. The complex will feature two academic buildings to house the Pamplin College of Business and space for faculty offices, classrooms, and research areas for use by all disciplines involved in data analytics, specifically Pamplin, the College of Science, and the College of Engineering. The academic buildings, planned for the northwest corner of campus off Perry Street, are expected to open in 2024.

A pedestrian tunnel stretching under West Campus Drive will connect this complex with the two living-learning communities, which will be constructed south of the Inn at Virginia Tech. They will house about 700 students.

One will be for students studying business and analytics, and it will feature entrepreneurship laboratories, faculty-in-residence apartments, and shared spaces for learning. The other building will be geared toward students interested in studying international business and policy. It will house the Cranwell International Center and related support programs for international students.
A JOINT VENTURE

HORACIO VALEIRAS DOESN’T MEASURE SUCCESS BASED ON LINES FROM BUSINESS LEDGERS, NUMBERS ON BANK STATEMENTS, OR TITLES IN BOARD ROOMS. INSTEAD, THE 1980 CHEMICAL ENGINEERING GRADUATE TALLIES SUCCESS THROUGH RELATIONSHIPS.

For Valeiras, connecting with people is a guiding principle for life, one that governs every decision big or small, personal or professional. He shares the axiom with Amy, his wife of 35 years.

“I think the most important quality is trust—whether it’s with each other or in business partnerships,” said Horacio. “I try to be as open with people as you can be and as direct as possible.”

Horacio, who is a co-managing partner at Frontier Global Partners LLC, an investment management firm in La Jolla, California, even built his career on trust. And Amy, a respected San Diego artist, finds inspiration from the intimate moments and life experiences that shape people and places.

“In our investment philosophy we use behavioral finance, which is all about how people act and react. Emotions can get in the way of effectively managing money, so developing a trusting relationship with clients is essential.”

FROM CHEMICAL ENGINEERING TO FINANCE

Never one to shy away from a challenge, Horacio admits he first pursued chemical engineering because of its reputation for being among the hardest disciplines. Yet, he found the long-term, detail-driven projects did not inspire a passion for the work.
Virginia Tech is doing a lot of great things.

From the Campaign to the Innovation Campus to the Health Campus in Roanoke to making sure that we graduate students that can get great jobs to the arts. It’s exciting.

Horacio Valeiras ’80

I intended to follow in the footsteps of my parents, who were both educators,” he said. “While I was in graduate school at MIT, I took some classes in the business school, and I really enjoyed them. I taught for a year, just long enough to figure out that it wasn’t my calling. I took an engineering position at Chevron, and I kept revisiting the idea of those business classes, so I applied to the MBA program at University of California at Berkeley. It was the early ’30s. The stock market was just starting to boom. Japan was doing really well. I asked myself: ‘Do you want to work in a world where projects last three, four, five years or one where every day is different?’

A native of Argentina, Horacio moved to the U.S. as a child. Education was a priority for his parents. “They taught us that education was a priority with their time and resources. Amy has served as the board chair of the San Diego Public Library Foundation and is now a member of the advisory board for the Smithsonian Libraries. Horacio is the rector of Virginia Tech’s Board of Visitors and is serving as a tri-chair for Boundless Impact.”

The couple supports educational initiatives with their time and resources. Amy has served as the board chair of the San Diego Public Library Foundation and is now a member of the advisory board for the Smithsonian Libraries. Horacio is the rector of Virginia Tech’s Board of Visitors and is serving as a tri-chair for Boundless Impact.”

Although Horacio always expected that he would learn to fly, what he didn’t anticipate were the opportunities his pilot’s license would create for giving back.

“The sky’s the limit

When Horacio isn’t working, spending time with his family, or involved in a university activity, chances are he’s flying—a hobby that was inspired during childhood. His favorite book was ‘The Little Prince.’ Written by Antoine de Saint Exupéry, the novella tells the story of an aviator who crashes his plane in the Sahara where he encounters the little prince.

But it was traveling by air with his father that really fanned the desire.

“My father was a math professor at the University of Buenos Aires,” he said. “But it was traveling by air with his father that really fanned the desire.”

“I just went up and said, ‘I don’t know you. I wasn’t shy, and the rest is history,” said Horacio.

Amy, a clay artist, is the proprietor of Threefoot Clay. She works in porcelain and red stone clay, crafting functional and sculptural pieces.

“Texture is a bit of an obsession,” said Amy. “I find texture tools in hardware stores, cooking shops, and even from items my friends are discarding as junk.”

Life has taken the Valeiras family to many different cities in the U.S., and they’ve lived abroad. The exposure to different people, environments, and cultures has influenced Amy as artist and an individual.

“We’ve moved all over. We’ve lived in England. We’ve lived in San Francisco and Philadelphia and Bethlehem, Pennsylvania, and New York,” said Horacio.

“Everywhere we’ve lived, we’ve always looked for the good things. We’ve made it a point to get involved—to do something in that community to make it a better place,” Amy said.

Horacio’s mother, who is a sculptor, introduced Amy to sculptural pieces. She works in porcelain and red stone clay, crafting functional and sculptural pieces.

“Virginia Tech is doing a lot of great things. From the campaign to the Innovation Campus to the health campus in Roanoke to making sure that we graduate students that can get great jobs to the arts. It’s exciting. We need to get a lot of people involved,” he said.

“There’s a lot of places to help out. There are ways to lend your expertise. There are students you can mentor. There are graduates you can hire.”

“They literally had Rubik’s Cubes they were solving, and they were showing Three Stooges movies.”

Since neither Amy nor Horacio were fans of the movie entertainment, they spent the evening talking together.


At a house party during graduate school, Horacio met Amy Threefoot.

“Amy attended Tufts, and she was dragged to the party by her brother,” said Horacio. “It was exactly what you would think,” said Amy. “They literally had Rubik’s Cubes they were solving, and they were showing Three Stooges movies.”

“Virginia Tech is doing a lot of great things. From the campaign to the Innovation Campus to the health campus in Roanoke to making sure that we graduate students that can get great jobs to the arts. It’s exciting.”

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Horacio Valeiras ’80

Laura K. Blackwood

In Good Company: Horacio Valeiras and André Davis mingle with guests at a reception during the Reflections Dinner, which was held in the Commonwealth Ballroom at Squires Student Center on Oct. 10. (at right) Morgan Blackwood Patel ’03, Horacio Valeiras ’80, and Lynne Doughtie ’85 are serving as tri-chairs of Boundless Impact: The Campaign for Virginia Tech.

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When Joe T. May ’62 was in high school, he wasn’t exactly on a successful path. After a suspension for smoking cigarettes, May’s principal allowed him to graduate only if he promised “to do something useful” with his life.

So, May joined the Army, where he was exposed to electronics. Later, he earned a degree in electrical engineering from Virginia Tech, but he had help along the way.

That’s why May and his family—wife, Bobby, and two daughters, Virginia Tech alumna Elaine and University of Virginia alumna Beth—gifted the College of Engineering $5 million from the May Family Foundation to establish a program to increase the number of first-generation students who enroll at and graduate from Virginia Tech. The Mays previously endowed two electrical engineering scholarships in memory of their son, Philip A. May ’89.

For more about May, visit vtnews.vt.edu.

FINDING THE RIGHT PATH

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Peter B. Schultz, Virginia Beach, Va., was honored with emeritus status by the Virginia Tech Board of Visitors.

Black Alumni Reunion
April 17-19, 2020
Celebrate with friends old and new, commemorate milestones, meet students, and learn what’s happening at our university. The reunion will feature opportunities to network, learn, and have fun during spring game weekend. Registration is now open.
alumni.vt.edu/bar2020

Old Guard Society of Golden Alumni Reunion
May 21-23, 2020
The Old Guard, alumni graduating in 1969 or later, will celebrate in Roanoke this year. Make plans to join us for tours of the Virginia Tech Carilion campus, updates from university leadership, and more.
alumni.vt.edu/reunion2020

Reunion Weekend 2020
June 4-7, 2020
We are celebrating milestone class anniversaries from 1975 to 2015, but all Hokies are welcome. Early bird registration will open in January.
alumni.vt.edu/reunion2020

Gregory E. White, Chesterfield, Va., who died Nov. 9, 2019, was recognized during the United States Department of Defense’s Public Works (DPW) at Fort Lee, Va. The DPW awarded the building housing to whitecotton, who was Fort Lee’s chief director of DPW and Logistics; White worked at DPW for over 30 years.

JOIN THE PAST FOR THE FUTURE OF CHILDREN
CHAMPION FOR CHILDREN
Colleen Kraf

UT PROSIM IS VERY IMPORTANT TO US. WE WANT TO HELP THE PEOPLE IN OUR COMMUNITY TO IMPROVE THEIR QUALITY OF LIFE IN A WAY THAT TO A LOT OF PEOPLE MAY SEEM SMALL, BUT TO THEM IT COULD MEAN THE WORLD."

Zackory Biggers
club president

THREE YEARS AGO, DENISE GORDONY-TODERICO ‘95, DVM ‘99, was out for a Sunday morning run when she was struck by an SUV traveling at 60 mph. More than an hour passed before she was found and flown to a trauma center.

Denise spent 40 days in the hospital and is still recovering from resulting medical issues, including traumatic brain injury and broken vertebral in her neck and back, among other orthopedic and internal injuries.

“When Denise left physical therapy, she was walking,” said her husband, Benjamin Toderico ‘97, M.S. ‘99. “Now she’s running. She’s swimming. She can carry a 75-pound weight across the gym, and so she can carry our kids. It may not look the same, but we’ve learned that you can do whatever you want to do.”

In April, the Todericos returned to campus to pass the wisdom earned along their journey to a new generation of Hokies, while in turn being served by the Virginia Tech chapter of the national organization began as a senior design project but has blossomed into a student organization that regularly takes on “challengers,” or individuals for whom the QL+ team designs and builds devices to enrich their lives.

“You can make people smile and laugh. You can have an impact on people’s daily lives, happy, whether it was as the HokieBird or behind the scenes. Our mission is to help the community. Whether it’s bringing something to the table, creating awareness or enrichment, or just giving back, we’re here to help the community. Our goal is to improve their quality of life in a way that to a lot of people may seem small, but to them it could mean the world.”

FROM THE BOW SEAT
Read the full story and watch a video about the Todericos at vtmag.vt.edu.
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CAREER
Carrie L. Heiser Kiser, Middleboro, Va., was appointed as senior vice president of Five Star Trust Co.

Diana Lyn C. McGrew, Virginia Beach, Va., joined FEA Ruthford LLP as an associate in the litigation department.

David M. Wieg, Blacksburg, Va., is the department head for large animal clinical sciences at Virginia Tech.

BIRTH
Paul a. Carlson, Washington, D.C., a daughter, 05/19.

Kelly J. Caruso, Charlotte, N.C., a son, 05/20.

Gregory R. Reif, Wayne, Pa., a son, 05/21.

BIRTH
Harda K. Rajamishra, Henderson, Va., founded the Organization for Rare Diseases in India.

BIRTH
Aaron M. Teitelbaum, Newtown, Conn., a daughter, 05/04.

Chad J. Gauthier, Roanoke, Va., a son, 06/27.

BIRTH
Marybeth A. Farquhar, Sterling, Va., has joined the American Veterinary Association as executive vice president of research, quality, and scientific affairs.

Isaac C. Eckman, Cleveland, Ga., was appointed as executive vice president of operations for Atlantic Hardwood Corp. and was elected vice president of the Southern Cypress Manufacturers Association.

BIRTH
Erin Hawkins Brackin and Morgan Lerri Brackin, Afton, Va., a son, 05/22.

Janelle Cary, Saluda, Va., a son, 04/18.

Matthew R. Frenos, Lincolnia, Neb., a son, 06/25.

CAREER
Randal D. Cone, Salisbury, Md., was appointed as the dean of the College of Science at the University of Maryland.

Kristin E. Spohnbake, Baltimore, Md., was named the chair of the 2023 Urban Land Institute Baltimore District Council.

Mark C. Helton, Virginia Beach, Va., is a daughter, 05/19.

BIRTH
Emma Lee Katherine Mobon Gilbert and Scott Gilbert N., Missoula, Pa., a son, 05/20.

Daniel A. Lavery, Catonsville, Md., a daughter, 05/06.

Julia S. Wolff Hatmaker, Roanoke, Va., a daughter, 06/27.

BIRTH
Morgan Levi Bracken, Blacksburg, Va., a daughter, 05/06.

Tiffany Francis Reaves, Richmond, Va., a daughter, 10/29.

Tiffany P. Ritchie and Ross Loyal Ritchie, Mount Pleasant, S.C., a son, 05/20.

CAREER
Sarah H. Glass, Richmond, Va., was named the reviewing editor of the Journal of Agricultural Science.

Adam T. Kendrick, Hopewell, Va., was named a 2021 Young Professional Alumni of the Year by the Virginia Tech College of Liberal Arts and Human Sciences.

Shannon M. McCale, Toano, Va., received the Young Farmers and Ranchers Award from the Appalachian State University.

Claire M. White, Blacksburg, Va., was promoted to associate professor and was named the chair of the department of Animal Sciences.

BIRTH
Brittany L. Quigg, Kansas, a daughter, 06/26.

CAREER
William A. Forbes, Charlotte, N.C., named the Outstanding Recent Alumni Award by the Alumni Association.

WEDDING
Amanda R. Belyea, Quickburg, Va., was named assistant county administrator in Shenandoah County, Va.

Saul K. Se, San Antonio, Tex., received the Milken Educator Award.

CAREER
Amanda R. Belyea, Quickburg, Va., was named assistant county administrator in Shenandoah County, Va.

BIRTH
Jennifer A. Davis and Amanda Curtis Davis, New York, N.Y., a daughter, 05/19.

Rachel P. Walker and Ben Walker ’39, Arlington, Va., a son, 05/16.

CAREER
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BIRTH
Michael D. Curling, Roswell, Ga., a daughter, 06/26.

CAREER
Austen G. Ayer, Austin, Tex., won the Milken Educator Award.

CAREER
Shenandoah Valley Agricultural Research and Extension Center.

BIRTH
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"I AM THE END OF EVERY BEGINNING and the Beginning of every Seashore."

That’s the first of several lines in a riddle that Scott Young ’88 gave his wife, Marjorie. He told her they were taking a vacation, but he wouldn’t say where.

Give up?

You see, the end of “beginning” is the letter “g” and the beginning of “seashore” is an “s,” and both letters were clues to destinations. In July, the Youngs joined about a dozen Hokies on an Alumni Association travel tour cruising down the Rhine River, beginning in Amsterdam, making multiple stops in Germany, and then France, and ending in Switzerland.

On the cruise, Gary Armstrong ’82 was quick to respond when asked for a singular memory from his undergraduate days at Virginia Tech: “Unlimited food and drink in the dining hall.” Fitting that he should say that in the dining room of the Scenic Opal cruise ship, where it’s always time to eat on board, and the experience was delicious.

For Armstrong, who traveled with his wife, Sherrie, the trip reminded him of the fall of 1978, and how fortunate he felt to discover the beautiful fall weather and beautiful campus in Blacksburg. Better yet, Armstrong was delighted when he first spotted a familiar name on the trip’s roster of alumni: Byron Yost ’61. In 1985, Armstrong became a credit analyst at Dominion Bank in Roanoke, where he learned how to underwrite community business loans under the leadership of Yost, who headed the department. “I was really excited, because I hadn’t seen Byron in 27 or 28 years,” Armstrong said. Yost was a “gentleman banker and a mentor,” said Armstrong, who now consults for banks. “Everybody loved Byron. He took an interest in us.”

Yost and his wife, Nancy, traveled to Europe with Warren Ferguson ’61 and Gail Browning. Yost and Ferguson, who both transferred to Virginia Tech after two years at Bridgewater College and Ferrum College, respectively, commuted to campus from Salem each day. “We’d hang around the student center, waiting for our rides home,” Ferguson said.

Ferguson, a retired insurance adjustor who’s gone on seven or eight Virginia Tech alumni tours, appreciated the chance to see multiple countries on a single trip—all from a cruise ship, where there’s no need to move suitcases from hotel to hotel, and where an all-inclusive journey means travelers know the exact cost up front.

And the camaraderie among new Hokie friends was the icing on the cake. If your trip happened to be just days before the 50th anniversary of the Apollo 11 moon landing, you would have been happy to find yourself within earshot of Bill Piland ’62, traveling with his wife, Ann. Piland took a civilian assignment with NASA as an aerospace engineer in 1962 and worked there for 39 years alongside a good number of other Hokies.

Young, who put on his class ring for the trip and then needed “soapy water and some creative twisting” to remove it once he reached home, summed up the cruise with one word: relationships. Unlike a class ring, those strengthened bonds—with local tour guides, cruise ship staff, fellow Hokies, and his wife—won’t come off.

For more information about Alumni Association travel tours, go to alumni.vt.edu/travel.
Retro title in 1999 introduced the university to the country.

EVERYTHING VIRGINIA TECH: The Hokies’ shot at the national
nation and positioned the university in
the national spotlight in an unprece-
dusted manner.

The team, their special season, and the
dented manner.

The Hokies ultimately lost to the Sem-
ern Virginia high-rise office building spelled
its Hokie Pride in lighted windows nightly;
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The team, their special season, and the

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Sales of orange and maroon Hokie para-

FIGURE 1. COURTESY OF VIRGINIA TECH MAGAZINE

HOKIE MANIA

TWENTY YEARS AGO, THE VIRGINIA
Tech football team marched to an 11-0
regular season, a No. 2 ranking in the
final Associated Press poll, and to the
national title game against No. 1 Florida
Tech take on top-ranked Florida State at the

The Hokies ultimately lost to the Sem-
inoles, 46-29, but along the way, they
won the affection of many across the
nation and positioned the university in
the national spotlight in an unprece-
dented manner.

The team, their special season, and the

Hokies pronounce our university motto, Ut
Prosim (That I May Serve), in very differ-
ent ways. The word Ut might rhyme with
"but," "boot," "foot," or even something
completely different. A similar issue arises
with Prosim; some pronounce it with an "s"

After conferring with dozens of Hokies
and reaching no clear resolution, we
turned to Associate Professor Andrew
Becker, who teaches Latin and ancient
Greek in Virginia Tech's Department of
Modern and Classical Languages and Lit-
eratures, for guidance.

"I've heard people go all the way from
'sounding, for guidance.

You want to land on the 'u,' as in 'put.'
And actually, where you
want to land is halfway between those.
You want to land on the 'u,' as in 'put.'
So, there's a little bit of lip rounding, as in
‘foot’, not a lot like 'oo,' not flat like 'uh,'
Becker said.

Becker also weighed in on, Prosim.

"Most people make the mistake of making
a 'z' sound. Prosim would be 'pro' as in
'professor,' or 'profet,' and 'sim,' like
'simple' or 'simulate,'" Becker said.

Becker is, however, quick to provide a
disclaimer and a possible explanation for
the variety of pronunciations out there.

"Latin was spoken as a native language
for over a millennium and used across
much of the Mediterranean, North Africa,
Middle East, and Western Europe during the
Roman Empire. It was then used as
an international language in the church
and in education in Europe for another
millennium or so. There was a lot of vari-
ation, from time to time, place to place,
town to town, social class to social class,
and person to person, so we can't be too
pedantic and precise about how people
pronounce it, it's crucial to get
the spelling right for whatever Latin or
Greek you add. It's sad to see a mangled
internet translation inked on someone's
ankle." ■ TW

For more information about how Hokies pronounce Ut Prosim (That I May Serve) at vtmag.vt.edu.

HOokie MANIA

Perhaps since the dawn of time
people have debated the pronunciations
of certain words.

Is it “po-TAY-toe” or “po-TAH-toe?”
Is it “to-MAY-toe” or “to-MAH-toe?”

Virginia Tech doesn’t have a stake in either
of those debates, but there is a pronounce-
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Is it “po-TAY-toe” or “po-TAH-toe?”
Is it “to-MAY-toe” or “to-MAH-toe?”

Virginia Tech doesn’t have a stake in either
of those debates, but there is a pronounce-
ance commonum that hits close to home.

Hokies pronounce our university motto, Ut
Prosim (That I May Serve), in very differ-
ent ways. The word Ut might rhyme with
"but," "boot," "foot," or even something
completely different. A similar issue arises
with Prosim; some pronounce it with an "s"

After conferring with dozens of Hokies
and reaching no clear resolution, we
turned to Associate Professor Andrew
Becker, who teaches Latin and ancient
Greek in Virginia Tech’s Department of
Modern and Classical Languages and Lit-
eratures, for guidance.

"I've heard people go all the way from
'sounding, for guidance.

You want to land on the 'u,' as in 'put.'
And actually, where you
want to land is halfway between those.
You want to land on the 'u,' as in 'put.'
So, there's a little bit of lip rounding, as in
‘foot’, not a lot like 'oo,' not flat like 'uh,'
Becker said.

Becker also weighed in on, Prosim.

"Most people make the mistake of making
a 'z' sound. Prosim would be 'pro' as in
'professor,' or 'profet,' and 'sim,' like
'simple' or 'simulate,'" Becker said.

Becker is, however, quick to provide a
disclaimer and a possible explanation for
the variety of pronunciations out there.

"Latin was spoken as a native language
for over a millennium and used across
much of the Mediterranean, North Africa,
Middle East, and Western Europe during the
Roman Empire. It was then used as
an international language in the church
and in education in Europe for another
millennium or so. There was a lot of vari-
ation, from time to time, place to place,
town to town, social class to social class,
and person to person, so we can't be too
pedantic and precise about how people
pronounce it, it's crucial to get
the spelling right for whatever Latin or
Greek you add. It's sad to see a mangled
internet translation inked on someone's
ankle." ■ TW
OUTSTANDING CHAPTER AWARDS

GOLD
Atlanta
Baltimore
Central Florida
Charleston
Charlotte
Dallas/Fort Worth
Denver
First State
Jacksonville
Middle Tennessee
National Capital Region
NC Triad
Palmetto
Richmond
Roanoke Valley
Shenandoah
Tidewater

SILVER
Alleghany Highlands
Central Pennsylvania
Central Virginia
Chicago
Cincinnati
Columbia
Paziqua
Frederickburg
Minnesota
New England
New River Valley
Orange County
Peninsula
San Antonio
Triangle
Williamsburg

BRONZE
Charlottesville
Houston
New Jersey
Philadelphia
Pittsburgh
San Diego
Southeastern Michigan
Tideneck

SUPERLATIVE AWARDS

OUTSTANDING CHAPTER EVENT
Tidewater Chapter, Virginia Tech vs. Old Dominion University Pregame Tailgate

OUTSTANDING COMMUNITY SERVICE PROJECT
Tidewater Chapter, The Big Event 2019 (Surfrider Foundation Beach Cleanup)

OUTSTANDING CHAPTER NETWORKING EVENT
Denver Chapter, Young Alumni Pub Crawl 2018

OUTSTANDING CHAPTER MARKETING PROGRAM
National Capital Region Chapter

HONORABLE MENTION
Jacksonville Chapter

OUTSTANDING CHAPTER VOLUNTEER
Lynell Barta Helms ’01, Tidewater Chapter

INNOVATION AWARD
Middle Tennessee (Nashville) Chapter, Virginia Schools Mixer and Predators Game

BROADENING ALUMNI ENGAGEMENT AWARD
National Capital Region Chapter, Wag and Brew Event

MOST IMPROVED CHAPTER
Charlottesville Chapter

OUTSTANDING "RENEWED" CHAPTER
Cincinnati Chapter

OUTSTANDING CHAPTER OFFICER
Eric Eley ’85, NC Triad Chapter

FAMILY

1 “Our little Birdie is snug as a bug with her big brother, Quart.” — Tiffany Anne Francis Reaves ’08, Williamsburg, Virginia, who welcomed a daughter, Crewe Sparrow "Birdie," 5/17/19.

2 “We met in 2009 at Virginia Tech’s Western equine riding team tryouts. Ten years later, we got married in Keswick, Virginia, surrounded by friends, family, and Hokies.” — Kathryn Slaughter Mehfoud ’13, Champaign, Illinois, who married Collins Mehfoud ’10, 5/31/19.

3 “Big sister Waverly was just as excited as mom and dad to meet her new baby brother.” — Ashley Goodroe Winstead ’08, Hayes, Virginia, who, along with John Winstead ’04, welcomed a son, Brooks Harrison, 5/16/19.

4 “Maroon and orange are already Benjamin’s favorite colors.” — Ethan Lavery ’06, Haymarket, Virginia, who welcomed a son, Benjamin Lavery, 3/22/19.

5 “Natalie loves teaching her new brother, Cole, how to cheer on the Hokies.” — Ian K. Barnes ’11, Toano, Virginia, who, along with Caitlin Boyle Barnes ’12, welcomed a son, Cole, 4/23/19.

See more family photos at vtmag.vt.edu.
Louder noises emanate from a workshop on top of a hill on Blacksburg’s Harding Avenue. Inside, Eric Collins is forging new opportunities in an age-old profession—blacksmithing.

“It seems like there is this idea that blacksmiths are big, burly guys with huge hammers that are just going to town,” said Collins, who graduated from Virginia Tech in 2007 with a degree in industrial engineering. “But that’s not how it is at all. Most of the time, you don’t need a huge amount of physical strength to do it, you need manual dexterity. It’s a perfect craft for people who have use of their arms and hands and who want to make stuff!”

The art of blacksmithing is documented as early as 1350 B.C. in Egypt when men used the techniques to craft tools from iron. Modern blacksmiths still forge their creations the old-fashioned way, heating the steel to around 2,000 degrees to make it malleable enough to shape or cut.

Collins, who has been blacksmithing since he was hooked.

“Forging at his workshop. Collins shared a steel dragon he had forged and invited Collins and his parents to learn more about forging at his workshop. Collins was hooked.

“They make you now can last, with care, 100, 200, 300 years. As long as they are taken care of, they will last forever,” said Collins. “How many things can you do that are that permanent?”

Professionally, Collins designs custom products for industrial manufacturing, noting that he has a design process he can apply to any type of problem. Also, he sells art, ranging from blacksmithed products to paintings and wood creations.

“I’ve always made, designed, and created stuff,” said Collins. “That is who I am. My mind grinds on issues. If there is a problem, I always try to find out how to fix it.”

Collins actively participates in the South- west Virginia Blacksmith Guild, and this summer, he taught a blacksmithing class at Blue Ridge Church camp for children, perhaps inspiring yet another generation of smiths.

Haley Cummings, a senior majoring in public relations, is an intern with Virginia Tech Magazine.

Hammer it out: (at right) Eric Collins, uses traditional tools, like a hammer and anvil (below), but also incorporates modern technology into the craft of blacksmithing.
IN MEMORIAM


**68**

Edward Allen Myrick, Dalbelle, Va., 1/21/2019.

**40**

Mary Hagaman Dayler, Johnson City, Tenn., 1/20/2019.

**49**


**44**


Charles E. Shonberger, Salem, Va., 1/10/2019.


**45**


**46**


Irvin R. Holmes Sr, Oxon Hill, Md., 1/12/2019.


**66**

Dorothy Jane Lowery Barron, Clinton Township, Mich., 1/2/2019.

Lawrence D. Garrett, Bowling Green, Ky., 1/19/2019.


Laura F. Curry, Camden, S.C., 2/2/2019.

Frederick J. Swett Sr., Richmond, Va., 2/21/2019.

William E. Smith, Chesapeake, Va., 3/14/2019.


Carroll Ashley Williams, Virginia Beach, Va., 3/9/2019.


**64**


Mary Helen Brown, Irvington, Va., 1/12/2019.


Floyd Wendell Williams, Walsingham, Va., 1/22/2019.


Bruno R. Aimi, Schenectady, N.Y., 1/14/2019.

George Lawrence Einsi Jr, Huront, Ohio, 3/21/2019.


Elizabeth Trible Kennedy, Wimberley, Texas, 1/16/2019.


Larry B. Hall, Virginia Beach, Va., 3/24/2019.


Donald C. Frizz, Bluf City, Texas, 2/27/2019.


Michael Lee Campbell, Salem, Va., 2/7/2019.


Dwight Morrison Pemberton, Shippensburg, S.C., 1/19/2019.

Stella Shan Sun, Raleigh, N.C., 1/17/2019.


Hiroyoshi Furukawa, Fukuoka, Japan, 2/15/2019.


Brandon Lee Shelton, Chesapeake, Va., 3/15/2019.


Marvin Loney Narrum, Lihle, 2/24/2019.


Frances Graham Hilt Trent, Roanoke, Va., 3/16/2019.


Donald Hastings Miller, Fort Myers, Fl., 2/24/2019.


Glenda Bursley, Salt Lake City, Utah, 12/14/2018.


Theodore Ernest Hervey, Bertram, Texas, 1/26/2019.

Robert Bruce Wright, Winchester, Va., 1/21/2019.


Frank Allan Plava, Mole, Utah, 2/2/2019.

Peter Van Vleet, Wayzemburg, Va., 1/14/2019.
OBITUARIES

FACULTY/STAFF

James L. "Bud" Robertson Jr., Alumni Distinguished Professor of Mechanical Engineering at Virginia Tech, died on Nov. 2.

Robertson used vivid stories to bring the American Civil War to life for generations of Virginia Tech students, and for millions across the world. During the 100th anniversary of the Civil War, President John F. Kennedy asked Robertson to serve as executive director of the United States Civil War Centennial Commission.

In 1967, Robertson joined the faculty of Virginia Tech, where his course on the Civil War attracted an average of 80 students each semester and became the largest class of its kind in the nation. During his 44 years at the university, he taught more than 25,000 Virginia Tech students.

In 1999, Robertson became the founding director of the Virginia Center for Civil War Studies. The center has established a tribute page in Robertson’s honor. Visit civilwar.vt.edu/tribute-to-james-i-bud-robertson-jr to contribute memories.

Read more about Robertson at vtmag.vt.edu.

Benjamin S. Blanchard Jr., former assistant dean of the College of Engineering and professor emeritus of industrial and systems engineering at Virginia Tech, died July 11.

Walter L. Conger, former department head and professor emeritus of chemical engineering, died July 26.

Robert Lowell, a research professor in the Department of Geo- sciences, died June 24.

Walter F. O’Brien Jr. ’60 ’68, the J. Bernard Jones Professor of Mechanical Engineering and a Virginia Tech faculty member for more than 52 years, died July 25.

Lawrence N. Sewell M.S. ’32, a retired Virginia Tech computer engineer who helped design and build the computer systems for the Department of Mathematics’ Math Emporium, died May 27.

Gary Paul Swank, associate professor of internal medicine at the Virginia Tech Carilion School of Medicine and medical director of Carilion’s Cardiac Catheterization Lab, died on June 23.

ALUMNI LEADERS

Christopher Kraft ’44, NASA’s first flight director and a pioneer who led multiple space missions, died July 22.

After earning a bachelor’s degree in aeronautical engineering, Kraft joined the Langley Aeronautical Laboratory of the National Advisory Committee for Aeronautics, the precursor of NASA. In October 1958, he was one of the original members of the Space Task Group, the organization established to manage Project Mercury. As NASA’s director of flight operations in the 1960s, Kraft was instrumental in landing an astronaut on the moon. In 1972, he was named director of the Johnson Space Center.

In 2002, Virginia Tech awarded Kraft the William H. Ruffner Medal—the university’s highest honor.

Read more about Kraft at vtmag.vt.edu.

Mary Riege Luter, Tempe, Ariz., 12/16/2018.

Mary C. Voglewede Peterson, Youngstown, N.C., 1/7/2019.

Helen Trull, Blacksburg, Va., 1/21/1919.

Louise Ryan Grim, Blacksburg, Va., 1/22/2019.


Benny Ray Bell, Grants, N.M., 12/31/2018.

James Harrison Kelly, Chester, Va., 1/1/2019.


National Association of College admission Directors Newsletter
REFLECTIONS: The beauty of Virginia Tech’s campus, like this view from beneath Torgersen Bridge following a midday rainstorm in autumn, can be awe-inspiring.
STANDING AT AN INFLECTION POINT IN HISTORY

STAYING CONNECTED TO AND involved with Virginia Tech makes the university—and our bonds as Hokies—stronger.

That’s why your engagement is such a crucial part of Boundless Impact: The Campaign for Virginia Tech.

This comprehensive campaign is the university’s fourth, but it’s the first with an engagement goal. We are connecting with more Hokies than ever before, and our goal is to continue growing that number—expanding from 40,000 engaged alumni and friends to more than 100,000 over the course of the campaign.

There are ways for all Hokies to remain active in the life of the university.

When you volunteer, come to an event, or make a gift, you are making a difference. You are making our community stronger and the campus experience more relevant for current and future Hokies.

Give back by mentoring an undergraduate student. Shape the university’s future by serving on a board. Help Hokies reconnect by pitching in as a reunion volunteer, or share your enthusiasm as a Giving Day ambassador.

Stay connected to Hokies and our campus by attending events. Expand your professional community by attending a networking event. Rekindle friendships at a reunion or meet Hokies in your neighborhood at a chapter event. Purchase season tickets to the Moss Arts Center, men’s or women’s basketball, or football.

Being a Hokie is a part of who you are—and Hokies help the causes that matter most to them. With your help, we will move Virginia Tech forward.

We are poised to become an even greater force for positive change in the world. With an active network of alumni, we can seize this moment.

Join us to make this bold vision a reality.

Mike Moyer, the associate vice president of development for colleges, and Angela Hayes, the chief of staff for the vice president of advancement, are leading the Boundless Impact campaign.

IN OUR NEXT ISSUE

Data are individual units of information that can be analyzed and measured to aid decision-making in virtually every organization or activity, from research and business management to finance and governance. Virginia Tech inventively interweaves data science into its curriculum to inform students of its value across disciplines. In our spring edition, read about several graduate students who are analyzing data for athletics.

You can be a part of our next addition, too. We welcome story ideas from our readers and always enjoy passing along your career and family news in our Class Notes section. Don’t forget to update your contact information and let us know what’s happening in your life. Visit vtmag.vt.edu to learn how.

BOUNDLESS IMPACT

Glenn Youngkin, co-CEO of The Carlyle Group and a member of its board of directors, was among the featured speakers at an event on Oct. 11, 2019, which was held in the Moss Arts Center to kick off Boundless Impact: The Campaign for Virginia Tech. The campaign, which is the most ambitious in Virginia Tech’s history, is expected to fuel major initiatives across the university. Turn to page 33 to learn more.

CONTENTS

END NOTE
Virginia Tech is home for the curious, the bold, the insatiable. A thirst for knowledge propels us, a call for service unites us. Research. Discovery. Impact. That’s our role. Discover yours... vt.edu

SMART FARMS

VIRGINIA TECH IS BUILDING THE FARM OF TOMORROW—TODAY