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**Visionary**

Remembering Tech's 11th president

# VIRGINIA TECH

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summer 2016



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Innovation and Entrepreneurship

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president's message



# The power of the Hokie network

by TIM SANDS

When I came to Virginia Tech two years ago, something exciting was developing at the Pamplin College of Business: an initiative to create a center for innovation and entrepreneurship that had the potential to supercharge the entrepreneurial environment by engaging the whole university.

Today, thanks to a gift from Virginia Tech alumni and Apex Systems founding partners Brian Callaghan, Ted Hanson, Win Sheridan, and Jeffrey Veatch, we have the Apex Systems Center for Innovation and Entrepreneurship (Apex CIE). I'm proud to say that our entrepreneurial spirit has been unleashed! Our students created more than 50 companies in the center's first year and formed a living-learning community called Innovate. In addition, thanks to policy changes approved by the Board of Visitors, our students own the intellectual property they create.

We still have much work to do, but we are off and running, and the business community is taking notice. At our annual "Hokies on Wall Street" visit to New York City, I had the privilege of joining the Apex founders, Tech alumni, and Pamplin Dean Robert T. Sumichrast in ringing the closing bell of the New York Stock Exchange.

The success of Apex CIE highlights two important points. First, we have a powerful network of Hokie alumni who can make things happen. Second, the value of an entrepreneurial education extends beyond the business environment. Every Virginia Tech

student needs entrepreneurial skills, such as working in diverse teams, converting data to actionable information, developing empathy for stakeholders, communicating proficiently, and learning from failure. These abilities foster the resilience that allows our graduates to easily leap from one career trajectory to another as our global economy evolves. (For more on this campus-wide story on innovation, see page 22.)

We call these individuals "VT-shaped": graduates with the skills to lead, work, and live in the spirit of *Ut Prosim* (That I May Serve). I can't wait to see what they will accomplish! □

*Tim Sands is Virginia Tech's 16th president.*

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Virginia Tech's 11th president, T. Marshall Hahn Jr., died May 29. Hahn guided the institution's evolution from a male military college into a comprehensive university, diversifying academic offerings; expanding admissions, particularly for women; and much more.

**22 Rising Stock**  
The ringing of the New York Stock Exchange's closing bell by Virginia Tech leaders and alumni echoed the innovation and entrepreneurship thriving in the university community.

**26 Hokies Who Hack**  
Hokies have long tinkered with and repurposed objects to make them better—a skill known among programmers and innovators as "hacking." Team-oriented hacking has become a valuable exercise in preparing students of varying backgrounds, skill levels, and expertise to tackle the world's greatest challenges.

**34 Here Today, Home Tomorrow**  
It's easy to make yourself at home in the FutureHAUS, a structure as intuitive as a smartphone, where responsive systems adapt to individuals and all household functions can be easily activated by voice, gesture, and touch.

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**On the cover:** If you happened to be standing on the floor of the New York Stock Exchange in late April, chances are you that you heard "LET'S GO!" answered by "HOKIES!" a time or two. Photo courtesy of the New York Stock Exchange. Read the full story on page 22.



**Big Apple:** (Clockwise from upper left) Serial social entrepreneur Andrew Horn (hospitality and tourism management '08), who most recently launched Tribute, a platform for people to send encouraging video messages to others, speaking with undergraduates in New York City; the New York Stock Exchange; students visiting with New York City entrepreneurs; and (from left) Vice President for Advancement Charlie Phlegar '78, '87, Apex CIE Executive Director Derick Maggard '13, Apex's Win Sheridan '94, former football coach Frank Beamer '69, and Apex's Brian Callaghan '93. Photos by Jim Stroup. For more NYC coverage, see page 22.

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LOGAN WALLACE

**The color guard**

It's great to see that the Corps of Cadets Color Guard is alive and well. I loved the article on their outreach efforts with elementary school students. There is nothing more important than giving back, and it is great to see this starting so early in life. *Ut Prosim* in action!

*Col. Dave DeMartino (civil engineering '86), San Antonio*

**On the quads**

Kudos to Alison Matthiessen and Juliet Crichton for their story on the Lomaka quadruplets. I am sure a lot of work went into the piece, and they should be proud of the result. It is interesting to see how different four people born in four minutes can be. I lost 30 minutes at work reading it and then going through the analyses at the end! As a former Collegiate Times reporter, I appreciate good research and good presentation, and I thought the readers got the benefit of both in this story.

*Ken Hancock (communication '85), Bassett, Virginia*

**Have something to say? Send us a letter at [vtmag@vt.edu](mailto:vtmag@vt.edu).**

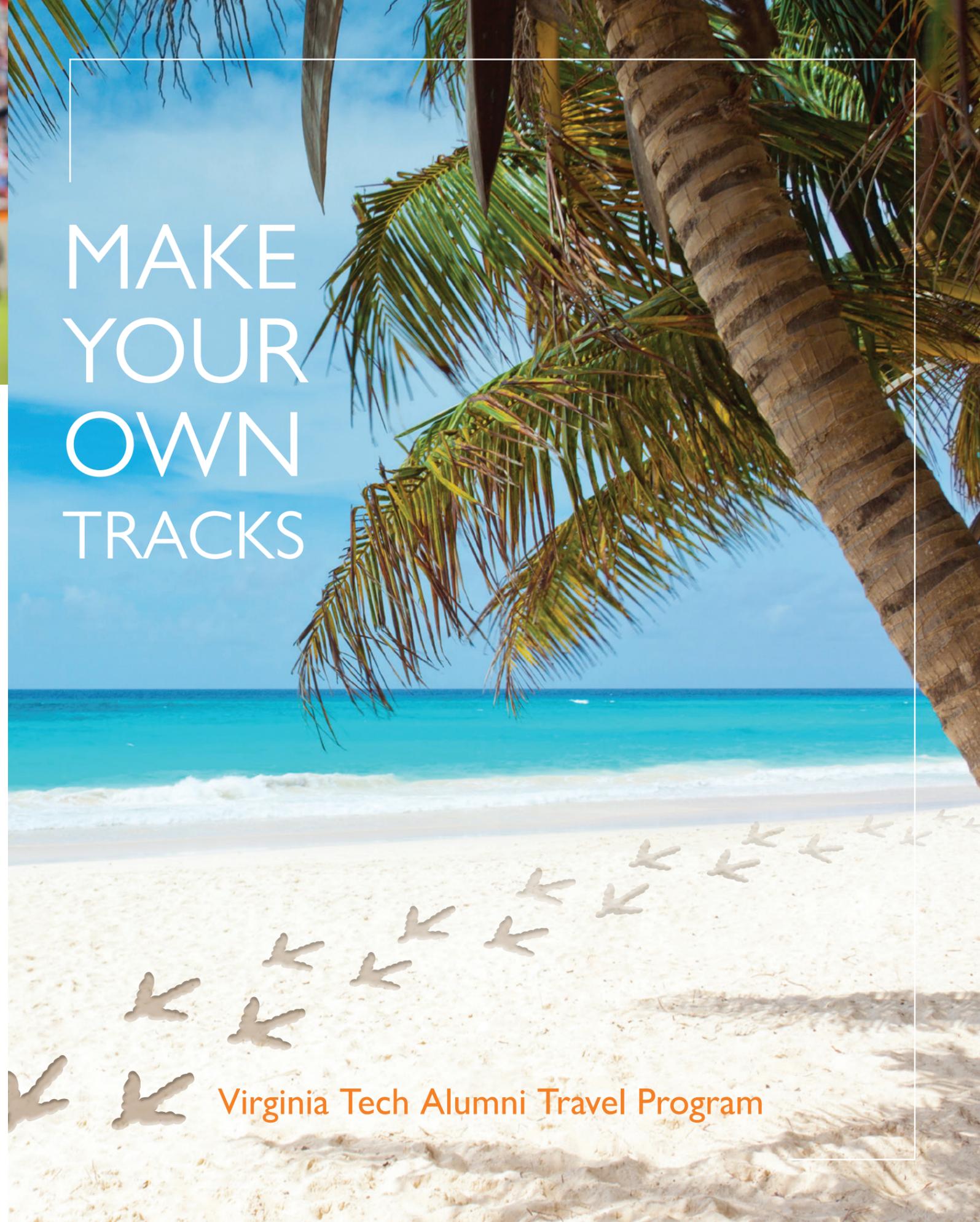
**Virginia Tech and Flint**

If there is an award for the Best Magazine Cover I've Ever Seen, your spring 2016 edition will surely win. What a precious little boy. To think that anyone—city officials, the governor, city emergency managers, the EPA—anyone—could cause harm to this child through actions or inactions, cover-up attempts, dereliction of duty, slowness of response, or otherwise, is a gross moral failure and is probably illegal at a minimum. Elected and appointed officials have no higher duty than the protection of citizens, especially children. In Flint, they all failed. I am so proud of my university and Professor Marc Edwards and his team for their involvement in the Flint crisis. Sometimes you just have to do what's right, especially for the children, and these Hokies did that. This is a wonderful example of the *Ut Prosim* philosophy lived every day at Virginia Tech.

*Dan Bailey (English '67), Danville, Virginia*

**Corrections:** In the spring edition, May graduate Leslie McCrea should have been listed as a contributor for the "Ology" article. In the Flint water story, the last name of Lee-Anne Walters' daughter, Kaylie Mosteller, was incorrect; and research scientist David "Otto" Schwake's full name was not presented in the copy.

# MAKE YOUR OWN TRACKS



**Virginia Tech Alumni Travel Program**

# Around the Drillfield

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TRICIA LOMBARDI

## Running for life

**Steps:** Rising junior and researcher Hannah Ricketts ran across America to honor a family friend.

One of Hannah Ricketts' most poignant memories is learning how to read with her family friend, Dee Head, who often cared for her because her parents worked odd hours as paramedics.

When Head fell ill with cancer, 11-year-old Ricketts and Head read one last book together over the course of several hours. Head died shortly thereafter. As memories of her friend began to fade, Ricketts searched for a way to commemorate her.

Ricketts, a rising junior majoring in human nutrition, foods, and exercise, found what she was looking for in a Virginia Tech lab and on the roads of America.

Last summer, Ricketts took part in the Ulman Cancer Run for Young Adults, a 49-day cross-country journey. She ran on a relay team and honored Head by writing her name on her calf.

Ricketts particularly remembers feeling altitude sickness during the run on a day she had dedicated to Dee. But then she thought about her friend and the fact that she didn't have the option to quit. "Now I feel like I have that mental toughness to push through anything," she said.

At the College of Agriculture and Life Sciences, Ricketts works in Professor David Bevans' lab, where she researches drugs that could be used to target precursors to cancer. Ricketts performs calculations that generate detailed graphics of cell response to drugs targeting certain enzymes, a less expensive and faster method than testing each drug.

"This research is ... a way for me to feel like I am giving back to Dee," said Ricketts.

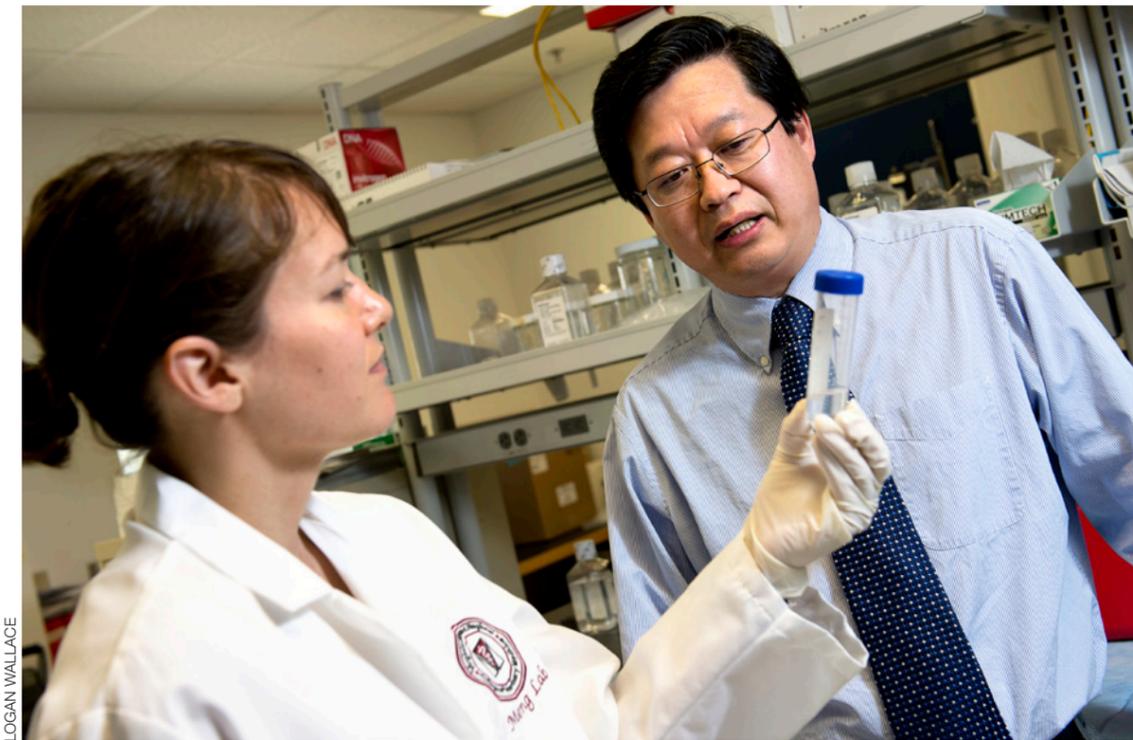
**Miles to go:**  
For the full story, visit [vtmag.vt.edu](http://vtmag.vt.edu).

### Central Steam Plant boiler conversion project to enhance campus sustainability efforts

As part of Virginia Tech's ongoing sustainability efforts, carbon emissions at the Central Steam Plant on campus will be reduced nearly 50 percent over the next four years.

By April 2020, Tech expects to replace the majority of the coal burned at the plant with natural gas, a conversion that, once fully implemented, has the potential to save the university more than \$1 million annually in operating and fuel costs.

Annually generating a steam output greater than 943 billion BTUs (British thermal units, one of which is approximately the heat produced by burning a single wooden match), the Central Steam Plant provides more than 100 campus buildings with a portion of their heat, hot water, and electricity needs.



LOGAN WALLACE

### Virology at Virginia Tech

Dr. X.J. Meng (above right), University Distinguished Professor of Molecular Virology at Virginia Tech, was elected a member of the National Academy of Sciences (NAS), one of the highest honors bestowed upon scientists in the U.S.

Meng is the fifth faculty member to be elected to the NAS while at Virginia Tech and the sixth in the university's history. With Meng's selection, 23 Virginia Tech affiliates have held membership in the national academies.

A virologist in the Department of Biomedical Sciences and Pathobiology at the Virginia-Maryland College of Veterinary Medicine, Meng studies emerging and reemerging viral diseases that impact veterinary and human public health. He was elected a Fellow of the National Academy of Inventors in 2014 and to the American Academy of Microbiology in 2012.

On the heels of Meng's honor, Virginia Tech hosted the 35th Annual Meeting for the American Society for Virology, North America's premier virology conference, from June 18 to 22. Virologists from around the world gathered on the Blacksburg campus to exchange information and collaborate with fellow researchers.

The timing of the meeting was particularly relevant as the global community confronts ongoing threats posed by the Zika virus disease.

In response to the disease, Virginia Tech's Office of Emergency Management and Schiffert Health Center, along with the Virginia Department of Health, are closely monitoring the Zika situation in the U.S. and abroad.

For an explanation of the viral disease and its risks, along with travel recommendations and online resources, the university has created a reference repository at [www.emergency.vt.edu/ready/zika.html](http://www.emergency.vt.edu/ready/zika.html).

## Tech exceeds \$100 million in record fundraising year

In its first fiscal year under a new advancement model for fundraising, communications, and alumni relations, Virginia Tech raised more than \$100 million in donations for the first time, surpassing the previous record of \$92.23 million set in fiscal year 2011.

The university raised \$101.45 million between July 1, 2015, and June 30, 2016, an increase of 13 percent over the previous year.

“Our fundraising success is a testament to the generosity of Hokies everywhere,” Virginia Tech President Tim Sands said. “Our alumni and friends take to heart the spirit behind our motto of *Ut Prosim* (That I May Serve), and this commitment to service sets Virginia Tech apart. I look forward to transformative change as we build on this milestone and continue to deploy our advancement model.”

Charlie Phlegar, vice president for advancement, said the record total is a credit to Sands’ vision and commitment, and will help ensure a bright future for Virginia Tech, building on the university’s strong foundation and tradition while creating a 21st-century land-grant model.

“Setting a fundraising record is exciting not for its own sake but because of what it means in terms of providing scholarships, support for our faculty, and amazing, hands-on learning experiences,” Phlegar said.

The transition to an advancement model aligns resources in support of the university’s vision with an aim toward fulfilling an increasing need for philanthropic support. Private support has become critical to the university as public funding has declined. The state provided 37 percent of the university’s total budget in 1998, but in the past fiscal year state support accounted for less than 18 percent of the total budget.

“I could not be more excited about where we are heading as a university and an advancement division,” Phlegar added. “These results show we’re generating the momentum by telling our story and representing the authenticity of the Virginia Tech brand while we continuously grow our engagement and our giving in today’s fiercely competitive college marketplace. What we’ve achieved is significant, and as we look toward next year we must stay focused on telling our story, reconnecting with our alumni and friends, and growing the percentage of our alumni who give back to the university.”

**\$101.45 million**

GIVEN TO THE UNIVERSITY IN THE PAST FISCAL YEAR, THE LARGEST AMOUNT EVER IN A SINGLE YEAR

**13%**

increase in philanthropy received compared to the previous year

**1,458**

DONORS INDUCTED INTO THE RELAUNCHED 1872 SOCIETY, WHICH RECOGNIZES THOSE WHO GIVE \$5,000 OR MORE FOR CURRENT USE EACH YEAR

**31,516** DONORS IN THE PAST FISCAL YEAR, INCLUDING CORPORATIONS AND FOUNDATIONS

**12** colleges or programs

raised **10%** more than at least **10%** the previous year

**\$7.12 million**

RAISED BY THE OFFICE OF ANNUAL GIVING, ITS HIGHEST TOTAL EVER



In college, Thomas Gardner (right), running with a teammate, learned how to blend his skills in writing and running.

COURTESY PHOTO

### Full stride:

To read several of Gardner’s entries, visit [vtmag.vt.edu](http://vtmag.vt.edu). Online, you’ll also find a story from the very first edition of Virginia Tech Magazine in 1978 that further highlights the well-established heritage of running and thinking on campus. Gardner would approve, for the 1978 story ends with reflections on Frost.

poet. But about a dozen years ago, he began running five mornings a week on the trails along Pandapas Pond and Poverty Creek, in the Jefferson National Forest just northwest of Blacksburg. Beginning in January 2012, he would return home from each run and, still dripping sweat, record journal entries, intending to produce a book.

He later revisited the daily ruminations—dwelling on the awareness of movement or the elements of nature on a given day—and used the riffs to shift into poetry, tying his thoughts to the writings of Thoreau, Frost, Eliot, Whitman, and Dickinson. The scheme allowed his poetic sensibilities to return, which “completely surprised and thrilled” him. The book, he said, unites the ways in which he is “most myself, most awake, most aware, most alive,” in his notions of body, teaching, poetry, and family.

From entry to entry, the hand-off from running to poetry is often invisible. For example, Gardner wrote about running with his brother, John, on the beach while on vacation.

*“Two bodies, alive in the other, but apart. ... Seeing him there, knowing that when we get back, he’ll be gone.”*—Aug. 6, 2012

Two months into Gardner’s daily journaling about running, John died in his sleep from a heart attack.

*“Cold rain this morning, 45 degrees, crying hard by the time I hit the pond.”*—Feb. 29, 2012

*“Now I’m alone, wordless, with the strangest sense of being set apart to mourn or notice.”*—April 11, 2012

Said Gardner, “Surely [his death] made me think I needed to keep doing [the book]. It was about him as much as anything.”

Running and poetry are synchronized, reliant on such shared techniques as tempo and poise. On a familiar trail or in a memorized poem, each step unlocks layers of meaning, imagery, and memory. “I feel spatially how the poem works and how it goes from here to there because I do it running as well,” Gardner said.

*“Two days ago, a few steps from where I am now, I saw a deer with a broken leg scramble away, then pause and meet my eyes. No fear on either of our faces.”*—Nov. 29, 2012

## A return

Eighteen months, and little else, separated Tom Gardner and his younger brother, John. They shared a bedroom, instant understandings, even a name: They were simply called “Tom-John.”

Tom became Alumni Distinguished Professor of English Thomas Gardner, author of “Poverty Creek Journal,” a 2014 work of literary nonfiction from Tupelo Press.

Central to the book is running, which the 64-year-old has done consistently for some 50 years. When Gardner was an undergraduate English major and cross country runner at Bucknell University, he intentionally separated his running self and writing self, as if the two were incompatible. Then a respected English professor shocked Gardner by congratulating him on his race times. “That gave me permission to try to bring these two parts of myself together,” Gardner said.

In the decades after landing a faculty position at Virginia Tech in 1982, Gardner determined that he was a better literary critic than



LOGAN WALLACE

# Visionary:

## Remembering Tech's 11th president

by LARRY HINCKER '72, '94 AND ALBERT RABOTEAU

**P**resident emeritus T. Marshall Hahn Jr., who transformed a primarily male military college into a comprehensive university, died May 29. He was 89.

A brilliant scientist, Hahn was a prodigy in all aspects of life. He earned a bachelor's degree in physics from the University of Kentucky at age 18 and, after serving a two-year stint in the U.S. Navy, received a Ph.D. in physics from the Massachusetts Institute of Technology at age 23. He was hired at age 35 as the president of then-named Virginia Polytechnic Institute (VPI), becoming the youngest president of any land-grant institution in the country.

After his academic career, Hahn distinguished himself in industry, retiring in 1993 from Georgia Pacific Corp. as CEO.

"President Hahn was a trusted and supportive friend who displayed unwavering support for Virginia Tech," said university President Emeritus Charles W. Steger. "During his transformative presidency, he opened access to higher education and laid the foundation to

expand our research programs so that we could become a major national research university. He was the best of the best."

When Hahn first came to VPI in 1954 as head of the Department of Physics, the entire institution enrolled some 4,000 students. When he became VPI's president, the school had slightly more than 6,000 students. By the time he left in 1974, enrollment was 17,400.

Hahn began his presidency on July 2, 1962, 100 years to the day of Abraham Lincoln's signing into law the Morrill Land-Grant Act, which changed American higher education. Hahn proceeded to change VPI: He diversified and broadened academic offerings; expanded admissions opportunities, particularly for women; and remade the physical plant.

Early on, Hahn recognized that change was needed in response to the Baby Boomer demographic bulge. He felt it was neither morally responsible nor practical for VPI to remain a male military college.



JIM STROUP

**Prodigious:** T. Marshall Hahn Jr. was named the president of Virginia Polytechnic Institute at the age of 35, serving from 1962 to 1974.

Although Hahn battled with alumni—and even with his own governing body—about dropping the mandatory military requirement, he prevailed in 1964. Applications immediately increased.

Hahn also fully opened VPI's doors to women in 1964. Even though VPI had partnered with then-Radford College to allow women enrolled there to take VPI degree programs not offered at Radford, VPI was functionally an all-male school. Hahn severed the Radford College connection, and female enrollment at VPI increased significantly.

Over the course of his almost 13-year presidency, Hahn added 30 undergraduate degree programs, including art, German, history, marketing, management, philosophy, sociology, and psychology, and no less than 20 graduate programs. He also created colleges of architecture, arts and sciences, and education.

This broadening of the institute's academic profile induced Hahn to begin calling VPI a university instead of a college. In April 1970,

the Virginia General Assembly conferred the university's current, formal title: Virginia Polytechnic Institute and State University.

On campus, Hahn oversaw the construction of approximately 25 major buildings, including huge dormitories to house the influx of students, Lane Stadium, and Cassell Coliseum.

Long after stepping down, Hahn still helped advance the construction of new buildings. Four buildings on the Blacksburg campus bear the Hahn name: Hahn Hall-South Wing, Hahn Hall-North Wing, the Hahn Hurst Basketball Practice Center, and the Peggy Lee Hahn Garden Pavilion and Horticulture Garden.

"His presidential legacy would inspire all of us even if he had never set foot on our campus again after stepping down," current Virginia Tech President Tim Sands said. "But, of course, that was not the case. His philanthropic legacy is truly extraordinary. I can think of no single person who has done as much for this university."

When Hahn left Tech in 1974, the Richmond Times-Dispatch wrote, "Constructive change has been the hallmark of the Hahn administration. His willingness to implement changes, even at the risk of severe criticism and ridicule to himself, is the primary reason VPI had grown and prospered."

In Virginia, Hahn's impact was felt far beyond Blacksburg. He chaired what later became known as the Hahn Commission, which advocated for regional government. Today, regional planning commissions are a lasting legacy of that effort. He was an early advocate of the Virginia Community College System, and Virginia Tech was the first college or university to accept community college students without loss of credit.

"The Virginia Tech family, the commonwealth, and beyond have lost a giant," said Debbie Petrino, rector of the Virginia Tech Board of Visitors. "Dr. Hahn was truly a visionary and transformational leader, as well as an incredibly warm and generous gentleman. He will be missed."

Hahn is survived by two daughters, Anne Hahn Hurst and Betty Hahn; a son-in-law, Doug Chancey; and three grandchildren, Erin McKelvy, Shane McKelvy, and Marshall Hurst. He was preceded in death by his wife, Margaret Louise "Peggy" Hahn, and son, William Hahn. □

*Larry Hincker '72, '94 is the former associate vice president of university relations, and Albert Raboteau is the director of advancement communications.*



LOGAN WALLACE

Linguistics expert Joseph F. Eska is a professor in the Department of English.

# Q: Are emojis a return to hieroglyphs?

**A:** In Blacksburg and among Hokie alumni, a lot of buzz surfaced when Virginia Tech launched a series of emojis at the end of April. What are we to make of these pictograms that the majority of us increasingly employ in our electronic communication? Such newspapers as the Guardian and such magazines as Wired have suggested that emojis are a new kind of language, perhaps akin to the hieroglyphs of ancient Egypt. Could this be true?

However much such a thought might appeal to some of us, the use of emojis is actually quite limited. They mostly function as indicators of how we feel, or they're simply used for fun. People who are close might establish a private code system of emojis, just like twins sometimes establish a private language between themselves, but the code is always limited in scope.

The use of emojis, then, can be compared to certain kinds of nonhuman animal communication, which generally has specific purposes. Bees are known to dance to inform the hive of the location of a food source, but the dance cannot express any other kind of information. Birdsong indicates location and conveys warnings and has a function in sexual selection, but the songs cannot express any other kind of information. This is not language in the human sense.

What of hieroglyphs? They are not a language, but a system that evolved over time to record the ancient Egyptian language in physical form. First of all, hieroglyphs were logograms, a

sign or character that represented a word or phrase. For example, the mouth-shaped symbol  stood for the word "mouth," which was pronounced "r" (hieroglyphs do not record vowel sounds, just as many scripts in use today in the Middle East do not). The use of , then, represented the sound "r"—that is, the shape acted as a phonogram, a symbol representing a vocal sound. Since the word for "towards" was pronounced the same way as the word for "mouth" in ancient Egyptian, the symbol  came to be used to spell the word for "towards," that is, "mouth" and "towards" were homonyms in ancient Egyptian, just like the numeral "four" and the preposition "for" in contemporary English.

Another example is the wave-shaped logogram , which represented the word "water" and was pronounced "n." But  could also be a phonogram to spell the word for "for" because it was pronounced as "n." Once hieroglyphs became a way to spell sounds, they could be combined to spell larger words. Thus the combination  spelled "rn," the ancient Egyptian word for "name."

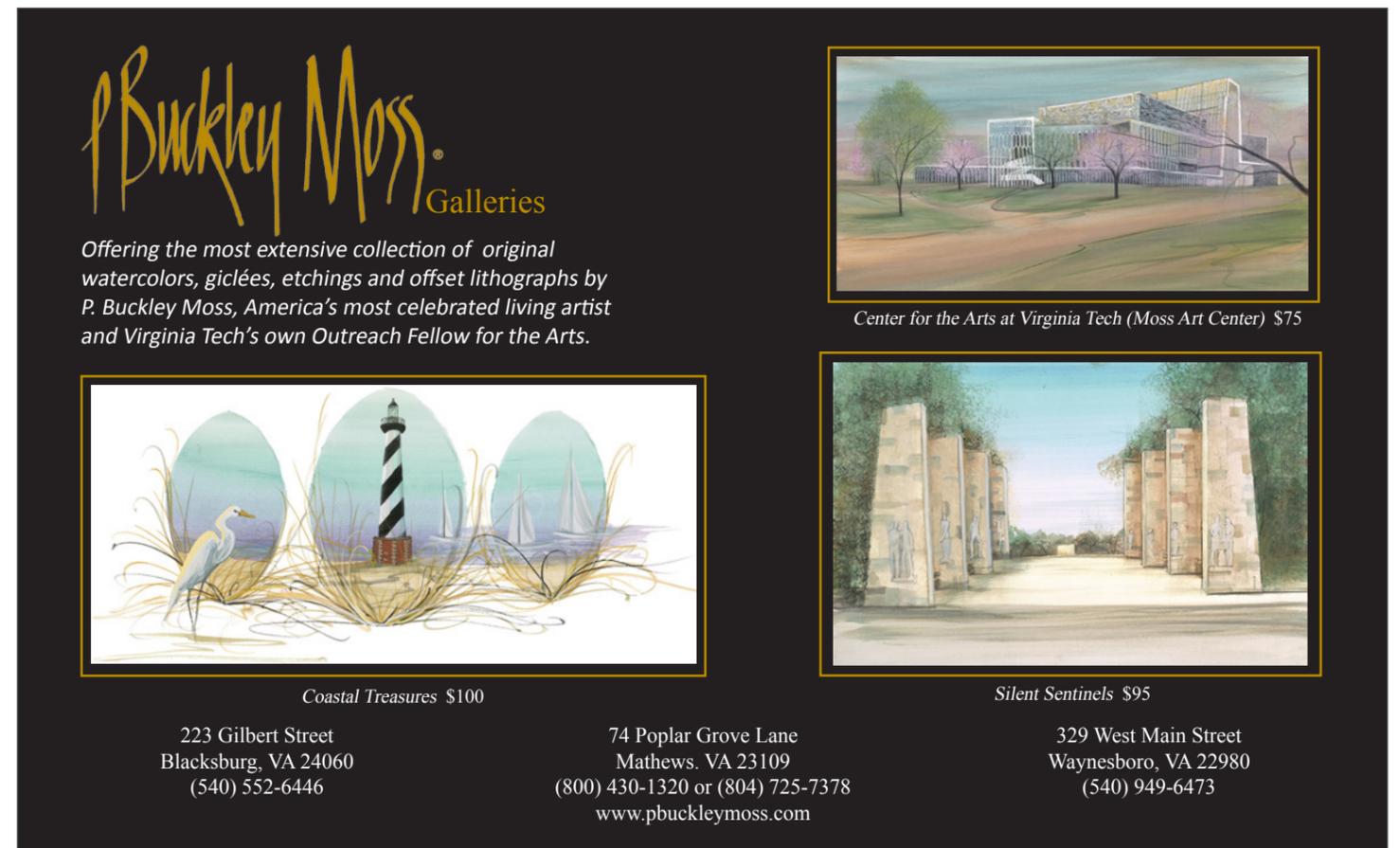
This process may seem cumbersome, but hieroglyphs allowed ancient Egyptians to compose numerous kinds of texts: literary and mythological tales, histories and chronicles, religious hymns, scientific treatises and legal and medical texts, poems and songs, personal letters and biographies, even graffiti. They wrote about anything that was important to them, just like we English speakers leverage the Roman alphabet today. And that is why emojis are not a new language—or anything like hieroglyphs. 😊



Wait, what?! Where did you get those???

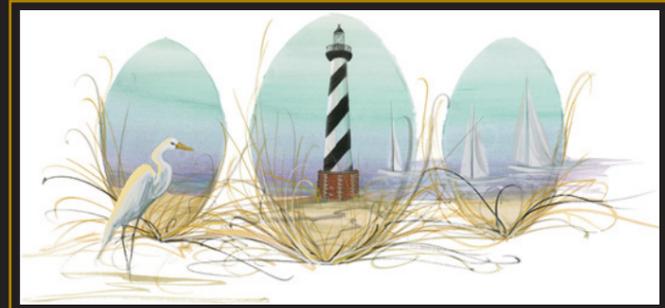
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**In step:** Cadet Kristine Irene Mapili (far right) seeks to learn inside and outside of the classroom.



# Leader, scholar

by CARRIE COX '99

**T**here are more than 270 cadets who joined the Virginia Tech Corps of Cadets with more than military service in mind.

Regardless of their career path, cadets in the Citizen-Leader Track, organized into the VPI Battalion, aspire to lead others. The battalion's vision is to graduate individuals with character, confidence, and wellness to lead successful lives in the service of others.

Cadet Kristine Irene Mapili, of Triangle, Virginia, a senior majoring in civil engineering, uniquely embodies the program's values. "Leadership is service, not position," said Mapili, who as VPI Battalion's executive officer was second in command. "Titles and ranks don't mean as much to me as whether or not someone genuinely cares about those around them."

Mapili's resilience, maturity, academic achievement (she carries a 3.5 GPA), and selfless commitment to others make her stand out. In fall 2015, as the 2nd Battalion's chief administrator for more than 320 cadets, she implemented an information-sharing network for activities that increased the cadets' involvement on campus. Additionally, she started a ride-sharing initiative for Thanksgiving and end-of-semester breaks, that helped cadets, especially first-year cadets, travel home. Because of her impact as a cadet, Mapili was recently named the VPI Battalion Outstanding Graduate for the Class of 2016.

Mapili's academic pursuits are equally noteworthy. In summer 2014, with partial financial support from the corps, Mapili visited Morocco, Sri Lanka, and Turkey as part of her 21st Century Studies program, building upon a year-long course sequence offered by the College of Liberal Arts and Human Sciences. More recently, Mapili won third place in the Marr Technical Paper competition at the Virginia Student American Society of Civil Engineers' conference, the first time since 2012 that a Virginia Tech student had placed in the competition. As a member of the university's Flint Water Study Team, Mapili wrote her paper on corrosion in copper pipes.

"Mapili clearly represents the type of scholar and leader that Virginia Tech and the Corps of Cadets strive to develop: a person who seeks to learn inside and outside of the classroom and builds upon a foundation of serving others," said Capt. James Snyder, deputy commandant for the 2nd Battalion.

After a summer internship with engineering firm Hazen and Sawyer, Mapili will return to campus as a fifth-year engineering student. Following graduate school, she plans to join the Peace Corps. □

*Lt. Col. Carrie Cox (M.S. civil engineering '99), formerly the Corps of Cadets' executive officer, now teaches Air Force ROTC at Tech.*

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**Scaling success:** Joshua Bell '16 (left) and rising senior Abigail Smith (top right) have both benefited from gifts honoring Fred D. Durham (bottom right), a 1921 graduate.

## Gifts enable students' ambitions

by ERICA STACY

Motivated by a proud family tradition, Joshua Bell (mechanical engineering '16) landed a position with the Naval Surface Warfare Center Dahlgren Division, becoming the fifth generation in his family to work at the base.

He may represent the fifth generation, but he also represents a first. "I am the first engineer," said Bell, a native of Warsaw, Virginia. "My grandfather, who also worked at Dahlgren, is very proud. I always wanted to be an engineer. Virginia Tech helped me make that happen."

An only child, Bell was the first in his immediate family to attend college. By carefully saving his income from summer jobs and working hard to earn scholarships, he not only helped pay for school, but also graduated with no debt, an exceptional achievement these days.

As a three-time recipient of the Fred D. Durham Scholarship, Bell also was able to take advantage of a study-abroad experience and an engineering internship in Pennsylvania, opportunities he otherwise might have missed had he needed to work more hours to pay for his education.

"It was humbling and inspiring to know that, thanks to someone's generosity, this scholarship was available for students like me," Bell said. "I think it made me work even harder. I hope that I will have the chance to do the same someday [and help others]."

The Fred D. Durham Scholarship was established by Eleanor Durham Davenport of Richmond, Virginia, and her family to honor her father, the namesake of Virginia Tech's Durham Hall and a member of the Class of 1921 who earned his bachelor's in civil engineering. Durham owned C. Lee Cook Co., which merged

with three other firms to form Dover Corp. His family's generous gifts also created the Davenport Leadership Scholars program.

"Motivation for my support of the Davenport Leadership Scholars and the Fred Durham Scholarship comes from my father ... and the love that he had for Virginia Tech," Davenport said.

The renewable, merit-based Davenport Leadership Scholar awards are given to first-year students in the College of Engineering. One such scholar is Cleveland native Abigail Smith.

A rising senior majoring in industrial and systems engineering with a minor in green engineering, Smith harbors career interests focused on the intersection of green engineering with public policy, including environmentally conscious supply-chain solutions, as well as organizations, law firms, and businesses focused on societal impact. Smith has interned for two summers as a Federal Technology Summer Scholar at Deloitte Consulting.

"This scholarship has given me the opportunity to concentrate on my studies and explore opportunities in service and research," Smith said of the Davenport award.

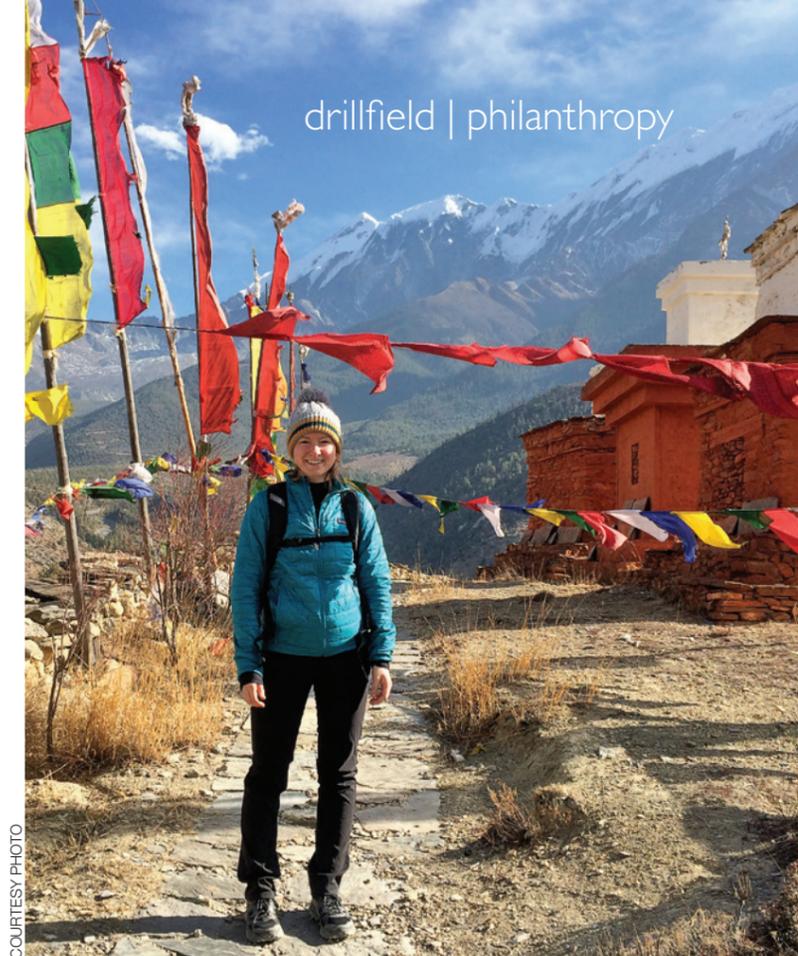
Smith's experiences include co-founding Service Without Borders, an interdisciplinary student-led organization she currently leads as president. In January, Smith traveled with the organization to Nepal to assess sites damaged in the 2015 earthquakes and aftershocks, and the group developed ideas for improving the situation. During a return trip this summer by six students and two professors, those ideas will be implemented in partnership with the Nepalese.

"I am grateful for this scholarship and this university," Smith said. "I feel so supported by the academic community at Virginia Tech."

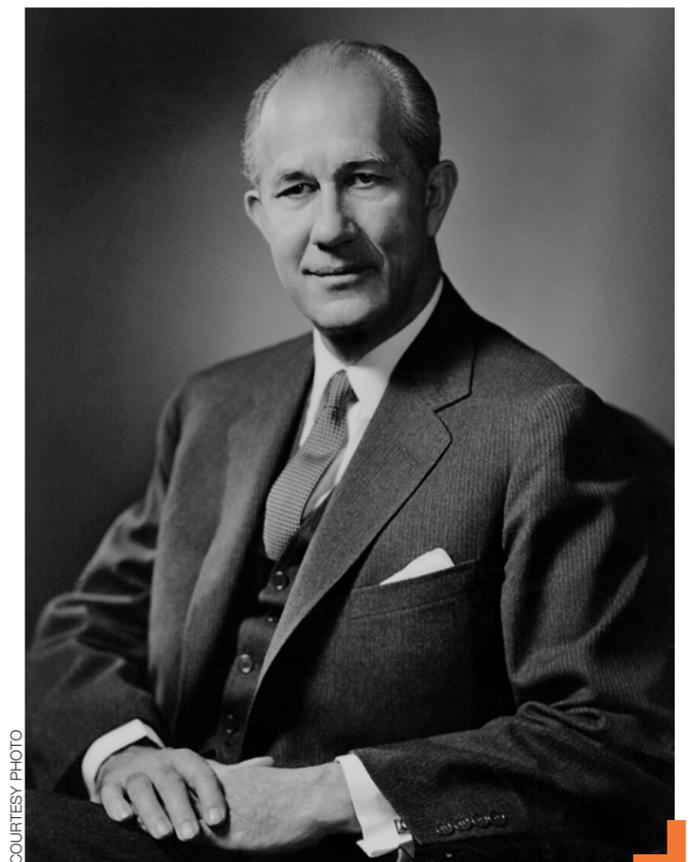
For Davenport, supporting students like Smith and Bell is a way to stay connected to her father's university and to make a lasting impact.

"It is important to me to help those students who warrant the help, with the idea that they will then pay it forward and support Virginia Tech in the future," said Davenport, whose grandsons, Frederick Shivel and Glen Shivel, both earned bachelor's and master's degrees from Virginia Tech. "Tech has meant so much to my entire family, and it warms my heart to see the remarkable growth of the university. It behooves all of us to give back to Virginia Tech to create future generations of leaders." □

*Erica Stacy is a writer and editor in University Relations.*



COURTESY PHOTO



COURTESY PHOTO

# The value of an athletic scholarship

by JIMMY ROBERTSON

Ken Ekanem is set to start as a defensive end for the Virginia Tech football team this fall. In his previous two years, he has racked up nearly 100 career tackles—24 for a loss—and 14 career sacks. He was named All-ACC once and earned his degree in management with a concentration in entrepreneurship, innovation, and technology management this past May.

The Hokie Nation helped him do all those things.

Donors to the Hokie Club's Annual Fund—the account that pays for tuition, fees, and room and board for the university's scholarship athletes (all 479 of them in the 2015-16 year)—provided for Ekanem's education.

"I'm very appreciative," he said. "I don't pay room and board. All of that is covered. It's a lot less stress on my family and me. I have all the tools I need to succeed in school and on the field."

Ekanem needed more than a scholarship to achieve his potential. The sports medicine and strength and conditioning staffs helped him overcome an injury he suffered as a high school senior, and the nutrition staff helped him lose the 15 pounds he gained during the recovery. And Student-Athlete Academic Support Services staff kept him on track academically.

"Tutoring was big for me," he admitted. "I got my schedule right and got my work ethic right. I was a decent student in high school,

but you can't be a decent student and succeed at Tech. So they really helped me develop into a better student."

Yet the price of helping student-athletes realize their potential keeps rising. As a self-supporting auxiliary of the university, the athletics department receives no state funding, operating solely on donations and revenue from ticket sales and advertising apparel contracts. And in the past five years, the price tag for scholarships has increased by 62 percent. The athletics department spent approximately \$14.4 million on scholarships for the 2015-16 academic year, while scholarship donations for the year came in at \$9.8 million.

To address the shortfall, football and men's basketball season-ticket holders seated in designated "scholarship sections" in Lane Stadium and Cassell Coliseum will be asked, beginning in 2017, to contribute a minimum per-seat scholarship gift each year to secure a priority location. Both venues will then undergo a complete re-seating.

The Hokie Club also is introducing an easier-to-understand priority points program and an annual giving benefits chart that outlines benefits such as parking, exclusive event invitations, and the ability to purchase postseason tickets.

To be eligible for annual benefits, donors will be asked to give to the Hokie Scholarship Fund by March 31, 2017. To be eligible for

benefits related only to men's basketball, donors will be asked to give by June 30, 2017.

Meanwhile, the Hokie Nation should never discount how much their donations mean to student-athletes. Just ask women's basketball player Tajjah Campbell.

"I never imagined that someone like me, coming from where I came from, would be here on scholarship," Campbell said. "I get super emotional thinking of how grateful I am. That there are people who would do this for people who come from many different backgrounds is amazing." □

*Jimmy Robertson, the athletics department's director of content creation, is the editor of Inside Hokie Sports magazine.*

## Ken Ekanem

Year  
**Redshirt senior**

Major  
**Management**

Hometown  
**Centreville, Virginia**

Tuition and fees  
**\$12,486**

Room and board  
**\$8,290**

Books  
**\$800**

Cost-of-attendance gap  
**\$3,411**

Total\*  
**\$24,987 (in-state)**  
(out-of-state equivalent:  
\$41,985)

\*Reflects projected 2016-17 scholarship costs and additional expenses



### Classroom performance, spring 2016

The average **team GPA** was **3.14**; the average cumulative team GPA is 3.09

**15 teams** achieved a **3.0 GPA** or better; **15 teams** maintain a **cumulative 3.0** or better

**171** student-athletes made the **Dean's List** (3.4 GPA or better)

**21** student-athletes earned a **4.0**, and **4 of them** maintain a cumulative 4.0

**59 percent** of student-athletes earned a **3.0 GPA** or better; **53 percent** maintain a **cumulative 3.0** or better

### Scholarships, by the numbers

**479** scholarships provided

**62%** increase in scholarship costs over five years

**2015 revenue** from scholarship donations: **\$9.8 million**

**2015-16 scholarship costs** for Tech athletics: **\$14.4 million**

# Diplomatic

*A backstage look at authenticating degrees, one by one*

by ALISON MATTHIESSEN '05, '16  
photos by MICHAEL FOLTA

A freshly printed diploma represents the culmination of coordination, technical support, and long hours of work—and not just for the graduate.

Leading up to commencement each year, the Office of the University Registrar prepares thousands of diplomas. According to Clyde Cridlin (see picture “a”), associate registrar for academic programs and compliance, the timeline is as follows:



## August 2014

Students apply for a degree at the beginning of their junior year. One such student was Richard “Trey” Good (at right, with family members), of North Dinwiddie, Virginia, pursuing a bachelor’s degree in packaging systems and designs, one of the university’s newest majors.

## January 2016

Throughout the semester, the registrar’s office monitors whether students who intend to graduate in May are on track.

## March 2

Students must apply for spring graduation by March 2 in order to receive a diploma and be listed in the commencement program. Tech is one of the few large universities to hand out actual diplomas during commencement.

## March 24- April 15

The office finalizes commencement arrangements, such as designating college and department representatives for diploma distribution. After faculty members enter tentative grades, the office checks graduation statuses.

## April 21

The office receives 5,091 diplomas from an outside vendor.

## April 22-27

Staff members proofread diplomas, ordering corrected versions as necessary.

## April 27

The window to enter tentative grades closes at midnight. The office conducts another clearance check.

## May 9-13

**a** Each envelope is labeled with a student’s name, major, and commencement year and term. Diplomas are sorted according to the commencement schedules. As additional degree clearances are performed, staff members adjust diplomas.

## May 13

**b** 5 p.m.: As faculty submit grades, the office runs a final degree clearance. Staff members check for University Honors requirements and levels of distinction, such as cum laude. If spring grades change a level, the diploma is replaced with a letter promising an updated diploma by mail.

**c** Late into Friday night and early Saturday morning, the office conducts a final check, verifying the accuracy of each diploma and ensuring that each envelope is in the appropriate box.

## Saturday, May 14

Even though some ceremonies take place on Friday, diplomas can’t be distributed until Saturday, regarded as the official commencement day by the university’s accrediting bodies.

## **d** 6:30-8:30 a.m.:

Registrar Rick Sparks begins distributing diplomas. Representatives, including Stephanie Hart, director of the College of Natural Resources and Environment’s (CNRE) Advising Center, retrieve their boxes.

## **e** 8:30 a.m.:

As other ceremonies are held across campus, CNRE Dean Paul Winistorfer congratulates Good in the Moss Arts Center. □

*Alison Matthiessen (communication '05, M.A.'16) is the communications coordinator in the Office of the Executive Vice President and Provost.*



# RISE

Hokies on Wall Street  
and the Apex Systems Center for  
Innovation and Entrepreneurship

# STOCK



NEW YORK STOCK EXCHANGE

**F**ew settings are more symbolic than the New York Stock Exchange (NYSE) to celebrate Virginia Tech's rapidly expanding initiatives in innovation and entrepreneurship.

A single moment—4 p.m., Tuesday, April 26, to be exact—captured the university's momentum, for that was when university representatives and alumni rang the exchange's closing bell.

The bell-ringing was sponsored by Tech alumni at two NYSE-listed companies: HubSpot, whose chief financial officer is John Kinzer (accounting '90), and On Assignment, which acquired Apex Systems, the information technology staffing company founded in 1995 by Brian Callaghan (psychology '93), Win Sheridan (political science '94), and Jeff Veatch (finance '93) and that Ted Hanson (accounting '91) joined as chief financial officer in 1998.

Said Sheridan, "Ringing the closing bell at the New York Stock Exchange was a wonderful way to mark the momentum and

impact that the Apex Systems Center has had in inspiring and nurturing entrepreneurs and innovators at Virginia Tech."

Behind the bell is a tale of how the forces of innovation are shaped at Virginia Tech.

In 2014, Callaghan, Hanson, Sheridan, and Veatch contributed \$5 million to create the Apex Systems Center for Innovation and Entrepreneurship (Apex CIE) at Virginia Tech. Situated in the Pamplin College of Business and charged with a mission to instill innovative, entrepreneurial thinking in students across campus, the center provides hands-on, educational training through the delivery of experiential curriculum and extracurricular programs.

Apex CIE Executive Director Derick Maggard (M.S. industrial systems engineering '13) said the center nurtures a mindset that serves both the young alumna leading a startup and the mid-career alumnus spinning a company out of a large corporation. "We believe that innovation and entrepreneurship can be a powerful force in organizations of all types and sizes, in established busi-

nesses as well as new ventures. It takes the entrepreneurial mindset to solve problems, make an impact, and innovate," he said.

Such thinking is embodied in the university's physical presences. With Virginia Tech's proximity to federal agencies and international communities in the National Capital Region, coupled with the Health Sciences and Technology Innovation District in the Roanoke-Blacksburg region, the university is creating innovation hubs—vast living-learning districts that will become a magnet for talented partners and students.

"Everybody wins when successful graduates partner with Virginia Tech to provide resources to educate the next generation of students both inside and outside the classroom," said Theresa Mayer (electrical engineering '88), vice president for research and innovation. "We are building innovation spaces and mentor networks to support active sharing of ideas and information among our students, faculty, staff, alumni, and partners. This is creating the environment and culture to collaborate, innovate, and start companies."

Alongside the Apex center—a driving force on campus—a number of activities prepare students to be adaptive and entrepreneurial.

- The **Innovate living-learning community** seeks to discover, prepare, and connect the next generation of entrepreneurial leaders. Students immerse themselves in the many facets of entrepreneurship: brainstorming ideas, concept development, demographic research, product design, writing a business plan, project management, problem-solving, critical thinking, securing funding, creating a marketing campaign, and final implementation.
- During each academic year, visiting **entrepreneurs-in-residence** live in an apartment connected to the Innovate living-learning community. Representing diverse fields, the entrepreneurs are chosen based on their success in starting and managing enterprises and their commitment to building Virginia Tech's entrepreneurial ecosystem.
- The **Global Entrepreneurship Challenge**, organized by business incubator VT KnowledgeWorks, allows student teams to present concepts to a panel of local business leaders. At the most recent competition, the three top prizes (in the outstanding tangible product, information technology/services, and people's choice categories) went to teams that had benefited from Apex CIE programs, support, and curriculum.
- The annual **Union Innovation Challenge**, organized by the Apex center in partnership with Union Bank & Trust, inspires students and others to submit innovative proposals for a chance to win funding and start-up services from Union. Carilion Clinic participated in organizing the 2016 challenge, in which six teams pitched ideas for new healthcare, wellness, or medical devices.
- **Entrepreneur treks** routinely expose students to venture capitalists and other business movers and shakers in various innovative and startup communities. The treks have taken students to New York, Washington, Boston, San Francisco, and Atlanta.
- The **minor in entrepreneurship-new venture growth** focuses on the knowledge and skills needed to create new ventures and lead their early growth. Students learn how to convert ideas into business successes, particularly in the context of engineering and science-based technology commercialization.
- The annual **Hokies on Wall Street networking reception**, held every spring, has drawn more than 200 alumni in recent years. Initially an event for alumni working on Wall Street, it has

expanded to include alumni in such fields as accounting, real estate, marketing, and publishing.

- **Virginia Tech alumni** play pivotal roles in the university's innovation and entrepreneurship programs. They serve as classroom speakers, career mentors, and entrepreneurs-in-residence. They serve as the university's links and advocates to the business and professional communities, and they give back to the university through advisory board service, job placement assistance, and philanthropic gifts.
- In **capstone projects**, multidisciplinary teams of faculty and students work alongside industry representatives to ideate on problems, critically assess opportunities, and propose solutions based on market potential.
- The **Virginia Tech Enterprise Forum** gives entrepreneurs and innovators a valuable network and resources to connect with the broader community. The forum connects entrepreneurs with management expertise, joint-venture partners, business services, capital, and other critical resources.
- **Internships** play a critical role. Companies work with Tech and Apex CIE to access talented students who possess deep disciplinary skill sets as well as broad competencies in teamwork, leadership, problem-solving, and innovation.

### The experience of education

For today's Virginia Tech student, then, the curricular and extracurricular offerings provide something perhaps more valuable than a GPA: experience.

"Experiential entrepreneurial education goes beyond developing start-up companies. It builds the skills needed for a fulfilling and resilient life and career," said Virginia Tech President Tim Sands. "Our graduates must have a global perspective, coupled with the ability to evaluate and act on new information as the economy evolves and new opportunities develop over the next several decades."

## THE ENTREPRENEUR TREK

by ZACHARY HOOPES '16

**M**ore than a dozen current students, coordinated by Apex CIE, traveled to New York City to join in the bell-ringing, networking reception, and more. The students visited seven companies—household names such as ESPN and Goldman Sachs, as well as Hokie-led companies such as Betaworks and Tribute.

Zachary Hoopes (finance '16), the account manager of PRISM, Pamplin's social media organization, is returning in the fall semester to finish a management degree. After returning from the New York City trip, he said the experience was an invitation for students to examine "what we want out of our education, our careers, and beyond." Virginia Tech Magazine asked Hoopes to visit with his fellow travelers about their experiences.

### How did the trip change your perspective?

**Madison Blevins**, *finance major and rising junior*: "It showed me the endless possibilities that I have during the rest of my time at Tech. We got to meet really passionate and successful alumni who want nothing more than to help other Hokies achieve their dreams. I plan to be more intentional when I interact with people on campus, because I never know who I might be able to help."

### Did you make any lasting relationships?

**Maddie Kulik**, *computer science major and rising junior*: "I made a good connection with Alex Obenauer (the Mindsense co-founder and CEO who earned a Tech computer science degree in 2012), which was a cool moment for me because I heard him speak at an engineering conference in the fall, and I thought he was an incredible speaker and a very humble person. Simply making that connection with someone who is so successful, but also struggled in the same ways I am as an undergrad, is awesome. I am actually meeting with him for coffee [soon]."

### What was the best piece of advice you received?

**Mckenzi MacDowall**, *finance major and rising senior*: "I was talking to an alumnus at Goldman Sachs and he said that Hokies do very well when they go into firms like [his]. I asked what sets us apart, and he said that Hokies have grit and a lack of a sense of entitlement. He told us to be humble and work hard—so that is something I will definitely take with me going into my internship this summer."

### What exceeded your expectations?

**Elisabeth Cox**, *accounting and information systems major and rising senior*: "I realized that the Hokie family does really exist everywhere, and that alumni are just as interested in me and my life as I am in theirs."

### What surprised you?

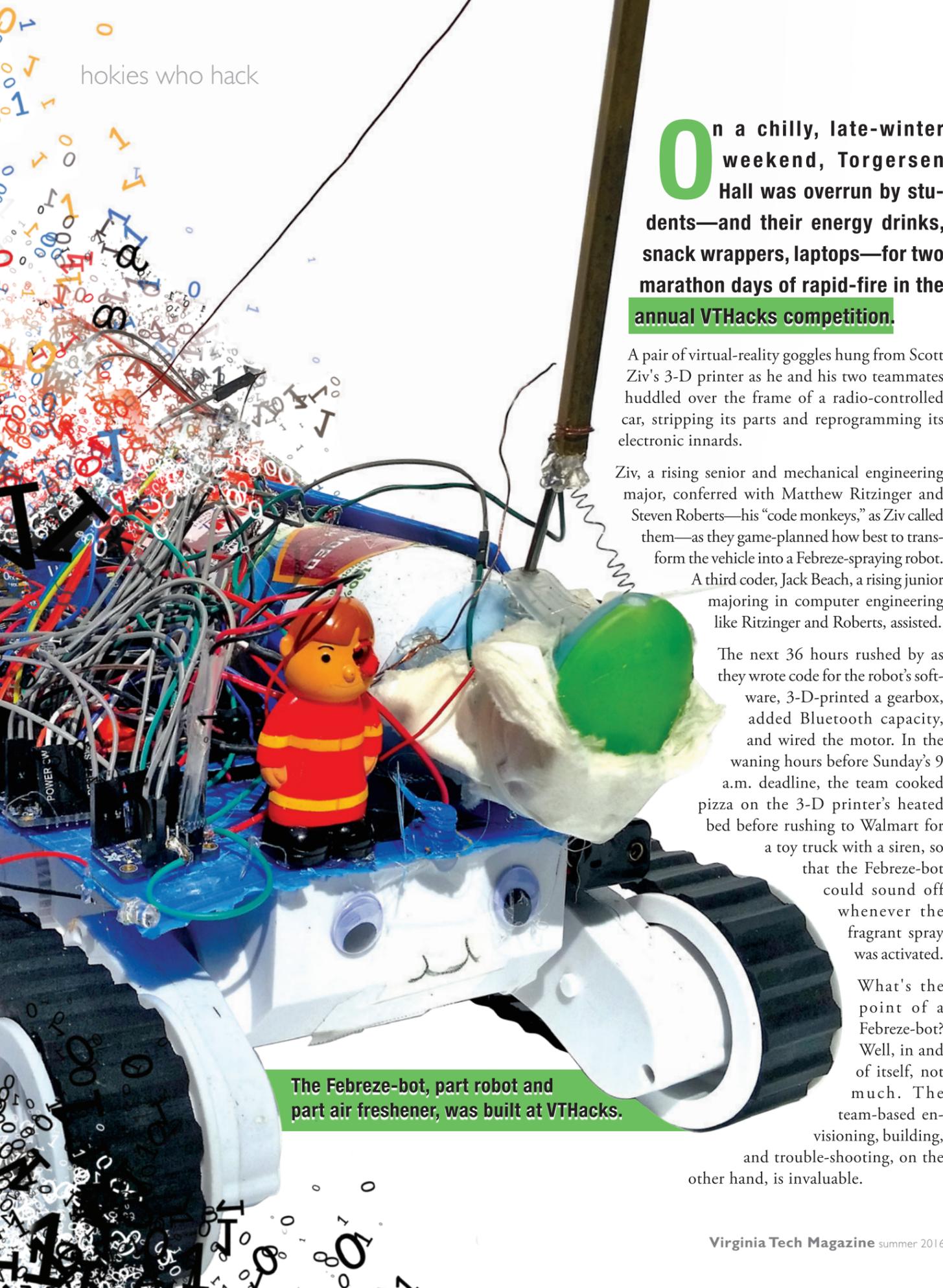
**Christine Smith** (finance '16): "It is refreshing to meet people whose lives have taken them a million different directions, but who have become incredibly successful by pursuing their passions and seeking what they thought was interesting. I hope that my life takes a similar trajectory, where I constantly feel inspired and let that inspiration lead me." □



# HACKERS

by MASON ADAMS

For some, the term “**hacking**” may bring to mind the image of shadowy figures stealing data or planting viruses. But among programmers and innovators, the term has come to represent the **concept of tinkering and repurposing objects to make them work better.** As coding assumes a more central role in the digital world around us, Virginia Tech exists both as a destination for talented hackers and as a guiding force to harness that ability for the greater good.



The Febreze-bot, part robot and part air freshener, was built at VTHacks.

**O**n a chilly, late-winter weekend, Torgersen Hall was overrun by students—and their energy drinks, snack wrappers, laptops—for two marathon days of rapid-fire in the annual VTHacks competition.

A pair of virtual-reality goggles hung from Scott Ziv's 3-D printer as he and his two teammates huddled over the frame of a radio-controlled car, stripping its parts and reprogramming its electronic innards.

Ziv, a rising senior and mechanical engineering major, conferred with Matthew Ritzinger and Steven Roberts—his “code monkeys,” as Ziv called them—as they game-planned how best to transform the vehicle into a Febreze-spraying robot.

A third coder, Jack Beach, a rising junior majoring in computer engineering like Ritzinger and Roberts, assisted.

The next 36 hours rushed by as they wrote code for the robot's software, 3-D-printed a gearbox, added Bluetooth capacity, and wired the motor. In the waning hours before Sunday's 9 a.m. deadline, the team cooked pizza on the 3-D printer's heated bed before rushing to Walmart for a toy truck with a siren, so that the Febreze-bot could sound off whenever the fragrant spray was activated.

What's the point of a Febreze-bot? Well, in and of itself, not much. The team-based envisioning, building, and trouble-shooting, on the other hand, is invaluable.



**"LIFE AND ART ARE ABOUT PROBLEM-SOLVING."**

—Scott Ziv

HELEN ZHANG

Student Scott Ziv solders wiring on the Febreze-bot.

To Ziv, the process is emblematic of a larger truth that a former art teacher once shared with him: "Life and art are about problem-solving." As Ziv said afterward, the machine worked "flawlessly, in the worst possible way." In other words, they're still learning.

Increasingly applied to diverse fields, hackathons have a unique way of generating teamwork, as participants of varying backgrounds, skill levels, and expertise rush to complete a project by a deadline. In a sense, a hackathon is something of a small-scale model for what Virginia Tech hopes to accomplish with its Destination Areas, which encourage interdisciplinary problem-solving.

**COOL COLLABORATION**

Both for his creativity and his striking blond afro, Jordan White stood out among the students who organized VTHacks. White, a rising senior and former president of the Virginia Tech Entrepreneur Club, first attended a hackathon at Yale University during his freshman year at Tech. "The amount you could learn and create in one

weekend was really cool and exhilarating," White said.

The Entrepreneur Club hosts its own spin on a hackathon called "Built with: \_\_\_\_." Attendees write down five skills on sticky notes, with their contact information on the back, and post them on a large board—essentially providing a list of resources available on demand. Students then collaborate on ideas and projects, with many individuals floating between groups as their skills are needed. The February event drew 200 students representing 47 different majors.

White, who is majoring in computer science with a minor in industrial design, co-founded a design and development company with fellow computer science major Ojas Mhetar and another friend after a 2014 hackathon at which the team created a full-fledged iPad app to teach college-aged bachelors how to cook 15 basic meals.

The hackathon trend reflects the growing presence of computers in our lives. According to a 2015 report published by Ericsson, a Swedish technology firm that supports

the telecommunications industry, the number of smartphone subscriptions will grow from 2.6 billion today to 6.1 billion by 2020. Additionally, computer technology is increasingly present in everyday objects—the so-called Internet of Things, or IoT for short.

This exponential digitization offers a world of opportunities leveraging large data sets to improve human lives—and also opens doors for the unethical or downright malevolent use of data.

Two of Virginia Tech's new Destination Areas, Data and Decision Sciences and Integrated Security, aim to unleash the university's most talented innovators on problems in those spheres. The former involves the computer-enabled collection and analysis of datasets, which will boost living quality by providing otherwise invisible insights into our world. The latter is closely related, protecting that data and other assets while balancing privacy concerns.

### HACKING FOR HEALTH

In April, the Center for Business Intelligence and Analytics (CBIA) in the Pamplin College of Business partnered with AT&T to sponsor the Mobile Apps for Global Good in Healthcare hackathon, designed to lead to smartphone applications that improve health, reduce costs, and enhance the patient's experience.

In a mere 24 hours, the winning team—Jonathan Briganti, a rising senior majoring in neuroscience; Brian Elliott, a double major in electrical engineering and computer engineering who will graduate in December; and Madeline Yaskowski, a rising sophomore majoring in public relations—built an app to track mental health and detect early warning signs of dementia and Alzheimer's disease. Along with a \$2,500 prize, the team

won the attention of healthcare provider Carilion Clinic, which has continued to work with Briganti and Elliott to further develop the app.

That transcendent outcome is the type of result that CBIA executive director Linda Oldham wants to encourage. Oldham is guiding a new one-year master's degree program that confers a master of science in business administration with a concentration in business analytics. The 30-credit-hour program is split evenly between business and analytics cores, with a capstone project whose structure somewhat resembles an extended, narrowly focused hackathon.

About 20 students are signed up this summer for the pilot program, whose sponsors include IBM, Altria, HP Enterprise Services, Beyer Automotive, and Carilion Clinic.

Companies will challenge the student cohort with a range of data and problems, and the students will form interdisciplinary teams to bid on the projects. The students will meet weekly with their corporate sponsors, while learning from Oldham how to build a business case that can yield a high return for the sponsor

**A student team built an app now being adopted by Carilion Clinic.**

### BIG FORECASTS

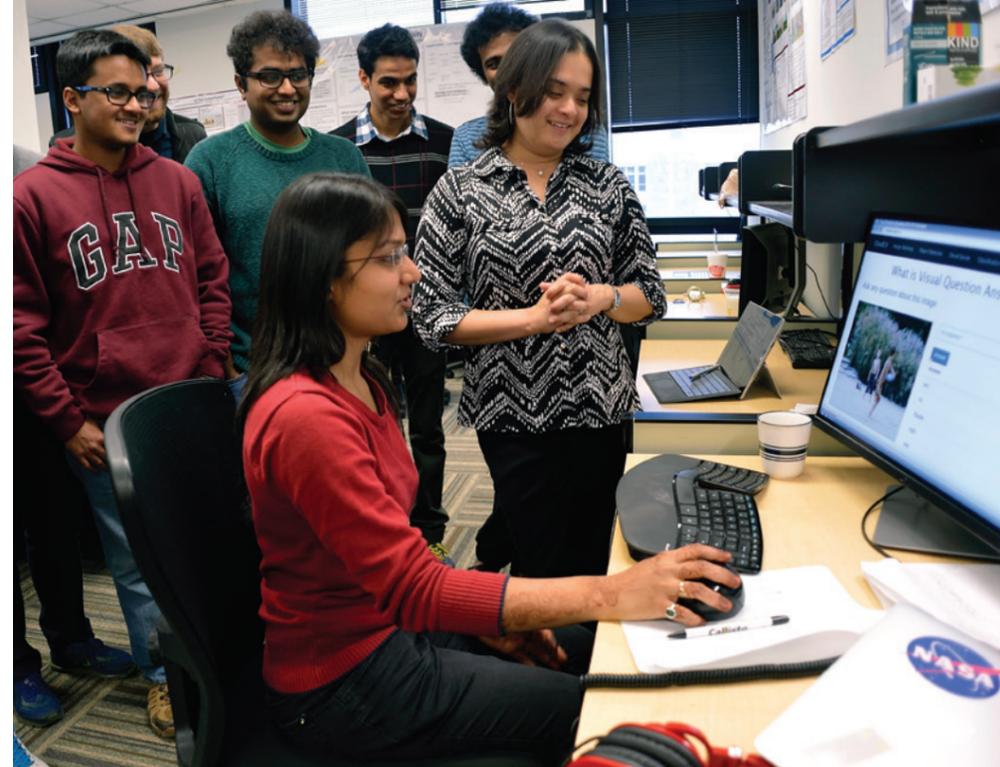
Besides coding and hacking, Virginia Tech teams have also competed well in contests to analyze large datasets.

Five years ago, Naren Ramakrishnan, the Thomas L. Phillips Professor of Engineering, and other faculty members from the departments of Computer Science, Statistics, Electrical and Computer Engineering, and Mathematics, founded the Discovery Analytics Center (DAC) as a home for collaborative research. Along the way, they created new courses and a curriculum that now trains students in big-data techniques.

The center's students often win data-science competitions. One 2013 challenge involved a dataset of user-submitted reviews from online review company Yelp, which asked teams to organize the information in novel ways. The Tech team, one of four winning teams, created a program that visualizes reviews such that semantically related words are placed close to one another, thus improving users' understanding of a large number of reviews.

Another DAC-based team developed EMBERS (early model-based event recognition using surrogates) for Intelligence Advanced Research Projects Activity, a federal agency known as IARPA. Declared the winner of an IARPA forecasting tournament, EMBERS uses algorithms analyze a continual feed of open-source data to forecast significant societal events such as protests and disease outbreaks around the globe. (To read a winter 2014-15 magazine story about EMBERS and DAC, visit [vtmag.vt.edu](http://vtmag.vt.edu).)

"Whatever degree you pursue at Virginia Tech, it is important to have some level of data literacy, to understand how data undergirds your discipline, and to use the methods of data science to complement your disciplinary work," Ramakrishnan

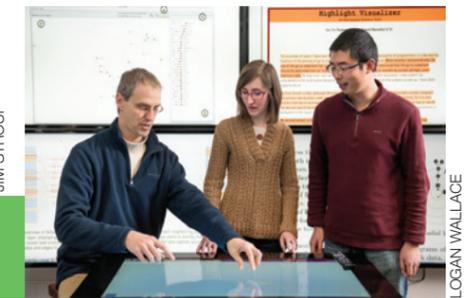


**Students and faculty at Tech's Discovery Analytics Center explore new ways to break down and apply big data to real-world challenges.**

JIM STROUP



LOGAN WALLACE



LOGAN WALLACE

said. "If you have this data-science concentration, you add a lot of value to your education and immediately open yourself to a lot of possibilities."

### BRIDGE-BUILDERS

In the university's National Capital Region, the Ted and Karyn Hume Center for National Security and Technology is home to another interdisciplinary program aimed at data and security. Encompassing the technical, policy, and regulatory aspects of cybersecurity, the CyberLeaders2020 certificate program begins this fall thanks to a \$500,000 grant from the William and Flora Hewlett Foundation, a California-based philanthropic organization.

"We need policy people who understand the technology, and we need technology people who understand the legal, ethical, and policy implications," said Janine Hiller, the Richard E. Sorensen Professor of Finance and a longtime cybersecurity scholar who is teaching part of the CyberLeaders curriculum. "The technology won't lead us to places that we want to be as a society

if we don't talk to each other. We need to create bridges."

Since its founding in 2010, the Hume Center has been working to create those bridges. A large part of the center's efforts—in support of military organizations and the defense contracting community—is cybersecurity, said center director Charles Clancy.

Students at the center are often able to obtain security clearances and work on classified projects while still in school, Clancy said. That clearance, attractive to prospective employers, adds an estimated \$10,000 or more to a graduate's starting salary, he said.

Thus Tech graduates are well-positioned in the rapidly growing cybersecurity market, which is projected to balloon from \$75 billion in 2015 to \$170 billion by 2020. A Stanford University study found that nearly 250,000 federal cybersecurity jobs are unfilled, and the number of job postings grew 74 percent from 2010 to 2015.

### Destination for excellence

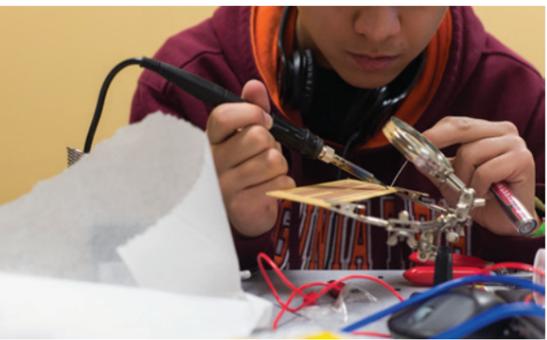
**Five Destination Areas**—sites of interdisciplinary collaboration where experts are positioned to address the full complexities of broad, societal-scale problems—will launch at Virginia Tech in the fall semester.

For more on the five areas below, visit [provost.vt.edu/destination-areas.html](http://provost.vt.edu/destination-areas.html). And check out the story about intelligent infrastructure on page 41.

- Adaptive Brain and Behavior
- Intelligent Infrastructure
- Global Systems Science
- Data Analytics and Decision Sciences
- Integrated Security



KEVIN MANUEL



KEVIN MANUEL



HELEN ZHANG



KEVIN MANUEL



hokies who hack

"I ALWAYS SAW COMPUTER PROGRAMMING AS INTIMIDATING. NOW, I SEE IT AS SOMETHING I CAN ACTUALLY DO!"

—Jaketa Linzy

Students at VTHacks used coding and mechanical skills to create new projects in a single weekend.

### Capitally speaking

With locations in Alexandria, Arlington, Fairfax, Falls Church, Leesburg, Manassas, and Middleburg, Virginia Tech's National Capital Region (NCR) links academia, industry, and government in entrepreneurship, innovation, and economic development.

The NCR presence includes seven colleges and more than 45 graduate degree and certificate programs, including two executive master's programs in business administration and natural resources.

The faculty roster of more than 85 active researchers accounts for more than \$15 million in research expenditures focused on four main areas: national security, resiliency, energy and sustainability, and health and life sciences. Cutting through these areas are cross-disciplinary capabilities in policy and data analytics that help solve national and regional problems.

### DATA PROTECTION

A steadily growing number of Tech alumni have found homes in the cybersecurity sector, especially in and around Washington, D.C.

The Federal Energy Regulatory Commission (FERC) regulates the interstate transmission of energy, such as electricity, natural gas, and oil. Behind the scenes is Mittal Desai (business information technology '06), FERC's chief information security officer and chief privacy officer.

"The data [that FERC] uses on a daily basis can make very profound impacts in how we regulate energy for the United States," Desai said. "The data is very sensitive in nature. The work I do is to protect our mission-critical systems and data from being compromised."

His unit supports FERC departments against cyberattacks. "As technology evolves, a lot of these criminal acts are getting more sophisticated at an alarming rate," Desai said. "We can't be stagnant. There's something new coming down the line all the time, whether it's a new malicious actor or some new form of cyberattack. For a lot of individuals in this field, that's what keeps them up at night."

Desai estimated that he splits his time, half and half, between technical work and other tasks that draw on his interdisciplinary background. His Pamplin education grounded him in business basics—accounting, finance, information technology, and marketing—before exposing him to technological material, with capstone classes on networking and database design and development.

Besides the technical side of the job, Desai communicates with colleagues, manages budgets, oversees cybersecurity marketing initiatives, and more. "Interdisciplinary

studies are important because you develop those building blocks. Those, coupled with technical knowledge, make you well-rounded in the field," he said.

Joshua Higgins (communication, political science '14) writes for Inside Cybersecurity, a daily industry publication.

"Within my first week of starting, I realized cybersecurity is not just an IT issue; it's an economic issue," Higgins said. "Based on that perspective, I think it's important to have IT people and business executives and policy people working together, combining those different aspects together to create the environment you need to combat the hackers that are always 10 steps ahead of the good guys."

### HACKING PROBLEMS

Outside of technical fields, a knack for coding and cybersecurity is becoming more and more important. A graduate in the humanities may not need to know how to build an app from scratch, but an

understanding of the basics, including data security, will allow for a fuller understanding of the increasingly digitized world.

At VTHacks in Torgersen Hall, student teams tinkered away. One group broke down the steps for an app on tracking health metrics. Another worked to transform photos into artwork modeled after the style of various painters. Another app was meant to motivate users to exercise.

Jaketa Linzy, who graduated in May with a mathematics degree, dove into a tutorial for Javascript, a coding language. Although she had just one coding class under her belt, she and a friend majoring in sociology were building a website from scratch.

"I tried to do as much as possible last night, but I made very little progress," Linzy said early in the weekend. But she's no longer intimidated by coding. "I am learning a lot, and that's ultimately the purpose of doing this." □

# HERE TODAY / HOME TOMORROW

by KATIE GEHRT '97, '02  
photos by JIM STROUP

IMAGINE AN INTUITIVE, RESPONSIVE HOME THAT RECOGNIZES AND INSTANTLY ADAPTS TO YOU, A HOME WHERE ACCESSORIES, APPLIANCES, PLUMBING, HEATING, COOLING, LIGHTING, AND VENTILATION—AND EVEN THE MINIATURE CLEANING ROBOTS—ARE EASILY ACTIVATED BY YOUR VOICE, GESTURES, AND TOUCH.

It's not an episode of "The Jetsons." It's the FutureHAUS, under construction now at Virginia Tech.

The FutureHAUS research team has discovered that if major components of homes, such as kitchens, bathrooms, and audio-visual walls, are built in factories—much like the way cars are manufactured—advanced technologies can be seamlessly integrated. Safer and more environmentally sustainable than on-site construction methods, the modular process capitalizes on the many benefits of prefabrication. Plug-and-play wall components called "cartridges" can be delivered to construction sites fully assembled.

Joseph Wheeler, professor of architecture in the College of Architecture and Urban Studies and co-director of the Center for Design Research, believes the concept can

revolutionize the current building process and provide the digital complexity we'll demand in the future. As he explained, "We are looking at the future of both how we build and how we live."

Wheeler and Denis Gracanic, an associate professor in the College of Engineering's Department of Computer Science, along with Clive Vorster, a visiting instructor in the School of Architecture + Design, have worked the past three years with students from architecture, industrial design, interior design, and computer science to envision how people will interact with their homes in the near future. "The technology is here; it's just not yet being fully integrated into our buildings," Wheeler said.

And that's the work the team is doing: finding new ways to integrate technology while ensuring the home accommodates users of

all ages and abilities. "You're going to walk into this place and say, 'Wow, this house is cool,' and then you're going to realize that it's 100 percent [Americans with Disabilities Act] accessible," Wheeler said.

Students have played key roles in conducting research, proposing new design concepts, and constructing various prototypes. So, too, have industry and campus partners. The team has commenced work with DuPont and professors Tim Long and Chris Williams of Virginia Tech's Macromolecules and Interfaces Institute in a research partnership, aptly dubbed "From Molecules to Modules," to develop smart building materials for the modular cartridge concept.

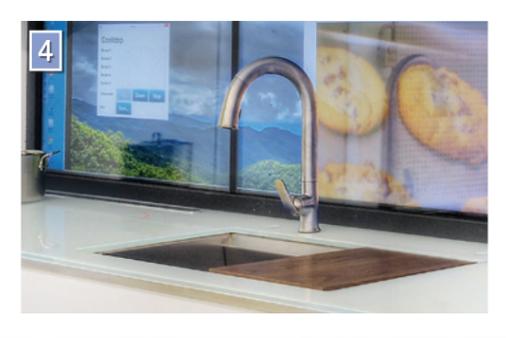
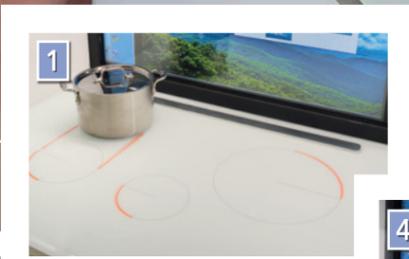
The ultimate plan is to install a complete multistory prototype on campus.



AT THE FRONT DOOR, A VISITOR'S IMAGE IS RELAYED TO THE KITCHEN'S "VIRTUAL WINDOW" BACKSPLASH.

THE FIRST CARTRIDGE INTRODUCED, **THE KITCHEN** SEAMLESSLY INTEGRATES MULTIPLE FUNCTIONS INTO ONE EASY-TO-USE INTERFACE. WITH ELECTRONIC CONTROL, MULTIPLE DEVICES CAN BE ACTIVATED IN MANY WAYS, INCLUDING WITH VOICE AND GESTURE. THE DESIGN ALLOWS FOR "AGING IN PLACE"—IN OTHER WORDS, LIFELONG ACCESSIBILITY. THE SYSTEMS MANAGE ENERGY USE, TRACK GROCERY INVENTORY, AND ASSIST USERS WITH COOKING, SHOPPING, AND SOCIALIZING.

- 1 Energy-efficient magnetic **INDUCTION TECHNOLOGY** underneath the countertop offers an easy-to-clean surface and flexible space. Any area can become a heating surface while the rest remains cool and usable. The **COUNTERTOP SURFACES** are durable, easy-to-clean, anti-microbial glass.
- 2 On the interactive "**VIRTUAL WINDOW**" **BACKSPLASH**, the main interface for all kitchen functions, you can display a recipe, activate an appliance, monitor cooking, or communicate with friends and family.
- 3 The **FAUCET** features hands-free operation and gesture control for flow and temperature settings.
- 4 The **MICROWAVE'S** infrared sensor allows for precise temperature cooking, while a microphone detects the status of your popping popcorn.
- 5 The **TRASH CABINET**, with a hands-free door, has bins for trash, recycling, and compost.
- 6 The **SOCIAL TABLE** carries an interactive multimedia display for researching recipes, browsing the web, or extending the "virtual window" for kitchen operations.
- 7 **LED LIGHTING** is motion-activated, offering custom colors and region control.



- 8 When the **DISHWASHER'S** automatic detergent dispenser runs low, your house will reorder detergent.
- 9 The **COFFEE MAKER** can be programmed to start making coffee when the shower is turned on in the morning.
- 10 Monitoring food temperature and moisture, wireless probes in the **WALL OVEN** will alert you when dinner is ready, while a video feed allows you to follow the action on a screen or a smartphone.
- 11 In the **PANTRY**, weight sensors monitor stock ingredients and expiration dates, while a **UPC READER** can update an inventory database that can be accessed from a smartphone while you're shopping.
- 12 The **REFRIGERATOR** does the same thing. The pantry features touch-to-open and hands-free door operation, while the fridge opens by touch... or the old-fashioned way: manually.

IN A FALL 2015 INTERDISCIPLINARY SPECIAL STUDIES COURSE, STUDENTS RESEARCHED TECHNOLOGY, MATERIALS, PLUMBING FIXTURES, AND ACCESSIBLE DESIGN. THE BEST IDEAS LED TO A **BATHROOM**—THE FUTUREHAUS'S MOST RECENT ADDITION—THAT RECOGNIZES ITS USERS AND PROVIDES CUSTOMIZED PREFERENCES, ALONG WITH CLEANLINESS, SAFETY, AND ACCESSIBILITY.

**1** The interactive **SHOWER SYSTEM** monitors energy and water use. Control the water volume and temperature with voice and gestures.

**2** Hands-free **FIXTURES** use low-flow technology and save hot water, even adjusting for your individual temperature preference.

**3** When you're not streaming Netflix, jets in the **BATHTUB** can be synced to music.

**4** The **IN-WALL HAMPER and TRASH BIN** keep the floor clutter-free, clean, and safe.

**5** The **SMART TOILET** offers air filtration and recirculation; heating in the seat and base; integrated lighting; motion-activated seats; and water efficiency.

The seamless, glass **SMART FLOOR** is etched to prevent slips, heated for comfort, and lighted at night. An embedded scale will display your weight on the mirror, while slip-and-fall technology can detect vibrations consistent with a fall and send a text message to a caregiver.

**CLIMATE CONTROLS** feature automated humidity management and a smart thermostat for preprogrammed individual comfort settings.

**6** Automatically adjusting based on tasks and user preferences, the **RGBW LED** lighting can be tuned to the entire spectrum, with varying degrees of color and white, and synced to circadian rhythms to provide psychological comfort.

MANY ASPECTS OF FUTUREHAUS ARE INSPIRED BY THE CONSTRUCTION OF VIRGINIA TECH'S LUMENHAUS, WHICH WON THE INTERNATIONAL SOLAR DECATHLON COMPETITION IN SPAIN IN 2010. IN 2012, LUMENHAUS WON AN AMERICAN INSTITUTE OF ARCHITECTS HONOR AWARD FOR ARCHITECTURE—THE FIRST TIME THIS AWARD HAS BEEN GIVEN TO A UNIVERSITY TEAM. WHEELER WAS ONE OF FOUR FACULTY LEADERS ON THE PROJECT.



The embedded **AUTOMATIC SOAP DISPENSER** will order soap online.

**7** The **SMART MIRROR** displays email, calendar, messages, weather, time, traffic, sports scores, or soap levels—whatever you choose. The mirror is an interface for lighting, music, and the shower's temperature and flow.

**8** Using biometric fingerprint recognition, the **VANITY** automatically adjusts its height for adults, children, or those in wheelchairs.

Along with anti-microbial, self-cleaning surfaces, the bathroom uses a system of panels in the walls, floor, and shower stall to minimize joints and provide a **CLEAN AND SANITARY** environment. When the restroom is unoccupied, a motion-activated cleaning robot will emerge from its storage cubby in the base of the wall.



## THE LIVING ROOM CARTRIDGE

PRIMARILY FOCUSES ON LIGHTING RESEARCH AND INTERIOR MODULAR WALL SYSTEMS. WITH SUPPORT FROM DUPONT AND THE VIRGINIA TECH INSTITUTE FOR CREATIVITY, ARTS, AND TECHNOLOGY, GRACANIN AND WHEELER WORKED WITH JOHN RICHEY OF THE DEPARTMENT OF PSYCHOLOGY TO EXPLORE THE PSYCHOLOGY OF LIGHTING AND THE RESPONSIVE HOME INTERIOR, INCLUDING LOOKING AT CIRCADIAN RHYTHM AND HOW TO MIMIC THE NATURAL CHANGES OF LIGHT, AS WELL AS CREATING LIGHTING CONDITIONS THAT ARE APPROPRIATE FOR THE TASKS AT HAND.

**1** The central communications hub of the entire home, the **AUDIO-VISUAL WALL** features an integrated entertainment center and a countertop that conceals wireless charging stations for phones and tablets.

**2** A customizable **LIGHTING** system in the ceiling and walls provides responsive lighting that can be coordinated with sensor-detected activities throughout the day. The system can detect pixel color on the TV screen and repeat the colors in the ceiling.

**GESTURE-CONTROLLED LIGHTING** can be activated, brightened, and dimmed by hand.

**3** The solid-surface **MODULAR WALLS**, fire-resistant with sound and thermal

insulation, are easy to clean, customize, and change. With DuPont, the team is exploring wall compositions for better HVAC performance.

**4** **SEAT SENSORS** can detect the room's occupancy and even identify specific differences, which is used to adjust lighting according to your preferences.

**5** Integrated into the custom-built coffee table, the **TABLET STAND** allows for a more natural communication experience over Skype or Facetime. □

*Katie Gehrt (psychology '97, art '02) was the College of Architecture and Urban Studies' communications director.*

RUSSELL HITT, CHAIRMAN OF HITT CONTRACTING INC., AND TIM SANDS, PRESIDENT OF VIRGINIA TECH

# LEADING THE NATION IN INTELLIGENT INFRASTRUCTURE

by ALBERT RABOTEAU

IN ADDITION TO ITS FUTUREHAUS ENDEAVORS, VIRGINIA TECH IS ADDING FACILITIES, CREATING AN ACADEMIC MAJOR, AND LEVERAGING PARTNERSHIPS WITH INDUSTRY AND GOVERNMENT TO EXPAND TEACHING AND RESEARCH ABOUT INTEGRATING EMERGING TECHNOLOGIES INTO DAILY LIFE.

"We are uniquely suited to lead the nation in intelligent infrastructure for the 21st century," said Executive Vice President and Provost Thanassis Rikakis, pointing to the university's faculty expertise in key components of intelligent infrastructure, its crosscutting curriculum, and its network of research capabilities and partnerships.

Preliminary plans for new facilities include an Intelligent Infrastructure and Construction Complex that will allow the doubling of enrollment in the Myers-Lawson School of Construction. The two-building complex will be built near Bishop-Favrao Hall and the classroom building now under construction.

Also in the works is the Intelligent Infrastructure Corridor, to be developed along the western end of campus, providing a connection between the aforementioned complex and research facilities on Plantation Road. Connected by smart roads, the corridor's buildings will include large-scale smart construction, smart transportation, smart materials, and smart energy facilities with smart residences for students.

While significant private fundraising for the complex is ongoing, major com-

mitments include \$5 million from the charitable foundation controlled by the Hitt family, whose company, HITT Contracting Inc., is one of the nation's 100 largest general contractors.

"The skill and talent that comes out of Virginia Tech is exceptional," said the company's chairman, Russell Hitt. "I know that because we've had a lot of Hokies on our team over the years. It's an honor to give back to a university that not only develops capable, passionate minds, but that values the partnership between industry and higher education."

One building under development will be named Hitt Hall. The other structure, the Intelligent Infrastructure Building, will likely be used by students from multiple colleges who will be able to earn an intelligent infrastructure major within other degrees.

Vice President for Research and Innovation Theresa Mayer said the complex will join a strong collection of Tech resources, including the Urban Living Lab in the National Capital Region (NCR) and the network of smart and connected roadways operated by the Virginia Tech Transportation Institute (VTTI).

The university's existing MetroLab Network partnership with Arlington County, Virginia, allows the testing and collection of data from intelligent-infrastructure-related technology in an urban setting. Meanwhile, research related to autonomous and intelligent vehicles and smart roads is ongoing, both in Blacksburg and in the NCR, through a partnership between VTTI and the Virginia Department of Transportation. Among the ultimate aims of these partnerships are relieving traffic congestion and reducing crashes by alerting drivers and cars to traffic and road conditions in time for drivers to take action or for vehicles to brake automatically.

"The implications of being able to take a systems approach to the intelligent infrastructure that will surround us—from vehicles to roads, bridges, and buildings—cannot be overstated," Rikakis said. "Our expertise in this area is an opportunity not just for Virginia Tech, but for our entire state to become known as the national leader in this area." □

*Albert Raboteau is the director of advancement communications.*



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JIM STROUP

# Honoring traditions, both old and new

What an exciting time to be a part of Virginia Tech! This spring's commencement exercises launched some 6,000 new graduates into the world, swelling our numbers to more than 250,000 living alumni. The undergraduate ceremony was notable for its memorable theme of service embodied by the Virginia Tech Flint Water Study Team and a long overdue honorary degree bestowed on Irving Peddrew, the university's first black student. Warmest congratulations to our newest graduates and their families.

It's also an exciting time for the volunteers of the Virginia Tech Alumni Association Board of Directors who represent and serve the Hokie Nation. The board welcomes new members Justin Graves (sociology '12, educational leadership and policy studies '14), Matthew Joy (doctor of medicine '14, a graduate of the Virginia Tech Carilion School of Medicine inaugural class), Rock Roszak (management '71), Winston Samuels (M.S. animal science '80, Ph.D. animal science '83), and Keith Stemple (history, political science '95). All board members strive to engage current students in order to remain connected with the needs of today's generation. Chapters continue to offer a variety of programming, including networking events, service opportunities, and social gatherings, held in Virginia, across the nation, and around the world. And reunion activities bring thousands of Hokies back to beautiful Blacksburg and our beloved campus, where we uphold time-honored traditions and embrace new ones.

The board also learned more about the university's transition to an advancement model and is embracing the new University Advancement mission and values. In alignment with new directives from the advancement division, the board is revisiting its bylaws and engaging in a strategic planning process that will link the association's work to Beyond Boundaries, a university-wide effort to imagine the future of Virginia Tech. The land-grant mission of Virginia Tech will be foundational as the strategic planning process moves forward.

Ready to welcome yet another record-breaking class of freshmen in the fall, the Virginia Tech Alumni Association has never been more determined to be of service to its members. That means a lot to us, and I hope it means a lot to you!

*A. Carole Pratt (biology '72), president  
Alumni Association Board of Directors*



The Virginia Tech Alumni Association Board of Directors gathered for its spring meeting.



**First black women students celebrated**

In 1966, the first black women students arrived on the Blacksburg campus. Fifty years later, their legacy was celebrated during the 2016 Black Alumni Reunion in April.

The six trailblazers included Linda Adams Hoyle (statistics '68), Jacquelyn Butler Blackwell (sociology '69), Linda Edmonds Turner (clothing, textiles, and related art '70, M.B.A. '76, Ph.D. general business '79), La Verne "Freddie" Hairston Higgins, Marguerite "Chick" Harper Scott (history '70), and Chiquita Hudson.

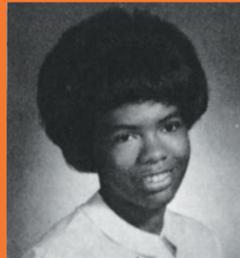
Higgins, Turner, and Scott (left to right) attended this year's reunion. The trio was recognized at a dinner and presented with an Alumni Association Board of Directors resolution acknowledging their important role in opening doors for future generations and helping to diversify the campus.

SHERRIE WHALEY

• **Linda Adams Hoyle**, valedictorian of her high school class in Covington, Virginia, completed two years at Dabney S. Lancaster Community College. She completed her junior and senior years at Tech and, in 1968, became the first black woman to graduate from the university. She worked for the U.S. Department of Commerce's Bureau of the Census for almost 34 years until retiring in 2002.

• **Jacquelyn Butler Blackwell** graduated at the top of her class in Lancaster County, Virginia, and came to Tech on a \$4,000 Rockefeller Scholarship. She graduated in three years and married Eli Blackwell (mechanical engineering '70). She held training positions at the Virginia Employment Commission and since then, she's been active in volunteer work.

• **Linda Edmonds Turner**, in addition to her Tech degrees, holds a master's degree from Michigan State University and completed a postdoctoral fellowship in higher education administration at Harvard University. The Halifax County, Virginia, native held two college presidencies and executive positions at three Fortune 500 companies. In 2015, she was named director of the Massachusetts Department of Industrial Accidents.



• **Laverne Hairston Higgins**, who came to Virginia Tech from Roanoke, was active in the anti-war movement and Tech United Ministries. In 1969, she left Tech and enrolled at the University of Minnesota, earning a bachelor's degree in child psychology and an M.B.A. In Minnesota, she was the director of a children's agency and a grants reviewer for several foundations.

• **Marguerite Harper Scott** first taught in Norfolk, Virginia, spending eight years at Maury High School, where she chaired the social studies department. She then taught civics, history, and sociology in Wake County (North Carolina) public schools. She was an adjunct professor at North Carolina State University and received her master's degree in liberal studies from Duke University.

• **Chiquita Hudson** came to Blacksburg from Hampton, Virginia, to study aerospace engineering. When the parents of a white roommate assigned to Linda Adams Hoyle refused to have their daughter room with Hoyle, Hudson was asked to move to Eggleston to room with her, and she agreed. Hudson died of lupus the summer after her freshman year.

IMAGES COURTESY OF UNIVERSITY LIBRARIES' SPECIAL COLLECTIONS.



JEAN REVILLARDYREZO



JEAN REVILLARDYREZO

**Alumna part of history-making solar flight**

It didn't take long for Paige Kassalen (electrical engineering '15) to leave an imprint on Solar Impulse 2 (SI2), the world's first airplane to attempt an around-the-world journey on solar power alone.

Featured in Glamour, Forbes, and Huffington Post, Kassalen is one of only three women, the only American, and the youngest person to serve on the 16-person ground crew of engineers.

After graduation from Tech, Kassalen returned home to Pittsburgh to join high-tech chemical manufacturer Covestro. The company, which outfitted the solar plane with insulating materials, rigid foams, composites, and coatings, was looking for someone with an engineering and public relations background to join the SI2 ground crew. Kassalen, who chaired the Institute of Electrical and Electronics Engineers (IEEE) student branch at Virginia Tech and co-chaired the IEEE Women in Engineering Pittsburgh affinity group, fit the bill.

Kassalen joined the team in Hawaii. Her primary duties included steering the tail of the 5,000-pound plane as it taxied onto the runway and catching a part of the single wing when the plane landed.

Early on the morning of April 24, the plane left Hawaii for California. "It was very calm and tranquil; the only sound you could hear was the whirring of the propellers," Kassalen said. "I'll never forget looking up at the plane as it took off into the sunrise, seeing our months of hard work come to fruition, and realizing that I was about to embark on a mission around the world."

Although men still dominate science, technology, engineering, and mathematics (STEM) fields, Kassalen was never deterred. Now she is something of a STEM ambassa-



COURTESY PHOTO

dor, often chatting with children and teens in the cities where the plane lands. "My message to all young people, regardless of gender, is 'Don't be afraid to fail.' Failure is inevitable," she said. "How you cope with failure and how you look at it separates people who succeed from those who don't."

Kassalen plans to return to Covestro when SI2 completes its journey in Abu Dhabi this summer, where the trip first began. "This experience has rekindled the mentality I had at Virginia Tech to keep pushing myself to learn and grow while staying true to my passions," she said. "My dream has always been to innovate and create. A goal of mine is to accentuate the importance of alternative energy and inspire younger generations to become more involved in STEM fields."

**Brain power:**

For more on Kassalen, including her social media channels and flight updates, visit [vtmag.vt.edu](http://vtmag.vt.edu).

### 2016 Alumni Distinguished Service Award recipients named

Jeanne Centracchio DaDamio (French '75, M.A. education '76), of Vienna, Virginia, and James E. Smith (chemistry '66), of Williamsburg, Virginia, are Virginia Tech's 2016 Alumni Distinguished Service Award winners.

DaDamio, a 1985 recipient of the university's Outstanding Young Alumni Award, served on the Alumni Association Board of Directors from 1977-89 and from 2005-11. She currently is a member of the advisory boards for the Division of Student Affairs and the College of Liberal Arts and Human Sciences. She has served on the Northern Virginia Regional Campaign Committee, is a member of the Gateway Society, and is involved in the Hokies for Higher Education legislative advocacy group and the university's Women in Leadership and Philanthropy Council. She and her family established the Centracchio-DaDamio Family Global Leadership Endowed Scholarship.

After a 33-year career with IBM, DaDamio retired as a senior program manager in the Global Business Services division. Her husband and daughters—Greg (sociology '74), Camille (industrial and systems engineering '11), and Nicole (sociology '13)—are also Hokies.

Smith, a member of the Hokie Club for more than 30 years, served as president of the Virginia Tech Alumni Association Board of Directors, and as a member of the Virginia Tech Foundation Board of Directors, the Department of Chemistry Advisory Council, and the German Club Alumni Foundation board.

In 2001, Smith and his wife, Carolyn, were inducted into the Ut Prosim Society. He is a former president and current board member of the Williamsburg Alumni Chapter, with prior service to the First State (Delaware) chapter. He is a member of the Hokies for Higher Education legislative advocacy group and served on the Hampton Roads Regional Campaign Committee.

At DuPont, Smith held positions in manufacturing, research, sales and marketing, business management, and technology licensing. After retiring in 2001, he formed SAI Consulting and worked for DuPont in technology licensing until 2004.



COURTESY PHOTOS

Jeanne Centracchio DaDamio '75, '76 and James E. Smith '66

## Homecomings

**Sept. 3** – Liberty  
College of Agriculture and Life Sciences

**Sept. 17** – Boston College  
Corps of Cadets  
Virginia-Maryland College of Veterinary Medicine

**Sept. 24** – East Carolina (Homecoming)  
Holtzman Alumni Center Open House and Tailgate  
College of Engineering  
College of Architecture and Urban Studies  
Highly-Tighty alumni  
Marching Virginians alumni

**Oct. 20** – Miami (Thursday night game)  
College of Science  
Multicultural alumni

**Nov. 12** – Georgia Tech  
Pamplin College of Business  
College of Liberal Arts and Human Sciences

**Nov. 26** – Virginia  
Division of Student Affairs – former student leaders  
Graduate School alumni  
Young alumni

## Reunions

**Sept. 24** – East Carolina (Homecoming)  
Class of 1966 – 50th reunion

**Oct. 20** – Miami (Thursday night game)  
Class of 1971 – 45th reunion  
Class of 1976 – 40th reunion

**Nov. 12** – Georgia Tech  
Class of 1991 – 25th reunion

**Nov. 26** – Virginia  
Class of 1981 – 35th reunion  
Class of 1986 – 30th reunion

*Homecomings and reunions coincide with home football games.*

### It's student send-off season!

Student send-off celebrations are a long-standing summer tradition for our alumni chapters. From Seattle to Jacksonville, volunteers are welcoming incoming freshmen into the Hokie Nation and sending returning students back to campus in style.

Held in June, July, and August, the picnics feature food from cookouts, pot-lucks, caterers, or tailgates. Guest speakers, raffles, cornhole, and other games are often part of the fun. Last year, one chapter even performed service projects, introducing students to the university's motto of *Ut Prosim* (That I May Serve).

Alumni often host the events at their homes, while some events are held at parks and other venues. To find out what your chapter has in store for the rest of the summer, visit [alumni.vt.edu/chapters](http://alumni.vt.edu/chapters).



COURTESY PHOTO

The Boston-based New England Alumni Chapter paused for a group shot at its student send-off.



COURTESY PHOTO

In 2015, the Southeastern Michigan Alumni Chapter hosted a well-attended student send-off picnic. Even the dog wore orange and maroon!

SAVE THE DATE

# OUT AT WORK

LGBTQ+ Student & Alumni Networking Event

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SEPTEMBER 23, 2016  
6 PM - 8 PM

BLACKSBURG LOCATION TO BE ANNOUNCED

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Ex Lapide Alumni Society  
Intercultural Engagement Center

Contact: Latanya Walker, [latanya@vt.edu](mailto:latanya@vt.edu)

Alumni Relations  
Business Diversity Center



LAUREN FAKES

### Coach Frank Beamer and his 'protector' selected as ring namesake and sponsor

Former football coach Frank Beamer (distributive education '69) has been named the Class of 2018 class ring namesake, while Virginia Tech police Capt. Vince Houston (above left), who served as Beamer's protector at home and away football games starting in 1989, has accepted the role of class sponsor.

Selected by each class, the ring namesake and sponsor are honorary roles related to the university's ring tradition. The Class of 2018 wanted to recognize Beamer for his 29 years as head football coach and Houston for his role in keeping the coach and the community safe.

"We mentioned to Coach that we noticed he was wearing his 1969 class ring at his retirement announcement," said Harvey Creasy III, a multimedia journalism major from Richmond and the 2018 ring design committee chair. "He told us that his Vir-

ginia Tech class ring is the one that has given true meaning to all of his many bowl rings."

Said Chris Saunders, a marketing and management major from Malvern, Pennsylvania, and the Class of 2018 president, "We felt that selecting Capt. Houston as our sponsor would create a great combination. The two have been linked together for so many years."

The namesake and sponsor also take an active role in the Ring Premiere and Ring Dance. This year's Ring Premiere, where the 2018 class ring will be revealed, will take place at 8 p.m. on Oct. 4 in Burruss Hall.

Since 1993, the Virginia Tech Alumni Association has provided sponsorship and advising to class programs, including the ring tradition. For more information, visit [alumni.vt.edu/classrings](http://alumni.vt.edu/classrings).

### Board holds spring meeting

The Alumni Association Board of Directors held its two-day spring meeting in late April. Presiding over the meeting were A. Carole Pratt (biology '72), president; Mark S. Lawrence (management '80), vice president; and Matthew M. Winston Jr. (marketing management '90), secretary-treasurer, past president, and Virginia Tech's senior associate vice president for alumni relations.

#### Directors:

- Deseria Creighton Barney '87
- Mary Virginia Berry '62 (honorary)
- Daniel W. Bird Jr. '60 (honorary)
- Marvin J. Boyd '00
- Gordon Bryan '82
- \*Lisa Carter Ellison '86
- Thomas J. Fast '06
- Deborah Barackman Flippo '83
- \*Jerome Fowlkes '88
- \*Kathleen Kyger Frazier '04
- \*William M. Furrer '91
- Colin L. Goddard '08
- \*\*Justin O. Graves '12, '14
- Harry N. Gustin '43 (honorary)
- Travis E. Hardy '01



James P. O'Connell '97, Kathleen Kyger Frazier '04, Lisa Carger Ellison '86, and Jerome Fowlkes '88

- William B. Holtzman '59
- Thomas H. Hughes '80
- Gene A. James '53
- \*\*Matthew T. Joy '14
- Michael T. Kender '83
- Adeel S. Khan '09
- William C. Latham '55
- Nathan T. Lavinka '11
- David E. Lowe '63 (honorary)
- Jacob A. Lutz III '78
- \*Brian C. Montgomery '03
- Melissa Byrne Nelson '92
- \*James P. O'Connell '97
- Morgan Blackwood Patel '02
- \*\*Richard S. Roszak '71

- Susan Bull Ryan '68
- Gregory J. Sagstetter '07
- \*\*Winston A. Samuels '81, '83
- Judy McIntire Springer '95
- \*\*Keith R. Stemple '95
- Brian T. Sullivan '93
- Karen E. Torgersen '78, '86
- Claudia K. True '81, '86
- Ellen B. Vance '76
- G.T. Ward '49, '52 (honorary)
- Justin A. Yalung '05
- Kai M. Zuehlke '05

\*Rotated off the board July 1  
\*\*Rotated onto the board July 1



SHERRIE WHALEY

### Alumni ambassadors

Graduating Student Alumni Associates are pictured at their annual awards banquet in early May. To see additional photos of the students, who play a critical role in supporting Alumni Association programs and events, visit [vtmag.vt.edu](http://vtmag.vt.edu).

Class **Notes**

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- Profile **54**
- How-to **59**
- Family **60**
- Retro **63**
- Moment **64**



**A new lens**

by JESSE TUEL  
photos by RICHARD MALLORY ALLNUTT '91, '03

**A** frozen cemetery at dawn is an unlikely place to be warm.

But Richard Mallory Allnutt was plenty warm.

Hired as a set photographer for a friend's independent film in 2000, Allnutt (M.S. electrical engineering '91, Ph.D. '03) took a leave of absence from his job in satellite communications to spend an immersive six weeks documenting the production and observing the film's people, everyone from actors to the "rough-

and-ready" crew members, waiting for new emotions to cross their faces. "You really see right inside a person. You see the beauty in everyone," Allnutt said. "That was electrifying."

In the Indianapolis cemetery, as he snapped the first few photographs of the assignment, Allnutt wasn't bothered by the chill —because he knew then that he was meant to be a photographer. "That one image changed my life," he said.

—continued on page 52



"Most photographers specialize. I couldn't do that. I was interested in too many things," said Allnutt, whose website, [rmallnutt.com](http://rmallnutt.com), says as much in its list of categories: portraits, candid, family, air, land, and water. "Each discipline informs the other. For example, photographing airplanes is much like photographing children. You have to be fast. Unless you're capable of reacting to those things, you miss so much."

**Clockwise from far left:** Capturing cinematographer Tony Henniger for an independent film in 2000; Canada Day in Ottawa in 2012, an image that won first place in the regional focus category at FotoWeekDC 2013 and was displayed at the National Geographic building in Washington, D.C.; a 5-year-old meeting his sister for the first time ("It was a beautiful moment to be a part of."); and jazz musician Branford Marsalis, a long-time New Orleans Saints fan, taken for JazzTimes magazine.

**Clockwise from right:** Lightning strikes near a coal-fired power plant in Masontown, Pennsylvania; two bear cubs huddle in desperation after becoming separated from their mother on Kodiak Island, Alaska; the mother, foaming at the mouth and sniffing the air loudly, unnerves Allnut, who's lying down on a small rise just 30 feet away; Allnut flies a B-25 bomber straight and level to give the pilot a break on the way to an air show; and a Lockheed P-38 Lightning banks sharply over the Oregon desert as forest fires burn in the background.



"My parents said my first word was 'aeroplane,' quite literally," Allnut said.

Today, Allnut straddles three fields: engineering, photography, and writing. As a freelance engineer, he helps design spacecraft antenna feeds—mostly for commercial vehicles, though he did have a small role on NASA's Dawn probe. An expert on airplanes and aviation history, he has written and shot photos for hundreds of articles for aviation publications. And his reputation as an award-winning photographer, one with rare versatility, is growing.

Comparing the three disciplines, Allnut notices more similarities than differences. All three require great creativity and the ability to step back to observe elements working together. They also require specificity: An engineer doesn't use unnecessary parts, just as the photographer or writer avoids clutter. Said Allnut, "In writing, you can't just paint wildly with adjectives."

A Blacksburg resident—at least when he's not traveling for assignments—Allnut finds the hectic nature of his work deeply satisfying. "It's a constant challenge to solve problems," he said. "And it's always different." □



SUE O'CALLAGHAN

## Right time, right place

by MASON ADAMS

**F**ate sometimes places an individual in a moment perfectly suited to her experience and knowledge so that a single action can make a lasting impact.

Such was the case for Elin Betanzo (M.E.N.G. environmental engineering '04), unexpectedly invited to dinner by an old high-school friend one evening in August 2015. Betanzo—a water policy analyst at the Northeast-Midwest Institute, a nonprofit organization dedicated to economic vitality, environmental quality, and regional equity—had known Michigan pediatrician Mona Hanna-Attisha since attending high school together in Royal Oak, Michigan.

Over supper and a bottle of wine, Hanna-Attisha mentioned her hour-long commute to Flint, and something clicked for Betanzo.

For weeks, Betanzo had been following the news coming out of Flint, where a shift in drinking water sources had created an escalating series of health issues. Betanzo, who earned undergradu-

ate degrees in environmental science and piano performance from Carnegie Mellon University, had seen a similar situation while working at the EPA's Office of Ground Water and Drinking Water and pursuing a degree in Virginia Tech's National Capital Region. She was at the EPA in 2004 when the Washington, D.C., lead crisis broke in the Washington Post; and although only a low-level staffer, she had helped investigate.

That year, Betanzo attended a number of multi-agency compliance workshops aimed at lowering lead levels. Through that work, she became aware of Marc Edwards, now the Charles P. Lunsford Professor of Civil and Environmental Engineering at Virginia Tech, who had sounded the warning in D.C. Severely damaging efforts to repair the harm, the Centers for Disease Control issued a report claiming no children were hurt by lead in the D.C. water.

Dining with Hanna-Attisha, Betanzo connected Flint and D.C. "I said, 'Wait, you're in Flint. You're head of pediatrics at a hospital there,'" Betanzo remembered. "She said, 'Yes, that's what I just said.' I said, 'You have access to all the health records there.' 'She said, 'Yes, why are you asking these questions?' I explained about the D.C. crisis and lead in the water in Flint. I told her the only thing that's going to stop it is if someone from the inside can do this study because Michigan was not releasing its numbers. She said, 'Give me all the information you have, and I'll do this.'"

Hanna-Attisha examined blood-lead levels in her patients, and her subsequent study and news release announcing that Flint's children did indeed have elevated levels of lead changed the political dynamic in Flint.

After months of denial by officials, Hanna-Attisha's exposure of the health issue forced local and state governments to acknowledge there was a problem and to shift the city's water source. In a short period, Edwards and his team of student researchers were embraced not just by residents, but also by the political establishment.

This summer, Betanzo returned to Virginia Tech with Hanna-Attisha to serve with Edwards as the keynote speakers at commencement. Betanzo stood on stage with the rest of the Flint Water Study team as they received a standing ovation from graduates and parents in Lane Stadium. □

# Embodying servant leadership

by SHERRIE WHALEY

Charlie Wood (economics '70) is all about connections.

Since 2008, he has worked to connect Virginia Tech alumni to each other as president of the Alumni Association's Richmond chapter, one of Virginia's largest chapters. And through Career Prospectors, a nonprofit networking organization he cofounded in 2002, he is credited with connecting more than 2,000 professionals with jobs throughout the Richmond region.

For his efforts, Wood was named the 2016 Henrico Community Leader of the Year by ChamberRVA's Henrico Business Council. The award honors an unsung hero who has made a positive difference in the community and has demonstrated unwavering support, dedication, and enthusiasm for the betterment and growth of Henrico County.

"Losing a job is a real psychological blow to our identities, our self-confidence, and our self-worth," said Jeb Hockman, director of marketing and communications for the Virginia War Memorial Foundation, who has participated in Career Prospectors. "Charlie instinctively realized this and, with the help of others who believed in his vision, set about to create a self-support group for those who, as he says, are 'in transition.' It's sort of an [Alcoholics Anonymous group] for out-of-work job seekers."

After a 32-year career with Southern States Cooperative, Wood took an early retirement. When he started looking for a new job, he discovered that his network was lacking—and thus was born Career Prospectors. Through weekly meetings and other gatherings, the organization provides skill development and confidence to the unemployed. Offerings include networking sessions and mock interviews, as well as guest speakers who address such topics as résumé writing, web-search skills, developing an elevator pitch, and dressing for success.

"Charlie's leadership has been a boon to Richmond-area job seekers. His advice on interviews, résumés, and networking is on target, encouraging, and empowering," said A.J. Hostetler, a Career Prospectors alum and director of communications for the Virginia Department of Aging and Rehabilitative Services. "I value his insights and am grateful that he volunteers time to assist those in employment transition."



COURTESY PHOTO

Wood was quick to credit the organization's volunteers for their role. "It is all about the opportunities we give to others," he said. "I get a kick out of helping people. When they have a connection to find a job and they show how much that means to them, that's meaningful to me."

"Charlie Wood personifies the definition of servant leadership, and he practices this form of leadership in all phases of his life," said Greg Fansler, senior associate director and director of marketing for Virginia Tech's Alumni Association. "As president of the Richmond Alumni Chapter, he creates leadership opportunities so other volunteers can demonstrate their talents to the community. This is the essence of servant leadership—to carve out positions so individuals can succeed and make a contribution to the greater good."

Service is also the ultimate goal of Career Prospectors. "No one has ever been charged a penny for all [Wood] has done or been charged to take advantage of all that Career Prospectors has to offer," Hockman said at the awards ceremony. "True service is giving back to your fellow brothers and sisters without any expectation of getting anything back in return. This is the definition of Charlie Wood." □

*Sherrie Whaley is a communications specialist with University Relations.*

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 (0102), 901 Prices Fork Rd., Blacksburg, VA 24061; email the news to [fleets@vt.edu](mailto:fleets@vt.edu); or submit the news online at [vtmag.vt.edu/submit-classnote.php](http://vtmag.vt.edu/submit-classnote.php), where photos may also be uploaded for consideration.

Alumni mailing addresses may be viewed online at [alumni.vt.edu/directory](http://alumni.vt.edu/directory) by logging in with your Virginia Tech PID and password. For assistance, call 540-231-6285.

- career accomplishments
- weddings
- births and adoptions
- deceased

**'38** **Roscoe R. Allen Jr.** (AGE), Peoria, Ill., 2/19/16.  
**Nile T. Horne** (BAD), Roanoke, Va., 12/14/15.

**'39** **Richard W. Greiner** (CHEM), Wytheville, Va., 5/11/15.

**'40** **Byrd L. Rawlings II** (IE), Waynesboro, Va., 12/27/15.

**'41** **Leslie C. Hurt** (AGEC), Appomattox, Va., 2/25/16.

**'42** **Thomas B. Hall Jr.** (AGEC), Buckingham, Va., 3/28/16.  
**John "Jack" A. Yowell** (GAG), Bealeton, Va., 2/6/16.

**'43** **Edward C. Etz** (AGRN), Norfolk, Va., 1/19/16.  
**Joe F. Lucas** (GBUS), Holdenville, Okla., 2/18/16.

**Richard L. Sanford** (AGRN), Orange, Va., 3/10/16.  
**R.M. "Ray" Unser** (ME), Cartersville, Ga., 2/13/16.  
**J. Randolph Wilson** (BAD), Bethesda, Md., 12/9/15.

**Clifton C. "Cliff" Garvin Jr.** (chemical engineering '43, M.S. '47), retired board chairman and CEO of Exxon Corp. (now Exxon Mobil Corp.), whose dedicated service and philanthropy set an example at Virginia Tech, died on April 17. A native of Portsmouth, Virginia, Garvin served as a combat engineer in the U.S. Army, making multiple landings in the South Pacific during World War II. After returning to Blacksburg and completing a master's degree in 1947, he joined the precursor of Exxon, starting out as a process engineer in Baton Rouge, Louisiana. Garvin was elected to the board in 1968 and named president in 1972. He became chairman and CEO in

1973 and served in that capacity until retiring in 1986. He served on the Virginia Tech Board of Visitors from 1988 to 1996 and as rector from 1991 to 1996. In 1983, Garvin was the first recipient of Virginia Tech's University Distinguished Achievement Award. In 1997, he was presented the William H. Ruffner Medal, the university's highest honor, and he received the Alumni Distinguished Service Award in 2001. Along with his wife, Thelma, Garvin was a member of the President's Circle in the Ut Prosim Society, which recognizes the university's most generous donors.

**'44** **R.C. "Bob" Dorey Jr.** (ME '48), Norfolk, Va., 2/22/16.

**'45** **Emory F. Hodges Jr.** (BAD), Alexandria, Va., 1/23/16.  
**Herbert F. Kibel** (BAD), Boynton Beach, Fla., 1/24/16.  
**William F. McGuire** (BAD), Pulaski, Va., 1/20/16.  
**William C. Morey Jr.** (ME), Leesburg, Fla., 12/9/15.  
**William G. Sale Jr.** (IE '48), Norfolk, Va., 12/19/15.

**'46** **Benjamin E. Ames Sr.** (BAD '48), Wichita, Kan., 1/20/16.  
**M.W. "Mel" Jefferson** (DASC '48), Richmond, Va., 4/5/16.

**'47** **William H. Puryear** (ME), Fort Lewis, Va., 3/17/16.

**'48** **Irene Preston Brown** (GHEC), Marion, Va., 3/17/16.  
**Meade "Smoot" C. Edmunds Jr.** (BIOL), Lewisville, N.C., 1/26/16.  
**John G. Ironmonger** (ASE '49), Arnold, Md., 1/13/16.

**'49** **James E. Cozart** (BAD), Abingdon, Va., 3/1/16.  
**Calvin T. Davis** (AGED), Suffolk, Va., 2/24/16.  
**Curtis E. McKenzie** (CHE), Concord, N.C., 2/13/16.  
**O. Beverley Roller** (AGED), Weyers Cave, Va., 3/30/16.  
**N.H. "Nat" Stevenson Jr.** (CHEM), Virginia Beach, Va., 2/29/16.

**'50** **Lawrence H. Boyd** (ARE), Knoxville, Tenn., 1/31/16.  
**Lynwood A. Cosby** (PHYS), Front Royal, Va., 5/28/15.

**Albert P. Gillespie** (GAG), Tazewell, Va., 1/5/16.  
**Elmer L. Lam Jr.** (ME '51), Charlotte, N.C., 1/27/16.  
**J.W. "Jimmy" Michael Jr.** (BAD), Roanoke, Va., 2/9/16.  
**James "Red" L. Richardson** (CE), Norfolk, Va., 2/20/16.  
**P. Mitchell Scott Jr.** (ME), Jacksonville, Fla., 12/29/15.  
**L. Thomas Wilburn Jr.** (IEOR '51), Cincinnati, Ohio, 12/27/15.  
**Harold E. Wingert** (ME), Winston-Salem, N.C., 12/27/15.

**'51** **W.T. "Bill" Alexander Jr.** (ME), Williamsburg, Va., 3/28/16.  
**Leonard W. Cooper** (STAT), Cincinnati, Ohio, 3/3/16.

**Lyman C. Daughtrey Jr.** (IE), Greenville, N.C., 2/18/16.  
**Robert W. Eberhard** (ME, ME '56), Houston, Texas, 2/4/16.  
**Arthur J. Gustafson Jr.** (EE), Williamsburg, Va., 1/18/16.  
**Hal H. Harkrader Jr.** (BAD), Bristol, Va., 1/14/16.  
**Claude "Nick" W. Nicholson Jr.** (BAD '52), Fort Myers, Fla., 2/15/16.  
**Gene D. Whitlow** (BAD), Roanoke, Va., 1/22/16.  
**George R. Williams** (HORT), Blacksburg, Va., 3/7/16.  
**H. Ashton "Pete" Williamson Jr.** (BAD), Virginia Beach, Va., 1/17/16.

**'52** **Robert E. Davis** (ME), Exton, Pa., 1/10/16.  
**Howard A. Farrar** (FW), Newport News, Va., 3/4/16.

**Charles "Flip" W. Flippo** (BAD), Melbourne, Fla., 2/29/16.  
**Hollis C. Grubb** (ME), Tucson, Ariz., 11/21/15.  
**Polly Adams Kahle** (GHEC), Christiansburg, Va., 3/16/16.  
**Lester H. Kyle Jr.** (CE '53), Gaffney, S.C., 1/14/16.  
**Thomas W. Reed** (ME), Perry, Fla., 2/28/16.  
**Frank R. White** (ME), Platte City, Mo., 1/24/16.

**'53** **John B. Lindamood** (AGED, DASC '55), Columbus, Ohio, was inducted into the Department of Food Science and Technology Hall of Distinction at Ohio State University.

**John F. Barden** (CE), Poughkeepsie, N.Y., 12/20/15.  
**Charles F. Hurt** (CE '54), Lynchburg, Va., 1/30/16.

**'54** **Jack P. Ferratt Jr.** (ME), Abingdon, Va., 1/5/16.  
**William Little Jr.** (CE), Houston, Texas, 3/11/16.

**'55** **John A. Dean** (AGED), Colonial Heights, Va., 2/28/16.  
**Chester Z. Gates** (DE '62), Birmingham, Ala., 2/20/16.

**Stephen "Choo Choo" E. Justis** (BAD), Forest, Va., 3/18/16.  
**Charles A. Marks III** (AGED), Waynesboro, Va., 2/20/16.  
**Don M. Mills** (BAD '59), Abingdon, Md., 10/18/15.  
**Thomas J. Proffitt Jr.** (CHEM), Pikeville, N.C., 1/24/16.  
**Macey W. White Sr.** (AGED '58), Hartfield, Va., 3/11/16.  
**Irvin C. Wildman Jr.** (ANSC), Powhatan, Va., 12/9/15.

**'56** **Joseph H. Mason** (ARCH '58), San Diego, Calif., 9/18/15.  
**Earl A. Mitchell Jr.** (AGEC), Roanoke, Va., 3/5/16.  
**Gerald S. Williams** (AGED), Yale, Va., 12/27/15.

**'57** **Dennis H. All** (BAD), Mechanicsville, Va., 1/16/16.  
**Joe R. Brown** (BAD), Martinsville, Va., 1/25/16.

**Henry "Grif" R. Griffin** (AGED), Windsor, Va., 3/28/16.  
**B.R. "Bill" Halsey** (ACCT), Corrales, N.M., 3/31/16.  
**William M. Pardue** (METE), Oak Ridge, Tenn., 2/1/16.  
**Richard T. Sale III** (ME), Gwynn, Va., 12/19/15.  
**Russell C. Schools** (AGEC), Capron, Va., 1/19/16.

**'58** **Donald B. Kline** (GAG '57), Linville, Va., 12/24/15.  
**David L. Morgan** (BAD), Hampton, Va., 1/26/16.  
**Andres "Andy" E. Siochi** (CHE), Blacksburg, Va., 3/26/16.  
**Richard D. Wagner** (ASE, ASE '60), Newport News, Va., 3/7/16.



LOGAN WALLACE

### First black student receives ninth honorary degree in Tech history

Irving Linwood Peddrew III, the first black student to attend Virginia Tech and the first to attend any historically all-white four-year public institution in the 11 former states of the Confederacy, received an honorary degree—a bachelor's degree in electrical engineering—at Virginia Tech commencement ceremonies on May 13.

President Tim Sands made the announcement during the university's Black Alumni Reunion in late April. "Hard work, character, and meaningful experience in the spirit of *Ut Prosim* (That I May Serve) is the essence of a Virginia Tech degree, and no one is more deserving than Irving Peddrew," Sands said. "He chose to come here knowing he would endure exclusion and hardship, hoping his experience would make a difference for others, and it certainly has."

An honor student at his all-black high school in Hampton, Virginia, Peddrew began his post-secondary education in 1953 as the only black student among Tech's 3,322 enrollees that year.

He was required to participate in the Corps of Cadets, but was not allowed to live or eat on campus. Disillusioned with his treatment, Peddrew left at the end of his junior year and moved to California to join the workforce.

He worked several years in the aerospace and fruit industries, at Newport News Shipbuilding, and at Hampton University before retiring in 1994.

"Irving Peddrew displayed enormous courage as he navigated the many difficult obstacles he faced attending a historically

all-white institution," said Matthew M. Winston Jr. (marketing management '90), senior associate vice president for alumni relations. "He became a catalyst and a pioneer for desegregation, laying the groundwork for the enrollment of generations of African-American students at Virginia Tech. He placed our university on a path to fulfill its true potential to become an inclusive institution for all."

Peddrew's degree is only the ninth honorary degree in the university's 145-year history. In 2003, Tech honored his legacy by naming Peddrew-Yates Residence Hall after him and the late Charlie Yates, the first black student to receive a degree from the university.

### Reunion celebrates heritage

More than 400 alumni returned to campus for the 2016 Black Alumni Reunion, which celebrated several milestones, including the 25th anniversary of the Black Cultural Center, the 20th anniversary of the Enlightened Gospel Choir, and the anniversary of the matriculation of the first black women (see page 44 for a story on the women).

"This year's reunion was an unparalleled success. The energy and engagement amongst the attendees were powerful and spoke volumes to the passion and support they hold for our beloved alma mater," Winston said. "Alumni volunteers, students, alumni staff, and the senior administration, from the president to the deans, all pitched in to make the endeavor a successful one. We hope to use this model to guide many constituency-based reunions in the future."

For more on the reunion, visit [vtmag.vt.edu](http://vtmag.vt.edu).



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5



## It's a bird! It's a plane!

When Jack Norris (industrial engineering '73), of Phoenix, decided to build his first experimental aircraft, he immediately thought of an old T-shirt design depicting the HokieBird's colors. Here's how he took off:

- Learn to fly a plane.** A medical procedure in 2010 limited the pilot, but Norris found that he could fly a light sport plane, which has a maximum gross weight of 1,320 pounds and cruises at 120 knots.
- Buy a kit.** Most light sport planes are made of fiberglass to meet weight requirements. Norris could have purchased a pre-built plane, but he chose an Arion Lightning kit after taking a demo flight.
- Learn all you can.** Since he's building more than 51 percent of the plane, he obtained a maintenance license from the Federal Aviation Administration, which allows him to make his own fixes. Norris attended an engine school that taught him everything from honing cylinders to re-jetting the carburetor.



1

class notes | how-to

2



3



4



- Begin the build.** In November 2015, Norris began working at a build center where he could store his kit and obtain advice and assistance. He outsourced the paint job, but otherwise handled most of the work himself.

**Keep meticulous notes.** Norris compiled more than 100 pages of notes while building his plane, assembling an invaluable reference for future pilots and builders.

- Lift off!**



### Up, up, and away:

For more about the project in Norris's own words, visit [vtmag.vt.edu](http://vtmag.vt.edu).

'59 Paul S. Barbery (MINE), Bluefield, Va., 3/17/16.

H.L. "Herb" Blankenship Sr. (IE), Pfafftown, N.C., 1/15/16.

Burton J. Gwinn Jr. (BAD), Melbourne, Fla., 12/23/15.

Enoch M. Jones (ME), Seabrook, Texas, 2/26/16.

Ralph L. Saunders (ACCT), Nashville, Tenn., 4/1/16.

Donald H. Sires (BAD), Renton, Wash., 1/24/16.

Thurman "Jack" D. Sullins (DASC), Longs, S.C., 12/19/15.

'60 John L. Lemons (EE), Cupertino, Calif., endowed the John

Lemons Enrichment Fund to help the Services for Students with Disabilities office in Virginia Tech's Division of Student Affairs support Tech students who suffer speech impairment, including stuttering and stammering.

Walter F. O'Brien Jr. (ME, ME '68), Blacksburg, Va., was named a Fellow of the American Institute of Aeronautics and Astronautics.

L.M. "Morris" Brown (CE, SAEN '61), Richmond, Va., 1/4/16.

Frederick M. Donica Jr. (ME '61), Jesup, Ga., 2/17/16.

Wallace O. Faison (EE), Richmond, Va., 1/17/16.

Julius E. Harris (ASE, ASE '64, ASE '70), Yorktown, Va., 2/8/16.

James R. Holdren (DASC), Bedford, Va., 1/13/16.

Lawrence C. Phipps (CE), Richmond, Va., 2/9/16.

'61 Charles B. Davis Jr. (EDBS '62), Pulaski, Va., 1/19/16.

James F. Howison III (EM), Huntsville, Ala., 2/16/16.

John F. Newcomb (EM '62), Gloucester Point, Va., 3/10/16.

'62 John "Jack" C. Caldwell Jr. (EE), Appomattox, Va., 10/10/15.

Anthony G. Matthews (CHE '65), Lexington, S.C., 1/27/16.

Edmund R. Temple (BAD '64), Fairfield, N.C., 2/8/16.

'63 Stiles L. Bartley (ARCH '65, ARCH '65), Richmond, Va., 3/7/16.

Thomas "T.J." Clayton Jr. (BAD '64), Powhatan, Va., 2/1/16.

Joseph C. Gibbs Jr. (BAD), Richmond, Va., 1/20/16.

'64 Wayne T. Blanks (ME), Washington, N.C., 2/1/16.

Charles L. Hamilton (GEOL), Wayne, N.J., 1/7/16.

L. Thompson Stanley (MGT), Pompano Beach, Fla., 2/23/16.



"Colin is named after his maternal grandfather who wears Virginia Tech every single day and when asked if he went to Tech, responds, 'My daughter and money did, so I consider myself a Hokie, too.'"

—Lindsay Estes '06

Lindsay Leisher Estes '06, Baltimore, Md., a son, Colin Robert, 6/19/15.

"Lena has been a Hokie since birth (her dad, mom, and grandpa are all Hokies) and she is already a huge Tech football fan, enjoying her first tailgate at 6 months old!"

—Alexa Gardner '05



Alexa Fraley Gardner '05 and Jeremiah Gardner '08, Christiansburg, Va., a daughter, Lena Grace, 4/27/15.

KRISTIN CORNELI PHOTOGRAPHY

ALEXA GARDNER

"Garner is a 10th-generation Virginian, named after his ancestor who fought for America in the Revolutionary War."

—Maria Robison '02



JOSH ROBISON

Maria Evangelista Robison '02, Virginia Beach, Va., a son, Garner Carmen, 12/31/15.



MCCRAW PHOTOGRAPHY

"Having the HokieBird at our wedding was the most important thing to Hunter and me. The HokieBird scheduled to come to our wedding had an emergency, was unable to come, and cancelled the day of the rehearsal. Hearing our story, a summer marketing intern saved the day and, despite having never been a HokieBird, appeared at our wedding as a surprise! *Ut Prosim* at its best!"

—Elizabeth Davis '13

Elizabeth Musser Davis '13 and Hunter Ross Davis '12 '13, Winston-Salem, N.C., 7/18/15.

'65 **Irving M. Blank** (PAD), Richmond, Va., is president of the Virginia Law Foundation.

**George L. Hanbury II** (PAD '66), Fort Lauderdale, Fla., was named among the Top 100 Power Leaders by the South Florida Business Journal.

**Joel M. Amos** (CE), Dry Fork, Va., 1/9/16.

**Thomas J. Carrington** (GEOL), Auburn, Ala., 3/17/16.

**Thomas "Jeff" T. Jeffries III** (GEOP), Stevensville, Md., 1/8/16.

**Arthur T. McClinton Jr.** (PHYS, PHYS '66), Annandale, Va., 12/19/15.

**Arthur W. McKinney Sr.** (ARE '66), Beaverdam, Va., 2/25/16.

**Robert C. Melucci** (CHEM), Gwynedd, Pa., 12/18/15.

'66 **Wilbur B. Fichter** (EM), Williamsburg, Va., 3/23/16.

**G. Edward Mayhew Jr.** (BAD), Vinton, Va., 2/4/16.

'67 **James P. Townsend** (DASC), Manquin, Va., 3/21/16.

'68 **W.R. "Ron" Howell** (ENGL), Hardy, Va., 1/16/16.

'69 **G.J. "Gary" Kerestes** (CHE '70), Midland, Mich., 1/1/16.

**Ronald L. Prickett** (ACCT), Fletcher, N.C., 2/6/16.

**Judith McDaniel Wood** (HIST '70), Kennewick, Wash., 3/7/16.

'70 **Charles T. Wood** (ECON), Richmond, Va., was named the Henrico Community Leader of the Year for 2016 for his efforts to help his community.

**Thomas W. Campbell** (BC '71), Knoxville, Tenn., 12/22/15.

**Steven L. Cumbo** (EE '71), Salem, Va., 3/15/16.

'71 **Lawrence D. LaPointe** (ART), Tampa, Fla., 3/3/16.

**James E. Tuttle** (ENGL), Williamsburg, Va., 12/29/15.

**Michael J. Widger** (DE), Pennsville, N.J., 3/3/16.

'72 **Lawrence G. Hincker** (MBA '95), Blacksburg, Va., was conferred the title of associate vice president and spokesperson emeritus by the Virginia Tech Board of Visitors.

**Michael J. Ileo** (ECON), Wellington, Fla., 5/26/15.

**Virginia Elliott Mescher** (MHFD), Burke, Va., 2/27/16.

**Wlodzimierz Rozenbaum** (HIST), Silver Spring, Md., 10/17/15.

'73 **Elva E. Tillman** (URPL), Baltimore, Md., was awarded the Dorsey Award from the Bar Association of Baltimore City.

**Leroy Jones** (EDBS), Abingdon, Va., 1/15/16.

**Leo M. Moore** (ME), Deltaville, Va., 1/2/16.

**James D. Robbins** (EDBS), Woodbridge, Va., 3/8/16.

**Joseph M. Vann** (NSE), Madison, N.J., 2/18/16.

**Donald R. Wilson** (MGT), Charlotte, N.C., 2/19/16.

'74 **Bruce L. Hall** (ENGL '75), Woodstock, Va., 3/16/16.

**Joseph C. King** (UA, URBA '81), Danville, Va., 12/26/15.

**Robert H. Wright** (AGRN), Chantilly, Va., 12/12/15.

'75 **John S. Carruth** (FW), Charleston, S.C., was named executive director of the Wood Supply Research Institute.

**Alfred L. Cantley** (ACCT '76), Elkins, W.Va., 1/11/16.

**Cheryl B. Grube** (SOC '76), Woodbridge, Va., 11/16/15.

**James R. Jackson** (EDAD, EDAD), Chesapeake, Va., 11/14/15.

**Beverly K. Hensley Mahood** (MGT), Elkton, Va., 3/3/16.

**Bobby L. Morcom** (MEDT), Madison Heights, Va., 2/27/16.

**Philip H. Richard Jr.** (MATH), East Lansing, Mich., 11/28/15.

**John J. Spencer** (EDBS '76), Ocean View, Del., 2/25/16.

**Thomas "Lenny" L. Vaughan** (ENGL), Portsmouth, Va., 1/4/16.

**Brent M. Wilson** (BC '76), Roanoke, Va., 3/8/16.

'76 **Wayne E. Boggs** (ACCT), Arlington, Va., 1/22/16.

**Elizabeth Howard Dotur** (EDAD '77), Purcellville, Va., 3/23/16.

**Frances Coulter Sherrard** (EDSP), Indianapolis, Ind., 3/14/16.

**Dollie A. Tarrant** (EDVT '77), Norfolk, Va., 2/16/16.

'77 **Martin C. Chapman** (GEOP, GEOP '79, GEOP '98), Christiansburg, Va., director of the Virginia Tech Seismological Observatory, received the 2015 Jesuit Seismological Association Award for Contributions to Observational Seismology.

**Traci Medford-Rosow** (PCSI, SPAN), Mahopac, N.Y., authored a memoir, "Inflection Point: War and Sacrifice in Corporate America," an account of a corporate battle for control of a pharmaceutical product, which was published by Pegasus Books.

**Joseph R. Henderson Jr.** (ETE), Raleigh, N.C., 12/22/15.

**Karen D. Roberts Rancorn** (CTRA), Newport News, Va., 1/21/16.

**Daniel D. Wood Jr.** (ANSC '78), Altamonte Springs, Fla., 1/7/16.

'78 **Andrew R. Kissell** (CE '79), Virginia Beach, Va., was elected to serve a three-year term as president of the Virginia Conference of United Methodist Men.

**Thomas P. Walk** (FIN), Tazewell, Va., was elected to the disAbility Law Center of Virginia Board of Directors.

**Thomas R. Grinde** (MGT), Sea Cliff, N.Y., 1/10/16.

**Joseph P. McCaffrey** (ENT, ENT '81), Pullman, Wash., 2/19/16.

'79 **Patrick K. Hash** (AGED), Atkins, Va., 2/24/16.

**Peter M. Pelish** (ME), Irwin, Pa., 1/9/16.

'80 **H. Judson Skinker Jr.** (ARCH '81, IT '07), Midlothian, Va., is the senior information security officer for the Virginia Community College System.

**William "Jack" O. Turner III** (CE), Marietta, Ga., 12/31/15.

'81 **Daniel J. Stone** (EE), Bradenton, Fla., 2/27/16.

**Azarie S. Geathers Waters** (EDAD, EDAD '83), Virginia Beach, Va., 2/16/16.

'82 **Letitia A. Long** (EE), Arlington, Va., is chairwoman of the Intelligence and National Security Alliance Board of Directors.

**Alysoun F. Holland** (ANSC '83), Hagerstown, Md., 12/27/15.

**William D. Rosenfeld** (EDCI), Blacksburg, Va., 2/28/16.

**William A. Sheaffer** (FW), Micanopy, Fla., 1/2/16.

**Daniel A. Stanek** (ARCH '84), Roanoke, Va., 2/9/16.

'83 **Jerry H. Wingfield** (HIST), West Columbia, S.C., 1/5/16.

'84 **Regina E. Dugan** (ME, ME '85), Los Altos, Calif., was named the head of a Facebook research-and-product-development group.

'85 **Richard D. Crosby Jr.** (EDAD '84, EDAD), Lorton, Va., 12/29/15.

**Gary W. Jarratt** (MGT), North Dinwiddie, Va., 1/31/16.

**Maribeth Quinn** (IEOR), Westerville, Ohio, 2/12/16.

**Michael Storm Jr.** (EDAD), Virginia Beach, Va., 11/24/15.

'86 **W. Dale Huff Jr.** (LAR), Christiansburg, Va., is head of landscape architectural services for the Virginia Department of Transportation in Richmond.

**Cathy Lange** (ARCH), Wakefield, Mass., is principal of Shepley Bulfinch, a national architecture practice in Boston.

**Kirk H. Schulz** (CHE, CHE '91), Manhattan, Kan., was named president of Washington State University.

**Keith F. Becker** (CS), Baltimore, Md., 2/7/16.

**Joseph G. Fedorczak** (CSA), Waukesha, Wis., 2/7/16.

'87 **Robert S. Keynton** (ME), Louisville, Ky., is the director of research initiatives at the University of Louisville.

**David S. Moore** (HNF), University Park, Md., 1/17/16.

**Frances M. Parker** (STAT), Savage, Md., 2/26/16.

'88 **Tonya D. Chapman Vincent** (MKED, BAD '09), Woodbridge, Va., was named the chief of Portsmouth Police Department.

**Virginia Tech in hand**

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**Revisit life at Tech**—from 1990 onward—in the pages of Virginia Tech Magazine. Browse the archives at [vtmag.vt.edu/archives](http://vtmag.vt.edu/archives).

- '89 **Edward R. Olsen** (HORT '90, EDCT '10), Midlothian, Va., is an Extension agent for agriculture and natural resources/horticulture in Henrico County.
- Frances J. Phoenix** (EDCI), Dumfries, Va., 3/9/16.
- '90 **David S. Hunt** (ME), Washington, D.C., was named the Portsmouth Naval Shipyard commander by the Naval Sea Systems Command.
- Edward F. Lener** (GEOL, GEOL '97), Blacksburg, Va., co-authored a book, "Graduate Research: A Guide for Students in the Sciences."
- '91 **Gerard F. Lawson** (FCD), North Chesterfield, Va., was named the president of the American Counseling Association.
- Ann Marie Stephens** (FCD), Fairfax, Va., wrote a children's book, "Scuba Dog," that was published by Little Bee Books.
- '92 **Cary A. Nothnagel** (TA, ENGL '94), Richmond, Va., was named the 2016 Teacher of the Year at Manchester High School in Chesterfield County.
- Geoffrey S. Bald** (ECON), Birmingham, Ala., 7/22/15.
- Kenneth D. Jones** (EDAD, EDAD), Fort Washington, Md., 5/11/15.
- Steven J. Tselides** (EDVT), Warren, Va., 1/17/16.
- '93 **Karl W. Barth** (PHYS), Poughkeepsie, N.Y., is a senior member of the technical staff at GlobalFoundries.
- Dan M. Sandifer** (FCD), Beijing, China, 1/11/16.
- '94 **C. Patrick Hogeboom IV** (CE), Fairfax Station, Va., was honored as a finalist for the National Society of Professional Engineers' 2016 Federal Engineer of the Year award.
- '95 **Thomas E. Boyce** (PSYC, PSYC '99), San Carlos, Calif., released his third album through Something Magical Productions LLC.
- James "J.B." Daniel II** (CSES, CSES '97), Amelia Court House, Va., was named Pastureland Conservationist of the Year at the American Forage and Grassland Council's annual conference.

- Barry I. Matherly** (URPL), Richmond, Va., is the chairman of the International Economic Development Council.
- Walter K. Ickes Jr.** (PSCI), Georgetown, Ky., 3/9/16.
- '96 **Addison W. Nottingham III** (ARCH '96), Lovettsville, Va., was named principal of the ACG Architects firm.
- Brian L. Edmonds** (HIDM '97), Blackstone, Va., 3/1/16.
- Matthew R. Ellis** (BIOC, VM '01), Blacksburg, Va., 2/8/16.
- '97 **James L. Moore III** (EDSP, EDCO '00), Alexandria, Va., received the Distinguished Contributions to Gender Equity in Education Research Award from the American Educational Research Association and authored two books, "African American Male Students in PreK-12 Schools" and "Black Males and Intercollegiate Athletes: An Exploration of Problems and Solutions."
- '98 **Shawn W. Walker** (EE), Danville, Va., an assistant professor of mathematics at Louisiana State University, received a National Science Foundation CAREER award.
- '99 **Stuart P. Bernstein** (ARCH), Elkhorn, Neb., received an Alumni Outstanding Teaching Award from the University of Nebraska at Omaha Alumni Association.
- Erin P. Walsh Donovan** (CE), Annandale, Va., was recognized in the Engineering News Record Mid-Atlantic's 2016 Top 20 Under 40 competition.
- '00 **Rayya Deeb** (COMM), Westlake Village, Calif., authored a book, "Seneca Rebel," a young adult science-fiction thriller published by ATM Publishing.
- Natalie A. Hart** (MGT '01), Blacksburg, Va., joined Virginia Tech's advancement division as a principal gifts officer.
- Sarah Bedsaul Hiza** (CHEM), Scotts Valley, Calif., was named a 2016 Tribute to Women honoree by YWCA Silicon Valley.
- Daniel A. Musiker** (CE), Arnold, Md., was awarded the 2014 Public Works Annapolis Engineer of the Year from the Naval Facilities Engineering Command.
- Michael R. Munsey** (ME), Roanoke, Va., a son, 11/4/15.



**120** years ago, O.M. Stull (Class of 1896) first used the word "Hoki" in a spirit yell he had written for a competition:  
**Hoki, Hoki, Hoki, Hy.**  
**Techs, Techs, V.P.I.**  
**Sola-Rex, Sola-Rah.**  
**Polytechs - Vir-gin-ia.**  
**Rae, Ri, V.P.I.**

**80** years ago, the first iteration of the HokieBird, then called the "Gobbler," debuted.

**60** years ago, Newman Library had just opened its doors. At the low-tech circulation desk, attendants stamped cards to track checked-out books.

**43** years ago, Virginia Tech became the first school in the country to admit female members to its Corps of Cadets. The women formed the all-female L Squadron.



BY KIM BASSLER '12, UNIVERSITY LIBRARIES COMMUNICATIONS COORDINATOR. IMAGES COURTESY OF LIBRARIES' SPECIAL COLLECTIONS; MORE CAN BE FOUND AT [IMAGEBASE.LIB.VT.EDU](http://IMAGEBASE.LIB.VT.EDU).

- '01 **James D. Lough** (PHYS), Aurora, Colo., a postdoctoral researcher at the Albert Einstein Institute in Germany, was part of a group of scientists that recorded the sound of two black holes colliding, which proves Albert Einstein's theory of relativity and the existence of gravitational waves.
- Gregory K. Brown** (CE) and **Laura M. Kvech-Brown** (HIST), Smithfield, Va., a daughter, 12/30/15.
- '02 **Timothy A. Kittila** (ME), Victoria, Minn., is the director of the Data Center Practice for Parallel Technologies.
- Kurt J. Riehl** (FIN), West End, N.C., was named a State Farm agent.

- John T. Dalton** (FIN) and **Kelly McGrath Dalton** (HNFE '04, HNFE '07), Arlington, Va., a son, 2/15/16.
- Christopher R. Nalevanko** (EE) and **Lindsay McCartney Nalevanko** (CT '04), Seattle, Wash., a son, 2/23/16.
- Maria Evangelista Robison** (COMM), Virginia Beach, Va., a son, 12/31/15.
- '03 **Felicia M. Rankin Qashu** (BIOL), Germantown, Md., is deputy research director at the Department of Defense's Defense and Veterans Brain Injury Center.
- Jerry B. Sumpter** (BIT, ACIS '10), Christiansburg, Va., is director of finance information technology at Virginia Tech.

- Marie Kniedler Randev** (CHE) and **Raja P. Randev**, Houston, Texas, 1/9/16.
- David E. Blanchard** (BIT) and **Lindsay K. Jones Blanchard** (HD '04, EDCI '06), Herndon, Va., a son, 11/17/15.
- Richard "Scott" Booker** (ECON), Henrico, Va., a daughter, 2/2/16.
- Caroline Hunter Davis** (COMM) and **Luke F. Davis** (ACIS '03, BAD '05), Columbia, S.C., a son, 12/30/15.
- Jared D. Peak** (BCHM), Apex, N.C., a son, 2/14/16.
- Heather Parks Turner** (CT), Hardy, Va., a daughter, 2/6/16.
- '04 **Juan P. Espinoza** (PUA), Blacksburg, Va., was appointed by Gov.

- Terry McAuliffe to the Virginia Latino Advisory Board.
- Kimberly A. House** (PSCI), Philadelphia, Pa., rejoined Rawle & Henderson LLP, working in the catastrophic loss practice group.
- James R. Osborne** (ARCH), Phoenix, Md., was named general counsel at Johnson, Mirmiran, and Thompson, an architectural and engineering firm.
- Jason D. Scyphers** (PSYC) and **Kimberly Radgowski Scyphers** (PSYC '05), Fairfax, Va., a son, 10/23/15.
- Jessica L. Clem Tabb** (FIN) and **John M. Tabb III** (FIN, ARCH '05), Charleston, S.C., a son, 12/31/15.
- Amy B. Adamchik Tate** (ITDS), Baltimore, Md., a daughter, 1/17/16.



JIM STROUP

## Ms. Wheelchair Virginia

Crowned Ms. Wheelchair Virginia in March, Laura Rhyné Tollin (biology '01) heads to Michigan for the national competition in August.

Tollin, a data integrity specialist at the Virginia Tech Transportation Institute, wouldn't have entered the competition if not for a lifechanging event.

"In 2014, I got divorced. It shook me to my core and made me reflect on how society viewed me. I had been married for 11 years and had taken everything for granted. I then started holding myself accountable and stopped shirking opportunities or responsibilities. It was a massive shift in my way of thinking. I started praying and going to the Unitarian Universalist Church of Blacksburg.

"As a result of wanting to change and improve myself, I went to the Blue Ridge Independent Living Center conference in Richmond in late 2015. There, Pamela Cobler handed me a flyer for Ms. Wheelchair Virginia. At that time, I was still looking for something to galvanize me and bring true meaning to my life.

"Despite being anti-pageant, I chose to go into the contest and view it as an experience and a chance to meet new people. It came at a time in my life where I needed something to spur me into action. I came to own my disabilities and started to take pride in them because I have done a lot with my life up to this point. Not only that, I have much more to look forward to."

**Anthony N. Nicholas** (ACIS), Frederick, Md., 1/26/16.

'05 **Brigitte K. Orrick** (FPR) is director of workforce development for the Tree Care Industry Association.

**Brian S. Board** (CE), Hampton, Va., a daughter, 11/17/15.

**Alexa Fraley Gardner** (HD, EDCI '11) and **Jeremiah J. Gardner** (MGT '08), Christiansburg, Va., a daughter, 4/27/15.

'06 **Nathan A. Lahy** (LAR), Chesapeake, Va., is a licensed landscape architect in North Carolina and Virginia.

**Stacy C. Whipple Daley** (FIN) and **John C. Daley** (FIN '09), Fairfax, Va., a son, 9/4/15.

**Lindsey Leisher Estes** (COMM), Bel Air, Md., a son, 6/19/15.

**Kyle E. Spangler** (WOOD), Norfolk, Va., a son, 3/4/16.

'07 **John C. Flores** (MKTG), West New York, N.J., was honored as a 2016 Future Famer by the Medical Advertising Hall of Fame.

**Ashley Dooley Carpenter** (CS), Glenmoore, Pa., a son, 3/29/16.

**Kyle F. Fondren** (MKTG) and **Katie N. Fondren** (MKTG), North Chesterfield, Va., a daughter, 12/15/15.

'08 **Steven R. Anton** (ME, ME '11), Cookeville, Tenn., received a Young Investigator Research Program grant from the U.S. Air Force Office of Scientific Research.

**Ethan B. Crockett** (FORS) and **Elise N. Glaum** (COMM '09), Richmond, Va., 9/5/15.

**Benjamin M. Bredenkamp** (CHEM), Roanoke, Va., a son, 3/7/16.

**Lindsey W. Woodburn Brown** (APSC) and **Christopher M. Brown** (ARCH '10), Henrico, Va., a son, 1/8/16.

**Nicklaus C. Eisenbeiser** (COMM), Columbia, Md., a daughter, 1/5/16.

'09 **Braden L. Field** (ARCH), Falls Church, Va., is an associate with the MTFA architecture firm.

**James T. Thorson** (FIW), Seattle, Wash., received the 2016 Presidential Early Career Award for Scientists and Engineers, the highest honor given by the U.S. government to early career scientists and engineers.

**Roger L. Scott Jr.** (AT) and **Amanda L. Weakley-Scott** (APSC '10, DASC '10, VM '14), Brightwood, Va., 12/31/15.

**Brandon J. Divers** (HIST) and **Jennifer H. Hedrick Divers** (COMM '10), Haughton, La., a son, 11/16/15.

**Roger L. Scott Jr.** (AT) and **Amanda L. Weakley-Scott** (APSC '10, DASC '10, VM '14), Brightwood, Va., a daughter, 10/17/15.

**Matthew L. Crane** (ME), South Boston, Va., 1/10/16.

'10 **Chad S. Ratliff** (BAD), Charlottesville, Va., an adjunct professor of entrepreneurship at Piedmont Virginia Community College, was named to the Governor's Council on Youth Entrepreneurship.

**Russell W. Harris** (ME), Monrovia, Md., a daughter, 7/22/15.

'11 **Hunter R. Davis** (HIST, EDCI '13) and **Elizabeth Musser Davis** (HNFE '13, PH '15), Henrico, Va., 7/18/15.

'13 **Rajan Jha** (CE), Roanoke, Va., was named one of 2016's New Faces of Civil Engineering Professionals by the American Society of Civil Engineers.

**Clark D. Egelston** (DASC) and **Mackenzie Moore Egelston** (AT '14), Fultonville, N.Y., 1/1/16.

**David M. Wisda** (AE, AE '15) and **Kristen Becker Wisda** (FIN), Blacksburg, Va., 10/11/15.

'15 **Victoria M. Childress** (PH), Richmond, Va., is a senior research assistant with the Commonwealth Institute for Child and Family Studies, a division of Virginia Commonwealth University's Department of Psychiatry.

**Kevin J. Olson** (CS), Vienna, Va., performed a guitar routine at two Virginia Tech basketball game halftimes.

## obituaries

### faculty/staff

**Guyton Bowers Hammond**, professor emeritus of religious studies, died May 1. Hammond, who taught undergraduate classes in religious studies at Virginia Tech for 38 years, was head of the Department of Philosophy and Religion from 1978 to 1983 and the Department of Religion from 1983 to 1985. In 1995, he served as transition leader for the Center for Interdisciplinary Studies, the forerunner of the current Department of Religion and Culture. When Hammond retired in 1995, an anonymous donor honored him by establishing the Hammond Lectureship in Religious Ethics and Society.

**Precision pups:** Dogs may look like sloppy drinkers, but their tongue movements are in fact precise movements that use inertia to optimize their ability to drink. Rapid tongue acceleration—to the tune of 2 to 4 Gs—is followed by tongue retraction, which draws water upward. The dog then bites down to capture the water. Researchers in Virginia Tech's Bio-Inspired Fluid Lab, which investigates practical applications that exploit the movement of fluids in living systems, filmed 19 dogs in the National Science Foundation-supported study. For more on the research, visit [vtmag.vt.edu](http://vtmag.vt.edu). Image courtesy of Jake Socha, Sean Gart, and Sunghwan Jung.

*The future is*  
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**Hunter Shinn's ambitions stretch beyond borders.**

Although this rising sophomore has not left the United States, he's been fascinated by the study of languages since first taking Latin in fifth grade.

As he works toward a degree in classical studies, Hunter plans to enroll in as many language courses as possible, with an eye to becoming

a teacher or translator. He also anticipates studying abroad, most likely in Greece or Rome, where he can hone his knack for languages.

A native of Portsmouth, Rhode Island, Hunter chose to invent his future at Virginia Tech. A renewable, merit-based scholarship helps make it possible for him to attend his school of choice, and also provides inspiration.

"It's a great honor, and I'm going to work as hard as I can to maintain it," Hunter says of his scholarship, which is supported by donations to the annual fund for his college.

To make a gift of your own, or to learn more about annual giving to Virginia Tech, including our new 1872 Society, visit [bit.ly/vt-ag](http://bit.ly/vt-ag).

