

VIRGINIA TECH

magazine

SPRING 2020

OF LOVE AND LEMURS
A shared passion for conservation

WELL SPENT
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HOKIES AND

SPACE

VIRGINIA TECH'S FOOTPRINTS ON THE FINAL FRONTIER

BOOM BOXES MIGHT NOT BE IN...



BUT GIVING BACK TO, LIKE,
VIRGINIA TECH IS...

TOTALLY "IN"

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3, 2, 1, BLAST OFF!

Roger Crouch dreamed of becoming a pilot, but color blindness hindered his chances. Crouch focused on his education, earning both a master's and a doctorate in physics from Virginia Tech.

With the introduction of the payload specialist position in NASA's space shuttle program, Crouch fulfilled his dream. He flew aboard STS-83 Columbia April 4, 1997, and later launched on STS-94 Columbia. Crouch logged more than 471 hours in space, conducting experiments in a wide range of physical sciences while in orbit.

Read about Crouch and the many Hokies who have helped shape space exploration on page 36. For even more, check out Special Collections at the University Libraries in Blacksburg, which houses space-related documents, photos, and artifacts. Find all the details at vtmag.vt.edu.

Roger Crouch



FEATURES

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For doctoral students Brandon and Meredith Semel, studying the lemurs of Madagascar is a partnership for a lifetime.

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Hokies have played key roles in mankind's advance beyond the clouds, flying as astronauts, leading missions from the ground, and participating in the thousands of support and science roles required to launch humans into space and bring them back safely.

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ON THE COVER: Virginia Tech alumnus Christopher C. Kraft Jr. takes charge from his console in Cape Canaveral, Fla., in an undated photo. For 25 years, Kraft played crucial roles in the American space program and was considered the founder of NASA's mission control. (at right) The golden-crowned sifaka, found in Madagascar, is the focus of Brandon and Meredith Semel research.



PRESIDENT'S MESSAGE

ACTION PLAN: President Tim Sands visited Naples, Florida, in February to address Virginia Tech alumni and friends at a regional kickoff event for Boundless Impact: The Campaign for Virginia Tech.

AN EXCITING NEW ERA

A few months ago, we ushered in a new decade and with it an exciting new era for Virginia Tech.

Our campuses continue to grow and evolve. The Creativity and Innovation District is taking shape in Blacksburg, and soon the Fralin Biomedical Research Institute at VTC will open a new building in Roanoke, in addition to launching the first phase of its research presence with Children's National Hospital in Washington, D.C.

And we are advancing our plans for the Innovation Campus in the greater Washington, D.C., metro area. In early February, we named Lance Collins as the inaugural leader for that campus. Collins, who has led Cornell's College of Engineering since 2010, was a key member of the leadership team that successfully bid to partner with New York City to build Cornell Tech. We are excited to have Lance joining our university. You can read more about him on page 15.

I could compare Virginia Tech's momentum to a rocket launch; in fact, several Hokies are directly involved in space exploration. You can learn more on page 28. Perhaps we'll add space travel to the Hokie Bucket List one day!

Back here on Earth, we continue to grow as one university with an interconnected network of campuses. As we enhance

our Extension offices and Agricultural Research and Extension Centers, grow our research and academic facilities in Blacksburg, explore health sciences and technology in Roanoke, focus on national security in Arlington, advance automotive performance in southern Virginia, and develop technology and innovation partnerships in the D.C. area, every location shares our signature mission to serve.

In the spirit of *Ut Prosim* (That I May Serve), we are committed to providing the same university experience to every member of our community regardless of their geographic location or any other differentiator.

Your help is instrumental in shaping the Virginia Tech experience. One way is to join us online on March 18-19 for Giving Day 2020. For 24 hours, alumni, students, faculty, staff, families, and friends can come together to make a powerful impact on our future. And throughout the year, opportunities abound for you—to mentor students, host interns, and volunteer for your local alumni chapter.

Your support will help us advance a great new decade for Virginia Tech. Go Hokies! ■

Tim Sands is Virginia Tech's 16th president.

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SOMETHING TO SAY?

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LETTERS



FROM THE EDITOR

IN THE SPIRIT OF ORANGE AND MAROON

For Hokies, *Ut Prosim* (That I May Serve) is more than a motto. It's a way of life. Giving back is a theme that crosses generations of Virginia Tech graduates and inspires future students.

When unexpected natural disasters or other crises strike, Hokies like Mickey Hayes '64 are always among the first to respond.

Last fall, Hayes and his wife Sarah saw their home on the island of Abaco destroyed by Hurricane Dorian. They responded by partnering with Kyle Falwell, who managed and flew Hayes' Cessna jet, to transport relief supplies, including a significant amount of Hokie apparel, to the weather-ravaged island. Although the couple and their Bahamian neighbors still face significant challenges in rebuilding their community, they are persevering, wearing not only Hokie colors but also Hokie spirit.

"It's what *Ut Prosim* is all about," Hayes said. "That we may serve."

Read more about Hayes and the rebuilding efforts by visiting vtmag.vt.edu.



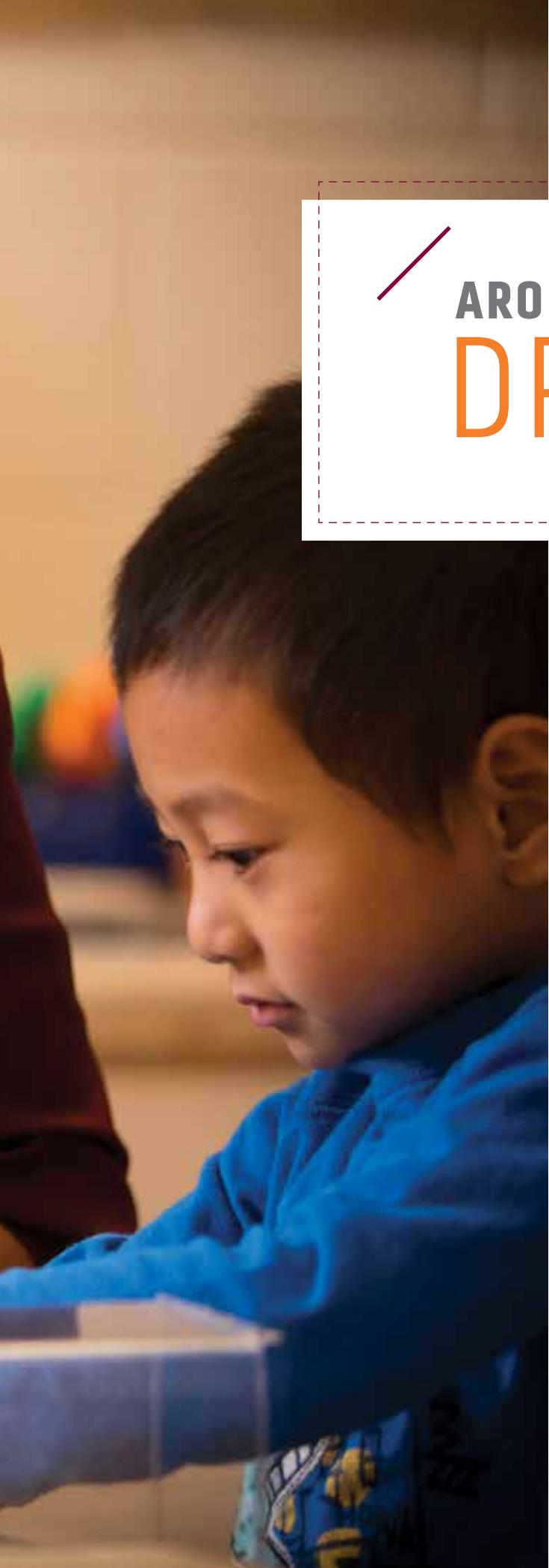
NEIGHBOR TO NEIGHBOR: Mickey and Sarah Hayes (pictured at top) coordinated deliveries of relief supplies, including donated Hokie apparel (above), to residents of the Bahamas following Hurricane Dorian.

CONTACT US

Virginia Tech Magazine welcomes stories about the many ways that our readers make an impact in communities across the globe through their research, careers, and service. Send your ideas to vtmag@vt.edu.



GOLD STAR: Virginia Tech alumna Emily Phillips works with a child at the Virginia Tech Child Development Center for Learning and Research.



AROUND THE DRILLFIELD

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NEWS

NEW CHILDHOOD PRE-EDUCATION MAJOR AIMS TO SET GOLD STANDARD FOR CHILD CARE

A NEW MAJOR AT VIRGINIA TECH WILL PROVIDE A VALUABLE resource in support of Gov. Ralph Northam's plans to increase early childhood education for all Virginians.

The childhood pre-education major, based in the Department of Human Development and Family Science, will provide students with a strong foundation to excel as early childhood educators, as well as in occupations such as counselors, social workers, therapists, and pediatricians that provide emotional support to children.

April Few-Demo, professor and head of the department, said the new major focuses on understanding not only physical child development, but also how family environments affect children. Family dynamics and units are diverse, she said, and how they interact within society has a profound effect on healthy brain development, learning potential, academic success, and future access to resources.

"We're not just teaching students how to teach," Few-Demo said. "We're teaching them to understand the whole child and to know that children do not exist on an island; they exist within a family system." ■



┌ CULTIVATING FOR A CAUSE: Student Mandi Dynes walks through crop fields in Ecuador. ┐

STUDENTS' RESEARCH HELPING FARMERS IN ECUADOR

MORE THAN 2,000 MILES SOUTH OF Blacksburg lies a country where the length of days and nights is roughly equal year-round, where the mountains stretch up to 20,000 feet, and where people donned in brightly colored ponchos farm on steep, grassy slopes that reach the clouds.

It's the site of a 20-year partnership between Virginia Tech Professor Jeff Alwang and his Ecuadorian collaborators, and also where Virginia Tech agriculture students have gone to learn about international development and human-centered research firsthand.

Seven students followed Alwang there in summer 2019 to begin a new five-year project, funded by a U.S. Department of Agriculture workforce development grant, that examines sustainable farming practices in Ecuador's Chimborazo province and will develop the research capacity of undergraduate students in agriculture.

The students from departments across the College of Agriculture and Life Sciences spent six weeks in the Andean

highlands learning about the country's history and culture and then interviewing Andean farmers about their agricultural practices to gather baseline data for the ongoing project.

By involving the students in each step of the process, Alwang and his co-investigators are preparing the next generation of international agricultural researchers and giving them a holistic picture of what development work is like.

"No one does an experiment just to do an experiment. They do it because they're trying to help a cause, and this experience helped me see the cause firsthand," said Kaitlyn Gallagher, a senior in biochemistry.

The project's purpose ultimately is to help poor farmers in the region by analyzing the feasibility of bringing more sustainable farming practices to the Chimborazo region in terms of food security and economics. New groups of students over the next several years will continue the work established by the initial cohort. ■

LUIZ DASILVA NAMED INAUGURAL EXECUTIVE DIRECTOR FOR COMMONWEALTH CYBER INITIATIVE



LUIZ A. DASILVA, PROFESSOR OF telecommunications at Trinity College in Dublin, Ireland, and director of CONNECT, the Science Foundation Ireland Centre for Future Communications and Networks, will join the Commonwealth Cyber Initiative in March 2020 as its inaugural executive director.

At CCI, DaSilva will lead a network of higher education and industry experts to build an ecosystem of cyber-related research, education, and engagement that will position Virginia as a world leader in cybersecurity and cyber-physical systems.

With partnership of both higher education institutions and industry, CCI was established in the 2018-20 Virginia budget, which will invest \$20 million annually from 2020 and beyond.

DaSilva comes to CCI with 21 years of experience in academia, including 17 years in the Commonwealth of Virginia as a professor at Virginia Tech. ■

STUDENTS LEARN BANKING THROUGH LOANS WITH REAL MONEY

VIRGINIA TECH STUDENTS WHO study finance are investing real money while acquiring the skills of commercial banking loan officers.

Credit Corps is a new program offered through the Pamplin College of Business that allows students, using funds from the Virginia Tech Foundation, to participate in actual loans with bank partners.

The unique program is aimed at enhancing students' skills in credit risk analysis, business analytics, teamwork, and portfolio management.

"Credit Corps will prepare students for jobs and careers across a wide range of finance career paths and offer financial firms a pipeline of credit-savvy recruits with hands-on experience," said finance professor George Morgan, who led efforts to develop the program.

The Virginia Tech Foundation is committing \$2 million over four years to sponsor the program.

Atlantic Union Bank has signed on as the program's inaugural partner, providing loans that Credit Corps may consider for participation.

Based in the Department of Finance, Insurance, and Business Law in the Pamplin College of Business, the program is a one-of-a-kind capstone experience. Before they can be considered for Credit Corps in their senior year, students must earn certification from the Risk Management Association. ■



SCIENCE QUEEN: Camille Schrier '18, who performed a science experiment as her talent, was crowned Miss America on Dec. 19, 2019.

MISS AMERICA SHINES SPOTLIGHT ON SCIENCE

CAMILLE SCHRIER MADE HISTORY IN December as the second Virginia Tech alumna ever to be crowned Miss America.

But her victory was historic on another level. The 2018 Virginia Tech graduate, who double majored in systems biology and biochemistry, was the first Miss America winner to perform a science experiment as her talent. It was the same experiment she used in winning the title of Miss Virginia in the summer of 2019. Currently, she is enrolled in the doctoral program at Virginia Commonwealth University's School of Pharmacy.

In November, Schrier returned to Blacksburg and recreated the science experiment demo on stage at the Moss Arts Center as part of the Nutshell Games, sponsored by the Virginia Tech Center for Communicating Science. Earlier in the day, she appeared at the Vir-

ginia Tech Science Festival, where she delighted scores of attendees by creating a faux cloud using liquid nitrogen and boiling water.

Schrier's Miss America victory will inspire young girls to explore STEM opportunities, said Virginia Tech College of Science Dean Sally C. Morton.

"We are delighted to see a Virginia Tech science alumna shine on the national stage," Morton said. "And we're even more thrilled that she is using her success to showcase the value of STEM education for kids and as a catalyst to encourage young girls to study science and do science."

Kylene Barker, a 1978 Virginia Tech graduate, is the only other Hokie alumna to be crowned Miss America. She won the competition in 1978. ■



IN THE WILD: Professor Marcella Kelly has spent the past 15 years tracking predatory ocelots and jaguars using remote sensor cameras.

PROFESSOR'S RESEARCH REVEALS INFORMATION ABOUT ELUSIVE WILD CATS

IT IS NIGHT IN A CENTRAL AMERICAN pine forest, and an ocelot is following a game trail. The predatory wild cat passes between two remotely triggered infrared cameras set at knee-height. The cameras flash simultaneously, startling the animal and momentarily illuminating the forest.

Professor Marcella Kelly, of the College of Natural Resources and Environment, has spent the past 15 years tracking the movements of predatory ocelots and jaguars using remote sensor cameras. Now her research, one of the longest continuous studies of wild cat populations in the world, is giving scientists new insights into the range, population sizes, and migratory habits of Central American wild cats.

Kelly and Christopher Satter, a doctoral student in Virginia Tech's Department of Fish and Wildlife Conservation, have col-

laborated with other researchers to publish two papers utilizing this ocelot data. A paper on population densities in Belize was published in the Wildlife Society's Journal of Wildlife Management, while another on the use of spatial capture-recapture models to measure sex-specific population dynamics appeared in the journal Ecosphere.

Kelly's passion for researching wild cats started at the University of California-Davis, where she did her doctoral research identifying individual cheetahs from photographs in Tanzania.

"We put our efforts into designing effective methods for using cameras to measure wild populations that are now being taught everywhere," Kelly said. "If you're going to survey for forested animals, you'll follow procedures partly developed in my lab." ■

GIVENS NAMED DEAN OF VIRGINIA-MARYLAND COLLEGE OF VETERINARY MEDICINE



M. DANIEL GIVENS, A VETERINARIAN, researcher, and educator, is the new dean of the Virginia-Maryland College of Veterinary Medicine at Virginia Tech, effective June 1.

Givens currently serves as the associate dean for academic affairs in the College of Veterinary Medicine at Auburn University, where he is also a professor in the Department of Pathobiology. He will succeed Gregory B. Daniel, who has served as interim dean of the college since 2017 and will return to his faculty position in the Department of Small Animal Clinical Sciences.

Since joining the Auburn University faculty in 2000, Givens, a diplomate of both the American College of Veterinary Microbiologists (virology specialty) and the American College of Theriogenologists, has served in various roles, including acting head of the Department of Pathobiology and interim associate dean for academic affairs. ■

INDIA-BASED CERTIFICATE PROGRAM TEACHES BIG DATA SKILLS

RADHICA KANNIGANTI WORKS

for a startup company in India, home to some of the world's most-polluted cities. She hopes to improve lives through her work as an environmental engineer for Bangalore-based Devic Earth, which is testing a device that reduces air pollution by employing radio waves.

The job, which requires analyses of wind speeds, rainfall, temperatures, and more, led Kanniganti to Virginia Tech's new India-based noncredit certificate program in business analytics, where she was one of 14 students who received a certificate in business analytics and artificial intelligence in the program's first graduation ceremony in November in Chennai, home of the Virginia Tech, India site.

"I needed to master the tools of big data," Kanniganti said.

The certificate program was designed for people like Kanniganti, who lack technical computer-programming backgrounds yet need to master data tools. The business analytics program—spearheaded by Guru Ghosh, vice president for Outreach and International Affairs—is Virginia Tech's first international noncredit certificate. ■



PEDIATRIC PARTNERSHIP: Children's National Hospital and Virginia Tech will build a research facility at the new Children's National Research & Innovation Campus.

FRALIN BIOMEDICAL RESEARCH INSTITUTE ESTABLISHES A D.C. PRESENCE

CHILDREN'S NATIONAL HOSPITAL and Virginia Tech announced in November plans for a formal partnership that will include the construction of a 12,000-square-foot Virginia Tech biomedical research facility within a new Children's National Research & Innovation Campus.

The campus is an expansion of Children's National Hospital, which is located on a nearly 12-acre portion of the former Walter Reed Army Medical Center in Washington, D.C. It is set to open its first phase in December 2020.

The new collaboration will create an innovation campus focused on pediatric research.

Faculty from the Children's National Research Institute and the Fralin Biomedical Research Institute at VTC in Roanoke have worked together for more than a decade, already resulting in shared research grants, collaborative publications, and shared intellectual property. Together, the two institutions will expand their collaborations to develop new drugs, medical devices, software applications, and other novel treatments for cancer, rare diseases, and other disorders. ■



EXTRA, EXTRA!
READ ALL ABOUT IT.

For additional details, images, and videos related to the stories featured in Drillfield, go to vtmag.vt.edu.



AFRICAN IMMERSION: Professor Kathleen Alexander and her colleague Lena Patiño (center), both veterinarians, assess the health of two banded mongooses as part of their ongoing research.

EIGHT WEEKS WITH WILDLIFE IN BOTSWANA

FOR KAYLA EAST, STUDYING WILDLIFE health in northern Botswana meant having to get used to the unexpected.

"I remember, on a day off, a group of us were approached at our hotel by someone from the village who told us that a baby monkey had been injured and asked for our help," said East, a junior wildlife conservation major. "Very soon I found myself running through a fancy hotel with a baby monkey cradled in my arms, trying to figure out how to transport it to the wildlife lab. That was the moment I realized that there is no such thing as mundane in Botswana, no such thing as the expected."

East was among 15 Virginia Tech undergraduates who traveled to Botswana in summer 2019 to participate in a College of Natural Resources and Environment field course, Wildlife Health Immersion in Africa: Capture, Rehabilitation, and Forensics.

"This summer course was designed to

have a specific focus," said Professor Kathleen Alexander of the Department of Fish and Wildlife Conservation and an affiliate of the Fralin Life Sciences Institute. "We didn't want students to travel somewhere to see other people do the work; we wanted them to be responsible in having to navigate difficult, cross-disciplinary environments, to engage with wildlife while understanding the human dimensions of that interaction."

On location at the Centre for African Resources, Animals, Communities, and Land Use near Chobe National Park, Alexander's immersive eight-week course focused on training students on the many facets of wildlife work in sub-Saharan Africa. They participated in a rotation of tasks intended to mirror the center's range of work, including animal husbandry and care for raptors and mammals; introduction to laboratory techniques; public health and data handling; and wildlife ecology, capture, and rescue. ■

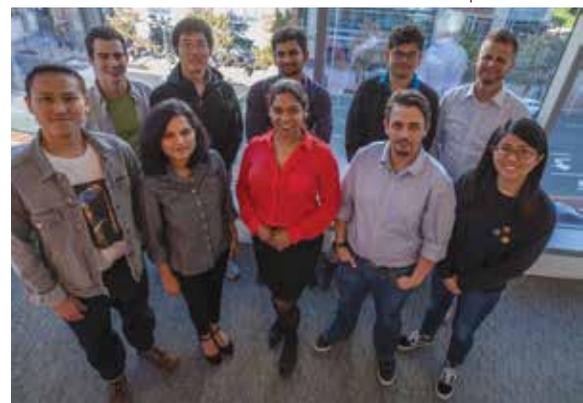
STUDENTS HAVE A VOICE IN INNOVATION CAMPUS PLANS

AFTER EARNING A BACHELOR'S degree in computer engineering at Virginia Tech, Logan Eisenbeiser moved to Northern Virginia last year to pursue his master's of computer engineering at the university's Falls Church campus.

Now he's also helping set the stage for Hokies who will study in Northern Virginia at Virginia Tech's future Innovation Campus.

Eisenbeiser is one of 10 graduate students selected as an Innovation Fellow. For the next year, the fellows will share perspectives, act as advisors, and participate in events as plans for the Innovation Campus move forward.

"With their fresh ideas and feedback, we will create a better educational experience for future Innovation Campus students," said Brandy Salmon, founding managing director for the campus. ■



INNOVATION FELLOWS: (back row) Logan Eisenbeiser, Xin Chen, Goprikrishna Rathinavel, Padmaksha Roy, and Christopher White. (front row) Yiqing Liu, Pooja Algikar, Sneharaj Ramdasalli, Ronald "Angel" Cox, and Yu-Hsuan Huang.

WVTF RADIO IQ ENHANCES COVERAGE

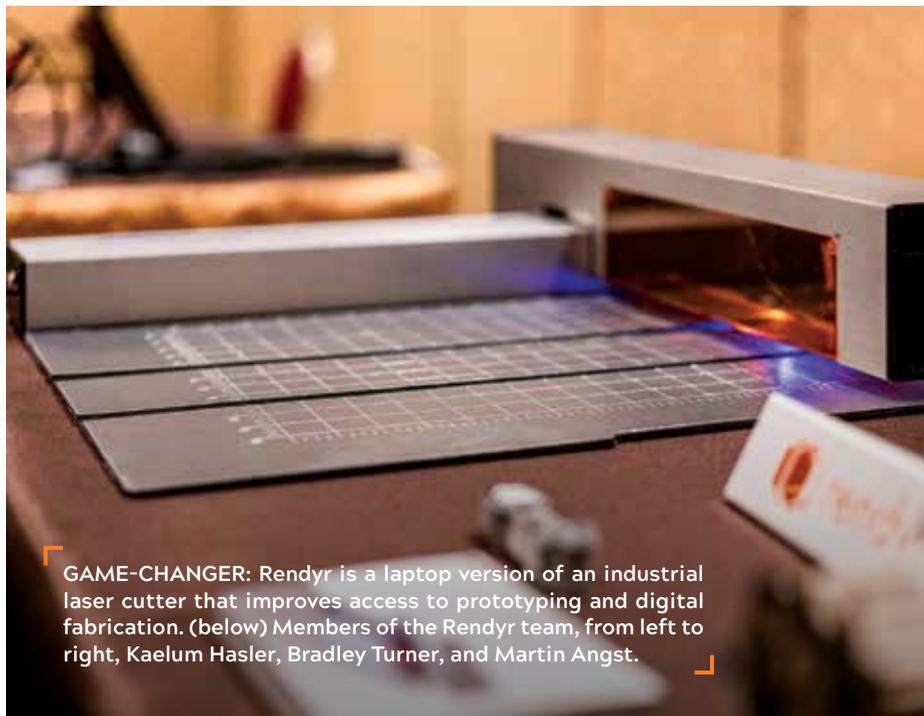


WVTF RADIO IQ HAS EXPANDED its reach in Virginia with the acquisition of 89.7 FM Richmond. The new signal, the station's twenty-fifth, increases WVTF's statewide coverage with award-winning news programming. The move also makes its public service available to a growing and diverse audience in the Richmond metro area. WVTF Radio IQ now extends from Wise, Virginia, in the southwestern part of the state, north to Spotsylvania, and east nearly to Williamsburg.

Virginia Tech has operated WVTF, the managing station for Virginia Public Radio, since the early 1980s. ■



MAKING WAVES: Roger Duvall, general manager of WVTF Radio IQ, sits in the Roanoke studio. ■



GAME-CHANGER: Rendyr is a laptop version of an industrial laser cutter that improves access to prototyping and digital fabrication. (below) Members of the Rendyr team, from left to right, Kaelum Hasler, Bradley Turner, and Martin Angst. ■

STUDENT ENTREPRENEURS SHOWCASE DESKTOP ROBOTICS STARTUP

A TEAM FROM THE COLLEGE OF Architecture and Urban Studies was one of only four student groups in the world to showcase their emerging desktop robotics company, Rendyr, at last fall's Autodesk University Conference Student Expo in Las Vegas.

The event showcased the latest technologies and tools that are changing the world and the entrepreneurs who created them.

Martin Angst, a student working toward a master's degree in architecture, and Kaelum Hasler, a junior majoring in industrial design, are co-founders of Rendyr, which is developing a "laptop version" of an industrial laser cutter to improve access to rapid prototyping and digital fabrication.

Designed to support creative environments that do not have the space or the budget to accommodate conventional

fabrication machines, its portability makes it convenient for a variety of settings and allows for easy sharing within groups of people. Hasler developed a prototype with support from the Institute for Creativity, Arts, and Technology at Virginia Tech. A second prototype won the Virginia Tech Game Changers Challenge and helped Hasler and Angst incorporate as Rendyr Inc. in 2018.

Virginia Tech students from a variety of academic disciplines, including industrial design, architecture, and engineering, are currently working at Rendyr. ■



NEWS REEL

NEW DEGREE APPROVED FOR INNOVATION CAMPUS



LAST FALL, THE STATE COUNCIL of Higher Education for Virginia approved a new Master of Engineering degree in computer science for the Innovation Campus.

The new graduate degree will prepare students with the knowledge and skills needed for mid-level and advanced positions in industries related to computing and enhance marketability to employers. Students can participate in the program on a part-time, full-time, or full-time accelerated basis. Full-time students could reasonably earn the Master of Engineering in computer science degree in about three semesters.

Sara Hooshangi joined Virginia Tech in January as founding program director. She intends to shape the program into a rigorous but flexible offering to students with diverse backgrounds, equipping them with skills sought by the fast-growing tech industry of the greater Washington, D.C., metro area. ■

VIRGINIA TECH VIDEOGRAPHERS HAVE BEEN HARD AT WORK CAPTURING THE UNIVERSITY'S NEWS AND EVENTS. WATCH THESE VIDEOS AND MANY OTHERS AT VIDEO.VT.EDU.



HOKIES HELP COOPER'S HAWK

A Cooper's hawk is flying free thanks to Hokies and the Southwest Virginia Wildlife Center. The hawk flew into a window and then spiraled to the ground at the Alphin Stuart Livestock Arena. Less than a week later, the hawk was released into the wild.



EXPLOSIVE RESEARCH IS PROTECTING PEOPLE AND INFRASTRUCTURE

Eric Jacques, an assistant professor in the College of Engineering, is using a shock tube to research the effects of blasts on structures, be it a terrorist attack or an accidental explosion.



HOKIEBIRD MEETS PRESIDENTIAL TURKEYS

Just before Thanksgiving, HokieBird met the Presidential Turkeys in Washington, D.C., before their debut at the White House. Afterward, the turkeys headed to their new home at Gobblers Rest on Virginia Tech's Blacksburg campus.



ARCHITECTURE STUDENTS DESIGN, BUILD NEW RIVER TRAIN OBSERVATORY

A cross-disciplinary team of faculty and students designed and built the New River Train Observatory in Radford, a unique structure offering dramatic views of the railway line.



AT THE HELM: Lance Collins has been named the inaugural executive director and vice president of Virginia Tech's Innovation Campus.

LEADING INNOVATION

LANCE R. COLLINS, THE INAUGURAL executive director and vice president of Virginia Tech's Innovation Campus, will be remembered at Cornell University for how he pushed the engineering college to new heights, leading one of its largest ever capital campaigns while significantly growing the number of women and underrepresented minorities among the faculty and student population.

But in New York City, where Collins provided early leadership for Cornell Tech, he's best known for saving the L Train.

Cornell Tech grew from the city's efforts to develop an elite graduate school campus of engineering and applied sciences that would partner with industry to maximize technology commercialization.

That momentum prompted New York Gov. Andrew Cuomo to call Collins, Cornell's Joseph Silbert Dean of Engi-

neering, when he needed help with the subway in 2018. The L Train's tunnel had been damaged by Hurricane Sandy in 2012. Renovations meant the subway line between Brooklyn and Manhattan would be closed for 15 months.

Collins and Columbia Engineering Dean Mary C. Boyce formed a team to develop a plan for the tunnel to be renovated at nights and weekends, allowing the L Train to run in full service during the day.

"Virginia Tech is very fortunate to have hired an individual with the special talents and capabilities of Lance Collins," said David J. Skorton, president emeritus of Cornell. "He's uniquely qualified to take the helm at the Innovation Campus for Virginia Tech. Between Lance's abilities and the vision demonstrated at Virginia Tech, this feels like a perfect fit for both."

Collins, who officially joins Virginia Tech Aug. 1, began his career at Penn State Uni-

versity in 1990. He moved to Cornell University's Sibley School of Mechanical and Aerospace Engineering in 2002. A few years later, he was hired as the school's director, and in 2010, he was appointed as the dean of Cornell Engineering.

Collins led one of the largest capital campaigns in the college's history. He significantly increased the diversity of the faculty and student body, more than doubling the proportion of students from underrepresented communities, from 8 to 19 percent. Undergraduate enrollment by women increased from 33 to 50 percent.

Now, he faces a "thrilling" opportunity at Virginia Tech: the chance to build a new campus from the ground up. Collins now aims to apply the lessons he's learned to building Virginia Tech's Innovation Campus in National Landing, with access to entrepreneurs, thought leaders, and the federal government. ■

BUILDING THE

OPTIMAL DATABASE



A TRADING AND ANALYTICS LAB. FORTY team rooms for students. An interactive teaching kitchen for hotel and restaurant management majors. Corporate flex space. An underground tunnel.

These are some of the features that are coming to Virginia Tech's Blacksburg campus in the next few years in the form of the \$250 million Global Business and Analytics Complex (GBAC).

The facility has been designed to include two residential spaces and two connected academic buildings, one which will serve as the new home for the Pamplin College of Business, but the benefits will extend well beyond Pamplin.

The complex will house faculty and host classes from multiple colleges, including the College of Engineering and the College of Science, all with a focus on computer science and data analytics.

This kind of interdisciplinary facility will be unique among business schools nationwide, said Robert Sumichrast, Pamplin's dean. The analytics theme ties GBAC to many different areas of the university.

"When a company or government agency faces a perplexing issue, they take it on with teams of experts pulled from multiple disciplines," said Sally C. Morton, dean of the College of Science. "It makes sense to show our future science, engineering, and business leaders the exponential value of different disciplines working side by side."

BUSINESS CONNECTIONS: Robert Sumichrast, dean of the Pamplin College of Business, meets with students.



BUFFERING

For updates on the GBAC project, visit www.pamplin.vt.edu/content/pamplin_vt_edu/en/gbac.

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 the buildings with two living-learning communities, to be constructed south of the Inn at Virginia Tech. They will house about 700 students.

One community will target students studying business and analytics. The other will be geared toward students interested in international business and policy. That building will house the Cranwell International Center and Mozaiko, a residential space for international and U.S. students focused on learning other cultures and languages.

The costs of the project will be financed from a blend of resources, including state funding tied to Amazon's HQ2 initiative, university funds, and private gifts.

GBAC is one of the top six priorities of Virginia Tech's Boundless Impact campaign, and active fundraising is ongoing for the project.

Plans for GBAC also connect to the priorities established for the commonwealth. Virginia's package to attract Amazon's second headquarters featured an assurance that Virginia universities would provide a pipeline of technology talent for industries throughout the state.

Virginia Tech has committed to add at least 2,000 more undergraduate students

studying computer science, computer engineering, and related disciplines over the next five years.

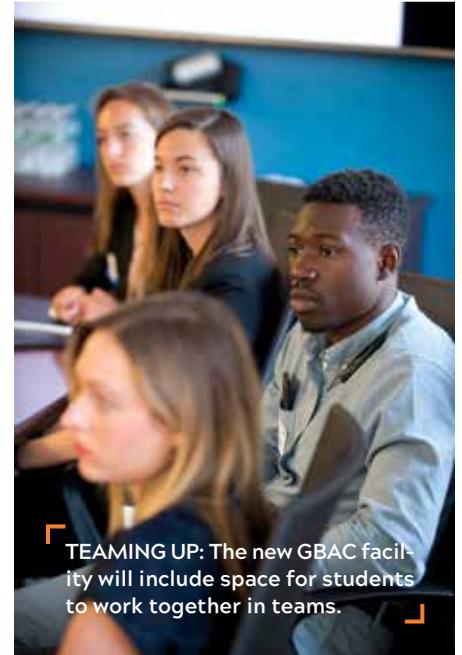
To support these new students and propel research, the university plans to hire up to 140 new faculty members in Blacksburg. The GBAC project will provide space for this expansion, in particular the Data and Decisions building at 120,000-gross-square-feet, the first academic structure.

"That building will be critical to the growth in enrollment that we will do," said Julia Ross, dean of the College of Engineering.

Plans for team rooms at GBAC will enable students to work more effectively in groups.

The team rooms give faculty the space "to teach some concepts from a more theoretical perspective and break the class up into teams, assign them a case, and send them across the hallway where they can work on it, come back, and present the results," Sumichrast said. "It encourages a much more active learning style."

GBAC also will house central space for meetings between students and corporate recruiters. The complex's new 3,500-square-foot lab for teaching and research in trading and analytics will be named for the Deloitte Foundation, in recognition of a \$3 million commitment by the foundation and Deloitte Virginia Tech alumni toward the complex. ■ JB



TEAMING UP: The new GBAC facility will include space for students to work together in teams.

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VIRGINIA TECH
BOUNDLESS
IMPACT

WELL SPENT

YOU MIGHT THINK IT TAKES BIG money to make a big impact at Virginia Tech, but the reality is that gifts of all sizes empower the Hokie community to make tangible improvements in the lives of others.

Hokie supporters made it possible for student volunteers from the Campus Kitchen program to re-direct more unserved food from campus dining centers to local nonprofits. Last year, 11 people gave a total of \$600 to the program. Their average gift was \$54, which is enough to cover three weeks of gas for the van that gets the food to the places it's most needed.



Researchers in the Virginia-Maryland College of Veterinary Medicine will model and monitor the hearts of Cavalier King Charles spaniels, a breed prone to heart trouble, thanks to 90 supporters who gave \$137 on average. In total, they gave enough to cover the costs of participation for 48 Cavaliers. Treatments and preventive measures from this study could benefit millions of dogs.



CAT PIPER, MINDY QUIGLEY, KHANH TO, JOHN CATHERWOOD-GINN, LOGAN WALLACE

From tackling the world's biggest, most complicated problems to boosting a student's ability to launch their career, your contributions make great things happen.

The power of giving is on display every day at Virginia Tech. That's especially

the case in the spring, when the annual Giving Day unites generous Hokies from around the world.

Giving Day 2020 launches at noon EST on March 18 and runs for 24 consecutive hours.

When Hokies come together, incredible things happen.

Learn more at vt.edu/givingday. ■

Brian Snell and Mason Adams are writers for Advancement.

Geosciences students were able to run a research symposium with support from 71 supporters who contributed an average gift of \$59 for a total of more than \$4,200. Their generosity enabled eleven undergraduate and 35 graduate students to attend the symposium, where they learned from each other, developed communications skills, and received feedback from faculty and peers.



The Virginia Tech Helmet Lab provides unbiased ratings, allowing consumers to make informed decisions when purchasing helmets for sports and recreational activities. In 2019, 84 donors raised \$10,000—an average gift of \$119—that the Helmet Lab used to test soccer headgear. The lab went on to release the first-ever soccer headgear ratings.



At a time when many school districts are cutting or eliminating their arts programs, the 58 donors who backed the Moss Arts Center's crowdfunding campaign in the fall of 2019 made it possible for 1,022 local K-12 students to attend performances and workshops. For every \$13 given, another child was able to participate.





MARCH ON: Retired U.S. Army Sgt. 1st Class, Melvin Morris, a Medal of Honor recipient, shares his story in Burruss Auditorium.

LESSONS IN LEADERSHIP

VIRGINIA TECH CADETS HEARD A powerful message about the meaning of service and duty when Medal of Honor recipient Melvin Morris spoke during the week of Veterans Day—a special event made possible by the Major General Thomas W. Rice Center for Leader Development as part of the Cutchins Leadership Lecture Series.

Morris, a retired U.S. Army sergeant first class, received the Medal of Honor for his actions on Sept. 17, 1969, during combat operations in Chi Lang, Vietnam. His lecture was made possible through a partnership with the Congressional Medal of Honor Foundation.

As the academic arm of the Corps of Cadets, the Rice Center's mission is to develop cadets into the next generation of global leaders. Each year, center Director Elaine Humphrey searches out diverse

speakers who challenge cadets—and the general public—to become better leaders.

“These lectures are meant to instill in our cadets a profound appreciation for the service and sacrifice of these particular people,” Humphrey said of the Medal of Honor presentations. “More importantly, they drive home the fact that these heroes and their legacy of service are never forgotten, that we continue to honor them and aspire to be like them.”

These messages connect to the history and core values of Virginia Tech. Seven alumni have received the Medal of Honor.

“Listening to Medal of Honor recipients allows us to understand the breadth of the sacrifices men and women before us have made,” said Mame Ngom, a junior in Air Force ROTC majoring in political science. “Behind every story we are able to take principles and lessons valuable to our

leadership development. Some of the lessons I have taken from listening to these heroic stories are the importance of hard work, integrity, discipline, and resilience.”

Past speakers have included Clinton L. Romesha, an Army staff sergeant who received the medal for actions on Oct. 3, 2009, during a deadly attack on Combat Outpost Keating in Afghanistan, and Leroy Petry, a master sergeant who received the medal for actions on May 26, 2008, during an attack in Paktya Province, Afghanistan.

The Cutchins Leadership Lecture Series is named for the late Clifford A. Cutchins III, a former bank chairman and Virginia Tech Board of Visitors rector. A cadet in the Class of 1944, Cutchins received his degree in accounting. ■

Shay Barnhart is the Corps of Cadets' communications director.

THE GAME-CHANGERS

THE FOUNDERS OF VIRGINIA TECH'S Sports Data Analytics Club excel at using numbers to predict results, but there's one outcome they didn't compute fully—the group's popularity.

"Our first meeting, I would say 70 to 90 people showed up," said club co-founder Lynda Nguyen, who graduated in December with a bachelor's degree in computational modeling and data analytics (CMDA). "I was hoping for like 20, but the room was so packed we also had to have an additional first meeting the next day."

In the spring of 2018, a trip to the annual MIT Sloan Sports Analytics Conference inspired Nguyen and club co-founder Stephen Olsen to spearhead the launch of the group. Lizette Zietsman, an associate professor in the Department of Mathematics, assisted with the effort.

"I think that conference really opened our eyes to how big sports analytics is and what is going on in the industry," said Zietsman, who now serves as the club's academic advisor.

Since that first meeting in fall 2019, the group has grown to about 118 members. Several Hokie alums working in the

sports analytics field have visited to share their knowledge and experiences, including Faizan Hasnany, an analytics coordinator for the Chicago Bulls; Kenneth Massey, a sports statistician and contributor to the college football Bowl Champions Series; and Ken Pomeroy, a college hoops guru who revolutionized the usage of game stats.

For Olsen, a junior studying CMDA, the Sports Data Analytics Club represents the intersection of interests that drew him to Virginia Tech.

"Seeing some articles about students working with the basketball team here while I was applying to college was definitely something that stimulated my interests," Olsen said.

One of the priorities of the club is connecting students with opportunities to learn and develop. Since the fall, a handful of club members have worked alongside Virginia Tech's athletic teams.

Ieuan Israel, a senior CMDA major, plans to channel his passion for numbers into calculating run-expectancy figures that can be used by the baseball coaching staff. He believes the experience will not only help him as he prepares for a career,

but also when he and fellow club members attend a baseball-related analytics competition in Arizona in the spring.

"We're super excited about it. We'll be able to be in front of a bunch of major league baseball teams," said Israel of the contest, which will be held during the Society for American Baseball Research's annual conference.

Both the competition and the work with the baseball team are being funded in part through a Luther and Alice Hamlett Undergraduate Research Scholarship, which supports students majoring in CMDA, nanoscience, and systems biology. The scholarship also helped with costs associated with Nguyen's trip to the Massachusetts Institute of Technology analytics conference last spring.

Zietsman said such generosity will help the club take their work applying data to world of athletics beyond the university.

■ TW

JUST THE STATS: Virginia Tech's Sports Data Analytics Club is growing and connecting student members with opportunities in sports careers.





STAMP OF APPROVAL

“

VIRGINIA TECH VERY MUCH PREPARED ME FOR THE PROBLEM-SOLVING OF THE COMPUTER WORLD, BUT ALSO A LOT OF CREATIVITY OF THE MUSIC WORLD. BEING ABLE TO COMBINE THOSE TOGETHER WAS PRETTY COOL.”

Galina Belolipetski '19

IN A MOMENT WHILE RIDING THE Metro, Galina Belolipetski’s path to college became clear.

“I was listening to ‘Yellow’ by Coldplay when I got the email,” said Belolipetski, a Maryland native who graduated from Virginia Tech in May 2019. “I sent a screenshot to my parents, and I started happy crying.”

That email informed Belolipetski she’d been selected as one of four undergraduate students in Virginia Tech’s inaugural class of Stamps Leadership Scholars in the fall of 2014. The award included full tuition, fees, room, and board for four years, along with funds dedicated to support experiential learning opportunities.

The generous support cemented Belolipetski’s decision to attend Virginia Tech as an out-of-state student in the Honors College and set her on a path toward graduating with dual degrees in computer science and creative technologies with a focus in music composition. Her undergraduate experience and passion for the intersection of science and music ultimately led Belolipetski to an app development job with Sonos, an electronics company.

“Virginia Tech very much prepared me for the problem-solving of the computer world, but also a lot of creativity of the music world,” Belolipetski said. “Being able to combine those together was pretty cool.”

Belolipetski said the opportunity to double major in areas that have traditionally been viewed as opposites set Virginia Tech apart.

“My dual major was very encouraged here, and I got to explore the intersection of the two fields through experiences fueled by Virginia Tech,” she said. “These included participating in unique music computer science research opportunities, composing music using the Nintendo Wii’s remote and nunchuck controller, and voice performances in multichannel audio environments like the Cube.”

That experience, as well as the conferences she was able to attend while at Virginia Tech, propelled Belolipetski to a career at that same intersection.

“I really love it. It’s the best job I could have had straight out of college, and maybe the best ever,” Belolipetski said. “My Virginia Tech experience made me a well-rounded artist and computer scientist, and I’m continuing in both fields simultaneously as I find my way in post-graduation life.”

She added that she would encourage current or future students with varying passions not to give up on them simply because they might not traditionally align.

“If you have those interests and you can’t decide, you might as well go for both and see where they might land you,” Belolipetski said. ■ TW

DOES YOUR VOTE MATTER?



Caitlin Jewitt

YOUR VOTE COUNTS, BUT MAYBE NOT AS MUCH AS YOU MIGHT THINK.

Prior to 1972, the primaries and caucuses weren't deterministic; that's how Hubert Humphrey became the Democratic nominee in 1968 without competing in a single primary.

The Democratic Party subsequently made changes to offer voters what they asserted was more "meaningful participation." That meant connecting primaries and caucuses more closely to the candidate nominated at the convention. Although the national party did reform aspects of its nominating procedure, state govern-

ments and state parties also wield significant ability to shape results by enacting rules that affect the dates of a vote, designating proportional representation or winner-take-all tabulation, and determining who is allowed to vote in primaries.

How do these regulations affect voters' influence?

Because the presidential nomination process plays out over several months, voters in some states have more of a say in who becomes the nominee than others.

Sometimes state parties change rules to try to achieve specific objectives.

Parties also decide how delegates are allocated to candidates. Under proportional representation, delegates are allocated only to candidates whose numbers tally more than 15 percent of a vote.

Republicans, meanwhile, allow state parties to choose between proportional representation and winner-take-all, in which the winner receives all of the delegates no matter how close the vote.

On the Democratic side, the biggest change for 2020 involves superdelegates. In 2016, Hillary Clinton racked up hundreds of commitments from superdelegates even before the Iowa caucuses, which frustrated supporters of Bernie Sanders, her biggest rival.

Following 2016, the Democratic Party cre-

ated a Unity Reform Commission to study the process and make recommendations. One of its resolutions was that superdelegates be allowed to vote on the first ballot at the convention only if their vote will not be decisive. If it's a contested convention and no candidate can get a majority on the first ballot, then superdelegates will vote on the second ballot.

That change retains the superdelegates, but diminishes their power to shape the overall process.

All of these guidelines affect how much each vote during the primary process counts. Voters do have a say—but just how much of a say depends on factors controlled by the parties.

Citizens cast a vote in the process that chooses candidates, but there's a lot going on behind the scenes. It's not as straightforward as we might hope or expect.

Caitlin Jewitt, assistant professor in the Department of Political Science, has taught at Virginia Tech for six years. The author of "The Primary Rules: Parties, Voters, and Presidential Nominations," Jewitt has researched the method and timing of the nomination process, which is determined by national and state political parties, as well as state governments, and how related decisions influence the extent to which each vote matters in a presidential primary. ■



HOW TECH TICKS

BATTLE OF THE BIRDS

WINNER, WINNER, CHICKEN DINNER!!

James Zeisler Jr., executive chef, prepares chicken parmesan (above) and General Tso's chicken (above, right). Students are big fans of both dishes, but only one can win the Battle of the Birds. For play-by-play coverage of every fowl detail and to learn which bird rules the roost, visit vtmag.vt.edu.

FOR YEARS, CHICKEN PARMESAN, better known to Hokies simply as Chicken Parm, has sat atop the pecking order of popular dishes in Virginia Tech's Owens Hall. The meal has developed a cult-like following across the Blacksburg campus, breaking sales records on two separate occasions.

But while Chicken Parm was nesting on its laurels, another dish was flying below the radar, winging its way to a spot as a top contender.

"General Tso's is consistently a favorite of the students," said Lauren Snelson, assistant director of Owens Dining Center. "There was never any real hype around it, but it's just always been steady and popular." (Snelson moved on to another position shortly after this interview.)

In fall 2017, Chicken Parm averaged 1,102 daily portions to General Tso's 726, but by fall 2019, General Tso's had the edge, 896 to 628.

On Feb. 19, Chicken Parm and General Tso's squared off at Owens Food Court in the first ever Battle of the Birds. The dish with the most portions sold was declared the chicken champion.

The Battle of the Birds is just one example of how Virginia Tech Dining Services is an engaged member of the Virginia Tech community.

"Having the students get involved and get excited is what it's all about," Snelson said. "It gives them an opportunity to walk away from the books, walk away from the tests, and it brings them back home." ■ TW

Bio

A deep-fried, breaded chicken breast covered in marinara sauce and melted provolone, perched on a nest made of the customer's choice of sauce and noodles

Teammate

Garlic breadstick

Work

Wednesdays only

Career

Set a sales record on April 21, 2017, with 2,839 portions sold, and broke its own record less than two years later with 2,881 portions sold on Feb. 13, 2019

CHICKEN PARM

GENERAL TSO'S CHICKEN

Bio

Deep-fried, breaded chicken chunks covered in General Tso's sauce with a splash of Sriracha, perched on a nest of rice or noodles

Teammate

Broccoli

Work

Never misses a day

Career

A relative newcomer to the scene, with few relevant stats



LEMUR TRACKING COLLARS

A VIRGINIA TECH GRADUATE STUDENT is working to save an endangered lemur species in northern Madagascar, and a group of engineering students has stepped up to help make the project affordable.

Meredith Semel, a doctoral student in the Department of Biological Sciences, along with a team of undergraduate students and Nicole Abaid, an associate professor, are crafting unique, cost-effective collars to track the critically endangered lemurs.

“The purpose of the collars is to be able to understand lemur behavior, especially their movement patterns, without physically having to observe them,” said Semel.

Semel, who was named a National Science Foundation research fellow at Virginia Tech in 2016, studies Madagascar’s golden-crowned sifaka, a lemur species jeopardized due to deforestation and habitat loss. Abaid is an advisor for the seven undergraduate students who have helped create the collars that Semel will use to track the lemurs.

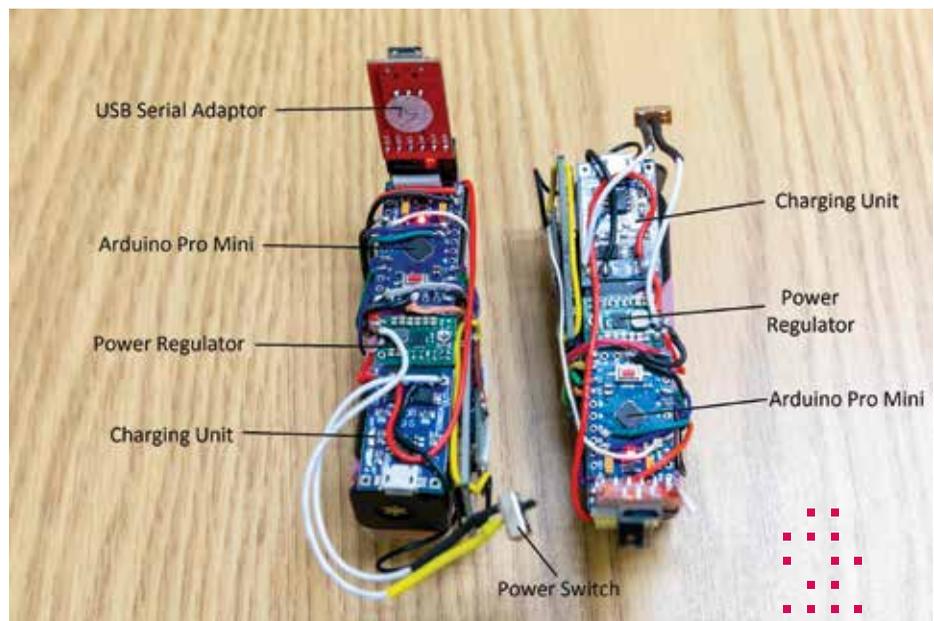
Scientists often use tracking collars that cost thousands of dollars apiece to learn more about animal behavior, but Semel expects each Virginia Tech-designed collar to cost less than \$200. This will allow the team to track more individual lemurs and to study them in different habitats.

Semel began the collar project assuming it would take two semesters. Three years later, she and her team have completed the prototype. The next step is to test the collars on captive lemurs at the Duke Lemur Center, a facility that houses the largest population of lemurs outside Madagascar. Their work will ensure that the collars are safe for future use on lemurs in the wild.

“A lot of wildlife are threatened due to climate change, habitat loss, disease, or

overall human encroachment,” Semel said. “Being able to track them in a cost-effective way will allow us to understand their behavior, physiology, and habitat requirements and apply the data to conservation management plans.” ■

Haley Cummings, a senior majoring in public relations, is an intern with Virginia Tech. Emily Roediger, director of communications for the College of Architecture and Urban Studies, contributed to the story.

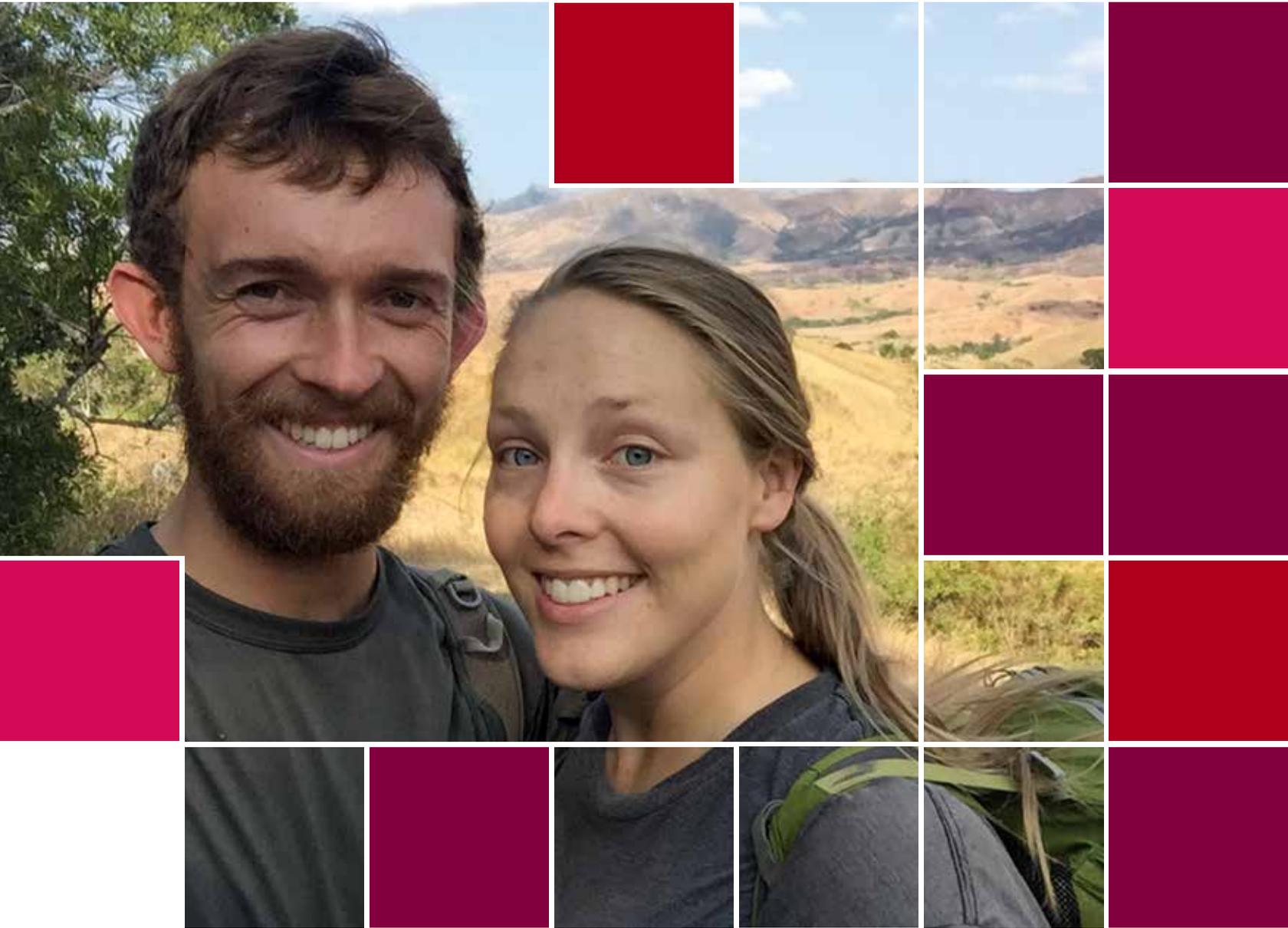




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OF LOVE and LEMURS

by Erica Stacy and Lindsay Key





It's been called the Red Island, the Rainbow Island, and even the Eighth Continent.

Situated off the southeast coast of Africa, Madagascar is the fourth-largest island in the world. Slightly larger than France, Madagascar is about twice the size of the state of Arizona. Scientists believe that the island was formed about 88 million years ago.

For millions of years, Madagascar evolved in isolation. The result: a uniquely biodiverse environment. Almost all of Madagascar's reptile and amphibian species and half of its birds are endemic to the island, meaning they can be found nowhere else on Earth. The area is a mecca for researchers interested in evolution, climate, flora, or fauna.

AND LEMURS.



At Duke, Brandon met then Duke Lemur Center director and professor Ken Glander—the man who years later would become the advisor for Brandon’s undergraduate research.

Brandon earned a bachelor of science in evolutionary anthropology and environmental science from Duke in 2013, followed by a master’s in anthropology from Northern Illinois University (NIU) in 2015.

Meanwhile, in North Carolina, Meredith aspired to a career as a veterinarian. She was drawn to the pinnipeds—seals, sea lions, and walruses—and later to sloths and elephants.

In 2014, Meredith earned a biology degree from Queens University of Charlotte, North Carolina. After graduation, she joined a team studying lemurs in Madagascar led by Mitch Irwin, one of the foremost experts on diademed sifakas. Brandon, who was studying under Irwin at NIU, was also on the team.

“We were the only English-speaking field assistants on the team,” said Brandon. “So, we got to know one another pretty well.”



Lemurs, the tree-hopping, large-eyed, furry primates found only in Madagascar, have inspired numerous research projects and captured the hearts of people around the world, including Interfaces of Global Change Fellows Brandon and Meredith Semel.

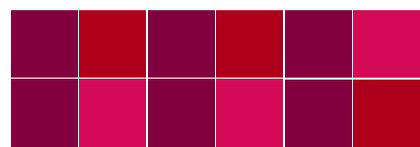
Pursuing field studies on the island, the couple found not only a direction for their careers, but also each other in what might be dubbed a lemur love story.

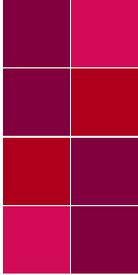
The Semels’ story began about two decades ago when, as young students, both felt called to work with animals.

“When I was in the third grade, I wrote and illustrated a book on lemurs,” said Brandon, who grew up in McHenry, Illinois. “My dad, Brad Semel, sent my report to Duke (University). They invited me to come meet their celebrity lemur, Jovian, and to take a guided tour of their lemur center.” (Jovian, whose stage name was Zaboo, starred in the PBS children’s show “Zaboomafoo,” which ran from 1999 through 2001. Although Jovian has since passed away, several of his offspring still live at Duke.)



IN THE TREETOPS: (TOP LEFT) WEIGHING AN AVERAGE OF 7.5 POUNDS, THE GOLDEN-CROWNED SIFAKA HAS LONG, STRONG LEGS THAT ENABLE IT TO CLING AND LEAP BETWEEN TREE TRUNKS AND BRANCHES. (MIDDLE) MADAGASCAR’S VARIED LANDSCAPE INCLUDES FORESTED MOUNTAINS IN THE NORTH. (ABOVE) BRANDON SEMEL POSES WITH A COQUEREL’S SIFAKA, A TYPE OF LEMUR MADE POPULAR BY THE PBS CHILDREN’S TELEVISION SHOW, “ZABOOMAFOO.”





At the close of the seven-month study, Brandon returned to NIU, and Meredith traveled to Limpopo, South Africa, to spend another seven months studying primates and predators. Upon returning to the U.S., she worked for a year as a high school science teacher.

Despite a separation that ranged from more than 800 to nearly 9,000 miles over two years, Brandon and Meredith stayed in touch, continuing to cultivate their friendship alongside their passion for the lemurs.

In 2015, Brandon was awarded a National Science Foundation fellowship to pursue doctoral studies under Sarah Karpanty in Virginia Tech's Department of Fish and Wildlife Conservation in the College of Natural Resources and Environment.

A year later, Meredith, who was also awarded an NSF fellowship, began a five-year doctoral program at Virginia Tech under Ignacio Moore, a behavioral endocrinologist and professor of biological sciences in the College of Science.



FIELD OF STUDY: THE DARAINA SPORTIVE LEMUR IS AMONG MORE THAN 103 KNOWN SPECIES OF LEMURS IN MADAGASCAR. (TOP, RIGHT) LEMURS AREN'T THE ONLY WILDLIFE MEREDITH SEMEL ENCOUNTERS DURING HER FIELD STUDIES. (TOP) THE SEMELS SPENT THEIR HONEYMOON WHERE THEY FIRST MET, STUDYING THE LEMURS IN MADAGASCAR.

Living in the same community, studying at the same university, the couple's passion for lemurs and respect for each other grew. They married in 2017.

Counselors and experts agree that the first year of marriage is one of the toughest. But Brandon and Meredith took tough to a whole new level by spending their first six wedded months living out of a tent in northern Madagascar.

According to the Semels, life in the field meant rising before sunrise, recording data at specific time intervals from predetermined locations throughout the day, and leaving the field at sunset. The researchers typically traversed about five miles each day, collecting scat and counting birds, lemurs, and other wildlife. They set up camp near a water source, hauling everything they would need for up to two weeks in carts pulled by cows.

Their mutual goal: to study one of the world's most endangered lemur species, the golden-crowned sifaka. Ninety-one percent of the approximately 103 known lemur species are endangered, according to the International Union for Conservation





AT RISK: DURING THE LAST DECADE, THE POPULATION OF THE GOLDEN-CROWNED SIFAKA HAS DECLINED BY 30 TO 50 PERCENT, LEAVING ONLY AN ESTIMATED 10,000 INDIVIDUALS IN THE WORLD.



“We try to work with local people to achieve goals. It’s not realistic to keep people out of the forests. But by creating an environment of mutual learning, we can help local communities recognize how really unique the lemurs are and to understand how protecting them may even benefit Madagascar financially.”

MEREDITH SEMEL



of Nature. The primary driver is the loss of habitat as a result of logging and slash-and-burn agriculture. For the Semels, time in the field provides opportunities to engage local communities and individuals in efforts to protect the animals.

“As an advisor, I am honored to work with Brandon, and to have come to know Meredith as well,” said Karpanty. “They exemplify the global reach of *Ut Prosim*. The ultimate outcome of Brandon’s project is direct guidance on reforestation plans to benefit both local people and lemurs. Both Brandon and Meredith have mentored undergraduates both in field work in Madagascar and in lab and analytical work here at home. They exemplify VT’s role as leaders in natural resource conservation globally.”

“We try to work with local people to achieve goals,” Meredith said. “It’s not realistic to keep people out of the forests. But by creating an environment of mutual learning, we can help local communities recognize how really unique the lemurs are and to understand how protecting them may even benefit Madagascar financially.”

The Semels are Interfaces of Global Change Fellows affiliated with Virginia Tech’s Global Change Center, an arm of the Fralin Life Science Institute. Brandon studies how lemur populations might respond to climate change and habitat loss by examining lemur densities and genetic diversity across different forest types. He uses a suite of techniques to monitor lemur distribution, including land tract surveying, scat sample collection, and drone monitoring.

“Ultimately, I plan to use the data from all of my studies to ensure that government-protected areas include forests that will be suitable for lemurs as the climate changes and that these forests are connected to one another to ensure adaptive genetic potential as they face future threats,” he said.

Brandon suggests that scientific study is about asking questions that the lemurs might ask if they could talk, then using every available resource to find answers and craft solutions.

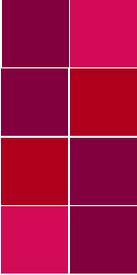


“Ultimately, I plan to use the data from all of my studies to ensure that government-protected areas include forests that will be suitable for lemurs as the climate changes, and that these forests are connected to one another to ensure adaptive genetic potential as they face future threats.”

BRANDON SEMEL

CULTURAL IMMERSION: (AT LEFT) THE SEMELS HIRE GUIDES FROM LOCAL MALAGASY COMMUNITIES AND PASS ALONG INFORMATION ABOUT THE LEMURS TO ENGAGE LOCAL COMMUNITIES IN PROTECTION EFFORTS. (ABOVE) FIELD STUDIES INVOLVE TREKKING ACROSS A VARIETY OF LANDSCAPES TO COLLECT SPECIMENS AND COUNT WILDLIFE.





“For example, if you’re a lemur, and you’re living in a little patch of forest, and that patch isn’t meeting your needs, then where are you going to go?” asked Brandon.

Faced with exactly this question, Brandon set out to identify the elements of the golden-crowned sifaka’s diet. This would involve collecting plant specimens, something with which he had limited experience, but for which there were experts on campus in Blacksburg.

Brandon connected with Jordan Metzgar, curator at Virginia Tech’s Massey Herbarium. Metzgar introduced Brandon to the fundamentals of plant collection.

In Madagascar, Brandon and Meredith worked together to press, dry, and identify specimens before shipping them to the U.S. for further studies.

However, Meredith typically focuses her studies on how lemurs respond socially and physiologically to fragmentation and landscape type.

“Meredith’s research is truly interdisciplinary, as she is working with engineers to develop radio collars to be used to track lemurs in the field in Madagascar,” said Moore, Meredith’s advisor. “She is spanning electrical engineering to conservation of wild animals.”

Meredith is collaborating with Nicole Abaid, assistant professor of mathematics in the College of Science, to build open-source tracking collars that more effectively study the group movements of lemurs, specifically the golden-crowned sifakas. (Read more on page 26.) Abaid was formerly an assistant professor of biomedical engineering and mechanics in the College of Engineering.

Meredith also collects fecal samples to assess lemur stress physiology by measuring glucocorticoid metabolite levels noninvasively.

“I view ecological questions through the lens of an organismal biologist,” she said. “I am interested in looking at how environmental factors influence lemur behavior and physiology on an individual and a group level.”

From an outreach perspective, the Semels have several ongoing projects with local communities in Madagascar. They have worked with local guides and Virginia Tech undergraduate students to document the species of plants and animals that can be found on the island. Previously, no such resource existed, as the Malagasy people primarily rely on oral storytelling to document their histories and surroundings. The Semels’ reference guide will serve as a written database of local knowledge, instill a sense of pride in the region’s unique natural history, and provide future researchers with a valuable resource.

“In line with Virginia Tech’s motto of *Ut Prosim* (That I May Serve), we see service at a community level as an important aspect of our work,” said Brandon. “We are working in one of the poorest places on Earth, asking people to limit their natural resource extraction for the good of the whole planet. That’s a lot to ask. Serving and working alongside communities is the best way to understand their basic societal goals and needs, from which long-term, sustainable solutions can be built.” ■



HAPPY TOGETHER: FOR BRANDON AND MEREDITH SEMEL, SCIENTIFIC TEAMWORK IS THE COMMITMENT OF A LIFETIME. (TOP, LEFT) GOLDEN-CROWNED SIFAKAS ARE ACTIVE DURING THE DAY. THEY LIVE IN SMALL FAMILY GROUPS WITH AROUND SIX MEMBERS. YOUNG ARE DEPENDENT UPON THEIR MOTHERS FOR FEEDING FOR AROUND FIVE MONTHS.





HOKIES AND SPACE

VIRGINIA TECH'S FOOTPRINTS ON THE FINAL FRONTIER

BY MASON ADAMS AND JENNY BOONE

A satellite is shown in space, with its solar panels extended. The background is a blue sky with white clouds. A large white circle is overlaid on the right side of the image, containing text. A dashed white line curves around the circle. A small white circle is located on the left side of the dashed line.

THE DREAM OF SLIPPING THE BONDS OF GRAVITY TO ESCAPE EARTH AND VENTURE INTO SPACE HAS INSPIRED HUMANITY FOR CENTURIES, UNITING SCIENTISTS, EXPLORERS, AND DREAMERS; ACCELERATING TECHNOLOGICAL ADVANCEMENT; AND PROPELLING NEW WORLDS OF RESEARCH AND DEVELOPMENT.

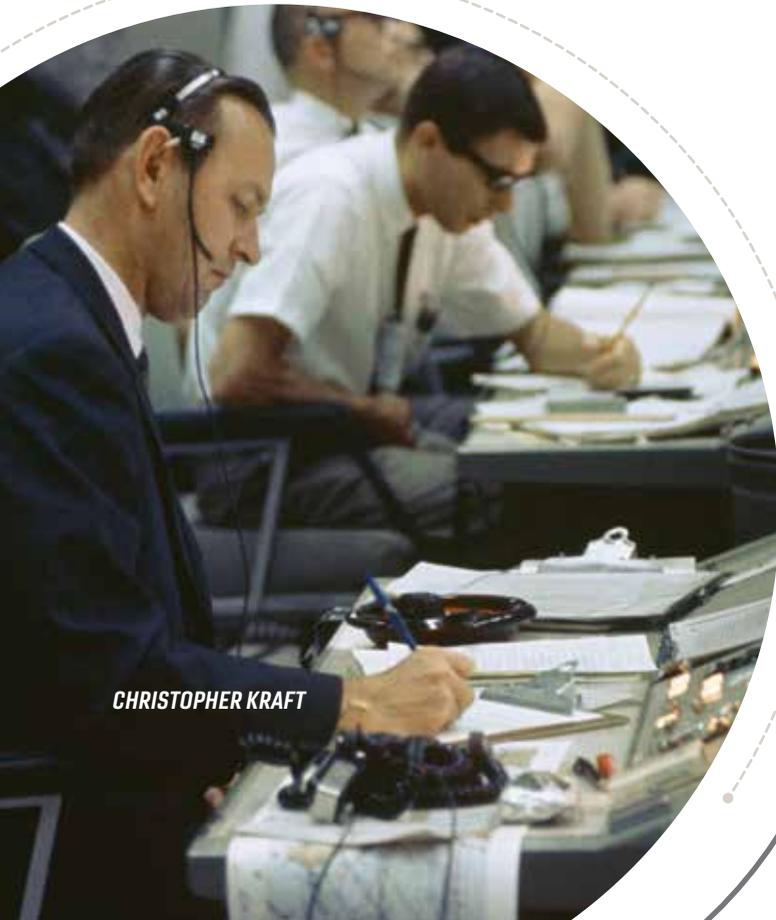
HOKIES HAVE PLAYED KEY ROLES IN THE WORLD'S ADVANCE BEYOND THE CLOUDS, FLYING AS ASTRONAUTS, LEADING MISSIONS FROM THE GROUND, AND PARTICIPATING IN THE THOUSANDS OF SUPPORT AND SCIENCE ROLES REQUIRED TO LAUNCH HUMANS INTO SPACE AND BRING THEM BACK SAFELY.

THE UNIVERSITY'S LAND-GRANT MISSION TO SERVE HUMANITY, AS WELL AS ITS STRENGTHS IN ENGINEERING AND OTHER FLIGHT-RELATED DISCIPLINES, CONTINUE TO PLAY AN IMPORTANT ROLE IN AERONAUTICS AND SPACE EXPLORATION.

CUBESAT CONSTELLATION: VIRGINIA TECH'S SATELLITE—THE FIRST TO BE BUILT BY UNDERGRADUATE STUDENTS AND LAUNCHED INTO SPACE—ALONG WITH TWO SATELLITES FROM OTHER VIRGINIA UNIVERSITIES WAS DEPLOYED FROM THE INTERNATIONAL SPACE STATION IN JULY 2019. WORKING TOGETHER AS A CONSTELLATION, THE THREE NANO-SATELLITES ARE EACH ABOUT FOUR INCHES CUBED AND WEIGH APPROXIMATELY THREE POUNDS.

"SCIENTISTS SAY THERE IS NO LIFE ON THE MOON. I LOOK AT THE MOON TODAY, SEE THE FACES FROM NASA, INDUSTRY, SCIENCE AND ACADEME WHO BRILLIANTLY SENT AMERICANS TO THAT PLACE, AND I KNOW DIFFERENTLY. THE PEOPLE OF MERCURY, GEMINI, AND APOLLO ARE BLOSSOMS ON THE MOON. THEIR SPIRITS WILL LIVE THERE FOREVER. I WAS PART OF THE CROWD, THEN PART OF LEADERSHIP THAT OPENED SPACE TRAVEL TO HUMAN BEINGS. WE THREW A NARROW FLASH OF LIGHT ACROSS OUR NATION'S HISTORY. I WAS THERE AT THE BEST OF TIMES."

-THE LATE CHRISTOPHER KRAFT '44
FROM HIS 2001 AUTOBIOGRAPHY
"FLIGHT: MY LIFE IN MISSION CONTROL"



CHRISTOPHER KRAFT

Virginia Tech's foray into flight began when a flying field was established near the university in 1913, just 10 years after the Wright Brothers' historic North Carolina flight. In 1926, then-Virginia Tech President Julian Burruss appointed a faculty committee to take the first steps toward planning an aeronautics program and considering sites for a landing field. As a result, construction of what is today the Virginia Tech airport began in 1929; that same year, the university began offering aeronautics courses under the mechanical engineering curriculum.

In 1941, aeronautical engineering became a separate curriculum, and within two years it was named an academic department.

NASA legend Christopher Kraft Jr. '44, who is remembered as the founding father of mission control, earned his degree from the new department before joining the Langley Aeronautical Laboratory of the National Advisory Committee for Aeronautics (NACA)—the precursor of NASA.

Kraft, who died in July 2019, went on to become NASA's first director of flight operations in the 1960s, and he was instrumental in landing an astronaut on the moon. Later, he became director of the Johnson Space Center in Houston. Kraft is credited with developing the mission planning and control processes required for crewed space missions in areas as diverse as go/no-go decisions, space-to-ground communications, space tracking, real-time problem-solving, and crew recovery. According to a story in the *The New York Times* following his death, Kraft's expertise influenced global tracking and instrumentation networks, instruments to monitor the condition of astronauts, flight plans, emergency procedures, techniques for splashdowns and recoveries at sea, and the training programs for thousands of ground personnel.

Kraft retired in 1982, but his renown did not fade. NASA's Building 30 Mission Control Center at Johnson Space Center is now the Christopher C. Kraft, Jr., Mission Control Center. The late Kraft donated his NASA documents and original flight plan papers to his alma mater. He encouraged his colleagues, including Michael Collins, former astronaut and command module pilot, to do the same.

SPACE KRAFT: CHRISTOPHER KRAFT (STANDING), MSC DIRECTOR OF FLIGHT OPERATIONS, OVERSEES ACTIVITY AT THE FLIGHT DIRECTORS CONSOLE IN THE MISSION OPERATIONS CONTROL ROOM ON THE FIRST DAY OF THE APOLLO 10 LUNAR ORBIT MISSION.





Throughout the 1950s and 1960s, Virginia Tech produced graduates who would play important roles in NASA’s space program.

There was John McKay ’50, a graduate of the aeronautical engineering program who flew the North American X-15, an experimental spaceplane, to an altitude of more than 50 miles, qualifying him as an early astronaut by U.S. standards.

Others, including C. Howard Robins Jr. ’58, Ph.D. ’67 and Robert Tolson ’58, M.S. ’68, Ph.D. ’90, supported the Apollo missions to the moon, the Viking project to Mars, and development of the Skylab space station.

Bill Piland ’62 spent 39 years at NASA in a series of leadership positions. He credits the Virginia Tech Corps of Cadets for shaping his career.

Homer Hickam ’64 was an engineer at NASA’s Marshall Flight Center in Huntsville, Alabama, where he trained astronauts for high-level missions, including the Hubble Space Telescope mission. The New York Times bestselling author’s memoir, “Rocket Boys,” was the inspiration for the popular film “October Sky.”

FLY HIGH: JOHN MCKAY ’50 (ABOVE) MADE 30 FLIGHTS IN THE ROCKET-PROPELLED X-15, INCLUDING A 1965 MISSION IN WHICH HE FLEW HIGHER THAN 50 MILES AND REACHED THE EDGE OF SPACE. MCKAY WAS POSTHUMOUSLY AWARDED HIS ASTRONAUT WINGS IN 2005.

Virginia Tech’s first Black student, Irving Peddrew, spent his career in the aerospace industry, while Charlie Yates ’58, the first Black graduate, was a faculty member in the Department of Aerospace and Ocean Engineering. Peddrew-Yates Residence Hall was named in their honor in 2002.

TO THE MOON AND BACK

During the 1960s, President John Kennedy’s support for the space race advanced opportunities for space-related education at Virginia Tech. NASA donated a wind tunnel for research, and the university also added two supersonic blow-down tunnels, a “plasma-jet,” an instrumentation lab, and its first analog computer.

Such examples clearly illustrate Virginia’s Tech’s early impact, yet they barely scratch the surface of the university’s contributions on the space flight industry. Numerous alumni filled crucial roles at NASA, at other public agencies, and in the private sector to increase humanity’s presence in space. Their experiences at Virginia Tech proved to be foundational in solving the challenges required for space flight, exploration, and research.

The first Hokie to cross the Kármán line, a 100-kilometer boundary internationally accepted as the threshold for becoming an astronaut, obtained his graduate degrees in physics at Tech. Roger Crouch M.S. ’68, Ph.D. ’71 flew as a payload specialist on two space shuttle flights in 1997, logging a combined 471 hours in space while conducting a variety of studies. He still remembers the thrill of the launch and orbiting the Earth once every 90 minutes.

“As we went south from Asia down toward Australia, I could see seven islands erupting that day with steam or smoke or something,” Crouch said. “It was just totally awesome. I thought, ‘Here’s a little ole hillbilly who in 45 minutes went from the west coast of Africa to Australia and saw marvelous things I never even imagined.’”

Eight years later, Charlie Camarda Ph.D. ’90 flew as a mission specialist aboard space shuttle Discovery—the first mission following the loss of the Columbia shuttle in 2003. Camarda spent his career at NASA focused on thermal engineering—controlling the high temperatures a craft can reach on its way to and from space. He holds seven patents based on his research.

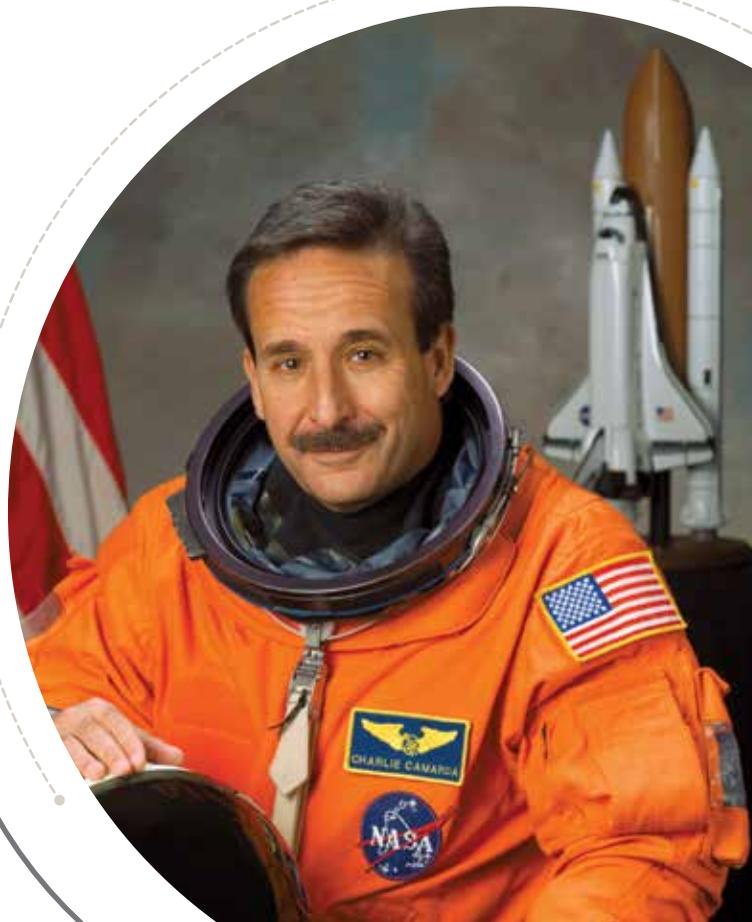
PIONEER: CHARLIE YATES ’58 (RIGHT) WAS THE FIRST BLACK GRADUATE OF VIRGINIA TECH AND A FACULTY MEMBER IN THE DEPARTMENT OF AEROSPACE AND OCEAN ENGINEERING.

LIFT OFF: CHARLIE CAMARDA ’90 (RIGHT CORNER) TOOK A VIRGINIA TECH FLAG ON A SHUTTLE INTO SPACE, AND LATER PRESENTED IT TO THE UNIVERSITY.



"I THINK EVERY ONE OF US UNDERSTANDS THAT SPACEFLIGHT IS RISKY. IT'S IMPORTANT THAT WE TAKE THOSE RISKS FOR THE FUTURE OF SPACE AND FOR THE FUTURE OF THE DEVELOPMENT OF TECHNOLOGY TO HELP US ON EARTH."

-CHARLIE CAMARDA PH.D. '90
2004 PREFLIGHT INTERVIEW



"I LITERALLY WATCHED NEIL ARMSTRONG WALK ON THE MOON IN 1969 ON A LITTLE TINY SONY TV WITH A TINY ANTENNA TO BRING IN THE SIGNAL. AT THAT POINT, I WAS 8 YEARS OLD. WELL, I WAS JUST TOTALLY BLOWN AWAY BY IT. I IMMEDIATELY WANTED TO BE AN ASTRONAUT."

.-KEVIN CROFTON '82

OUT-OF-THIS-WORLD OPPORTUNITY

Through the remainder of the 20th century and into the new millennium, Virginia Tech continued to develop its aerospace and ocean engineering department while working to bring together students and faculty across varying disciplinary backgrounds.

Around 2005, Virginia Tech began to develop a formal space research and educational strategy within the College of Engineering, a partnership between the Bradley Department of Electrical and Computer Engineering and the Department of Aerospace and Ocean Engineering (AOE).

In 2016, Kevin Crofton '82 committed \$14 million for what is now the Kevin T. Crofton Department of Aerospace and Ocean Engineering, along with \$1 million dedicated to the university's Division of Student Affairs. This gift helped to accelerate the progress of the space program.

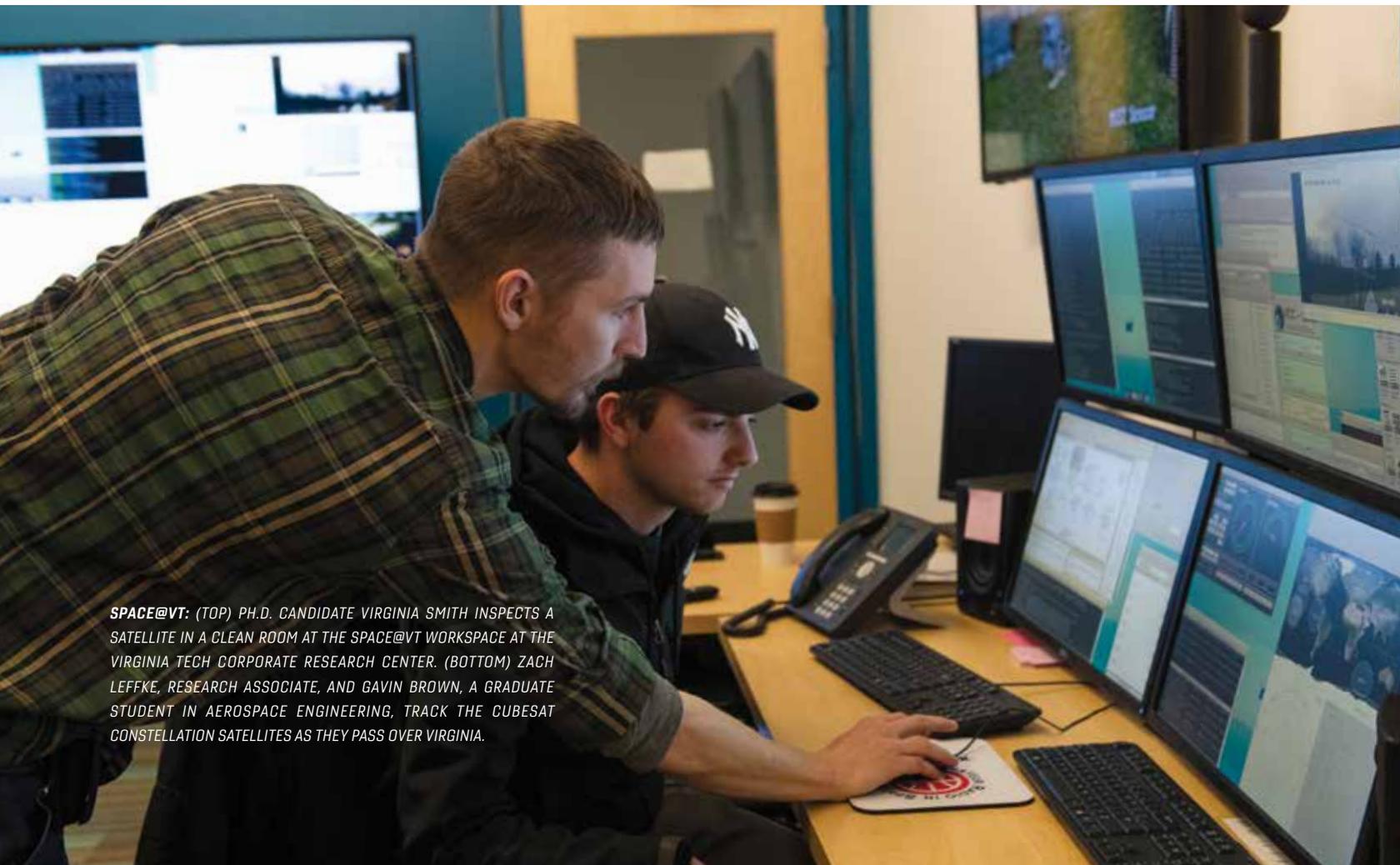
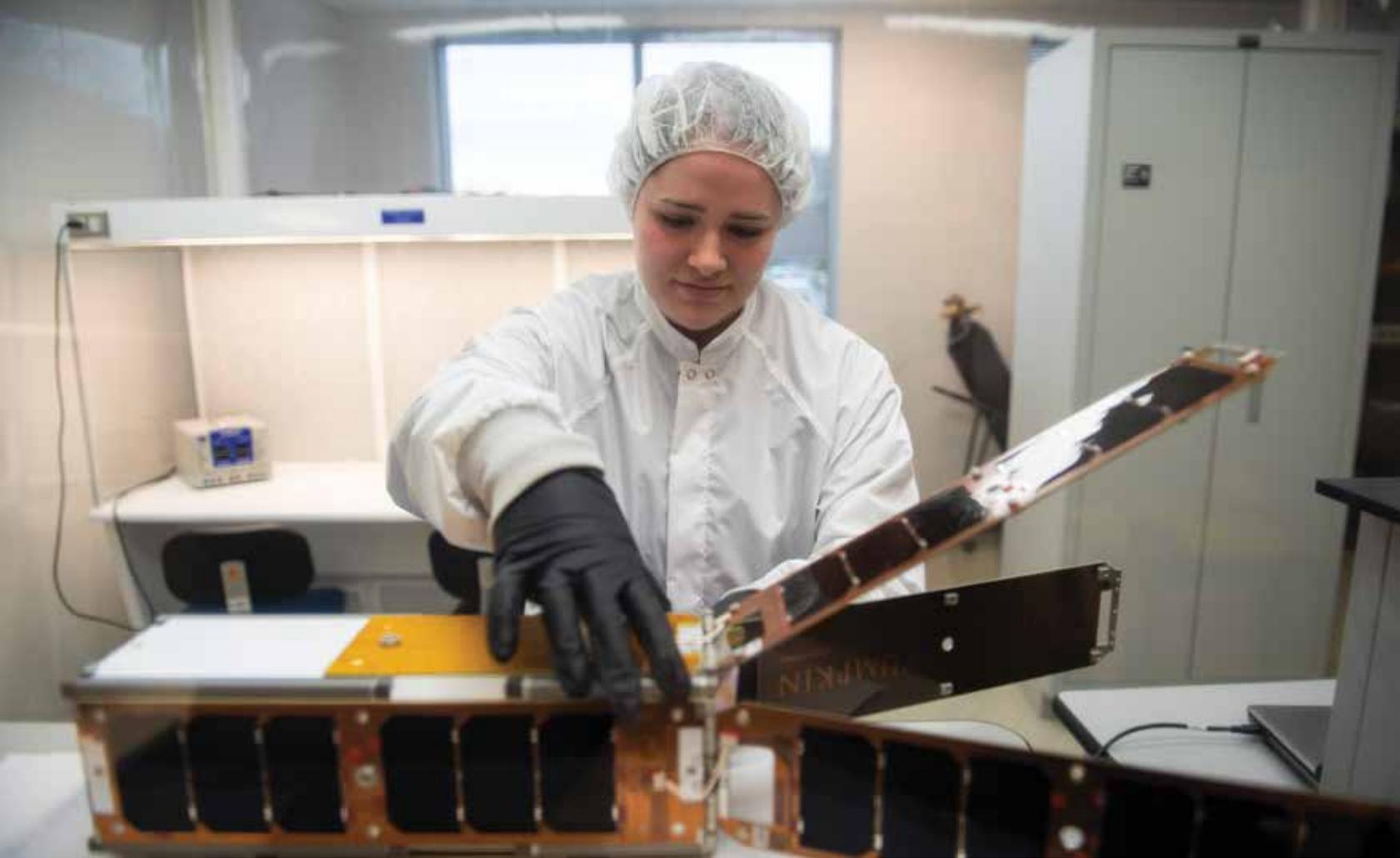
"The education I received from Virginia Tech opened the doors to my entire career," said Crofton, who worked in the aerospace industry for more than a decade, primarily on Boeing's Inertial Upper Stage, and as the boost motor program manager on the Standard Missile program. "Beyond the theory and empirical textbook learning, Tech's engineering program exposed me to the art of using a data-driven situational analysis to problem solving, the opportunity to interact with people from various backgrounds in a team environment, and the understanding that a team with a common set of goals can achieve anything."

Crofton now heads a global semiconductor and microelectronic equipment manufacturing company.

"On a purely personal basis, the AOE program taught me the value of perseverance," Crofton said. "The reason for my donation to Virginia Tech is because I want to give others the opportunity to have the same experience that I've had in their own lives. I grew up in a heavily agricultural area of Southwest Virginia. Without my Tech experience, I'm not entirely sure what I would have accomplished in life. I want that legacy and message to be that, regardless of their personal circumstances, anyone can accomplish anything with a great educational background and perseverance. That I May Serve—this is the way I can embody *Ut Prosim*."

Since 2007, space research and education have resided in the Center for Space Science and Engineering Research (or Space@VT). The center is a result of a National Science Foundation award to establish university space research and educational programs.





SPACE@VT: (TOP) PH.D. CANDIDATE VIRGINIA SMITH INSPECTS A SATELLITE IN A CLEAN ROOM AT THE SPACE@VT WORKSPACE AT THE VIRGINIA TECH CORPORATE RESEARCH CENTER. (BOTTOM) ZACH LEFFKE, RESEARCH ASSOCIATE, AND GAVIN BROWN, A GRADUATE STUDENT IN AEROSPACE ENGINEERING, TRACK THE CUBESAT CONSTELLATION SATELLITES AS THEY PASS OVER VIRGINIA.



"I WOUND UP BECOMING DANCE CAPTAIN IN MY FINAL YEAR IN THE NEW VIRGINIANS. THAT, QUITE FRANKLY, TAUGHT ME MORE ABOUT THE IMPORTANCE OF PRESENTATION AND LEADERSHIP AND SELF-CONFIDENCE THAN ANY OTHER EXPERIENCE I HAD AT VIRGINIA TECH."

-PATRICIA REMIAS '85

"Space@VT embodies a blend of basic science, engineering, and aerospace expertise," said Wayne Scales, founding director of Space@VT and the J. Byron Maupin Professor of Engineering. "This is rare among university space programs."

As the university advanced academic offerings and research, graduates continued to shape space exploration at NASA and, increasingly, in the private sector.

Patricia "Pat" Remias '85 strongly considered majoring in biomedical engineering, but during a classroom segment on human life support in space, she started to think more about aerospace. Now vice president of engineering for Sierra Nevada Corp.'s space systems business area, Remias said the strength of Virginia Tech's academics combined with the university's service ethic prepared her for a career in the aerospace industry.

Sierra Nevada Corp. has been developing the Dream Chaser, a space utility vehicle that will conduct at least six cargo missions to the International Space Station beginning in late 2021. The Dream Chaser is based on a design that NASA drew from spy photos of a Soviet craft that splashed down in the Indian Ocean in 1982. Bill Piland worked with the project during his stint at NASA Langley, and so did Jill Marlowe '88, whose first job at the center involved studying how people of all sizes enter and exit the craft. Now, Remias' company is working with the design.

Marlowe, now Langley's associate center director for technical, was drawn to Virginia Tech's service mission and its welcoming, iconic campus. After an early-career job designing submarines, she transferred to NASA Langley in the 1990s. Marlowe served in various roles at NASA before advancing to her current position, which aims to not only identify the next wave of revolutionary space research, but also transform the way research is done in the digital age.

"We need to be working in ways that are much more connected and much more agile than we have in the past," Marlowe said.

A key motivator for Marlowe's job is oriented around NASA's Artemis mission, which intends to land the first woman and next American man on the moon by 2024 as the foundation to eventually send humans to explore Mars.

"Artemis is challenging us to deliver breakthrough technologies on a very aggressive timeline, with a strong focus on mission infusion right from the start," Marlowe said.

Brett Montoya '12 contributes to Artemis from a different angle—as an architect designing homes for astronauts in space. “My job is pretty similar to what an architect does terrestrially,” said Montoya, a biology major at Virginia Tech who earned a master’s degree in space architecture at the University of Houston. “We design the spacecraft to accommodate all of the systems necessary to keep astronauts alive. There are quite a few more for a spacecraft than a house, and we make sure the environment we create is intuitive and comfortable for the users.”

Montoya leads a team of space architects and industrial designers at the Center for Design and Space Architecture at NASA. He also has been working with Virginia Tech’s College of Architecture and Urban Studies to recruit undergraduates who want to learn more about the career path and gain real experience. Montoya partners with faculty to offer students the option to pursue space-related design projects for their senior theses.

The range of space-related studies has grown deeper and broader as the Space Age has matured. Space exploration has become a launchpad for innovative faculty and students to pursue a wide array of research that benefits the world in ways that have nothing to do with spaceflight itself.

Sean McGinnis, director of the green engineering program at Virginia Tech, has taught a series of green engineering short courses for NASA employees at nine different sites since 2011. NASA hired him to teach the three-day classes for employees interested in gaining a deeper understanding of environmental issues for their work in engineering, research, and operations. The curriculum offers overviews of environmental topics and highlights related implications in NASA’s work.

“A couple of decades ago, people were focused on what the mission was, but not on the broader environmental impacts across the mission life cycle,” said McGinnis. “This training is about awareness, and it tries to build an internal culture of considering environmental impacts throughout the entire mission.”

Another Virginia Tech graduate, Erin Bonilla '04, is studying how astronaut crew members psychologically respond to living in space environments. In January, Bonilla was vice commander of a six-person, all-female crew who spent two weeks living as astronauts in a Mars-simulated environment. The SENSORIA mission, which was held at the Hawaii Space Exploration Analog and Simulation solar-powered habitat on the Big Island of Hawaii, monitored the crew’s mental and physical health.



ARTEMIS SPACECRAFT

"ONCE YOU ARE INTO SPACE, YOU WANT TO LEARN MORE. WORKING AT NASA, YOU'RE PART OF THAT FAMILY. YOU'RE CONTRIBUTING TO THAT GREATER MISSION."

-ERIN BONILLA '04



LIFE ON MARS: ERIN BONILLA '04 STANDS WITH SOME OF HER CREWMATES IN THE SENSORIA MISSION OUTSIDE OF THE HAWAII SPACE EXPLORATION ANALOG AND SIMULATION (HI-SEAS) HABITAT ON THE BIG ISLAND OF HAWAII. PICTURED, FROM LEFT TO RIGHT, ARE MAKIAH EUSTICE, ADRIANA BLACHOWICZ, AND BONILLA.

“There are few studies directed at women in the space environment,” said Bonilla, who lives in Arizona. She co-founded Flight Ready Systems, a consultancy specializing in field research, curriculum development, and educational outreach strategy with expertise in space-simulated environments. Bonilla’s research contributes to NASA’s long-duration spaceflight needs.

Bonilla’s fascination with the world of space began when she took a job managing websites for a contractor at NASA’s headquarters in Washington, D.C. As she put her degree in graphic design from Virginia Tech to work, she also caught the “space bug.”

“Once you are into space, you want to learn more,” she said. “Working at NASA, you’re part of that family. You’re contributing to that greater mission.”

THE NEXT GENERATION

Virginia Tech continues to prepare the next generation of Hokies for space work. Today, the university supports a host of student teams and clubs focused on space research and design, and many of these projects are funded through grants from NASA.

In January, several Virginia Tech graduate students and faculty traveled to Alaska’s Poker Flat Research Range to launch a sounding rocket built for NASA through Space@VT. The rocket’s purpose is to measure the accumulation of nitric oxide in the atmosphere as Alaska’s 24-hour darkness surrounds it. Ultimately, the team plans to assess how this gas moves into the stratosphere and destroys ozone.

That experiment sparked doctoral student Saswati Das’s interest in working with space and atmospheric science after graduation. “What captures my attention the most is the attempt to satisfy the human quest to know what lies beyond planet Earth through technology,” said Das, who spent a month in Alaska. “I realized how fascinating it is to see how several missions in the past have successfully uncovered what was for long unknown to mankind.”

Grace Wusk is another example of the next generation of Hokies in space. Wusk, a doctoral student who is studying biomedical engineering, grew up watching rocket launches on the Eastern Shore of Virginia. Her parents work at NASA’s Langley Research Center in Hampton, so she had easy access to all things space at an early age.

Wusk interned at Langley Research Center and Johnson Space Center in Houston, and then brought her space fascination to Virginia Tech. Using a NASA fellowship, she is researching astronaut health and performance by simulating space walks. Wusk studies factors that impact the physiological state of an astronaut, such as heart rate variability, skin conductance, and brain activity, with a goal of building a model to predict astronauts’ cognitive states.

NASA work “can really inspire anyone,” said Wusk, who hopes to work for the agency eventually. “You see how much international collaboration there is. You don’t see borders in space. It’s very unifying.”

Space exploration and the resulting research have transformed everyday life through technology found in smartphones, running shoes, fire-resistant fabric, solar panels, and much more. But humanity’s endeavors to reach the outer realms also inspire us and bring us together. ■

SPACE@VT SOUNDING
ROCKET LAUNCH



THERE ARE MANY LAYERS TO VIRGINIA TECH'S CONNECTIONS TO OUTER SPACE. THIS GRAPHIC HIGHLIGHTS A FEW EXAMPLES OF THE WAYS THAT HOKIES ARE SHAPING SPACE RESEARCH AND RELATED WORK NOW AND FOR THE FUTURE.

Society of Women in Aviation and Space Exploration promotes opportunities for women of all majors in pursuing aviation and space exploration.

JIM OWENS, chemical engineering senior, received an Astronaut Scholarship founded by the Mercury Seven astronauts.

ERIK KOMENDERA, assistant professor in the College of Engineering, leads a team that is developing robots that build chairs. Their goal is to make robots able to build structures in space.

A team led by **ERIC PATERSON**, who heads the Kevin T. Crofton Department of Aerospace and Ocean Engineering, is working with PlanetiQ on a space-based satellite for improved global climate and weather modeling.

The student-led **ORBITAL LAUNCH VEHICLE TEAM** is working to become the first amateur rocket team to build an orbital launch vehicle.

The **HOKIENAUTS**, a team of students spanning many majors, were finalists in a 2019 NASA competition to design digital information displays for astronauts' helmets.

EARTH'S SURFACE

EARTH ORBIT

ATMOSPHERE

A group of chemists and mechanical engineers has found a way to 3D-print Kapton, often used as an insulating material in space.

BRENT BLEVINS '03 '05 serves as a staffer for congressional Republicans on the House Committee on Science, Space and Technology, which includes oversight of NASA and NOAA, the National Oceanic Atmospheric Administration.

The Virginia Tech Mid-Atlantic Aviation Partnership is working with NASA to help drones sense nearby aircraft, a system known as detect and avoid.

Virginia Tech sponsors Students for the Exploration and Development of Space, a local chapter of an international organization.

ROCKETRY@VT aims to create a place for students to learn about, build, launch, and experiment with high-power rockets.

JON PITT, associate professor in the Department of Aerospace and Ocean Engineering, conducts research in space-based remote sensing of atmospheric and oceanic phenomenon to understand what is happening above, on, and below the ocean's surface.

INVENTS ROCKETRY is a student rocket design team that competes in NASA's Space Grant Midwest High-Power Rocket Competition.

Alumnus **PETE REUTT '81** is part of the NASA Kennedy Space Center team that will launch to the International Space Station on H-II Transfer Vehicle-9 in May 2020.

ROCKSAT-X is an initiative by the Colorado Space Grant Consortium in conjunction with NASA's Sounding Rocket Program Office to provide low-cost access to space for university student design teams. Virginia Tech's inspireFly team took first place at the national Astranis Students for the Exploration and Development of Space Satellite-II competition.

JOHN GROTZINGER '85 is a project scientist for NASA's Mars Science Laboratory mission. Grotzinger was instrumental in getting NASA to utilize advanced geological techniques to interpret features documented by the earlier rovers.

MARS MADNESS is a student led organization that competes in NASA's annual Human Exploration Rover Challenge.

SCOTT KING, a professor in the Department of Geosciences, led one of 24 teams selected by NASA to receive data collected over four years by its new InSight lander, which touched down on Mars in November 2018.

EARTH ORBIT CONT.

MARS

MOON

Three Virginia Tech teams were finalists in NASA's Revolutionary Aerospace Systems Concepts-Academic Linkage, an architecture design competition. NASA plans to use some of the concepts in its Artemis mission to the Moon and future human missions to Mars.

A Virginia Tech team competes in the NASA Moon to Mars Ice and Prospecting Challenge, which involves extracting water from a test bed of ice, rock, and soil.

OUTER REACHES (ASTEROID BELT & BEYOND)

BHUVANA SRINIVASAN, an assistant professor in the Department of Aerospace and Ocean Engineering, won a National Science Foundation Faculty Early Career Development program award to study plasma physics in exploding stars.



THE GENTLEMAN FARMER: Andy Beckstoffer '61 is CEO of Beckstoffer Vineyards, which farms more than 3,600 acres of delicate wine grapes in northern California's top wine-producing areas, including the Napa Valley, Mendocino County, and the Red Hills of Lake County.



AROUND THE HOKIE NATION

55 Class Notes

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70 Family



FROM VINE TO WINE

ON A CRISP MARCH MORNING, A PALE YELLOW VICTORIAN building with a red roof sat at the end of a road that wound through acres of grape vines. In the cozy top-floor office, bright California sunshine spilled through open glass doors that led to a deck overlooking a stream. The interior décor featured an eclectic collection of basketball bobbleheads and bronze sculptures in a western motif.

A Virginia flag stood prominently behind the large desk, where Andy Beckstoffer, renowned California viticulturist, was on the phone. From here, Beckstoffer '61, one of California's largest growers of premium wine grapes, manages day-to-day business.

"I live in California. I've been here for 50 years, but I'm from Virginia," said Beckstoffer gesturing to the flag behind him. "I'm still a Virginian. I'm still from Richmond, and I'm still proud of it."

Today, Virginia is home to numerous wineries and vineyards, but drinking wine wasn't a pastime when Beckstoffer was growing up in Richmond in the 1950s. "My daddy drank Virginia Gentleman bourbon. Nobody in the South drank wine," Beckstoffer said.

Beckstoffer, who attended Virginia Tech on a football scholarship, majored in building construction, which at the time was a part of the College of Engineering. "My family was in the lumber and millwork business," said Beckstoffer. "So, I chose the building construction curriculum. I always thought I would go into the homebuilding business."



WINE WISE: In November 2019, viticulturist Andy Beckstoffer shared his grape-growing expertise with Virginia Tech faculty and students at a special event held at the Wine Lab in Blacksburg.

“

THE NAPA VALLEY WINE BUSINESS HAS GOTTEN TO WHERE IT IS ON THE BACK OF TECHNOLOGY, BOTH IN VINEYARDS AND IN THE WINERY, AND THAT'S WHERE VIRGINIA TECH CAME IN FOR ME. "

Andy Beckstoffer '61

A member of the Army ROTC, Beckstoffer served two years in the Army after graduating in 1961. While stationed at the Presidio of San Francisco, he sampled the wines of the Napa Valley. But it was later, following graduate school, that Beckstoffer developed not only a taste for fine wine but also a successful career in the industry.

"I graduated from Dartmouth with an MBA in 1966, and I wanted to work in the free enterprise system. Eventually I took a job with Heublein, a producer and distributor of adult beverages, as the director of acquisition analysis. It was my job to help them acquire companies, and one of the first things that came up was the wine business," he said.

Beckstoffer played a critical role in advising Heublein to enter the premium wine segment of the California wine industry, including its purchase of Beaulieu Vineyards and United Vintners, owners of Inglenook and Italian Swiss Colony wines.

In time, Beckstoffer relocated to California to oversee the company investment, establishing the Vinifera Development Corp. and directing all aspects of the farming the vineyards. Eventually, he purchased Vinefera from Heublein and set about revolutionizing the California wine grape industry.

The building construction engineer-turned-grape-grower realized that to increase grape production and improve profitability, growers needed to employ technologies that would enable them to work smarter.

Beckstoffer Vineyards has pioneered innovations in drip irrigation, vine spacing, bench graft production, vineyard technology, and farming management that have significantly improved wine grape quality. The organization has also implemented new technologies to monitor and analyze vine health and productivity, manage water use, and improve vineyard efficiency. Such practices have established Beckstoffer Vineyards as consistent producers of grape varieties that can be found in many of the best wines in the world.

"The Napa Valley wine business has gotten to where it is on the back of technology, both in vineyards and in the winery, and that's where Virginia Tech came in for me," Beckstoffer said.

Beckstoffer leaned on the problem-solving strategies he'd learned as an engineering student to help growers incorporate science and technology strategically alongside the techniques and traditions grape growers before him had relied on successfully for generations.

As a founding director of the Napa Valley Grape Growers Association, Beckstoffer forged an early, historic agreement on grape pricing that tied the price of grapes to price of the wine. Thus began a new era in which grape quality and land preservation were brought to the forefront of the grape-growing industry.

"There's a natural conflict in all of agriculture between growers and producers," Beckstoffer said. "But we wanted to shift from being a commodity to being a



THROUGH THE GRAPEVINE

Read more about Beckstoffer at vtmag.vt.edu.

branded product ourselves. Now the price of grapes is a multiple of the price of wine.”

And as the business continued to evolve, the wines added a vineyard designation to their labels. Savvy consumers took note and began to demand wines made from grapes associated with a particular vineyard. Since grapes are the primary determinant for the quality of the wine, the grape itself becomes a branded product.

“I’ve always said that if you want to succeed, do things better than other people do,” said Beckstoffer. “But if you want to hit a home run, change the way business is done. We did that here.”

In the February 2009 edition of *American Vineyard*, Fred Schrader of The Schrader Cellars called Beckstoffer a “visionary” who is “very focused on producing the best quality grapes that are possible, explaining that the partnership wherein Beckstoffer grows the grapes and Schrader makes the wine is the “best of all possible worlds.”

“California wine country is special because of three things: The soil, the Mediterranean-like climate, and the people,” said Beckstoffer. “The passion, ingenuity, and desire of the California winemakers and growers really set the stage for success. When we started out, we were farmers. As we overcame challenges and learned from mistakes, we became vitaculturists. And as we progressed, we became stewards of the land.”

In 2007, Beckstoffer’s commitment to agricultural preservation and advocacy for federal tax incentives for donations of conservation easements earned him recognition as the Napa County Farm Bureau’s Outstanding Agriculturist of the Year along with a “first of its kind” Congressional Wine Caucus Commendation. Conservation easements guaran-

tee that a property will remain as a farm or open space in perpetuity.

At an event celebrating the award, Al Wagner, then-president of the Napa County Farm Bureau, said, “We applaud Andy’s leadership in preserving the agricultural and natural resources of Napa County. His advocacy efforts in Congress will lead to ... protection for thousands of acres of agricultural land and open space.”

Beckstoffer lives in the Napa Valley with his wife, Betty, to whom he has been married for more than 50 years. The couple has five children and seven grandchildren. One son serves as chief operating officer for Beckstoffer Vineyards, and another has opened a winery in the region.

In 2000, the Beckstoffers were named Citizens of the Year for their dedication to their community of St. Helena, California. And, in 2010, he was elected into the Culinary Institute of America’s Vintners Hall of Fame, the first grower to be honored with this prestigious wine industry award.

Business responsibilities and distance have made it difficult for Beckstoffer to return to Blacksburg, but in the fall of 2019, Board of Visitors rector Horacio

Valeiras invited Beckstoffer to visit the university with him.

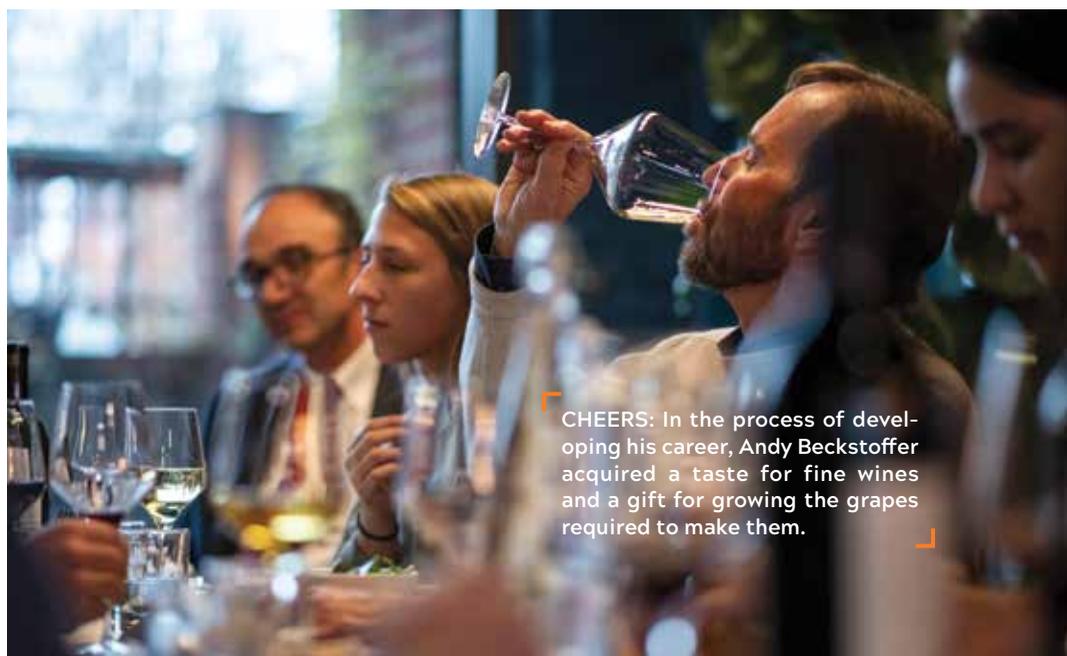
“My wife, Amy, and I have been big fans of Andy’s grapes for many years. As a fellow Hokie-turned-Californian, it’s been a pleasure getting to know this legendary figure in the California wine industry and helping reconnect him with Virginia Tech,” said Valeiras.

Beckstoffer enjoyed a campus tour and a special event with faculty and students who share his interest in wine. Jaclyn Fiola, a doctoral student in the School of Plant and Environmental Sciences was among the guests at the event.

“It was an honor to meet the man who helped put American wine on the global stage,” said Fiola.

For Beckstoffer, the visit offered a chance for reflection on his university experiences and education. “When you are passionate about something, you find ways to incorporate it into every aspect of your life, which can be good and bad,” he said.

“It’s like the wine itself. People say, ‘I went to this wonderful dinner. I met these lovely people.’ The wine is another guest at the table that helps you savor every moment.” ■ *ES*



CHEERS: In the process of developing his career, Andy Beckstoffer acquired a taste for fine wines and a gift for growing the grapes required to make them.

DIALED IN



TYLER HENDERSON SHOWS VISITORS around the Warner Brothers Burbank office where he works as director of photography for the Ellen DeGeneres Digital platform.

It's his birthday. Every second or third step he thanks another well-wisher, answers questions about his plans for celebrating, or fields queries about his baby.

It's hard to imagine him as a newcomer to Los Angeles, but when Henderson '09 landed in California a decade ago, he was an East Coast transplant without much of a community. "I fell in love with the whole idea of L.A.," Henderson said of his decision to head to the West Coast to work in the entertainment business. "I didn't know anyone. I winged it."

But the communication graduate from Roanoke County quickly learned he had a Hokie advantage.

Henderson reached out to a Virginia Tech alumnus he had heard about as a student, Ross Breitenbach. At the time, Breitenbach '92 was an executive producer at

MTV. Henderson found a role working for Breitenbach as a production assistant.

Breitenbach, who now owns his own production company, said his best advice for students is to network.

"The great thing about Virginia Tech is we have such a great alumni association, and our alumni always want to help each other," he said. "There's Hokies out there that can help you out."

That was certainly true for Henderson, who has worked on numerous television shows, including MTV's "Catfish," HGTV's "House Hunters," and even "Carpool Karaoke" for James Corden. He credits Breitenbach for jumpstarting his career.

"[Breitenbach] got me on a project. I moved on from there," Henderson said.

Now, at the "Ellen DeGeneres Show," Henderson is involved with digital production and field shoots. He's in charge of the "look and feel" of the shows helping direct all cameras and lighting used for production.

Henderson hopes his story will encourage other Hokies to take every chance to pursue their goals and to rely on the alumni network for help along the way. He credits the sense of community that started when he was a student in Blacksburg as a central to his successes.

"Don't be scared to just reach for your goals," Henderson said. "You can't be afraid to try." ■

Annie McCallum is the alumni communications director for Advancement.



FULLY FOCUSED: Tyler Henderson is the director of photography for the Ellen DeGeneres Digital platform.

COURTESY TYLER HENDERSON

REACH OUT!

Check out our career resources. We have a new online mentoring platform where you can connect with other Hokies for career advice or sign up to mentor undergraduate students. Plus, learn about our networking events and alumni LinkedIn group at alumni.vt.edu/careers.

CLASS NOTES

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

'59

CAREER Thomas M. Gathright II, Batesville, Va., was awarded the Anna Jonas Award from the Virginia Geological Field Conference.

'63

CAREER Sidney C. Smith Jr., Chapel Hill, N.C., who was appointed to the Dean's Council on Advancement for the Virginia Tech Carilion School of Medicine, received a Lifetime Achievement Award from the World Heart Federation.

'64

CAREER Joseph Burton Eller Jr., Marion, Va., was inducted into the Virginia Livestock Hall of Fame.

'73

CAREER Lawrence Jefferson Powell Jr., Salem, Va., was appointed deputy chief of the Botetourt County Fire and EMS Department.

'74

CAREER Frederick G. Wright Jr., Alexandria, Va., received the W.N. Carey, Jr. Distinguished Service Award from the Transportation Research Board of the National Academies of Science, Engineering, and Medicine.

'75

CAREER Paul E. Bugas Jr., Staunton, Va., retired from the Virginia Department of Game and Inland Fisheries.

Mark Mamula, Haymarket, Va., retired from Aerojet Rocketdyne in Gainesville, Va.

Larry W. Miller, Midland, Va., retired after 34 years as director of Fauquier County Parks and Recreation.

'77

CAREER Gary P. Fitzgerald, Washington, D.C., was recognized by Continental Who's Who as a Pinnacle Lifetime Achiever in the field of Accounting.

'78

CAREER Michael H. McDowell, Vernon Hill, Va., was the state winner of the Swisher Sweets/Sunbelt Expo Southeastern Farmer of the Year.

Dennis H. Treacy, Hanover, Va., who joined Reed Smith LLP as senior counsel in the government relations and administrative law group, was elected to membership in the American College of Environmental Lawyers.

'79

CAREER Craig W. Hatmaker, Mechanicsburg, Pa., was named information technology director for the Town of Christiansburg, Va.

'80

CAREER Ronald J. Kendall, Lubbock, Texas, was appointed to the U.S. EPA Clean Air Scientific Advisory Committee.

Gary W. Norman, Clear Brook, Va., was named 2019 Wildlife Biologist of the Year by the Southeastern Association of Fish and Wildlife Agencies.



THE BEST OF FRIENDS

Hokies (from left) Becky Lee '76; Mary Don Hege Shumaker '76, M.Ed. '77; Jane Cameron Eickhoff '76; Julie Miller Martin '76; Eleni Stratos Heeschen '76; and Pam Stratos, who began her college career at Virginia Tech but finished her degree elsewhere, traveled to Greece for a joint celebration of their 65th birthdays.

"We all met as freshmen in 1972 and have stayed friends since then. We decided to go to Greece because one of our friends is Greek American, and she had wanted to go to Greece to see the house that her father grew up in," said Shumaker.

Are you a traveling Hokie? Send your photos to classnotes@vt.edu.

'81

CAREER Mark C. Phillips, North Chesterfield, Va., retired on Sept. 30, 2019, following a 38-year career at Dominion Energy where he worked primarily in the nuclear engineering department.

Bevlee A. Watford, Blacksburg, Va., was named associate dean of equity and engagement at Virginia Tech.

'82

CAREER Ellen M. Fitzsimmons, Atlanta, Ga., joined SunTrust Banks Inc. as general counsel and corporate executive vice president and was ranked third on American Banker's Most Powerful Women list.

Kevin P. Kosco, Mount Pleasant, S.C., joined the South Carolina Federal Credit Union as senior vice president of retail sales and service.

Michael "Mickey" S. Smith, Wellington, Fla., was named to the Lawdragon 500 Leading Plaintiff Consumer Lawyers.

Matthew A. Turk, Chicago, Ill., was named president of Toyota Technological Institute at Chicago.

Melissa Hayden Weaver, Cary, N.C., was recognized in the 2020 edition of The Best Lawyers in America.

'83

CAREER Michael L. Burton, Inlet Beach, Fla., is president of BCPSB Operations Inc. doing business as HomeTeam Inspection Service Central Panhandle, Fla.

Jeffrey W. Farrar, Danville, Va., was named executive vice president and COO of American National Bankshares Inc.

Thomas M. Gathright III, Crozet, Va., is working in a newly created position at Albemarle County Service Authority where he is helping to implement a geographical information system-based computerized maintenance management system.

'84

CAREER Christina K. Hanger, Plano, Texas, was elected to the board of trustees for the W.K. Kellogg Foundation.

Michael J. Schantz, San Francisco, Calif., was appointed chief financial officer of Home Care Assistance.

Vernon Randall Tinsley, Summerfield, N.C., was recognized in the 2019 edition of Chambers USA: America's Leading Lawyers for Business and in the 2020 edition of The Best Lawyers in America for expertise in environmental law.

'85

CAREER Richard W. Hall, Martinsville, Va., was appointed to the board of directors of the Commonwealth of Virginia's Innovation and Entrepreneurship Investment Authority and the Center for Innovative Technology.

Pete Larkin, Roanoke, Va., joined Carilion Clinic's marketing and communications department in as senior consultant, public affairs.

Lori Lavery Mitchell, Radford, Va., is the student success coordinator at New River Community College.

James Stuart West, Glynco, Ga., is superintendent of the National Park Service's High Plains Group in Colorado and New Mexico.

'86

CAREER James J. Alex, Arlington, Va., is national tax go to market leader at RSM.

Kalpana N. Bagamane Denzel, Discover Bay, Hong Kong, is chief diversity and inclusion officer of Kering.

Matthew R. Heffernan, Spartanburg, S.C., is director, broadcast hub services for Nexstar Media Group Inc.

John H. Showalter Jr., Leesburg, Va., is senior staff engineer for the International Code Council.

'88

CAREER Suzanne Weaver Smith, Lexington, Ky., was elected to the Kentucky Aviation Hall of Fame.

Richard H. String, Manassas, Va., retired from the Federal Aviation Administration after 31 years of service.

'89

CAREER Jeffrey W. Burkett, Alexandria, Va., was promoted to major general in the United States Air Force and deputy director Joint Force Development and Design Center, Joint Staff J-7 Department of Defense.

Robert D. MacLean, South Riding, Va., is director of the Department of the Interior's Office of Law Enforcement and Security.



SAVE THE DATES

April 17-19

Black Alumni Reunion

Come back to campus, celebrate and commemorate milestones, meet students, and learn what's happening at our university. The 2020 reunion will have chances to network, learn, and have fun, all during spring game weekend.

May 21-23

Old Guard Society of Golden Alumni

June 4-7

Reunion Weekend

Reconnect with friends, family, and campus during our four-day summer reunion. Enjoy a party on the Drillfield, behind-the-scenes campus tours, children's activities, happy hours, presentations from university leaders, and more.

Oct. 3

Homecoming

Oct. 1-3

Class of 1970 50th Reunion

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

REUNION WEEKEND 2020

Hokies from across the country are primed to hit campus this summer for the university's third annual Reunion Weekend. Each June, alumni return to campus for an insider's take on Virginia Tech with behind-the-scenes access to campus facilities and inspiring talks from university leaders.

Here are five ways to pitch in and get excited.

JUNE 4-7

FIVE WAYS TO GET EXCITED FOR REUNION WEEKEND



1

Make plans early and you can save! Registration is open now.

2

Tell us you're coming! Let everyone know you'll be in Blacksburg this summer. Check out our Facebook event.

3

Be a Reunion Weekend ambassador. Spread the word by sharing our social media graphics and using #VTReunion20. Plus, join your class's Facebook group and update fellow alums on what's planned for this summer.

4

VOLUNTEER! Volunteers play a critical role in making Reunion Weekend a success. Give input on reunion programming and stay involved.

5

Sign up for insider details. Text VTReunion to 51555 to sign up for text messages alerting you to new reunion information. You'll be the first to know!



THE 411

To learn more and make plans, visit alumni.vt.edu/reunion2020.



CYBER-SERVICE

JESSICA GULICK '07 HAS BECOME A leader in the world of cybersecurity by revealing the team-based nature of the profession and using that insight to make it better.

In doing so, Gulick is demonstrating that core Hokie values—teamwork, competition, and service—go a long way toward making a difference in the world.

Gulick, president of the Virginia Tech MBA Advisory Board from 2015 to 2019 and a self-described “growth hacker,” is the founder and CEO of KATZCY, a consulting firm based in the D.C. area that helps cybersecurity experts grow their companies, professionalize cybersecurity functions in organizations, and accelerate market entry for cybersecurity talent and solutions. She’s vice president of the national board for the Women’s Society of Cyberjutsu, a nonprofit that empowers women to succeed in cybersecurity.

Gulick also serves on the leadership team for Wicked 6 Cyber Games, an esports competition in Las Vegas. Competitions like Wicked 6 may well become

an important way to identify and recruit emerging talent in the field.

“Games provide hands-on training,” said Gulick. “It’s seeing what it feels like to have to be under the pressure of an attack, and seeing what it is like to work as a team.”

That team element is crucial for doing cybersecurity in a real-world setting. Wicked 6 and other competitions simulate that environment. With the rise of esports as a recognized activity sanctioned in a growing number of high schools, these competitions provide a great place to cultivate and recruit talented students.

“A lot of people think of cybersecurity as an individual sport, not as a team sport,” Gulick said. “A good cybersecurity team is a team. They know how to communicate. They know strengths and weaknesses of the other 10 team members. They know when to put which skill to use to either defend or attack.”

The ability to work on a team of individuals coming at a problem from a variety

“

“A GOOD CYBERSECURITY TEAM IS A TEAM. **THEY KNOW HOW TO COMMUNICATE.**”

Jessica Gulick '07

of personal and disciplinary backgrounds is a vital element for people to thrive in today's work environment.

"The technological environment we're all operating in needs new ideas and different ideas in order to help us secure it," said Roberta "Bobbie" Stempfley, director of the CERT (computer emergency response team) Division at Carnegie Mellon University's Software Engineering Institute, and a friend and collaborator of Gulick's. "What we found in real life and competitions is when you put together a team that works well together but comes at the problem from different ways, you're better at overcoming the problem in a rapid manner."

The team environment also produces talent that's attractive to company recruiters.

"Lots of times when people come out of academia, they don't have real-world experience," said Paul Farrell, CEO of Nehemiah Security Inc. "Jessica's competitions give these students real-world examples to compete with other students. I've watched them; they're bright kids. They answer relevant questions on current topics, in our industry, like, 'If you've been breached, what's the pro-

cess that happens from there?' That is significant because, more and more, getting people with real-world experience is extremely valuable."

Gulick's involvement with Women's Society of Cyberjutsu gives emerging talent another layer of support as they move from taking classes to engaging within their profession. That involves encouraging not just individuals with technical skills like writing code, but also those with other so-called "soft" skills.

"When you do cybersecurity, you're protecting others," Gulick said. "It's making a difference with your life, and these young women need to hear that. They also need to hear that it takes all kinds. I'm not a coder, and too many of our kids, even today, are told you have to be a good coder to go into cybersecurity. You don't."

Gulick began in the cybersecurity profession soon after Sept. 11, 2001. She took a job with ManTech supporting the U.S. Department of State and managing its computer systems' vulnerabilities. She developed policy proposals and systems to measure the performance of cybersecurity programs.

From there, Gulick went to work for Science Applications International Corporation (SAIC), a government contractor that employs more than 20,000 people, where she spent a decade. During that time, she began pursuing an MBA at Virginia Tech, "and that changed everything," she said.

In the middle of her pursuit of that degree, she took over SAIC's marketing

program. She tripled its size and began to focus on cyber competitions, both as a way to market the company and as a recruitment tool.

"It was at that point that I realized that I had a passion for growth and marketing and strategy," Gulick said, which led her to establish KATZCY in 2015.

Cybersecurity marketing can be tricky, both in terms of figuring out where a company fits in the industry, but also in communicating that effectively to consumers and the company itself.

"A lot of times in cybersecurity, you have startups or small businesses have really smart engineers with brilliant minds, but they don't always understand that buyers need to understand what they're getting in terms of value delivered," Gulick said.

"I have to actually see the tool or talk to the people that are delivering the service to really get a better idea of where they fit in the market. We kind of blend being a marketing agency and consulting firm."

Farrell's Nehemiah Security firm has benefitted from Gulick's work.

"She is a master of her profession," Farrell said. "She knows it cold. She knows the people. She's very knowledgeable about everything—from a marketing standpoint, from a cybersecurity standpoint. People think marketing is marketing, but it's not. You've got to have unique skills about how the audience thinks."

Gulick continues to create, to innovate, and to cultivate the next generation of talent in the cybersecurity field. Her advice for others is straight-forward:

"No fear, no fear. Just persevere," Gulick said. ■ MA

VIRGINIA TECH magazine



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.

VTMAG.VT.EDU

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- THEN CHOOSE UPDATE ADDRESS(ES) AND PHONE(S)" OR "UPDATE ALUMNI EMAIL ADDRESS(ES)

YOU CAN ALSO EMAIL YOUR UPDATES TO ALUMNIDATA@VT.EDU. MAKE SURE YOU INCLUDE YOUR FULL NAME AND CLASS YEAR IN THE EMAIL.

David R. Penberthy, Manakin-Sabot, Va., is ACCC Treasurer 2019-2020.

Anthony H. Sgro, Asheville, N.C., was appointed head of school at Asheville School.

'90

CAREER **Joseph M. DeSimone**, Monte Sereno, Calif., founded Carbon.

Tyler T. Evans, Huntsville, Ala., is senior vice president of Aerojet Rocketdyne.

Steven M. Harrison, Arlington, Va., received the Vice Admiral J. Guy Reynolds Award for his leadership and accomplishments while serving as program manager for the Undersea Weapons Joint Program Office.

Robert J. Markus, Malibu, Calif., is senior partner at the WME.

Evelyn Vaughan McGill, Richmond, Va., was named president of the International Association of Industrial Accident Boards and Commissions.

Harold H. Speed III, Austin, Texas, is associated with the not-for-profit company, Micro:bit Education Foundation, which won the WISE Award established by the Qatar Foundation.

'91

CAREER **Joyce A. Cacho**, Washington, D.C., a member of the board of directors for Sunrise Banks, was named one of 19 directors to watch by Directors & Boards Magazine.

Gregory A. Luhan, Lexington, Ky., was named to the Architecture + Design executive board for a three-year term.

Andrew F. McCauley, Wilmington, N.C., is president of Qualitrol.

John R. McKnight, Lexington, S.C., was appointed as senior vice president of global operations at Dorman Products Inc.

'92

CAREER **Jay A. Altizer**, Dallas, Texas, is global president of North America, a GES provider of live events.

Noel A. Heiks, Cocoa Beach, Fla., was named to Emcore's Board of Directors.

Jonathan L. Pettit, Carlsbad, Calif., joined Weintraub Tobin as a stakeholder.

Stephen C. Walker, Henrico, Va., was named to the board of directors of Culpeper Christian School.

'93

CAREER **Whitney J. "Booboo" Little**, Memphis, Tenn., was named one of the Memphis Business Journal's 2019 Super Women in Business.

Ted M. Wolfe, Clarksville, Md., joined Mashburn Construction as a project manager for the Charleston office.

'94

CAREER **Michael D. Bremser**, Seal Beach, Calif., is president of Tempo Industries LLC.

Adrian A. D'Souza, New York, N.Y., is chief customer officer with Integral Ad Science.

'95

CAREER **Stacey Lowe Irvin**, Warrenton, Va., was honored as St. James' head of school.

Siobhan K. Starrs, Burke, Va., is the exhibition project manager for the National Museum of Natural History's newest exhibit, "David H. Koch Hall of Fossils - Deep Time."

'96

CAREER **John S. Phillips**, Blacksburg, Va., is president of the Roanoke-Blacksburg Technology Council.

'97

CAREER **Joshua S. Cumbow**, Abingdon, Va., was elected to a second term as Washington County commonwealth's attorney.

'98

CAREER **David W. Covington**, Gambrills, Md., is the new leader of VDOT's Interstate 81 Corridor Improvement Plan.

'99

CAREER **Kevin Baird**, Middletown, Del., was selected as a Top Lawyer of Trust and Estates by his peers.

Nathaniel L. Bishop, Christiansburg, Va., is senior associate dean at the Virginia Tech Carilion School of Medicine.

CHILDREN **James Samuel DeGenova** and **Stacey L. Knight '04**, Washington, D.C., a son, 10/28/19.

'00

CAREER **Timothy C. Doyle**, Denver, Colo., is chief investment officer of Destiny Capital Corporation.

Blake B. Hegeman, Richmond, Va., joined KaneJeffries, focusing on real estate, administrative, and association law.

Nadia A. Rogers, Blacksburg, Va., was appointed to the Virginia Board of Accountancy by Gov. Ralph Northam.

CHILDREN **Marvin J. Boyd**, Ashburn, Va., a daughter, 10/01/19.

'01

CAREER **Joseph B. Daly**, Alexandria, Va., joined HGA as electrical department leader and associate vice president.

Erin E. Martin Robertson, Napa, Calif., joined Round Pond Estate as director of marketing.

John D. Taliaferro, Fairfax Station, Va., is partner at Loeb and Loeb LLP.

'02

CAREER **John T. Farnum**, Arlington, Va., joined Miles & Stockbridge as a principal in the Washington, D.C., office.



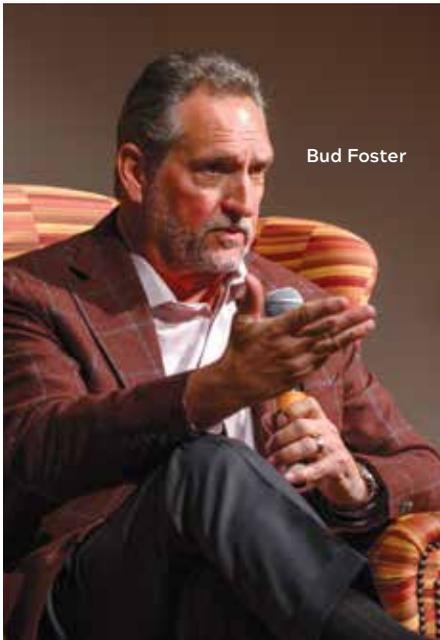
Andy Seibel

ROOTED IN SERVICE

Andy Seibel '85, '86, '05 has been named the executive secretary of Virginia FFA, overseeing agricultural education programs for more than 33,000 high school students and professional development for about 330 teachers in 192 different chapters. Befitting the nationwide switch from "Future Farmers of America" to FFA in 1988, the group aims to introduce students to careers in agriculture that go far beyond growing crops. There are more than 300 such careers, Seibel said, many of them requiring backgrounds in science and technology.

Prior to this position, Seibel taught high school agricultural education for 15 years, and between 2002 and 2018 held various jobs in agricultural education with FFA and Virginia Cooperative Extension.

WHAT'S IMPORTANT NOW?



Bud Foster

BUD FOSTER MAY BE HANGING UP HIS whistle, but he's far from finished with his commitment to serve Virginia Tech. After 33 years of coaching Hokie football, Foster retired at the end of 2019 as the nation's longest continuously tenured FBS [NCAA Division I Football Bowl Subdivision] assistant coach at the same school. Before starting a new position as an ambassador for the football program and the university, Foster fielded questions about his past, present, and future as a Hokie. Below is an excerpt from the interview, edited for length and clarity.

WHAT'S BEEN YOUR MOST MEANINGFUL ACCOMPLISHMENT?

"My most meaningful accomplishment was probably the birth of my children, to be honest. Hopefully, I was a loving, caring father. That's a side of me that a lot of people don't see. I'm proud of my family, and you know, that's a big part of why I've stayed here, the culture that we built here, a family-first mentality and the way Hokie Nation and everybody embraced us."

WHAT DOES THE LUNCH PAIL MEAN TO YOU?

"We started the lunch pail when I became the coordinator because I wanted to do something that was going to separate us from our opponents. It's about a lot of things, but really it's about success. And you know, success is a choice. Success is earned. And that's kind of what that the lunch pail stands for. You have to go earn your success. And you know, it carries over to everything you do in life, and it's how I try to live my life."

HOW HAVE YOU OBSERVED THE UNIVERSITY EVOLVE OVER TIME?

"I remember going into schools, and kids didn't know if we were a big-time program or if we were an FCS, which to me was kind of alarming. That's where

I've seen this thing change so much, us becoming one of the elite research institutions in the country and becoming one of the top public institutions in America. And that's because of the vision of the university and its leaders, the continuous forward direction. Having great leadership, from our senior administration to our deans to our faculty. That's what's created Hokie Nation."

TELL US ABOUT YOUR NEW ROLE AS AN AMBASSADOR TO THE UNIVERSITY.

"I've been here my whole adult life. I'll tell you a quick story: When I was a finalist for the Clemson job with Dabo Sweeney, it came down to Dabo and myself, and my kids, all they know is Virginia Tech. Well it was coming down to the decision, and my son said, 'Dad, we really think it's a pretty exciting opportunity for you, but if you get it, can we still have Virginia Tech season tickets?'"

"So, that was kind of the mindset of my kids, all they know is Virginia Tech and that Virginia Tech has been tremendous to me. And that's a big reason why we stayed here. I want to help any way I possibly can and be an ambassador, not just for the athletic department, but for Virginia Tech. I'm excited about this next chapter of my life as a Hokie." ■ JT/TW

Kevin P. Heaslip II, Blacksburg, Va., was named the CACI Faculty Fellow at Virginia Tech.

Gregory B. Kulhanjian, Los Angeles, Calif., is associate casting director and is currently working on The CW television show "All American," season 2.

Meghan A. Timlin, Virginia Beach, Va., was named to 2019's Top 40 Under 40.

Leah Duncan Wettstein, Freeland, Md., joined Hord Coplan Macht as CEO.

CHILDREN **Jessica Klacynski Crowder**, Sharpsburg, Ga., a son, 10/22/19.

John T. Dalton and Kelly McGrath Dalton '04, Arlington, Va., a daughter, 10/04/19.

Kurt J. Riehl, West End, N.C., a daughter, 08/15/19.

'03

CAREER **James F. Jennings Jr.**, Halifax, Va., is the facilities manager at Danville Community College.

'04

CAREER **James N. Estep**, Fairfax, Va., is regional executive at John Marshall Bank.

Lauren S. Lakdawala, Baltimore, Md., was named 2019 Distinguished Young Pharmacist of the Year in Maryland.

Andrew J. Lloyd, Youngsville, N.C., was tapped as relationship banking manager for North Raleigh at North State Bank.

David A. Prevette, Blacksburg, Va., was named higher education client leader at BHDP Architecture.

Aaron M. Teitelbaum, Newtown, Conn., is principal scientist, drug metabolism and pharmacokinetics, at Boehringer Ingelheim.

Andrew C. Witt, Bethel Park, Pa., is assistant professor of Old Testament at Tyndale University in Toronto, Ontario.

CHILDREN **Megan E. Brogley Przywara**, New York, N.Y., a daughter, 10/10/19.

Aaron M. Teitelbaum, Newtown, Conn., a daughter, 05/04/19

John Dean Winstead and Ashley Goodroe Winstead '08, Poquoson, Va., a son, 05/16/19.

'05

CAREER **Christopher J. Imhof**, Columbia, Md., is engineering manager for plumbing code and utility design standards at WSSC Water.

Anthony B. Reedy, Henrico, Va., is vice president of political operations of the Virginia REALTORS Association.

Terrell L. Strayhorn, Memphis, Tenn., special advisor of the National Association for Campus Activities board of directors, was selected as vice president for academic and student affairs at LeMoyné-Owen College and serves as a tenured professor of urban education.

Michael J. Wulff, Chantilly, Va., is Ellucian's senior vice president of global research and development.

CHILDREN **Anthony B. Reedy**, Henrico, Va., a son, 10/08/19.

'06

CAREER **Damon M. Fleming**, San Diego, Calif., is dean of the Fogelman College of Business and Economics at the University of Memphis.

Scott M. Hamlin, Silver Spring, Md., is vice president of the multifamily division of the Continental Realty Corp.

'07

CAREER **Monique T. Felder**, Nashville, Tenn., is superintendent of Orange County, Va., schools.

Joseph Y. Nizhnikov, Washington, D.C., is vice president, federal civilian sales for Steampunk Federal Civilian business sector and Salesforce practice.

CHILDREN **John Christopher Flores and Molly Joy Kalogera**, Ramsey, N.J., a daughter, 06/28/19.

'08

CAREER **Manisha P. Patel**, Greensboro, N.C. is president of the North Carolina Association of Women Attorneys for 2019.

WEDDING **Jeffery H. Carte**, Sacramento, Calif., and Jessica James, 10/05/19.

CHILDREN **Marc A. Greene**, Morrisville, N.C., a daughter, 11/17/19.

Andrew Marshaleck and Kristin D. Clarke Marshaleck, Fort Mill, S.C., a daughter, 06/23/19.

Christi Michelle Byrd Santora and Jason Gregory Santora '09, Chesterfield, N.J., a daughter, 12/16/18.

'09

CAREER **Cassandra E. Sheehan**, Fairfax, Va., joined Pesner Altmiller Melnick and DeMers as an associate in the civil litigation department.

Ashley Shiflett Summers, Fort Defiance, Va., is senior tax manager of PBMares.

WEDDING **Andrew Laurence Read and Megan E. Armstrong '10**, Washington, D.C., 08/17/19.

CHILDREN **Harrison L. Simmons**, Arlington, Va., a daughter, 10/04/19.

'10

CAREER **Lisa Homan Brennan**, Henrico, Va., joined KaneJeffries with a focus on transactional real estate, estate planning, and administration.

Daniel A. Brodhag, Columbus, Ohio, is engineering coordinator at the Federal Highway Administration.

Skyler G. Cooper, Dallas, Texas, is regional manager for Marcus & Millichap.



CYBER SAVVY

Baback Bazri '04 had long been interested in technology and solving real-world problems, but switching his major to business information technology was key in putting those interests to work.

"Once I switched to Pamplin and started taking core courses and business information technology classes, it all clicked for me," Bazri said.

Today, Bazri is a partner in the government and public sector advisory services practice at Ernst & Young LLP, located in McLean, Virginia. He has served a wide array of federal government agencies as well as Fortune 500 organizations in financial services, professional services, retail, telecommunications, and wholesale distribution. He is a Certified Information Systems Security Professional and Certified Information Systems Auditor.

WHAT'S THE HYPE?

HUNDREDS OF YOUNG ALUMNI ARE taking part in Virginia Tech's fundraising and engagement campaign through HYPE, Hokie Young Professional Events.

The events are being held across the country to celebrate the launch of Boundless Impact: The Campaign for Virginia Tech. The first event was held in early December at Penn Social in the Washington, D.C., area.

"It was so great ... It felt like a crowded Hokie House scene, elbow to elbow," said Erin Helbling, a 2014 graduate who chairs the D.C. Young Alumni Committee and helped organize the event. "We kept the program unstructured to allow the organic reconnecting to happen between people."

Virginia Tech launched its fourth campaign ever last year, with goals to raise funds and increase the number of Hokies involved with the university. HYPE is a way for young Hokies to do both.

HYPE connects new alumni with their fellow Hokies and supports Virginia Tech. A portion of the event's registration fee is a gift to the university.

"It's so important for new alumni to continue to stay connected to the university and one another, and we want HYPE to be a fun way to do that," said Shaun Grahe, director of student and young alumni engagement. "It's important for young alums to know that it's easy to be involved and make a difference, and that graduation is just a milestone in their

relationship with Virginia Tech."

For Helbling, HYPE did just that.

"Alumni have absolutely nothing to lose and everything to gain by joining fellow young alumni at these events, to build their network in an engaging and fun setting designed specifically with their interests in mind," said Helbling, who is currently the associate director of recruitment and outreach for the American Association of Colleges of Osteopathic Medicine. "At the D.C. event, it was so much fun to see everybody in one space. It's not like a social setting where you have to figure out how you connect to another person, because we're all already Virginia Tech alumni. And it's so inspiring to be around people who are achieving success in their fields."

The next event is set for March 18 in Virginia Beach. Grahe said he's excited to see the enthusiasm continue.

"Seeing so many recent grads celebrate and take part in the campaign is huge," he said. "We need new alums to be involved to help the university move forward and accomplish our ambitious goals. We're excited to support young alums and invest in their success."

Learn more about HYPE, including future dates, at alumni.vt.edu/events/hype. ■

Annie McCallum is the director of alumni communications for Advancement.



WEDDING **Thurman Shaver Dey-erle IV**, Blacksburg, Va., and **Janelle Lindsay Vella Gans**, 07/27/19.

Geoffrey D. Kiffe, Arlington, Va., and **Kim Kowal**, 09/28/19.

CHILDREN **Nolen W. Blackwood**, North Chesterfield, Va., a daughter, 07/30/19.

'11

CAREER **John W. Sugden**, Frederick, Md., is senior vice president of client engagement at Vcheck Global.

CHILDREN **Andrew J. Ickes**, Salem, Va., a son, 12/25/17 and twin girls, 8/17/2019.

Alexis J. Earley Purdy, Aurora, Colo., a daughter, 09/26/19.

Whitney D. Showalter, Blacksburg, Va., a daughter, 09/26/19.

'12

CAREER **Matthew K. Cook**, Roanoke, Va., is business relationship director at Carilion Clinic.

Lori M. Koch, Henrico, Va., was elected as a board member of the Structural Engineers Association of Virginia.

'13

CAREER **Phoebe Y. Choi**, Blacksburg, Va., joined the D.C. Market of Siegfried as an associate manager.

Rebecca O. Wilson, Petersburg, Va., was inducted into Red Wing Shoes' 2019 Wall of Honor.

Christian L. Hawthorne, Blacksburg, Va., joined Kilpatrick Townsend in Seattle as an associate.

'14

CAREER **William M. Long III** and **Jessica Raye Sutherlin '15**, Fairfax, Va., 07/26/19.

Jean L. "Raini" Ott, Elliston, Va., and **Trevor White**, 10/25/19.

Nathanael R. Vandygriff and **Jessica Neal Watkins**, Blacksburg, Va., 06/15/19.

'15

CAREER **Dillon T. Dearmond**, Damascus, Va., is senior consultant at CapTech Ventures Inc.

Sabithulla Khan, Pasadena, Calif., is program director at Cal Lutheran University in Thousand Oaks, Calif.

Jeffrey G. Wiegert, Garner, N.C., is an assistant professor and swine Extension specialist at Texas A&M University.

'16

CAREER **Sheng-I Yang**, Knoxville, Tenn., joined the University of Tennessee Department of Forestry, Wildlife and Fisheries as an associate professor.

'17

CAREER **Robert S. Eaton**, Johnson City, Tenn., retired after 36 years of federal service. He has relocated to Johnson City, Tenn., and will volunteer at the Erwin National Fish Hatchery.

Frederick William Klein IV, Blacksburg, Va., is FSO assurance staff accountant at EY.

Justin M. LeGore, Blacksburg, Va., hosted the first Old Town Beer, Wine, and Dog Festival.

Travertine J. Orndorff Garcia, Blacksburg, Va., had an article, "Sustainable Food Systems for Public Health," published by the University of Michigan School of Public Health.

'18

CAREER **Hunter E. Watkins**, Blacksburg, Va., joined the Culpeper branch of Farm Credit of the Virginias.

'19

CAREER **Alexander Benbassat**, Alexandria, Va., hosted the first Old Town Beer, Wine, and Dog Festival.

Bailey I. Black, Blacksburg, Va., is assistant director of advancement communications at Radford University.



HYPE events

Young alumni events are being held across the country to celebrate the launch of Boundless Impact: The Campaign for Virginia Tech.

HYPE, short for Hokie Young Professional Event, is a chance to hang out and network with other young alums, plus learn about what's happening at Virginia Tech and how to give back.

March 18
Virginia Beach

April 30
New York City

June 19
Richmond

Learn more at [alumni.vt.edu/
events/hype](http://alumni.vt.edu/events/hype)

Sept. 23-Oct. 2, 2020

Swiss Alps and the Italian Lakes

Enjoy high alpine splendor in St. Moritz and get to know the much-loved Italian Lakes region. Along the way, enjoy the natural beauty and the distinct cultures of two countries.

See magnificent scenery, architecture, and masterpieces, including a baroque palace and da Vinci's "The Last Supper" in Milan on this eight-night journey.





2020 ALUMNI

TRAVEL TOURS

CONNECT. LEARN. EXPLORE.

READY TO EMBARK ON YOUR JOURNEY? VIRGINIA TECH TRAVEL TOURS OFFERS PROGRAMS FOR TRAVELERS AT ALL EXPERIENCE LEVELS. SEE NEW LANDS THROUGH EXPERTLY PLANNED TOURS WHILE ENJOYING THE CAMARADERIE AND VALUE OF GROUP TRAVEL. TOURS ARE OPEN TO ALL VIRGINIA TECH ALUMNI, FRIENDS, AND FAMILY.

June 28-July 6
Baltic and Scandinavian Emperors

Aug. 16-24
Great Pacific Northwest

July 12-22
Gaelic Inspiration

Sept. 7-20
Relics and Retreats

July 23-30
Summer Vistas of Alaska

Sept. 13-24
Sicily in Depth

July 26-Aug. 5
Rhine Highlights

Oct. 15-25
Adriatic Awakening

July 31-Aug. 10
The Majestic Great Lakes

Dec. 11-19
Holiday Market Cruise

Aug. 10-18
Scotland - Sterling

Dec. 30-Jan.4
New Year's Rose Parade

PHOTO COURTESY OF AHI



ALUMNI.VT.EDU/TRAVEL

For more information about travel tours, go to alumni.vt.edu/travel.

Tech Triumph

Key of D

Words and Music by
MISS MATTIE W. EPES
& W. P. MADDUX

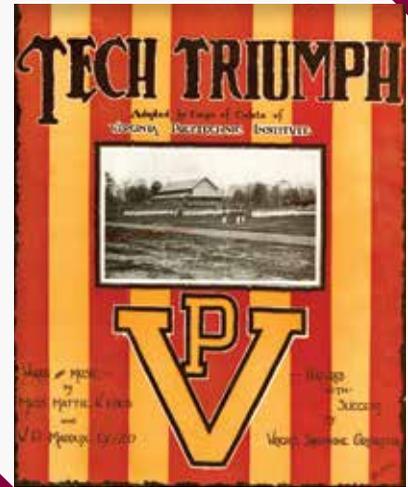
Introduction



VERSE



Copyright 1919 by W. P. Maddux



SING ALONG: An early print version of the sheet music for “Tech Triumph” declares the song as “Adopted by Corps of Cadets of Virginia Polytechnic Institute.” (at top) The regimental band, now known as the Highty-Tighties, has performed the music since 1919.

FINELY TUNED

IN THE SUMMER OF 1919, A MEMBER of the cadet band and his hometown neighbor composed a tune intended to energize the students of VPI.

Over the next 100 years, that tune, known as “Tech Triumph,” has become the hallmark of both the Highty-Tighties and Marching Virginians, the soundtrack for countless athletic performances, and the incoming call notification for at least one hall-of-fame coach.

“That’s Virginia Tech’s song, and I’m a Virginia Tech guy through and through,”

said Frank Beamer ’69, who served as the Hokies’ head football coach for 29 years. “If you call me, you don’t hear a traditional ring, you hear “Tech Triumph.”

It’s highly unlikely Wilfred Preston “Pete” Maddux had Coach Beamer’s ringtone in mind when he asked his Blackstone, Virginia, neighbor Mattie Eppes (Boggs) to collaborate on a new fight song in 1919, but a similar level of school spirit was undoubtedly present.

The story goes that when Maddux visited his hometown of Blackstone, he

would often visit Eppes’ home to play music—he the violin and she most often the piano. For “Tech Triumph,” Eppes played the tune and Maddux wrote out the score and lyrics. A few months later, their creation debuted just prior to VPI’s football game against Washington and Lee University. In December 1919, the composition was officially adopted as the university’s fight song.

Recently, the Virginia Department of Historic Resources approved a marker commemorating the writing of the song to be

placed near Eppes' home in Blackstone. Installation is scheduled for this spring.

On Dec. 10, 1919, the university newspaper, *The Virginia Tech*, published a letter Maddux penned expressing his appreciation and explaining his inspiration for the song.

"While, of course, everyone realizes that I expect to benefit financially through the publication of 'Tech Triumph,' I want everybody to know that it is mainly my devotion and love to the college, which I am proud to boast as my Alma Mater, that prompted me to write the song and it is for the sake of Tech that I want it to receive a wide circulation. It is more than gratifying to me to see the ardent spirit and loyalty which the Corps manifests when every man lends his lusty voice to swell the chorus of football singing."

The first arrangement of "Tech Triumph" was created by then Highty-Tighty band director James Schaeffer, who is widely credited with establishing the regimental band's famous precision. Schaeffer died in 1951, having spent all but four of his adult years working with the band.

In 1974, Virginia Tech added a civilian band, *The Marching Virginians*, and

James Sochinski, a professor emeritus who joined the university in 1977, organized the current arrangement to align the two bands.

"When I got here, they were playing different arrangements, so I was tasked with writing a universal arrangement that both bands would use," Sochinski said. "I decided to opt for a traditional-style arrangement, like a traditional college fight song."

During the decades since its creation, "Tech Triumph" has also found its way from the field to the recording studio. In June 1920, *The Virginia Tech* wrote that the Monogram Club had succeeded in getting the song placed on a Columbia record, and in 1940, Bob Crosby's Bobcats released their jazzy version of the tune. Today, "Tech Triumph" can be downloaded or streamed on multiple devices from all corners of the globe.

But for many Hokies, there's no better version than hearing the tune performed live by one of Virginia Tech's bands.

"Those trumpets sound off, and it's a call to Hokies everywhere. Every time the band plays it, it fires me up just like the first time I heard it," Beamer said. ■ TW

WHAT DOES "TECH TRIUMPH" MEAN TO YOU?

"To me, anytime I hear 'Tech Triumph,' it simply reminds me of the best days of my life as a student at Tech. Over the last 30 years, as athletics got onto the national stage, it also says 'look what we did.' Our university is as popular today as ever, and 'Tech Triumph' is right there with it"

- Dave Whiteside '93, former president of the *Marching Virginians Alumni Association*.

"Just hearing it makes me think of all the traditions and people that went before us. It's something that connects you with the people from the past and will connect you with people in the future, which, when you think about it, is really humbling"

- Eric Chomicki, a senior in the *Corps of Cadets studying business management, regimental historian, and a former Highty-Tighty brass captain*.

"The Highty-Tighties are the most influential organization I ever belonged to, not just because they were a band, but because of the values they instilled in me, and Jim Schaeffer is who brought those values to the band. So for me, 'Tech Triumph' relates back to that. They say it's every Hokie's favorite song. It certainly is mine, and for that reason, I can still play it by heart on the trumpet more than half a century after I graduated from Tech!"

- Bert Kinzey, HT '68; president emeritus, *Highty-Tighty Alumni Inc.*

ATTENTION!: Formed in 1893, the Highty-Tighties are the oldest collegiate band in Virginia.



FAMILY

1 “Big sister, Sophie, is excited about teaching Eleanor all about Hokie spirit,” —John Chris Flores '07, Ramsey, New Jersey, who, along with Molly Flores '07, welcomed a daughter, Eleanor Joy, 6/28/19.



CHRIS AND MOLLY FLORES

1

2 “On August 31, I married my Virginia Tech sweetheart,” —Katelyn Ann Margraf Rackowski '16, Fairfax, Virginia, who married Tim Rackowski '16, 8/31/19.



THE KENT'S PHOTOGRAPHY

2

3 “Joining brothers Tucker and Tanner, Tenley makes three,” —Kristin Clarke Marshaleck '08, Fort Mill, South Carolina, who welcomed a daughter, Tenley Paige, 6/23/19.



DAISY PHOTOGRAPHY

3

4 “It was a perfect day for a Hokie wedding,” —William Long III '14, Fairfax, Virginia, who married Jessica Sutherlin '15, 7/26/19.



SARAH MATTOZZI PHOTO

4

4

5 “Hokie Hokie Hy! We are celebrating a new addition to Hokie Nation,” —Marc Adam Greene '08, Morrisville, North Carolina, who welcomed a daughter, Ella Hope, 11/17/19.



HEATHER C. JOHNSON

5

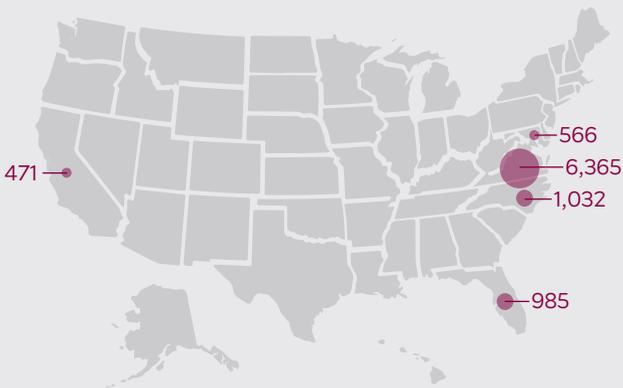
 **FAMILY TIES**
See more family photos at vtmag.vt.edu.

BE GOLDEN

WHAT IS THE OLD GUARD SOCIETY OF GOLDEN Alumni? The society comprises the university's most passionate and respected alumni. Each year when a new class celebrates their 50th reunion at Homecoming, they are inducted into the Old Guard, which then gathers annually each spring. There are now 14,280 living alumni who are part of the Old Guard Society of Golden Alumni. The need for the Old Guard was pointed out by P.B. Earle, Class of 1901. He proposed an alumni group that would continue reunions and fellowship for members of classes that could no longer hold individual class activities. Each year the society grows and becomes more diverse, reflecting how the university changed some 50 years ago. ■

U.S. Top 5

Virginia, North Carolina, Florida, Maryland, & California have the highest number of living alumni in residence.



DEMENTI STUDIO, SPECIAL COLLECTIONS AND UNIVERSITY ARCHIVES ARCHIVES, RM



1904

J. Ambler Johnston, Class of 1904, wrote the first constitution for the Old Guard.



1921

Women were admitted to the university in 1921. Now there are 850 women in the Old Guard. Female membership has more than doubled in the past five years.



1964

Corps membership was mandatory until 1964. Today, 7,992 Old Guard members were in the corps. Each year, the society inducts more civilians.



14,280

Total Old Guard Population

Total alumni population: 263,302

Over the next decade the society will triple in membership.



IN MEMORIAM

Listing includes notices shared with the university from May 1, 2019, through Sept. 30, 2019.

'42

William F. Young Jr., Odessa, Fla., 5/14/2019.

'44

Ralph S. Hess Jr., Danville, Va., 8/1/2019.

James Parrish Trant Jr., Newport News, Va., 8/14/2019.

Charles Edward Varn, Exeter, N.H., 4/11/2019.

'45

Wilson B. Dodson II, Norfolk, Va., 8/3/2019.

J. Bolling Lewis Jr., Richmond, Va., 8/8/19.

James Malcolm McIntosh Jr., Richmond, Va., 4/13/2019.

'46

Patsy Miller Crowell, Bethlehem, Pa., 6/22/2019.

Louis Grover Good, Cleveland, N.C., 7/7/2019.

Blair Monroe Haines Jr., Romney, W.Va., 4/21/2019.

Donald B. Kearney, Traverse City, Mich., 3/2/2019.

Raymond C. Morrissette, Dahlgren, Va., 6/24/2019.

T. Barrett Oliver, Canonsburg, Pa., 6/26/2019.

Richard H. Timberlake, Knoxville, Tenn., 7/29/2019.

'47

Julian Harris Lipscomb Sr., Virginia Beach, Va., 8/23/2019.

'48

Irving Earl Lawson Jr., Hampton, Va., 4/21/2019.

Edwin Earl Simpson, Martinsville, Va., 4/30/2019.

'49

Sidney A. Burnstein Jr., Richmond, Va., 7/12/2019.

George Dalton Dove, Goldsboro, N.C., 5/24/2019.

Ernest G. Wagner Jr., Pocahontas, Va., 8/14/2019.

Samuel M. Walton, Greensboro, N.C., 5/10/2019.

'50

Horace Palmer Bill Jr., Blacksburg, Va., 2/16/2019.

James H. Binns III, Afton, Va., 7/21/2019.

Orion L. Birdsall Jr., Palmyra, Va., 7/7/2019.

Robert "Twig" Hopkins Strickler, Harrisonburg, Va., 5/24/2019.

Charles C. Kestner, Sweet Briar, Va., 4/26/2019.

Saul H. Lowe, Chesapeake, Va., 3/31/2019.

Raymond Eugene Pillow, Baton Rouge, La., 4/16/2019.

James Madison Pollard Jr., Ashland, Va., 6/20/2019.

George Wyche Slate, Emporia, Va., 7/21/2019.

'51

Mason E. Marvel, High Springs, Fla., 5/20/2019.

Albert R. Proffitt, Abingdon, Va., 8/2/2019.

Edward J. Reynolds Jr., St. Simons Island, Ga., 7/9/2019.

William Ward Moseley, Naples, Fla., 7/23/2019.

A. Fred White, Cape May Court House, N.J., 6/25/2019.

'52

Wallace M. Brown, Harrisonburg, Va., 7/3/2019.

Bradley Warner Day, Trumbull, Conn., 5/21/2019.

Thomas H. Moore, Santa Ana, Calif., 4/3/2019.

Ralph M. Snyder, Williamsburg, Va., 5/21/2019.

James E. Yates, Surfside Beach, S.C., 6/4/2019.

'53

James Bailey Bell, Arden Hills, Minn., 7/23/2019.

Jeanette Colona Gorman, Charlotte, N.C., 7/1/2019.

Gilmer G. Holland Jr., Northfield, Ohio, 6/7/2019.

Richard Edward Loving, Waxhaw, N.C., 4/13/2019.

Douglas E. Richie, Gloucester, Va., 5/7/2019.

Elizabeth Morris Richie, Gloucester, Va., 6/26/2019.

Arnold David Robins, Palm Beach Gardens, Fla., 8/16/2019.

'54

Byron B. Black, Vienna, Va., 5/29/2019.

Winston W. Burks Jr., Bedford, Va., 4/13/2019.

'55

Marvin Vincent Craft Jr., Suffolk, Va., 7/24/2019.

Richard Gordon Draper, Elmira, Ore., 3/30/2019.

James F. Maile, Roanoke, Va., 8/21/2019.

Lawrence Elbert Perry Jr., Roanoke, Va., 7/18/2019.

Phyllis Isaacs Slayton, Blacksburg, Va., 4/24/2019.

Lowell E. Wade, Christiansburg, Va., 5/27/2019.

Richard James Wagner, Dupont, Wash., 8/4/2019.

'56

Bruce Austin Beam, McLean, Va., 7/26/2019.

Joseph John Geissler III, Pittsburgh, Pa., 4/15/2019.

Robert Booker Jewell, Mechanicsville, Va., 8/2/2019.

Alfred B. Warwick, Kalamazoo, Mich., 7/12/2019.

'57

Thomas Francis Aud, Lynchburg, Va., 8/15/2019.

George "G.L." L. Ball, Menlo Park, Calif., 8/12/2019.

Carlton Lee Cutchin Jr., Franklin, Va., 5/26/2019.

Melvin T. Dixon, Slocomb, Ala., 8/19/2019.

Roger G. Hopper, Urbanna, Va., 4/13/2019.

Samuel P. Hurd, Topeka, Kan., 4/22/2019.

Paul L. May, North Little Rock, Ark., 4/13/2019.

James H. Siviter Jr., Clermont, Fla., 6/7/2019.

I. Hugh Slagle, Marion, Va., 5/12/2019.

Rudolph A. Zemonek, Raleigh, N.C., 4/22/2019.

'58

William Gordon Bartenstein, Lake Orion, Mich., 6/2/19.

Floyd "F.G." Gregory Boothe Jr., Richmond, Va., 7/17/2019.

Carl Irvin Campbell, Rolla, Mo., 4/20/2019.

Robert N. Davis, Greensboro, N.C., 5/22/2019.

Don Akiba Halperin, Gainesville, Fla., 4/15/2019.

John Linwood Inge, Richmond, Va., 5/8/2019.

E.B. Peter Meekins, Williamsburg, Va., 5/4/2019.

Arthur Lee Scarborough, Virginia Beach, Va., 7/9/2019.

Alan E. Trotter, Commerce, Ga., 5/2/2019.

Charles Kinsley Widmaier III, Smith Center, Kan., 7/7/2019.

'59

Frederick W. Clemens, Blacksburg, Va., 7/29/2019.

John E. Denson, Carmel, Ind., 7/3/2019.

William C. Marshall, Spencer, Va., 8/8/2019.

Calvin Currell Southern, Ponte Vedra, Fla., 5/3/2019.

Charles W. Stewart Jr., Radford, Va., 4/13/2019.

Daniel Gardner Tyler, Collinsville, Va., 5/12/2019.

Cecil Carroll Umberger Sr., Williamsburg, Va., 6/10/2019.

'60

Donald Roy Barrans, Belews Creek, N.C., 6/28/2019.

Louis McGuire Briel, Calhoun, Ga., 6/18/2019.

William A. Clifton Jr., Danville, Va., 5/8/2019.

Robert M. Henry, Winchester, Va., 8/7/2019.

Douglas Neil Hillhouse, Oakville, Ontario, Canada, 3/18/2019.

Paul Kovacs III, Machipongo, Va., 6/6/2019.

Donald Keith McBride, Mount Airy, Md., 7/13/2019.

Walter F. O'Brien Jr., Blacksburg, Va., 7/25/2019.

Gretchen Woerner Parrott, Henrico, Va., 4/9/2019.

Charles A. Pendergrass Jr., Richmond, Va., 5/22/2019.

Robert L. Rash, Charlotte, N.C., 6/30/2019.

Russell David Reid Jr., Evinston, Va., 6/5/2019.

James Edgar Ware Jr., Quakerstown, Pa., 5/10/2019.

'61

James Leon Conner, San Angelo, Texas, 7/7/2019.

Albert Wesley Crawford, Roanoke, Va., 7/8/2019.

Hoeh McGuire Edwards Jr., Zuni, Va., 7/17/2019.

Robert A. Hutchins Jr., Cumming, Ga., 6/5/19.

Gail Foster Kirk, Frederick, Md., 7/1/2019.

Edward "Jack" J. Lucas Jr., Fieldale, Va., 6/27/2019.

Howard C. Melton, Alexandria, Va., 6/21/2019.

George A. Owens Sr., Loganville, Ga., 7/3/2019.

Charles "Bucky" F. Shell, Amelia Court House, Va., 7/10/2019.

'62

Bernard Lee Bolt, Harrisonburg, Va., 8/2/2019.

Ray Donald Faulconer Jr., Orange, Va., 7/14/2019.

Ann B. Hickman, Plymouth, Mich., 7/13/2019.

George Kawood Lucas, Riner, Va., 7/5/2019.

James Albert Rasnake, Poca, W.Va., 4/8/2019.

Walter Lee Reynolds, Smyrna, Ga., 7/6/2019.

James Wood Whitt, Woodbridge, Va., 3/31/2019.

'63

Thomas "Bucky" Rolander Blackburn IV, Mount Sidney, Va., 6/30/2019.

Joseph Ballard Harris Jr., Rockville, Md., 5/23/2019.

George Irby Jones, Blackstone, Va., 8/2/2019.

Robert Howard Morecock Sr., Mattaponi, Va., 4/6/2019.

William J. Schlemm, Lake Forest, Ill., 2/24/2019.

Edward Louis Thomas, Amarillo, Texas, 5/4/19.

'64

Thomas Lee Bonds, Clifton Park, N.Y., 5/17/2019.

John Andrew Creasy Sr., Marietta, Ga., 4/7/2019.

George Edwin Kaye, Albuquerque, N.M., 4/5/2019.

Eugene Brock Maxey, Williamsburg, Va., 8/19/2019.

Robert Samuel Plentovich, Gloucester, Va., 5/4/2019.

Kenneth Wayne Poore, Henrico, Va., 6/5/2019.

Thomas William Puckett, Waynesboro, Va., 5/2/2019.

Earl Rush Sutherland, Winchester, Va., 5/11/2019.

'65

Jeannette Skelton Charlton, Kennett Square, Pa., 4/14/2019.

Samuel Spotswood Cook, Rocky Mount, Va., 8/6/2019.

Harry Taylor Coyner, Stone Mountain, Ga., 5/7/2019.

Dennis W. McClellan, Alexandria, Va., 6/8/2019.

William Hall Mitchell, Tuscaloosa, Ala., 5/3/2019.

William Cary Nelson, Chapel Hill, N.C., 8/7/2019.

'66

Robert Lee Burton, Salem, Va., 1/28/2019.

Charles H. Gibson, Cincinnati, Ohio, 5/2/2019.

Cecil Columbus Lawson Jr., Richlands, Va., 6/22/2019.

William David Martin, Dallas, Texas, 9/4/2018.

Philip Keith Webb, New Castle, Va., 8/20/2019.

John Miley Whitesell, Fairfield, Va., 6/10/2019.

'67

Bergen Frederic Berkaw Jr., Marion, Va., 6/26/2019.

Garland Lee Burch, San Antonio, Texas, 7/7/2019.

John "Jack" S. Halow, Garards Fort, Pa., 6/30/2019.

Jeffrey Scott Jalbert, Kiawah Island, S.C., 4/27/2019.

Neil Craig Miller, Boca Raton, Fla., 4/28/2019.

'68

Michael George Doty, Stuarts Draft, Va., 8/18/2019.

Martin Michael McCormick, Clayton, N.C., 3/30/2019.

Warren Okley Vaughan, Morehead City, N.C., 6/14/2019.

James G. White, Chesapeake, Va., 8/6/2019.

Edwin B. Whitmore III, Marion, Va., 12/22/2018.

Louis Michael Zaborsky II, Prince George, Va., 5/26/2019.

'69

James Lee Aleshire, Troutville, Va., 7/3/2019.

Thomas R. McAnge Jr., Blacksburg, Va., 7/14/2019.

David Wakeman Parks, Hagerstown, Md., 5/5/2019.

William D. Richardson, Roanoke, Va., 7/2/2019.

Marlin A. Thomas, King George, Va., 6/6/2019.

'70

James Edward Carter, Churchville, Va., 5/15/2019.

Carter Ray Doyle, Durham, N.C., 4/11/2019.

John "J.L." Lee Malcolm, Townsend, Ga., 7/11/2019.

Taylor Hodges Motley Jr., Clemson, S.C., 5/25/2019.

Lewis R. Pugh, Crawfordville, Fla., 4/8/2019.

'71

John Carl Boling, Raleigh, N.C., 8/9/2019.

Donald Leigh Elder, Alexandria, Va., 5/24/2019.

Peter D. Madeo, Boonsboro, Md., 4/1/2019.

Daniel J. Verbonitz, Carefree, Ariz., 4/14/2019.

Michael Edward Walcavich, Spring, Texas, 8/2/2019.

'72

Joe William Derting, Abingdon, Va., 6/16/2019.

John Edward Smith, Great Mills, Md., 6/20/2019.

'73

Marion Farrar McDearmon II, Amherst, Va., 8/13/2019.

Barry Lynn Proctor, Abingdon, Va., 6/12/2019.

Eugene Francis Young, Dahlgren, Va., 8/10/2019.

'74

Sherrie Reeves Christensen, Purcellville, Va., 5/18/2019.

Thomas Matthias Hessler, Williamsburg, Va., 8/23/2019.

Anna Cecilia Noll, Tacoma, Wash., 6/18/2019.

Bobby Lee Vest, Martinez, Ga., 5/19/2019.

Alice Davis Walker, Blacksburg, Va., 5/19/2019.

'75

Robert Scott Boling, Blacksburg, Va., 12/19/19.

John Henderson Albright, Blacksburg, Va., 5/25/2019.

Mark Alton Bragg, Mechanicsville, Va., 2/24/2019.

Stephen Marshall Brooks, Jacksonville, Fla., 6/11/2019.

Jo McClendon Campbell, Stillwater, Okla., 8/21/2019.

James "J.B." Barnard Hodges, Cartersville, Va., 6/17/2019.

Tony Frank Holbrook, Fortaps, Tenn., 7/1/2019.

Martha Smith Holt, Marietta, Ga., 6/8/2019.

David Brownfield Horne, Orlando, Fla., 8/15/2019.

Gilbert "Buck" Lester James Jr., Appomattox, Va., 3/16/2019.

Kevin Gerard Malloy, Kettering, Ohio, 7/11/2019.

Frank Allen Pleva, Mathews, Va., 3/22/2019.

Robert Frederick Steffen, Hiwassee, Va., 4/2/2019.

Charles Victor Webster Jr., Salem, Va., 7/21/2019.

'76

Edward A. Cacciapaglia, Reston, Va., 4/2/2019.

John Francis Hovell, Fairfax, Va., 4/17/2019.

Sandra Kay Linton, Mechanicsville, Va., 6/16/2019.

Terry McClellan Looney, Chester, Va., 4/11/2019.

Ella Dickinson Youngblood, Roanoke, Va., 4/11/2019.

'77

Kerry Francq Moore, Tazewell, Va., 7/25/2019.

Jack L. Schinstock, Lincoln, Neb., 7/10/2019.

Robert Shoff Wilson Jr., Rockingham, Va., 5/15/2019.

'78

Blair John Buskirk, Gilbertsville, Pa., 5/23/2019.

Douglas James Kihm, Snohomish, Wash., 7/19/2019.

Lois Jean Stephens, Viera, Fla., 6/4/2019.

'79

Alan Dalton Barrow, Savannah, Ga., 4/18/2019.

David Hall Fields, Lebanon, Conn., 7/19/2019.

Douglas Lynn Lancaster, Salem, Va., 6/28/2019.

Sarah Ellen Mase, Ontonagon, Mich., 6/15/2019.

Mark Harrington Notess, Knoxville, Tenn., 8/5/2019.

J. Patrick Sanford, Glen Ellyn, Ill., 4/28/2019.

Sandra Elizabeth Craddock Wilson, Greensboro, N.C., 6/8/2019.

'80

Teri Lea Bennett, Powhatan, Va., 3/24/2019.

Michael Lynch Guilfoyle, Roanoke, Va., 8/4/2019.

Russell Louis Owens Jr., Dunnsville, Va., 6/23/2019.

'81

Robert Chester Mania Jr., Frankfort, Ky., 8/10/2019.

Donald James Morton Jr., Bowie, Md., 7/19/2019.

Allison Lynn Redd, Bloomington, Ill., 6/13/2018.

James Alfred Thornhill Jr., Aberdeen, S.D., 4/2/2019.

'82

Stanley Joseph Griscavage, Woodbridge, Va., 4/23/2019.

Paul Malcolm McTeer, Charleston, S.C., 8/14/2019.

'84

Charlotte Kay Bolling Baker, Bristol, Va., 6/6/2019.

Michael Brent Bykowski, Mechanicsville, Va., 5/9/2019.

Gary Michael Irwin, McKinney, Texas, 6/4/2019.

Anthony Dante Rugari, Alexandria, Va., 5/17/2019.

'85

James Francis Corrington, Lexington, Va., 6/23/2019.

Frank Simeone Digiacomio, Earlsyville, Va., 4/23/2019.

'86

Howard Wayne Messex, Chesapeake, Va., 7/31/2019.

Carroll Bishop Streit, Winchester, Va., 5/31/2019.

'87

Cheryl Leslie McLaughlin Glaessner, Bethesda, Md., 7/3/2019.

Francine Pamela Proulx, Fairfax, Va., 4/14/2019.

'88

Jeffrey B. Connor, Blacksburg, Va., 5/23/2019.

John Thomas Deignan, Henrico, Va., 8/25/2019.

Gary Keith Morrill, Christiansburg, Va., 8/3/2019.

Andrew Spencer Thexton, Richmond, Va., 8/25/2019.

'89

Mary Litts Burton, Staunton, Va., 7/22/2019.

Robert John Juntunen, Hernando, Fla., 3/25/2019.

Donna Lynn Bandy Murray, Pounding Mill, Va., 4/7/2019.

Christine Lynn Ramsey, Poulosbo, Wash., 7/15/2019.

'90

Kelly Gray Keesling, Matthews, N.C., 5/30/2019.

Charles Potter, San Jose, Calif., 7/10/2019.

Wesley Blaine Sandidge, Kingsport, Tenn., 4/27/2019.

'91

Jill Kay Chandler Jones, Newport News, Va., 7/27/2019.

'93

Christopher Carleton Askew, Lithonia, Ga., 5/7/2019.

Robert Thomas Chappell, Madison, Va., 5/3/2019.

David Robert Gallagher Jr., King George, Va., 5/17/2019.

'95

Michael Alfred Megeath Jr., Front Royal, Va., 7/29/2019.

'96

Michelle E. Motchos, Irmo, S.C., 4/11/2019.

'97

Beatrice O. Martin, Christiansburg, Va., 8/3/2019.

Jonathan Eugene Osborne, Raleigh, N.C., 7/27/2019.

'98

Samuel Ferebee Leary Jr., Chesapeake, Va., 6/11/2019.

'01

Adam Stephen Jaffe, Olney, Md., 6/21/2019.

Laura Charlene Roden, Manassas, Va., 6/15/2019.

Carrie Beth Swanay, Johnson City, Tenn., 7/24/2019.

— '02 —

Jodi L Bramucci, Sutersville, Pa., 5/26/19.

— '03 —

Eugene Henry DeWendt Heim, Poquoson, Va., 5/11/2019.

Keely Mae Larson, Indianapolis,

Ind., 6/10/2019.

Michael Edward Lydon II, Woodbridge, Va., 6/18/2019.

— '04 —

Sarah A. Sciolto, Reston, Va., 6/8/2019.

— '08 —

Marc Francis Delissio, Delmont, Pa., 5/5/2019.

Delphine Waddell Everhart, Cana, Va., 8/22/2019.

— '09 —

Joshua James Keith Housdan, Charlottesville, Va., 3/24/2019.

— '11 —

Jill Nicole Casten, Manhattan, Kan., 4/23/2019.

— '14 —

Alexander James Daly, Blacksburg, Va., 7/27/2019.

— '18 —

Kenneth Edward Townsend, Prospect, Va., 5/14/2019.

OBITUARIES

FACULTY/STAFF

Philip Shafer Kronenberg, professor emeritus in the College of Architecture and Urban Studies, died Aug. 1. Kronenberg co-founded the Center for Public Administration and Policy in the School of Public and International Affairs.

Carl Oscar McDaniels, a longtime professor of counselor education and former director of graduate studies and research, died Oct. 6.

Wallace B. Newton Sr., a longtime adjunct professor of finance and former president of the Virginia Tech MBA Alumni Association, died Sept. 8.

A DISTINGUISHED FRIEND

Pete Dye, a World Golf Hall of Famer who designed more than 130 public and private courses, including TPC Sawgrass, Whistling Straits, and the Pete Dye River Course of Virginia Tech, died Jan. 9.

Dye, one of the most influential course designers of the modern era, became involved with the redesign of what was then known as The River Course at the behest of his friends, Virginia Tech alumnus Bill Goodwin and his wife, Alice Goodwin, shortly after the course was acquired by the Virginia Tech Foundation in 2002.

Since its formal dedication in 2006, the Goodwins' investment and Dye's design have provided Virginia Tech and Southwest Virginia with access to one of the nation's finest golf courses and the Hokies' golf teams with an elite-level home course.



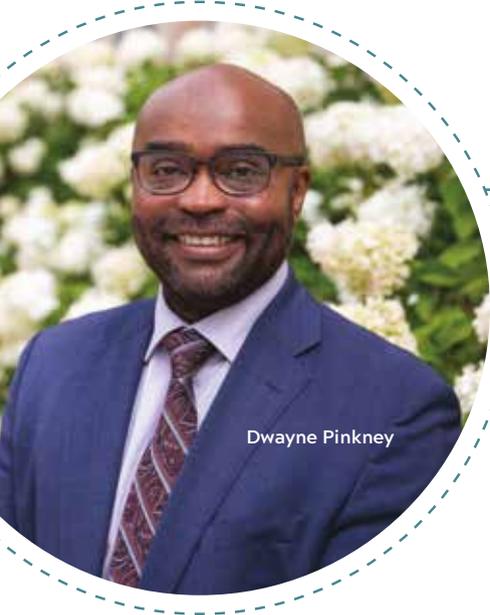
LEADERBOARD: Bill Goodwin, Pete Dye, and then-Virginia Tech President Charles W. Steger attended the dedication ceremony of the Pete Dye River Course of Virginia Tech in May 2006.



STILL
LIFE

UP, UP, AND AWAY: In January, several Virginia Tech graduate students and faculty traveled to Alaska's Poker Flat Research Range to launch a sounding rocket built for NASA through Space@VT. In the early morning hours of Jan. 27, photographer Aaron Lojewski of Fairbanks Aurora Tours (FairbanksAuroraTours.com) captured an image of the rocket blasting off into the sky. The image later ran on the front page of the Daily News-Miner, a newspaper located in Fairbanks.

Read more about Space@VT and their rockets in our feature, [Hokies and Space](#), on page 36.



Dwayne Pinkney

END NOTE

PROMOTING ENVIRONMENTAL SUSTAINABILITY

BEN FRANKLIN SAID, "WELL DONE IS BETTER THAN WELL SAID."

While the quote dates back some 300 years, its context is still very applicable, especially when it comes to climate change.

The environment is among the most pressing issues facing Virginia Tech and the world at large, requiring not only continued dialogue but immediate action.

In the decade since the Virginia Tech Climate Action Commitment was approved by the Board of Visitors, the university has made strides in reducing its environmental footprint.

- Thirty-two LEED-registered (Leadership in Energy and Environmental Design) buildings across the Blacksburg campus continue to reap strong energy savings.
- The Five-Year Energy Action Plan, launched in 2016, continues to drive implementation of energy efficiency measures in the 50 most energy-intensive buildings on campus. These measures have reduced carbon emissions by nearly 23,000 tons per year, and when fully implemented, will save the university \$6 million annually.

- In the past six years, greenhouse gas emissions have decreased by more than 20 percent, which is attributable to the use of natural gas as the university's primary fuel source. Virginia Tech is also engaged in a measured approach around solar energy with funding for select solar installation deployments in the near future.
- More than \$1 million in university funding has been allocated to student-requested sustainability projects through the award-winning Green Request For Proposal program.
- The Office of Sustainability's nationally recognized student internship program continues to grow both on campus and regionally.
- Nearly 900 courses include sustainability-related curriculum.

But more needs to be done.

President Tim Sands recently called for renewal of the Climate Action Commitment and creation of an ad hoc working group of university leaders and students, that will examine Virginia Tech's current Climate Action Commitment and determine how it should be updated to reflect more recent developments in climate

science and technological improvements to promote environmental sustainability.

The working group will also consider the long-term impact of the institution's Climate Action Commitment goals on university policies, operations, and budget, and identify broad metrics and the elements for determining success in meeting these goals.

I am very pleased to have formed this working group and to have John Randolph, professor emeritus of environmental planning, and Todd Schenk, assistant professor in urban affairs and planning, serving as chair and vice-chair, respectively. We are proud to have issued invitations to faculty, students, governance representatives, and community members to join in this cause.

In reexamining the Climate Action Commitment, we have an unmistakable opportunity to advance sustainability for generations to come—on all Virginia Tech campuses and far beyond. Whether it is recycling, biking to work, or conserving electricity in your office or residence, I encourage you to get involved.

Dwayne Pinkney is senior vice president and chief business officer at Virginia Tech. ■

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Thank you for renewing your giving.

**WE MAKE AN IMPACT,
TOGETHER.**

VIRGINIA TECH.

REUNION WEEKEND

2020

Join us
JUNE 4-7



Come home, HOKIES!

Virginia Tech is home. Reconnect with friends, family,
and campus during our four-day summer reunion.

Enjoy a party on the Drillfield, behind-the-scenes
campus tours, children's activities, happy hours,
presentations from university leaders, and more.



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