

Sparks

Time, space, and permission
for entrepreneurs

Campus Canines

Exploring the human-animal
bond

The Voyager

Alumna never turns down
adventure

VIRGINIA TECH magazine

fall 2014



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features

Sparks: “Time, space, and permission” for entrepreneurs
Described as a “farm team for the majors” for entrepreneurs, NuSpark is a new ideation space adjacent to Virginia Tech. Offering rent-free space for faculty, staff, students, and the public, the venture allows “time, space, and permission” to tinker, said a supporter.

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Sowing the Future: How Virginia Tech will provide food and fresh water for a growing population

As a research university with a rich agricultural heritage, Virginia Tech is ideally poised to help provide both food and water to the world’s billions. The first of a two-part series examines what the university is doing in the U.S. and Virginia in particular.

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Campus canines: Exploring the human-animal bond

“One second they’re gnawing their brother in the ear. The next second they’re scratching. And the next second they’re trying to climb out of the pen.” So goes a researcher’s effort to film puppies in 3-D, just one of the fascinating ways that dogs are being used across campus.

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The Voyager: Alumna never turns down adventure

Carolyn “Lonnie” Schorer (M.Arch. ’86) has searched for Amelia Earhart, designed the world’s first ocean-going residential community, written four children’s books, and will soon join an expedition to find a sunken aircraft carrier off the California coast. The 73-year-old has no plans to slow down.

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On the cover: Photo by Jim Stroup. Photo styled by Robin Dowdy.

In the **1960s**,
1 farmer fed
almost **26 people**.

Today,
1 farmer feeds
155 people.

By **2050**,
the Earth may hold
10 billion
people.

How will **we** feed them?

See page 24.



RYAN STONE

Unleashing the Innovation Ecosystem

by TIMOTHY D. SANDS



Although we are generally considered Virginia's leading economic development university, we have the potential to do still more. Our challenges here are not dissimilar from those of other land-grant universities, but I think we are in a better position to resolve them.

Corporate America sometimes is frustrated, rightfully in my opinion, with higher education's penchant to argue over intellectual property (IP) rights. Universities should and must engage in commercialization and entrepreneurship, and Virginia Tech is playing its part well. However, we must alter our approach.

In many cases, we should engage in commercialization not for the potential licensing revenue stream, but for the more important institutional and societal benefits. Sure, revenue is important to the institution. But moving ideas into the marketplace is more important in the long run. Developing a reputation as an institution that promotes the translation of discoveries into useful products and services will be critical to attracting faculty, staff, and student talent. An important aspect of building that reputation is lowering the barriers for corporate partnerships. Businesses will be more prone to hire our students, create internships, sponsor more research, and, yes, make philanthropic investments.

We're also looking at intellectual property from the student and faculty standpoint. We want students and faculty to see the university as a valuable partner whose interests align with theirs. We need to ensure that our institutional policies encourage disclosure and protect faculty and student rights. Our students should be offered as much freedom as possible to run with their ideas, even if that freedom means more mistakes than successes. From the faculty perspective, too many universities sit on their IP portfolios. If we cannot parlay patents into real business activity, we should release the intellectual property to the inventors and let them run with it.

Those of us who have spent time in American higher education know that there's something slightly different, dare I say special, about land-grant universities. Advancing the boundaries of knowledge while closely wedded to job-creating initiatives, universities like Virginia Tech are at the center of the 21st-century "innovation ecosystem."

Closely related to this intellectual property discussion is the promotion and tenure culture. The three prongs of our mission—discovery, learning, and engagement—do not have to be reflected in equal proportions in the promotion and tenure process, but I believe we do need to recognize commercialization for its role in the broader engagement mission.

We also need to reflect on how commercialization aids scholarship, the foundation of all three mission elements at a research university. There is plenty of evidence to suggest that scholars who engage in commercialization can be more productive because of the new ideas and discoveries that arise from the process of teasing economic value out of new knowledge.

Conversely, some of the most significant commercialization opportunities derive from serendipitous discoveries made while performing curiosity-driven research. We need to create an environment that will encourage our researchers to be opportunistic—to take a detour toward commercialization when the opportunity arises.

As I said in my last column, Virginia Tech has made great strides in the past decade or so and now ranks among the nation's leading universities. But we have the potential for much more—particularly in shaping an environment right here in Virginia that will unleash our potential to become a global hotbed for entrepreneurship, innovation, and commercialization. □

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All about the firsts

I enjoyed reading about firsts in Virginia Tech history in the summer magazine. I did not see the first veterinary class in 1984, of which my husband, Edward T. Knickman (D.V.M. '84), is a member. He has fond memories and lasting friends from his four years in Blacksburg.

Carol Knickman
Jarrettsville, Maryland

I have a very distinct memory of the first Tech touchdown in Lane Stadium. William and Mary was leading 7-3; it was Tech's ball and there was only time for one more play. Owens threw a hail mary to the end zone. The ball went through the hands of a Tech receiver and fell to the ground. The referee ruled a touchdown. Tech was lucky; W&M was robbed!

Bill Bodie '58
Williamsburg, Virginia

When woman were admitted to the Corps of Cadets, they were segregated into a separate dormitory and into a separate unit, L Squadron. The corps was declining in number after the war in Vietnam. In fall 1977, my freshman class was the first to be larger than the previous class in several

Corrections

In the "firsts" cover story in the summer 2014 edition, several dates and facts were incorrect. According to the U.S. Army Center of Military History, Antoine A.M. Gaujot, Class of 1901, earned the medal for actions at San Mateo in the Philippine Islands on Dec. 19, 1899 (the medal was issued in 1911), and Julien E. Gaujot, Class of 1894, earned the medal for actions at Aqua Prieta, Mexico, on April 13, 1911 (the medal was issued in 1912). Also, Earle Gregory (electrical engineering '23) was the first Virginian to earn the Medal of Honor in World War I for actions on Oct. 8, 1918, north of Verdun, France. Lastly, Patricia Ann Miller (general home economics '59) was awarded a commission in the U.S. Army Women's Medical Specialist Corps, unconnected to ROTC. Thank you to M. Cary Burton (business administration '59) for bringing these matters to our attention.

In addition, this fall the Student Alumni Associates will celebrate their 40th reunion, not their 45th.

years, and the corps had about 320 cadets, including L Squadron.

The corps was growing, but the Class of 1980 still had very few men, and my unit, F Squadron, had only three senior men. In spring 1979, L Squadron was disbanded, women cadets were integrated into the rest of the corps, and F Squadron received three women members, more than any other unit.

So the first woman to command a gender-integrated company was Selena S. Daughtrey, commander of F Squadron in 1979-80. In those days before coed dorms and with limited visiting hours, she wasn't even allowed in the company but for a few hours a day.

As always, thanks for keeping the Hokie spirit alive and interesting!

Reuben E. Moore (civil engineering '81)
Sylva, North Carolina

My wife and I were lifelong Virginians until last year when her job brought us to Atlanta. It's been a great move in many respects but we gave up our football tickets and haven't made it back to campus nearly as much as we used to. The most recent Virginia Tech Magazine made me both homesick and very proud of our university at the same time. Thanks for a great publication and keep 'em coming.

Matt Marchal (biochemistry and nutrition '93)
Atlanta, Ga.

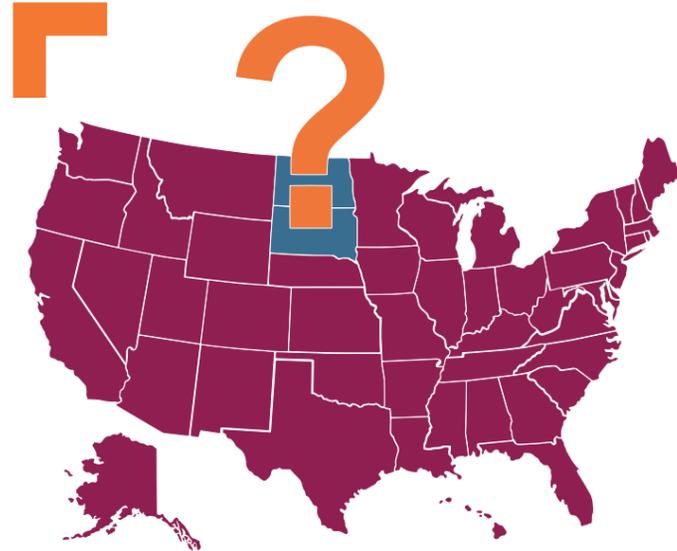


First female rector begins term

When Deborah Martin Petrine (business administration '78) assumed the position of rector at the Virginia Tech Board of Visitors' June meeting, she became the first woman to hold the position.

She is founder, president, and CEO of Commonwealth Care of Roanoke Inc., which owns

and operates 11 long-term-care facilities in Virginia. In 2005, Petrine received the Virginia Health Care Association's James G. Dutton Award for lifetime achievement in the long-term-care field. In 2009, she became president of Longleaf Senior Living LLC, which managed 32 assisted-living facilities in North Carolina. Petrine has served on advisory boards for the Pamplin College of Business management department and the Virginia Tech Center for Gerontology. In 2011, she received the Pamplin College Distinguished Alumnus Award.



Is it something we said?

On Aug. 20, the Hokie Nation gained some 6,400 new undergraduate students, including approximately 5,400 freshmen and 1,000 transfer students. Applications for undergraduate admission were received from 40 countries and every U.S. state ... except North Dakota and South Dakota. Surely it can't be Blacksburg's weather?

European facility renamed for Steger

Virginia Tech's primary international facility, the Center for European Studies and Architecture, located in Riva San Vitale, Switzerland, has been renamed the Steger Center for International Scholarship in tribute to former Tech President Charles W. Steger's vision of broadening the university's global presence, a defining element of his tenure. More than \$2.6 million in gifts made in Steger's honor by major donors to the university enabled the center's renovation and expansion.

"I was surprised, touched, and humbled to learn about this

and am extremely honored," said Steger, who, while serving as dean of Virginia Tech's College of Architecture and Urban Studies, spearheaded efforts over several years to obtain approvals from the Swiss government for the Virginia Tech Foundation to buy the facility.

Steger, who also negotiated the purchase with the former owners of the property, said the success of the center's programs was largely due to its founding director, Olivio Ferrari, and his widow, Lucy Ferrari, who formerly oversaw programs at the Swiss facility.



LARRY HINCKER



AMANDA LOWMAN

The power of the printed world

If you haven't yet heard about 3-D printing, you soon will. Stories that have covered the process, known inside the industry as additive manufacturing, typically focus on folks at home in front of a souped-up version of an ink-jet printer kicking out replacement parts for a broken valve cap or a homemade Jedi trinket for their fourth-grader obsessed with "Star Wars." There's even been talk of 3-D printed guns, both pro and con.

In Assistant Professor of Engineering Christopher Williams' DREAMS laboratory—an acronym for Design, Research, and Education for Additive Manufacturing Systems—Hokie researchers are looking well beyond just the fizz in the soda. In fact, many be-

lieve that 3-D printing will revolutionize manufacturing, medicine, and the marketplace. Williams' lab is helping to lead the charge.

On the drawing board and inside several of the 3-D printing processors, which range from the size of a coffee maker to a Honda Fit, are plans for bendable wings that could upend the way that small, unmanned aircraft are designed and built. And a 3-D printed sponge-like scaffolding implant made of dissolvable material could quicken the recovery of anyone with a shattered bone.

In print:

Read the full story in the summer edition of Research magazine at www.research.vt.edu/resmag/2014-summer/.

Firsts in Virginia Tech history: Recycling on campus

Although Virginia Tech is now committed to a range of sustainability projects and research, such ecological achievements were relatively long in the coming. Volunteer efforts to organize campus recycling date back to at least the mid-1970s, but it wasn't until 1989 that a new wave of

environmentalism prompted faculty and staff volunteers to join with students from the YMCA-sponsored organization Ecocycle to promote campus-wide recycling of aluminum cans.

Around the same time, English instructor Larry Bechtel and fellow faculty members borrowed a battered pickup truck from the Physical Plant and established a weekly paper

collection service that quickly expanded from one stop at Williams Hall to stops at 20 other campus buildings. Soon, volunteers were hauling the paper by flatbed to a trailer parked by the Duck Pond.

To manage the program's growth, Bechtel proposed in 1991 that the Physical Plant hire him part-time. Named the university's first full-time recycling coordinator the next

year, he effectively launched Virginia Tech Recycling.

Despite encountering a number of bumps in the road over the next 25 years, the university's efforts regularly win sustainability and green awards these days—and not just for recycling.

To learn about other firsts in Virginia Tech history, go to www.vtmag.vt.edu/sum14/.

Class I.	Class II.	Class III.	Class IV.
Vermont, University of. Vanderbilt University. Vassar College. Virginia, University of. Washington, University of. Washington University. Wellesley College. Wesleyan University. Western Reserve University. Williams College. Wisconsin, University of.	*Wabash College. Wake Forest College (recent degrees). Washburn College. Washington and Jefferson College (A). Washington and Lee University (A). Wells College. Western Maryland College. Western College for Women. West Virginia, University of. Whitman College. *William Jewell College. Wilson College. Willamette University (A). Wofford College. *Wooster, University of.	Valparaiso University. Wesleyan University of West Virginia. Westminster College (Pennsylvania). Wheaton College. Whitworth College. Wittenberg College.	Vincennes University. Virginia Polytechnic Institute. Wartburg College. Waynesburg College. Wilmington College (Ohio).

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COURTESY OF THE INTERNET ARCHIVE

A 1911 report from the U.S. Bureau of Education didn't look kindly on the performance of a certain school in Blacksburg.

From 'Fourth Class' to top class

While Virginia Tech continues to accumulate accolades, evidence that our beloved university hasn't always been so highly regarded has resurfaced. An Aug. 6 blog entry from *The Chronicle of Higher Education* recaps a national report, originally released by the U.S. Bureau of Education in 1911, ranking the country's colleges in four tiers.

Virginia Polytechnic Institute—today's Virginia Tech—was unceremoniously proclaimed a "Fourth Class" college, sharing the bottom rung with such institutions as Alabama Polytechnic Institute, Georgia School of Technology, Kansas State Agricultural College, and Texas Agricultural and Mechanical College.

What a difference a century makes.

In July, Virginia Tech was named among the country's top 50 colleges and 25 best public colleges on Money magazine's list of best colleges, and the university made its first appearance among the top 25 public colleges as ranked by Forbes.

On Money's list, Virginia Tech ranked 42nd among all institutions and tied for 12th among the 25 best public colleges. Overall, Virginia Tech received a value grade of A- and a ranking score of 3.62 on a 4.0 scale. To build its list, the magazine assessed some 1,500 four-year colleges and universities in the U.S., ultimately ranking 665 schools.

For the first time, Forbes added Virginia Tech to its annual ranking of the top 25 best public colleges, placing the university

23rd among public institutions and 117th among 650 national schools. Among the top 25 public colleges, which represent 16 states, three Virginia colleges appear.

The formula used for these most recent rankings placed high value on a college's "output," which includes graduation rates and graduates' success. While Money evaluated colleges based on educational quality, affordability, and outcomes, Forbes measured student satisfaction, post-graduate success, graduation rates, and academic success to compile its rankings.

Beyond this recognition of its outstanding academics, Virginia Tech routinely earns high marks for its overall campus experience, particularly its dining. Once again, the university was named No. 1 in Princeton Review's Best Campus Food rankings for 2015.

Administered by Dining Services, campus dining at Virginia Tech has placed in Princeton Review's top five best campus food spots for nine consecutive years, attaining the No. 1 designation in both 2010 and 2008. This year's top ranking was especially sweet: Virginia Tech dining was featured on the Aug. 5 broadcast of NBC's "Today" show.

Along with the No. 1 ranking for food, Virginia Tech was recognized as No. 2 for Town-Gown Relations Are Great, No. 3 for Their Students Love These Colleges, No. 5 for Happiest Students, and No. 5 for Best Quality of Life. These top rankings earned Virginia Tech a spot in Princeton Review's respected annual college guide, "The Best 379 Colleges."

"Fourth Class"? Not in our lifetimes.

Virginia Tech's research laboratory in India unveiled

Four years in the making, Virginia Tech's research laboratory in India opened in mid-May. Then-Virginia Tech President Charles W. Steger presided over the ribbon-cutting ceremony for the built-to-specs laboratory.

Outfitted with equipment enabling researchers to harvest energy in new ways from waves, sun, and wind, as well as mechanical vibrations such as those produced by trains, the 6,000-square-foot lab will soon feature a state-of-the-art wind tunnel allowing researchers to develop high-efficiency wind turbines by optimizing their aerodynamic and structural performance.

"We are crossing continents to meet the global demand for new energy technology development," said Virginia Gov. Terry McAuliffe. "The insights we gain and the technology we create all transfer back to Virginia, and we can apply those assets to build new industry, address U.S. energy challenges, and create a 21st-century Virginia economy."

The campus in the state of Tamil Nadu in southeast India pairs Virginia Tech's high-tech research with its tradition of putting new ideas and inventions into practice for the world's betterment. The South Asian country is the ideal locale for such research, said Guru Ghosh, the



Timothy Sands to be formally installed as 16th president

The Virginia Tech community has rolled out the red carpet for the university's 16th president, Timothy Sands. Some of the events have been a bit more informal—such as his participation in Hokie Camp alongside incoming freshman students, and his arrival at new student orientation. Meanwhile, the formal welcome—the official installation—will take place on Friday, Oct. 17, in the Burruss Hall Auditorium. For ongoing coverage of the celebration and its assorted events on Oct. 17 and 18, visit www.president.vt.edu/ installation. By using the social media hashtag #enterVTSandsman, alumni chapters, student organizations, and friends of the university can send Sands video greetings, photos wishing him well, or various tweets or posts. Photos by Logan Wallace.

university's vice president for outreach and international affairs: "Virginia Tech is setting a team to work that will refine and adapt windmills and solar

panels for use in households in rural India. This [work] is vital to reducing poverty where hundreds of thousands of people live off the grid.

Uplifting lives in India and elsewhere rests on the world's capacity to produce enough electricity for everyone."



LOGAN WALLACE



LOGAN WALLACE

Among other impressive features, Goodwin Hall—formerly called the Signature Engineering Building—houses the Terrestrial Robotics Engineering and Controls (TREC) Lab (left), where sophomore Eric Hahn works on THOR, the Tactical Hazardous Operations Robot; and, suspended in the atrium (right), a Trent 1000 jet engine.

It's opened ... and it's a beauty

The flagship building for the Virginia Tech College of Engineering—the newly renamed Goodwin Hall, formerly called the Signature Engineering Building—hosted its first classes in August.

The name change honors the philanthropy of Bill (mechanical engineering '62) and Alice Goodwin, whose donation—the largest single gift in university history—helped fund construction of the 155,000-square-foot, \$95.2 million facility.

Situated on Price's Fork Road on the north side of campus, the Hokie Stone-clad building is home to 40 instructional and research labs, eight classrooms, an auditorium, and 150 offices for several engineering departments.

Intriguingly, Goodwin Hall also incorporates a groundbreaking experiment to measure even the smallest vibrations made inside the building. Spearheaded by Department of Mechanical Engineering faculty members Pablo Tarazaga and Mary Kasarda and their Smart Infrastructure Laboratory, the project is designed as a test bed to track data related to building design and security, occupancy monitoring for emergency response, structural health monitoring, and more.

Some 240 accelerometers attached to 136 sensor mounts throughout the building's ceilings detect information on where people are within the structure, measure normal structural settling and wind loads, and track building movement resulting from earthquakes—an event that last struck Virginia in 2011. A

sensor array mounted outside the building will measure external vibrations, such as wind, traffic on nearby roads, the thunderous boom of the Skipper cannon, tens of thousands of Hokies celebrating a touchdown at Lane Stadium, and seismic activity.

More readily visible within the building is an imposing Trent 1000 jet engine—the cleanest, quietest, lightest, and most fuel-efficient jet engine in aviation today—donated by Rolls-Royce, the global power-systems company. The engine, which hangs 15 feet above the lobby floor, was donated to inspire the next generation of engineers. Rolls-Royce also plans to outfit the lobby of the building with interactive kiosks containing information on engine design and advanced manufacturing to inform and excite students about careers in engineering.

The Goodwins, who initially made their gift anonymously, are charter members of the President's Circle of the Ut Prosim Society, the university's most prestigious donor recognition group. Bill Goodwin received the University Distinguished Achievement Award in 2005, one of the university's highest honors.

"The mechanical engineering degree I earned from Virginia Tech helped me, and I believe in giving back," said Bill Goodwin.

The building's official dedication will be held Oct. 24. Coverage of the event will appear in the winter 2014-15 edition of Virginia Tech Magazine.

On the move:

Videos of the jet engine moving into the new facility and professors Tarazaga and Kasarda discussing the test bed are available at www.vtmag.vt.edu.



College of Architecture and Urban Studies celebrates 50th anniversary

When Virginia Tech's College of Architecture and Urban Studies (CAUS) was established in 1964, architecture, planning, building construction, and art were components of the college's curriculum—and each served as a precursor to its four current schools: the School of Architecture + Design, the School of Public and International Affairs, the Myers-Lawson School of Construction, and the School of the Visual Arts.

Indeed, after a half-century, many of the original philosophies and disciplines still shape the college's highly ranked, internationally recognized programs, notes CAUS Dean and Reynolds Metals Professor of Architecture Jack Davis.

To commemorate the college's 50 years of excellence, numerous special events, lectures, and exhibitions have been scheduled throughout the year to bring together faculty, staff, students, alumni, and friends to honor CAUS's legacy of discovery, engagement, and learning.

In addition to the CAUS Faculty Research Symposium in February and a September exhibition of 2-D and 3-D artwork by CAUS emeritus faculty in the Moss Arts Center, a celebration weekend on Sept. 4 featured open houses and tours, lectures, alumni receptions, and a black-tie gala.

For more on the anniversary, visit www.50years.caus.vt.edu.

Alumni-owned firm aiding campus navigation

The installation of a new campus navigation system—including building, interpretive, parking, street, trail, and other signs, along with information kiosks and banners—is under way on campus, thanks to the work of an alumni-owned firm.



Virginia Tech Daily

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Afton (horticulture '03) and Melissa Johnson (history '03), owners of WestView Companies, a contractor based in Oilville, Virginia, are responsible for building and installing the signage.

The project represents a tremendous upgrade for the campus's physical space. While the university's buildings and grounds receive high marks, visitors often complain about the difficulty of navigating campus. Those with mobility impairments report trouble finding accessible pathways and entrances to buildings. Even first responders have difficulty navigating campus.

"As beautiful as Virginia Tech is, it can be an intimidating place to navigate, especially for visitors and new students,"

said Frank Shushok Jr., senior associate vice president for student affairs. "This project is a major leap forward."

Said Jason Soileau, assistant vice president of university planning, "Over the next several years we will be making a major investment in our outdoor spaces that will match the effort we've made with the new and renovated buildings on campus. We plan to build better paths, install modern signage, upgrade the landscaping, and make other significant improvements. Our grounds will become a source of pride, just like our buildings."

For a video on the Johnsons' work and their memories of campus, visit www.vtmag.vt.edu.

Magazine readership survey

If a survey invitation reaches your email inbox in late October, please take the time to fill out the anonymous online readership survey. Your responses will help us produce a better magazine.

Revisit life at Tech—from 1990 onward—in the pages of Virginia Tech Magazine.

Browse the archives at www.vtmag.vt.edu/archives.



Renderings of Tech Center at Oyster Point foreshadow a dynamic development in Newport News, Virginia. Images courtesy of Tech Center.



Vision for Tech Center takes shape in Newport News

Model a research park after the Virginia Tech Corporate Research Center (CRC).

Then add space to live, eat, shop, and exercise.

The result? The Tech Center at Oyster Point, a 100-acre, \$250 million development including retail, residential, and commercial space and a technology and research center—all under construction in the heart of Newport News, Virginia.

Situated adjacent to Thomas Jefferson National Accelerator Facility, commonly called the Jefferson Lab, and within minutes of NASA's Langley Research Center, Tech Center is primed to become a hub of entrepreneurial innovation in Newport News. Tenants will find themselves in the epicenter of a booming, high-tech business community bent on creating jobs, improving lives, and strengthening the economy.

Tech Center is modeled after the CRC adjacent to Virginia Tech's Blacksburg campus. Home to some 150 companies and 2,700 employees and owned by the Virginia Tech Foundation, the CRC—named the 2010 Outstanding Research Park by the Association of University Research Parks—is a part of the university's innovation ecosystem, an environment that nurtures and commercializes ideas to benefit society.

Creating such an environment is the motivation for the Tech Center partnership, which includes Newport News-based developer W.M. Jordan Co. and its president and CEO, John Lawson, former rector of the Virginia Tech Board of Visitors; Georgia-based retail developer S. J. Collins Enterprises; Virginia Tech; and the City of Newport News.

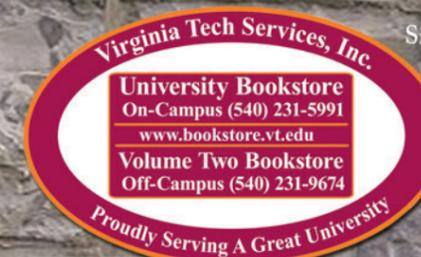
The sprawling mixed-use campus will offer luxury apartments, easy access to walking, biking, and exercising facilities, and healthy food choices, such as a Whole Foods store. The first research building is slated for completion in late 2015.

Peter Millar

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Andrew McCoy Building bellwether

by JESSE TUEL

Associate Professor Andrew Patton McCoy (M.S. construction science and management '07, Ph.D. environmental design and planning '08) is the Preston and Catharine White Fellow and assistant director of the Myers-Lawson School of Construction, and the director of the Virginia Center for Housing Research at Virginia Tech. Students awarded him the 2011, 2012, and 2013 Exemplary Faculty Award for the Department of Building Construction, and he was named to the Engineering News-Record's 2014 "Top 20 Under 40" list in the mid-Atlantic region.

You look at buildings differently than most, don't you?

My undergraduate degree was in architecture, and I realized that what I loved was the story behind how the building went up. The first person I worked for in the construction field, who's still a mentor, said to me, "I think that you can see buildings three-dimensionally in your head, whereas other people might not be able to. I can give you a set of plans, and you can already see how it's going to be built before it actually happens."

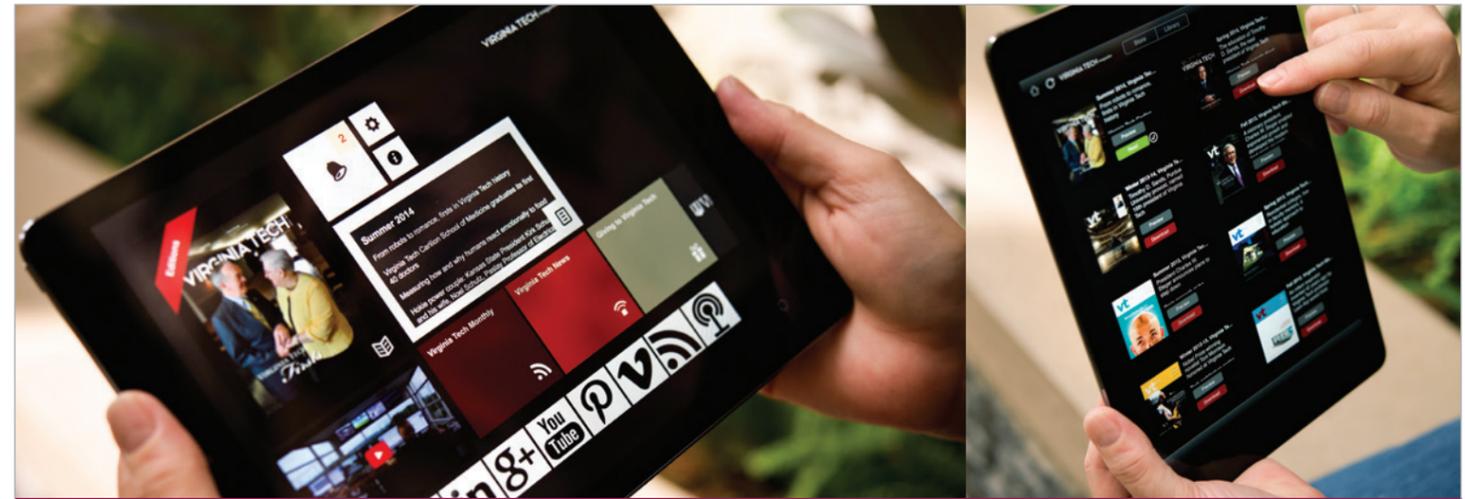
What's with the bell in your picture?

The bell belonged to my great-great-grandfather, John Crawford Hicks, who was a college professor in Tennessee in the late 1800s. He used the bell as a way of engaging students. To me, the bell is symbolic of trying to learn every day. I started as an architect and then did industrial and commercial construction work. I decided that I knew how to manage projects and I knew how to draw them, but I wasn't so clear on actually putting them together. So I quit. I became a laborer on a residential construction crew and worked my way up, eventually buying out the owner and running the company for four and a half years. I bring those experiences to the classroom, helping students understand that every day is about stretching and growing.

You were a part of the team that built Lumenhaus, the solar house that earned worldwide acclaim. What should we know about the future of "smart" homes?

It's incredible how smart technologies are moving forward. Smart-grid technologies and high-efficiency windows are more common. Certifications such as LEED are becoming standard. A new buzzword is "building physics," which means looking at how a structure's skin works, how moisture moves across materials, how the building breathes. The measurement of what our structures do has become so elevated, but I don't think people realize it. Builders are adapting and not building the way they did five years ago.

LOGAN WALLACE



Virginia Tech in hand

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What's new at the Virginia Center for Housing Research?

Founded by the commonwealth, the center has a central mission to tackle affordability in housing. We also help Virginia localities on the studies they need. We study energy-efficient products, building technologies, and how the industry adopts new and innovative approaches. Increasingly, we are working with large data sets that help us identify a market's characteristics and how a new technology spreads through a market.

You call a product's movement through the market the "diffusion of innovation."

The residential construction industry is quite fragmented, from raw materials

manufacturers to homebuyers, from one person working out of a truck to large companies building tens of thousands of homes per year. We've built a database with everything from the number of framing subcontractors in a location to the area's demographics to the presence of policies that incentivize building with certain technologies. The data allow us to identify market characteristics affecting products at a local level so we can help policymakers, manufacturers, and others.

What have you learned recently about your field?

The virtual design and construction process is incredibly advanced. Contractors can completely build the building in a

virtual space and then work virtually with subcontractors for every element, and they model it exactly as it's going to be built. It's making us better managers. We have more knowledge. The construction industry has not been like, say, the biomedical industry, where research drives the industry—but research is beginning to drive ours, and companies understand why they should have a research and development arm. I tell the companies that come to us every year that one of our graduates can walk in and start a modeling or R&D office. Students who graduate today are going to see a rate of change that is pretty intense. □



Blueprint:

For more on McCoy and the Lumenhaus project and to read a summer 2012 cover story on the future of housing in America, visit www.vtmag.vt.edu.

Wing Ng Discovery Engine

by MADELEINE GORDON
photo by LOGAN WALLACE

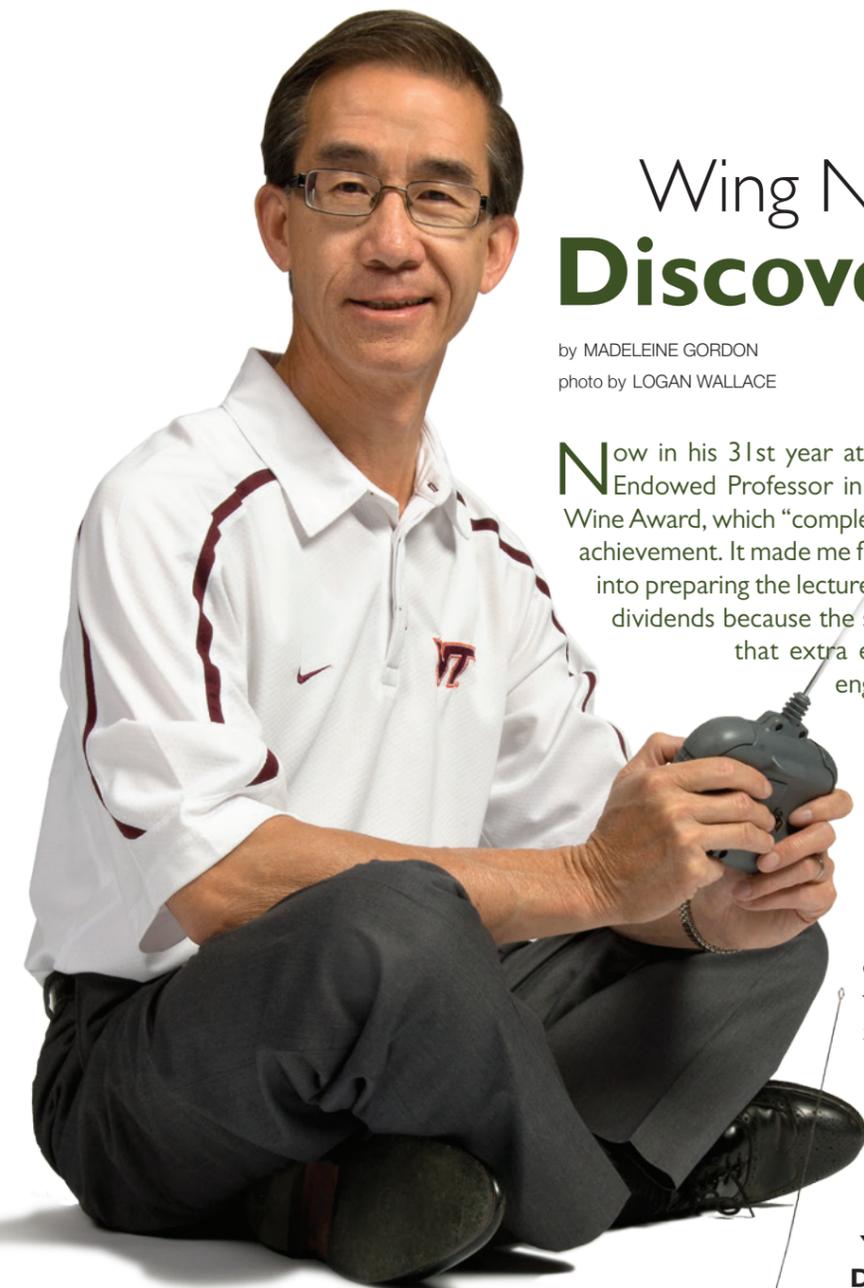
Now in his 31st year at Tech, Wing Ng, the Christopher C. Kraft Endowed Professor in Engineering, received the 2014 William E. Wine Award, which “completely overwhelmed” him, he said. “It’s a career achievement. It made me feel that all the effort and extra time that goes into preparing the lectures and making the classes interesting is paying dividends because the students and the university really appreciate that extra effort.” Ng, who specializes in gas turbine engines, practices the mantra “work hard, play hard” with hobbies like fishing, golfing, rock climbing, and scuba diving.

Why did you decide to settle down in Blacksburg?

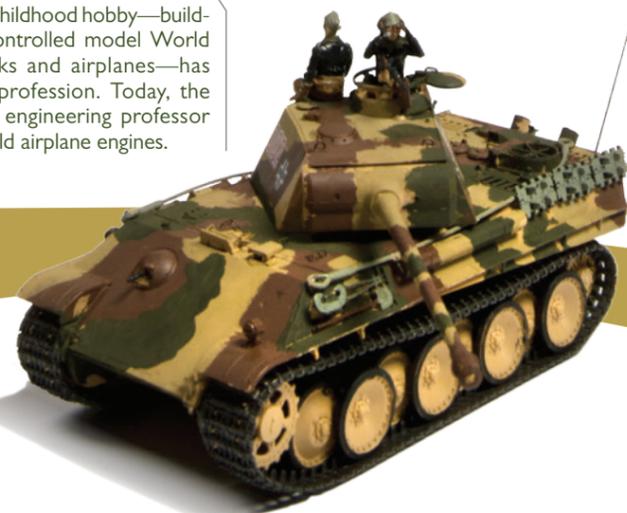
I was born and raised in Hong Kong—so was my wife—and then we went to school in Boston, so coming to Blacksburg was a culture shock. But what made us stay were the people and the environment. You cannot find a better place to raise a family than Blacksburg. ... Tech has been such a great place to work; the environment allows me to do first-rate research. We are competing with the top universities in the country. Our students are very highly sought.

You teach classes in thermofluid science. Describe the last time you learned something new in the field.

In research, every project is different. Graduate students work on research that has never been done before. Period. By that I mean not by anyone in the world. That is why companies want to fund us, to discover new knowledge. ... Teaching can also be a learning experience. Students ask questions sometimes that, despite the fact that I’ve taught for 30 years, I think, “How come no one has asked that question before?”



Wing Ng’s childhood hobby—building radio-controlled model World War II tanks and airplanes—has become a profession. Today, the mechanical engineering professor helps to build airplane engines.



Your business, Techsburg, offers engineering services and precision manufacturing capabilities to NASA, the aerospace and gas turbine industries, and more. How does Techsburg aid your teaching?

Each semester, I spend one lecture specifically talking about career advising and what is expected of students, both in industry and graduate school. By running the company, I have a firsthand knowledge of what industry expects and how to perform in the industrial environment, which is different than a university’s research environment. Students always appreciate that particular lecture.

Many of the 100-plus master’s and doctoral students you’ve advised have earned substantial recognition. How does this affect you?

This makes me very proud. We are fortunate to have some very good students. I

received my degree from the Massachusetts Institute of Technology, and I’ve seen some of the very best engineers, but our students here are top-notch. They are good engineers to begin with. I’m just providing some mentorship to make sure that when they finish here, they know how to solve problems—which is what engineers do—and know how to communicate and interact with people on a team. Those are things I emphasize when mentoring graduate students. As a result, they have gone on to industry and government labs and done well. [Their recognition is] a good testimony of the training they received at Virginia Tech.

Tell us about your Navy-funded project to reduce jet engine noise.

Assistant Professor Todd Lowe and I have developed new measurement techniques and instrumentation—to take measurements that no one in the world has done

before—that allow us to understand how noise is generated in huge jet engines. The project is a testimony to teamwork, how colleagues with different expertise have allowed our turbine engine studies to become well recognized. From the measurements we’ve taken in the wind tunnel in Randolph Hall’s basement, we can do modeling, and we can help other researchers understand the physics. We are optimistic that this new data can help make jet engines quieter not only on aircraft carrier decks, but also in commercial planes. □

Madeleine Gordon, a senior majoring in English and communication, was a Virginia Tech Magazine intern.

Making noise:

To read more about the Navy project on jet-engine noise, visit www.vtmag.vt.edu.

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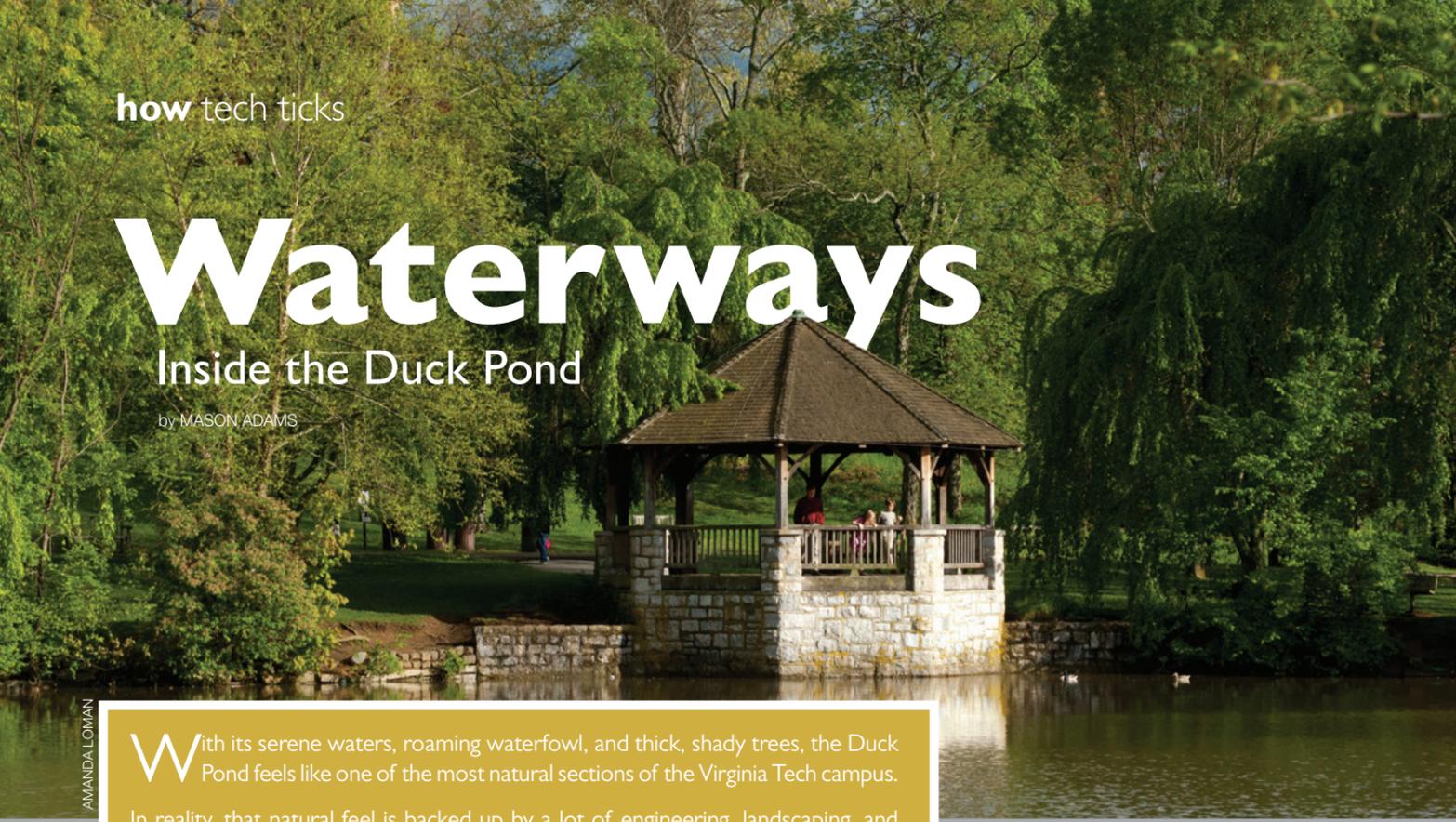
ONE TEAM - VIRGINIA TECH

No one of us is as strong as all of us.

Waterways

Inside the Duck Pond

by MASON ADAMS



AMANDA LOMAN

With its serene waters, roaming waterfowl, and thick, shady trees, the Duck Pond feels like one of the most natural sections of the Virginia Tech campus.

In reality, that natural feel is backed up by a lot of engineering, landscaping, and maintenance. The end result, however, speaks for itself: The Duck Pond is one of the most popular sites at Virginia Tech.

1 Artificially created in the mid-'30s, the Duck Pond is home to a variety of wildlife species. Waterfowl include Canada geese, mallard ducks, and Muscovy ducks.

The pond is inhabited by common carp, redbreast sunfish, mosquito fish, white suckers, black bullheads, and other fish released into it. Each spring, the College of Natural Resources and Environment stages an informal fishing tournament.

2 The gazebo is the focal point of the pedestrian trail that runs along the Duck Pond's southern edge. Built to attract recreationalists and occasionally house an event, the structure adds an exclamation point to the landscaped southern shore.

3 The dam along Duck Pond Drive forms the pond's western edge, with an outlet that leads to Stroubles Creek and eventually the New River.



JIM STROUP

4 Stephen Schoenholtz (second from left), director of the Virginia Water Resources Research Center and professor of forest hydrology and soils, works with students to gather samples from the Webb Branch of Stroubles Creek. Elsewhere, facilities staff check for sediment plumes at the pond's inlets to gauge the severity of erosion and floods in places upstream. The longer the plume, the worse the erosion.



5 Stroubles Creek, which flows through the Duck Pond, originates from springs in northern Blacksburg. In the mid-'30s, when the Drillfield was enlarged, the springs were piped underground, and they now emerge by West Campus Drive. The creek's upper reaches are inhabited by the Blacknose dace, a native minnow.



6 The Ice Pond, built in the winter of 1880-81, to provide ice to the college serves as the Duck Pond's little sibling. 1898-99, the college began using a refrigerating plant.

7 A man-made wetland containing native vegetation, the stormwater basin south of the Holtzman Alumni Center is used to regulate runoff and improve water quality. During floods, it fills to slow the flow of rainwater.

8 Solitude, the house by the Duck Pond, is the oldest structure on campus. Believed to date back more than 200 years, Solitude served as the residence on a 250-acre farm that eventually became part of Virginia Agricultural and Mechanical College in 1872.



LOGAN WALLACE

9 The large black willow tree that grows by the Main Branch of Stroubles Creek near the point the branch enters the Duck Pond has become a favorite of students, alumni, and arborists statewide. The tree was included in Nancy Hugo and Robert Llewellyn's 2008 book "Remarkable Trees of Virginia."



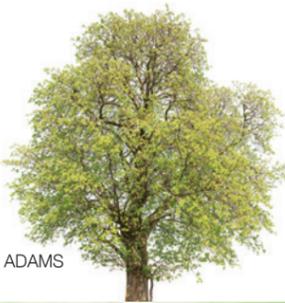
10 A sewer line along Stroubles Creek carries wastewater to a treatment plant that discharges into the New River.

Immersed:
For a video from a Duck Pond turtle's viewpoint and more, visit www.vtmag.vt.edu.

ICE POND PHOTO COURTESY OF SPECIAL COLLECTIONS, UNIVERSITY LIBRARIES, VIRGINIA TECH. STROUBLES CREEK PHOTO COURTESY OF UNIVERSITY DESIGN AND CONSTRUCTION ARCHIVES; DIGITAL COPY COURTESY OF DIGITAL IMAGING AND ARCHIVING AND W.CULLY HESSION.

A battle for the trees

by MASON ADAMS



LOGAN WALLACE

European settlers arrived in the Appalachian Mountains to find them covered by American chestnut and, to a lesser extent, Eastern and Carolina hemlock trees.

Today, chestnut and hemlock trees are suffering due to pests introduced from Asia. Chestnut blight, caused by a bark fungus, has nearly wiped out the above-ground portions of mature American chestnuts, even as the trees' root systems continue to survive underground.

The Eastern hemlock and Carolina hemlock similarly have been devastated by the hemlock woolly adelgid, a small sap-sucking insect.

Virginia Tech faculty, staff, and students are working to bring both species back.

At one point, the American chestnut was the most numerous and often largest tree in eastern forests. However, the chestnut blight, first noticed in 1904, devastated the species.

"All words about the American chestnut are now but an elegy for it," wrote Donald Culrose Peattie in "A Natural History of Trees," first published in 1948. "This once mighty tree, one of the grandest features of our sylvia, has gone down like a slaughtered army before a foreign fungus disease, the chestnut blight."

The last several years have seen a flurry of efforts to preserve the genetic material of various chestnut populations. That's been coupled with attempts to breed American chestnuts for resistance to blight, either by finding pure American chestnuts with apparent immunity or, more commonly, cross-breeding with the Chinese chestnut, which has a blight-resistant gene.

The Catawba Sustainability Center is using both approaches. In 2010, 50 pure American chestnut seeds from surviving chestnuts in the Catawba Valley were planted to help maintain the seeds' distinctive genetics.

Then, earlier this spring, the center partnered with the American Chestnut Foundation and Catawba Landcare to establish a breeding orchard. Those regional Catawba chestnuts will be bred to produce a tree that is 15/16ths American chestnut and 1/16th Chinese chestnut.

The resulting mix "should look and act like American chestnut trees" while maintaining resistance to chestnut blight, said Catawba Sustainability Center Manager Josh Nease. "It's a long-term project."

Efforts to control the woolly adelgid and restore hemlock populations will take a similarly long time.

In his natural history of trees, Peattie waxed poetic about hemlocks, which are found along streamsides in rocky ravines.

"Approaching such a noble tree, you think it dark, almost black, because the needles on the upper side are indeed a lustrous deep blue-green," Peattie wrote. "Yet when you lunch on the rock that is almost sure to be found at its feet, or settle your back into the buttresses of the bole and look up under the boughs, their shade seems silvery, since the underside of each needle is whitened by two lines. Soon even talk of the tree itself is silenced by it, and you fall to listening."

Like chestnuts, hemlock trees have fallen prey to a pest from Asia. The adelgid was introduced into the area around Richmond, Virginia, and expanded its range from there. By the 1960s, the adelgid was killing hemlocks and spreading rapidly, especially in the Appalachian Mountains.

Scott Salom, a professor of entomology in the College of Agriculture and Life Sciences, has spent years studying the adelgid and its natural predators in Asia.

"There are two reasons [the adelgid has] been so successful," Salom said. "Eastern



Branching out:

To learn more about Virginia Tech's work with chestnut and hemlock trees—and how to tell the difference between the two—visit www.vtmag.vt.edu.

hemlock trees, and a smaller species, Carolina hemlock, native to Virginia and North Carolina, are susceptible. Other species of hemlock from western North America and Asia are not. So the trees are susceptible when they become infected. There's no natural resistance, and there are no natural enemies because the adelgid wasn't here before."

Salom has identified two natural predators of the adelgid: a beetle in western North America that he began to study in 1997, and one from Japan that he began studying in 2006. He studied both in quarantine and eventually received permission to release both into eastern forests (the North American beetle in 2003, and the Japanese beetle in 2012).

Both beetle species specialize in eating adelgids and are otherwise considered to have little impact on the environment. The beetles live only in hemlock stands and shouldn't, for example, wind up in local households.

Salom said the Japanese beetle seems to have more potential to make an impact on the hemlock woolly adelgid because the beetle feeds at a higher rate and lays more eggs.

The big question remains: Will the beetles save the hemlock trees?

"We can't say that [they will save the trees], but we can say [the beetles are] establishing and feeding on the adelgids," Salom said. "We see that [they're] having an impact but we can't quantify it yet." □



LOGAN WALLACE



Bugged: Emily Lawrence (left), a research technician in the College of Agriculture and Life Sciences' entomology department, checks hemlock trees near Mountain Lake for *Laricobius osakensis* beetles (above, top). The beetles were released to feed upon the woolly adelgid, an insect that has been decimating hemlocks in the eastern U.S. for decades. Virginia Tech researchers are also working to save American chestnut trees (directly above) from chestnut blight, caused by a bark fungus.



LOGAN WALLACE

SPARKS

Creative space offers entrepreneurs “time, space, and permission”

by JESSE TUEL

Hands on: Card Isle, a startup company developing a greeting-card kiosk, anchors a corner of NuSpark, a creative space adjacent to campus. From left to right, team members pictured include chief operating officer David Henry (mechanical engineering '12, M.S. industrial systems engineering '12), chief technology officer Adam Donato, a Ph.D. candidate in mechanical engineering, and chief marketing officer Stephan Sabo (mechanical engineering '13).

The grass wasn't growing in late January when Ryan Farley (mechanical engineering '12) and Steve Corcoran, a former finance major, moved their fledgling business into NuSpark, a new creative space in downtown Blacksburg that allows entrepreneurs to commercialize their ideas.

The co-founders of LawnStarter, an online platform connecting customers with lawn care providers, wanted to unveil their concept as soon as the grass started turning greener.

NuSpark became the perfect fertilizer. Launched in mid-April, LawnStarter now operates in Northern Virginia; Richmond, Virginia; Yorktown, Virginia; and Austin, Texas. Farley and Corcoran spent the summer in Austin in the highly selective TechStars startup accelerator program, learning how to disrupt the trend of poor customer service in a \$71 billion industry.

“We’re expecting to be in multiple major cities with deep penetration next year, with hopefully hundreds of providers on our platform,” Farley said.

What they found at NuSpark wasn't just the “bright lights to keep you up late at night,” said Farley, noting that the team was sleeping in three-hour stretches, sometimes at NuSpark, ahead of the launch. They found mentors, collaborators, training, and more.

“Farm team”

The idea for NuSpark came from conversations among a handful of key players in the region's ecosystem of innovation, and the space was cobbled together in a collaborative fashion that neatly previewed the cooperative environment NuSpark affords entrepreneurs. The venture is supported through the Virginia Tech Foundation; the Roanoke-Blacksburg Technology Council; the Roanoke Blacksburg Innovation Network; Tech's Corporate Research Center (CRC); VT KnowledgeWorks; Tech's Institute for Creativity, Arts, and Technology (ICAT); and the National Science Foundation's regional I-Corps program.

Nestled in a ground-floor, 4,200-square-foot area in Collegiate Square at the corner of Prices Fork Road and North Main Street, NuSpark offers rent-free space for faculty, staff, students, and members of the public—anyone over the age of 18—to turn early-stage ideas into new ventures.

“NuSpark is more than just space—it is programming and community,” said John “Jack” Lesko, associate dean for research and graduate studies in the College of Engineering and the university's liaison to I-Corps, a partnership in the mid-Atlantic to find entrepreneurial faculty and students and help them bring their discoveries to market. “NuSpark is a safe place to fail, and it builds a community of entrepreneurs-in-training that learn from each other through formal and informal programming and interaction.”

Entrepreneurs share what they learn, whether it's helping set up a company's legal structure or finding the right programmer or videographer. Tenants undergo training to identify potential partners, activities, customers, revenue, and more. NuSpark currently houses about a dozen teams, all of which are facing a deadline: When a company reaches either 12 months at NuSpark or \$500,000 in gross revenue and/or capital funding, they move on. “That's one of the things we want here—positive churn,” said NuSpark director Sherry Walker. “We've started an entrepreneurial community here. It's a support system. It's an educational system.”

NuSpark provides “entry-level hands-on experience in becoming an entrepreneur,” long before company formation, said CRC President Joe Meredith. In later stages, a company can take advantage of VT KnowledgeWorks programming “when it is time for incorporation and access to capital.”

Or as Lesko put it, “You can think of NuSpark as a farm team for the majors.”

Worlds converging

In the NuSpark conference room, whiteboards donated by the Blacksburg branch of Rackspace are the backdrop for monthly brainstorming discussions on Bitcoin, the digital currency. Elsewhere, furniture donated by ICAT—which occupied the office space before moving into the Moss Arts Center—aids NuSpark's innovators. “We're almost seven months old,” Walker said in early August. “Like most startups, we're trying to figure out how to make it work.”

Furniture isn't ICAT's only imprint on the entrepreneurial community. The research institute is positioned at the nexus of science, engineering, art, and design—often called SEAD—and as ICAT director R. Benjamin Knapp noted, “Industry is based on these worlds converging.”

Offering an explanation, Knapp said a phone is purchased for its aesthetics and how the customer interacts with it, with little regard for the engineering behind the device. “When you have a start-up, you need a business person. You need an engineer. You need a designer. You need all of these people,” Knapp said.

ICAT fosters not only research, but also education, community outreach, and entrepreneurship. Part of ICAT's mission focuses on introducing SEAD and entrepreneurial sensibilities to K-12 classrooms—a creative inflow, so to speak, to Virginia Tech—while its involvement with NuSpark encourages creative outflow. NuSpark's purpose of accommodating brand-new ideas mirrors the institute's. “ICAT's mantra is time, space, and permission,” Knapp said. “At Virginia Tech, we want faculty and students to flourish and do these things and profit from what they do.”

Scaling up

Admission barriers to NuSpark are low: a video application explaining why the space



LAWNSTARTER

Steve Corcoran (left) and Ryan Farley '12 (right), who recently completed the TechStars accelerator program in Austin, Texas, launched their business in Blacksburg.

will help, and a scalable idea with the potential for economic impact. As NuSpark evolves, Walker is seeking additional grant funding for a prototyping area in which inventors can make things. One existing venture, for instance, could use more space to fine-tune its kiosk for printing greeting cards (seen at left). As it is now, they've taken over a corner of the open floor with construction materials.

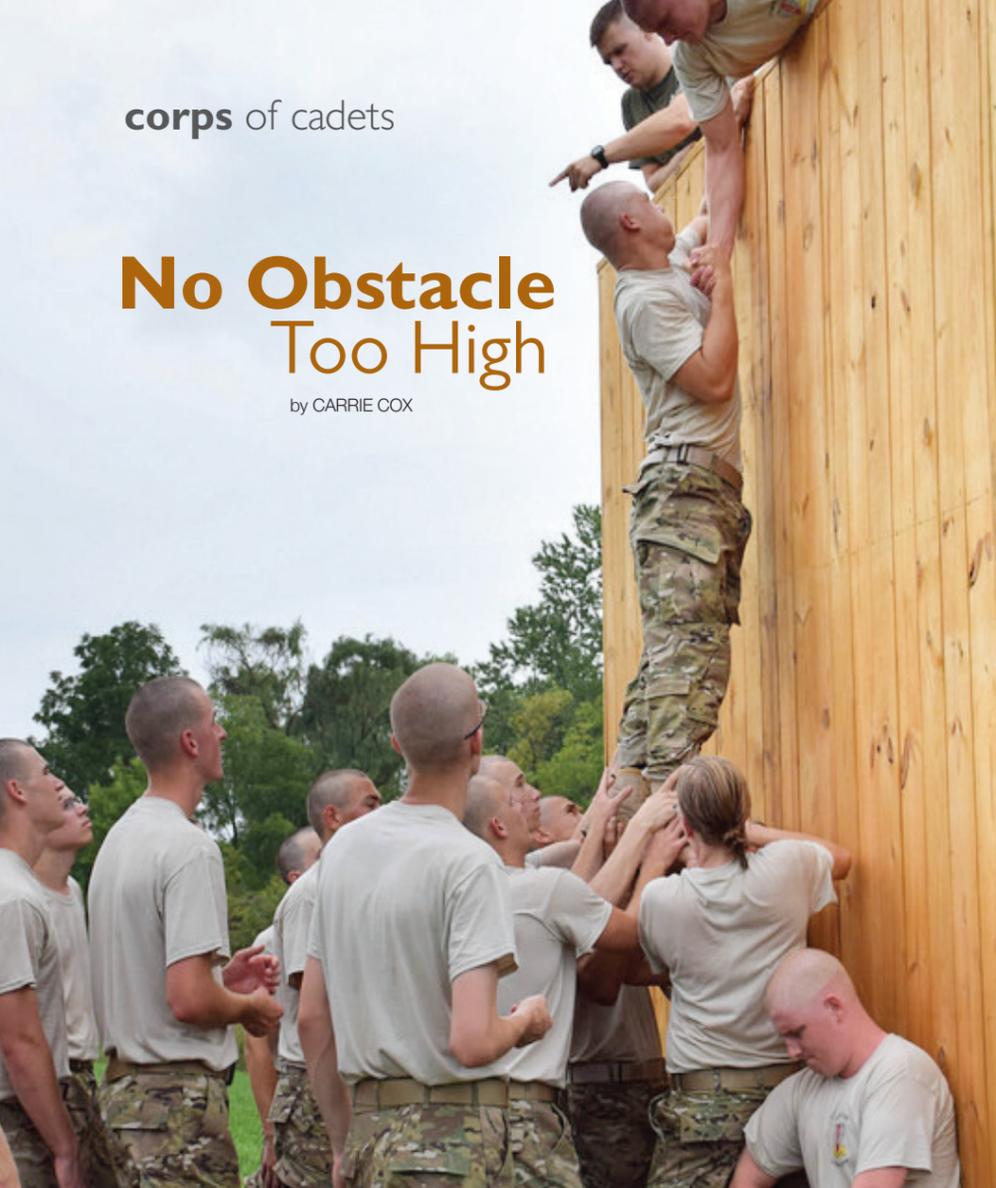
In the long term, NuSpark's founders hope that Blacksburg becomes better known as a place to create a job, not just find one, a place known for actively encouraging new startups and developing “innovative products that creatively destroy the way things are done today, like what iTunes did for music distribution,” Lesko said. “I hope that NuSpark is and continues to be a supporting element of that culture and ecosystem.”

LawnStarter's Farley, for his part, was “pleasantly surprised by the Blacksburg entrepreneurial environment.” Most of the initial startup funding came from local angel investors, many of whom are Virginia Tech alumni. And a computer science major, working on another project at NuSpark, joined LawnStarter full-time shortly before TechStars began.

If the trend lines hold, future entrepreneurs won't be the least bit surprised. □

No Obstacle Too High

by CARRIE COX



Looking up: In August, cadets navigated new obstacles on the course on Smithfield Road.

outstanding guidance throughout the year, combined with the cooperative culture of the combined civilian-military community on the Lower Quad, paved the way for the entire corps' success during the next few years of continued construction.

In addition to construction of residence halls and the Corps Leadership and Military Science Building on the Upper Quad, six new obstacles were added this summer to the obstacle course on Smithfield Road. This tremendous addition to the corps' training facilities models what our military-track cadets will see during their ROTC training, giving them an opportunity to practice here at home. More than 330 new cadets were the first to attempt these challenges during their training in August.

New challenges await the cadets in this academic year, but they continue to demonstrate that they will find a way to excel and to lead in their university and community—and that no obstacle is too high. □

Maj. Carrie Cox is the executive officer for the Corps of Cadets.



Up and over:

For a video of the new obstacle course, visit www.vtmag.vt.edu.

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Sowing the Future

by MASON ADAMS
photo by JIM STROUP
photo styled by ROBIN DOWDY



A 2013 United Nations report projects that the world population will reach 9.6 billion by 2050. More food must be grown in a shrinking amount of space and more water will be needed for drinking, agriculture, manufacturing, and more.

**That's
where we
come
in.**





CHELSEY ALLDER

A cow quietly lowed from the back of the barn as Chad Joines described the process of artificially inseminating a heifer to about 40 Virginia cattlemen and cattlemen.

The group, ranging from youngsters who looked fresh out of high school to longtime farmers in their 70s, listened closely as Joines, an agricultural supervisor in the College of Agriculture and Life Sciences' (CALs) Department of Animal and Poultry Sciences, ran through the basics of hormones, pregnancy, and managing a large herd of cows going into heat at roughly the same time.

A few minutes later, the group gathered around a monitor as Joines used ultrasound to determine the gender of an unborn calf.

"All that black in there is the baby," Joines said. "See that snake right there coming into the body of the calf? That would be the umbilical cord."

He talked the group through calf anatomy as seen on the screen before determining that the baby in question was a bull calf.



Clearly much has changed since the breeding of beef cattle began at Virginia Tech in the early 1900s.

The lecture and demonstration were part of a beef cattle field day at Kentland Farm, which serves as Virginia Tech's experimental farm. Other recent field days have focused on new farming technology, cover crops, irrigation and chemigation for vegetables, seasonal grasses, sustainable fruit production, integrated pest management, small farm organic practices, livestock watering, body condition scoring, cattle-working facilities, farm fencing, and the use of GPS in agriculture.

Not far from where Joines provided pointers on herd management, Carl Griffey, the W.G. Wyso Professor of Crop Genetics and Breeding in the Department of Crop and Soil Environ-

mental Sciences, maintains a series of plots to develop new varieties of wheat and barley.

Over the past two-and-a-half decades, Griffey's team has developed and released seven hulled and three hull-less barley varieties and 57 wheat varieties, including 50 soft red winter, one soft white winter, four hard red winter, and two winter durum wheat varieties. Those varieties, developed for increased yield and resistance to diseases such as powdery mildew, leaf rust, net blotch, fusarium head blight, and yellow-dwarf virus, have been marketed to and used by commercial growers in the nation's breadbasket. In 2011, Griffey's varieties were planted on more than half a million acres.

Preparing the world

This sort of research and Extension work, along with countless other examples, has become more important as the population of humans has grown exponentially.



AMANDA LOMAN

A United Nations report released in June 2013 projects that the global population will grow from roughly 7.2 billion today to 9.6 billion by 2050. Most estimates place the number between 10 billion and 15 billion within a hundred years. Such growth will lead to increased demand for nutritious food and clean water.

The growing population takes up more physical space, meaning less room for agricultural production—which, in turn, places more pressure on farmers to produce larger yields while combating disease, pests, and ever-changing weather patterns.

Similarly, a rapidly growing number of humans has boosted demand for water—not just for drinking, but as a crucial component in the supply chain for agriculture, manufactured goods, and even the mining of oil and natural gas.



Editor's note:

In this first installment of a two-part story, we examine the stateside efforts of Virginia Tech as it seeks to provide food and water for the world's ever-increasing population. For a look at the university's international efforts, see the winter 2014-15 magazine, published in mid-January 2015.

Shared knowledge: Chad Joines (far left), an agricultural supervisor in the animal and poultry sciences department, and undergraduate student Stephanie Dick administer vaccines to a newborn calf at Virginia Tech's Beef Cattle Center. At left, Senegalese graduate students currently studying in the College of Agriculture and Life Sciences work on a lab experiment, learning skills such as how to use conservation agriculture techniques in conditions where soil quality is poor.

As a research university with deep roots in agriculture, Virginia Tech is poised to help provide both food and water to the world's growing billions.

"The land-grant university system effectively integrates the teaching, research, and Extension missions to serve society in many different ways," said Alan Grant, CALS

dean. "It's really an ideal system to address the grand challenges that society will continue to face in the years to come."

Researchers routinely develop new ways to increase yields and decrease food spoilage. Extension agents provide important training to workers in the agriculture industry and ensure that Virginia farmers are educated in best practices. The university's graduates have grown increasingly interested in the science of food and water, and new undergraduate majors will further enable them to become tomorrow's leaders in agriculture and beyond.

"Our students are the future leaders and innovators, and they are very interested in being immersed in a learning environment that provides a variety of experiential learning opportunities and hands-on experiences, especially related to these societal

challenges," Grant said. "Many want to use these experiences as a way to explore different disciplines and potential careers."

Enrollment in food- and water-related degree programs, both at Virginia Tech and in similar colleges nationwide, is growing.

At CALS, the number of **incoming freshmen grew from 412 in 2008 to 525 in 2014**, with the biochemistry; animal and poultry sciences; and human nutrition, foods, and exercise departments experiencing some of the highest increases. Agricultural technology drew a record 70 incoming freshmen this fall. Those departments have attracted significant numbers of transfer students, too.

Starting in 2015, pending final approval by the State Council of Higher Education for Virginia, Tech plans to offer a new bachelor's degree in water resources that incorporates water science, policy, law, economics, management, and social science. The program will have its academic home in the College of Natural Resources and Environment's (CNRE) Department of Forest Resources and Environmental Conservation, but the colleges of Agriculture and Life Sciences, Architecture and Urban Studies, Engineering, and Science will serve as equal partners, emphasizing the interdisciplinary nature of the degree.

"The new degree is exactly the kind of curriculum innovation we need to address global challenges," said Paul Winistorfer, CNRE dean.



JIM STROUP



From the development of **SMALL-SCALE ORGANIC FARMING TECHNIQUES** to studying **CROP GENETICS** and **PESTICIDES**, Virginia Tech **ACTIVELY PARTNERS**



MICHAEL SHROYER



LOGAN WALLACE



Feeding the future: (From left to right) Sally Johnson (wearing white), an associate professor in the animal and poultry sciences department, works with a student in her lab; Percival Zhang, an associate professor in the biological systems engineering department, researches a process for turning plant biomass into food and fuel; and volunteers tend to a farm plot at the Catawba Sustainability Center.

The interdisciplinary degree is facilitated in part by the Virginia Water Resources Research Center, which is housed at Virginia Tech.

The center is one of 54 water resource programs established by Congress in 1964 and placed at land-grant universities across the nation. It was authorized as a state agency by the Virginia General Assembly in 1982.

The center acts as a clearinghouse for information on water resources, as well as a home for research projects on everything from the effects of cellulosic biofuel production on hydrology to the effectiveness of restoration efforts for streams in Central Appalachia's coalfields.

Virginia Tech has taken a similarly comprehensive approach to supporting the world's global population. From the development of small-scale organic farming techniques to studying crop genetics and pesticides, Virginia Tech actively partners with farmers on the other side of the planet, as well as those closer to home in Southwest Virginia.

In the Department of Crop and Soil Environmental Sciences, faculty like Griffey and Associate Professor Wade Thomason work both with agribusiness and with graduate students, providing real-world market solutions while also preparing the next generation of leaders in the field.

Paul Siegel, University Distinguished Professor Emeritus of Animal and Poultry Sciences, has, over the course of roughly 65 years, published more than 400 journal

articles, books, chapters, and reviews involving the role of genetics on nutrition, disease, immunology, physiology, and behavior of chickens and other poultry.

In the Department of Biological Sciences, Associate Professor Dorothea Tholl is researching terpenoids, the organic chemicals that give carrots their taste, and how those chemicals are affected by climate change. Across the hall, Assistant Professor Zachary Nimchuk is looking at plants' stem cell networks, seeking a greater understanding of how they work on a cellular level to the benefit of agricultural producers.

In the Department of Biological Systems Engineering, Professor Percival Zhang teaches classes while also making international headlines for his work with enzymes that break down wood chips, corn husks,

with farmers on the other side of the planet, as well as those closer to home in Southwest Virginia.

and other inedible plant parts into a sweet-tasting starch that can be digested by humans.

Within the same department, Assistant Professor Leigh Anne Krometis focuses her work on water and public health, identifying population growth and resulting urbanization as risk factors for exposing people to contaminants.

Krometis and her graduate and undergraduate students partner with Virginia Cooperative Extension to test private wells and cisterns in rural Virginia. Homeowners voluntarily submit water samples to be tested, and Krometis and her team analyze the results, usually about 2,000 samples per year. They see extreme variation, with fluctuating pH levels, infectious diseases, and lead levels that would be unacceptable in municipal water supplies.

The team is working to develop a better grasp of the state's water supplies while also helping to address problems they identify. They send results and recommendations back through Extension offices so homeowners can be notified, and the team works with the Southeast Rural Community Assistance Project, which offers grants and loans to remedy the problems.

Additionally, Krometis uses Kentland Farm test plots, filled with soil samples from around the state, to see how markers, including a gene found only in human

feces and microbes found in toilet paper, react with organic matter and percolate through the ground.

Partnering for growth

The interaction between faculty researchers and the real world is typical of Virginia Tech's efforts, especially around the commonwealth. The university supports Virginia's massive agricultural industry, and vice versa, on a number of levels.

"Interaction with industry is really important for our college," Grant said. "These relationships are built largely by faculty and are important in developing and supporting our research programs and in providing opportunities for our students to engage with firms that offer challenging and rewarding internships and careers."

About 23 percent of the sponsored research funding in CALS comes from private-sector industry, compared to the university's average of about 14 percent and a national average of 9 percent, Grant said.

Virginia's economy was founded on agriculture, which remains the state's largest industry by far, presenting an annual economic impact of **\$52 billion** and **providing nearly 311,000 jobs**, according to the Virginia Department of Agriculture and Consumer Services.

According to the U.S. Department of Agriculture's (USDA) 2012 Census of Agriculture, a five-year study released earlier this year, Virginia has more than 46,000 farms covering 8.3 million acres, or 33 percent of Virginia's total land area. Nearly 90 percent of those farms are owned and operated by individuals or families. The market value of Virginia agriculture products sold in 2012 was \$3.75 billion.

There's potential for more growth given Virginia's central location. Between new trade agreements and the Panama Canal's plan to open a wider lane of locks in 2015, Virginia is well positioned to boost its exports to international markets.

To support this diverse, powerful industry in continuing to innovate, grow, and find new markets, Virginia Tech operates a dozen Agriculture Research and Extension Centers (ARECs) spread across the commonwealth.

Ranging from Virginia's mountains and valleys, through the rolling foothills of the Piedmont, and down to the eastern Tidewater region, the ARECs blend research and Extension work beneath the umbrella of Virginia Tech's motto *Ut Prosim* (That I May Serve) to support regional farmers, fishermen, and others in the wide world of agriculture.

The ARECs perform research and support in fields nearly as diverse as Virginia: vegetable and crop production; dairy and meat livestock; tobacco; pasture management; peanuts; vineyards; insect and disease management; seafood; fruit trees; stormwater management and water quality; equine genetics and medicine; and more.



Sustenance:

For more on Tech's research into food, visit www.vtmag.vt.edu.

"The ARECs are located strategically to deal with regional issues important to urban and rural communities across Virginia," said Grant, the CALS dean.

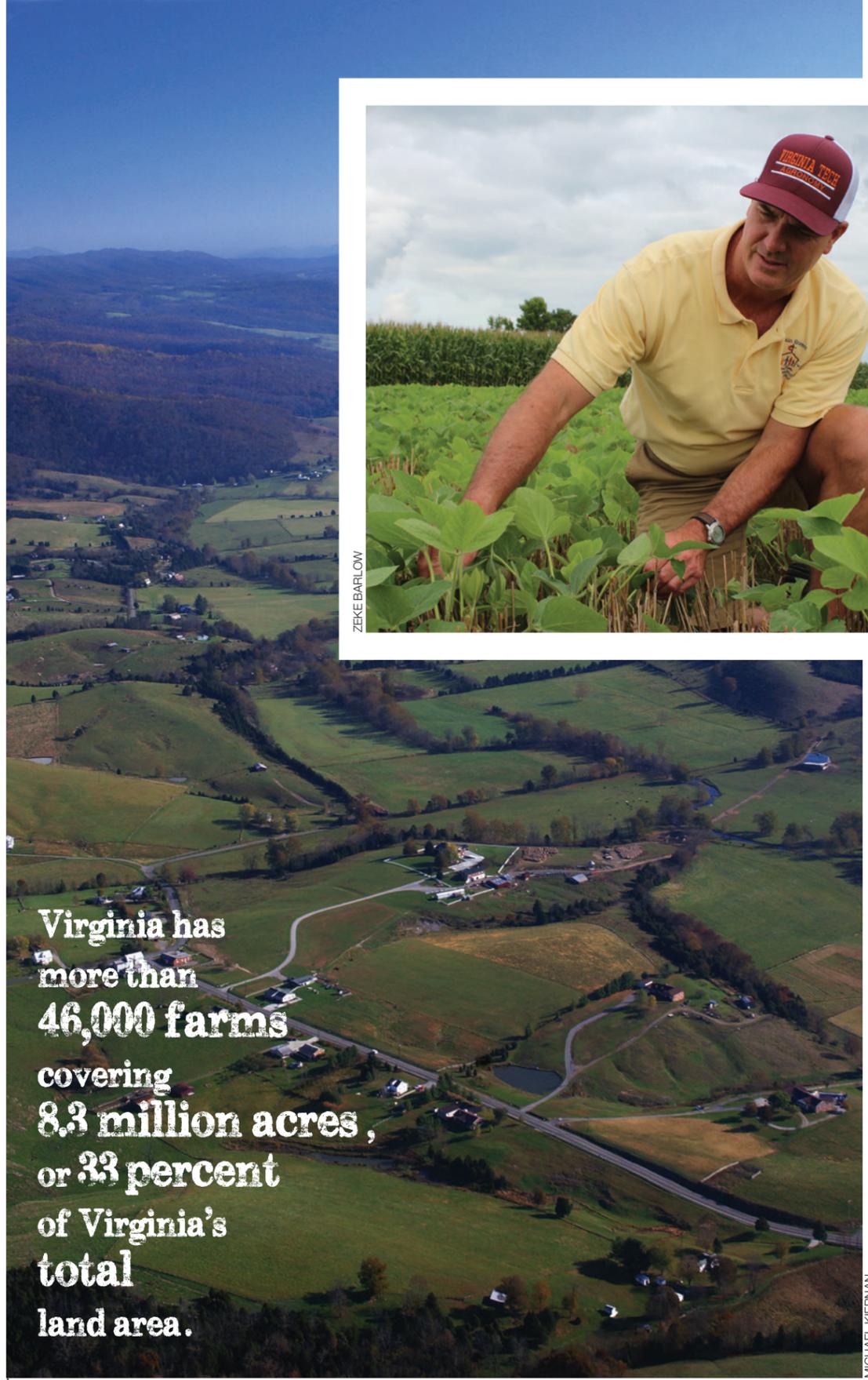
Near the small town of Blackstone, located in the heart of Southside Virginia southwest of Richmond, researchers at the Southern Piedmont AREC still devote much of the center's 1,182 acres to tobacco, the crop that served as Virginia's biggest economic driver from its colonization in 1607 through the 20th century.

Business has declined as cigarette sales have dropped in the U.S. and around the world, but tobacco remains an important part of Virginia's agricultural industry. Still, the changes in the market have resulted in changes at the Southern Piedmont AREC. Over the last couple of decades, the center has opened new land for research on agroforestry, crop research, and livestock forage.

The ARECs provide a place for innovation and experimentation that's necessary for Virginia to keep up with the larger world of agriculture. An example from the USDA's census: **In the 1960s, one farmer supplied food for 25.8 persons in the U.S. and abroad. Today, one farmer supplies food for 155 people.** Innovation helped make those gains in production possible, but more will be needed to feed a still-growing world population with a steadily shrinking amount of open, arable land.

Southern Piedmont AREC Director Carol Wilkinson said she sees the center partly as a test lab for new ideas and partly as a place to refine tried-and-true techniques with new applications.

"The AREC evolves with the needs of the industry," Wilkinson said. "We do everything from pie-in-the-sky [research] to the more immediate, practical applications."



Virginia has more than 46,000 farms covering 8.3 million acres, or 33 percent of Virginia's total land area.

Serving Virginians: Sites such as the Catawba Sus-Research and Extension Center (top) play a critical role the world. At the Tidewater site, where research delves into peanuts, cotton, small grains, alternative crops, swine production, and more, David Holshouser, an associate help farmers increase their yield of soybeans, one of the



ZEKKE BARLOW

sector in which fish and mollusks such as oysters and mussels are grown in tanks and ponds.

University Distinguished Professor George Flick Jr., in the Department of Food Science and Technology, founded the seafood AREC and the aquaculture Extension facility in Saltville, Virginia, giving the state a leg up in an industry with plenty of potential to grow.

The U.S. imports 91 percent of the seafood it consumes, with half of that coming from aquaculture. The U.S.'s seafood trade deficit stands at \$11.2 billion annually, according to the National Oceanic and Atmospheric Association.

The seafood AREC is working to tilt that balance through research into increasing production and keeping the resulting product safe and saleable when it reaches markets. Additionally, the center offers business assistance and food safety training for private-sector businesses.

For example, the center has worked closely with Blue Ridge Aquaculture Inc., a Martinsville, Virginia, business that is the world's largest producer of tilapia to use indoor recirculating aquaculture systems.

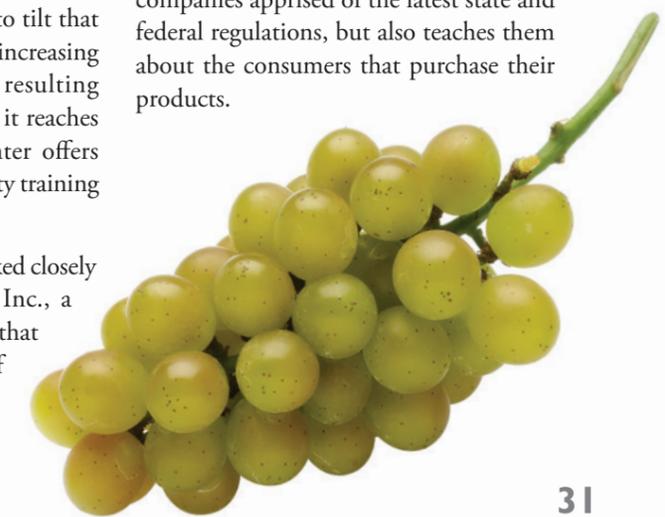
Serving seafood

A 90-minute drive from the Southern Piedmont AREC, on the Chesapeake Bay in Hampton, Virginia, the Virginia Seafood Agricultural Research and Extension Center applies a similar approach to seafood and aquaculture—a

rapidly growing One day in July, AREC staff member Alex Squadrito and Hampton University undergraduate Malik Breland studied small crustaceans called rotifers under a microscope. The rotifers feed on a highly concentrated algae blend and will eventually serve as feed themselves for young black bass and other finfish grown in indoor tanks. The idea is to develop better feed at lower cost, which in turn helps fish farmers better compete in a growing global market.

Seafood AREC Director Michael Jahncke held a red crab as he described research that will slow the development of black spots along the crab's legs. The black spots don't affect the taste of the crab, but they deter customers from purchasing those crabs with them. If scientists can slow down the growth of black spots, the crabs will enjoy a longer shelf life, businesses will benefit, and the amount of potential food going to waste will drop.

The seafood AREC's two Extension specialists allow the facility to deal even more directly with regional seafood businesses. Abigail Villalba holds regular training sessions on such topics as seafood handling, processing practices, and more. Because many workers in the regional industry speak only Spanish, Villalba often presents sessions in both English and Spanish. The training not only keeps regional companies apprised of the latest state and federal regulations, but also teaches them about the consumers that purchase their products.





JIM STROUP

The harvest's dockside value, both in public and in private

oyster grounds, grew from \$16.2 million in 2012 to \$22.2 million in 2013.



Partnerships: David Kuhn (right), assistant professor with the College of Agriculture and Life Sciences' Department of Food Science and Technology, has been studying water quality at a number of oyster hatcheries, including Oyster Seed Holdings in Grimstead, Virginia, with the assistance of Daniel Taylor (left), a senior research specialist with the Southwest Virginia Aquaculture Research Center, and Mike Congrove (middle), the Oyster Seed Holdings manager.

One office over from Villalba's, Extension specialist Daniel Kauffman works closely with Virginia's oyster industry, which is surging. The state's oyster harvest increased by 60 percent in 2012, and another 25 percent in 2013. The harvest's dockside value, both in public and in private oyster grounds, **grew from \$16.2 million in 2012 to \$22.2 million in 2013.**

A relatively expensive luxury when compared to grains and vegetables, seafood still plays an important role for Virginia. Kauffman has worked with oyster farmers who cater to a high-end market of consumers whose sensitive taste palates can tell the difference between oysters grown in two different creeks just six miles apart. To aid the farmers' marketing efforts, he has identified a variety of regional flavor characteristics in oysters grown around the Chesapeake Bay.

Kauffman also works with beginning oyster farmers, helping them develop enterprise budgets that set achievable goals on the way to profitability.

Just the beginning

That concept of assisting new farmers is one that Virginia Tech has fully embraced with a variety of business-support programs.

The Catawba Sustainability Center, located on 377 acres in Roanoke County, helps develop conservation land-management best practices. The center, which recently installed a silvipasture demonstration consisting of about 12 acres of trees planted with grazing livestock, has a business incubator program for small farms.

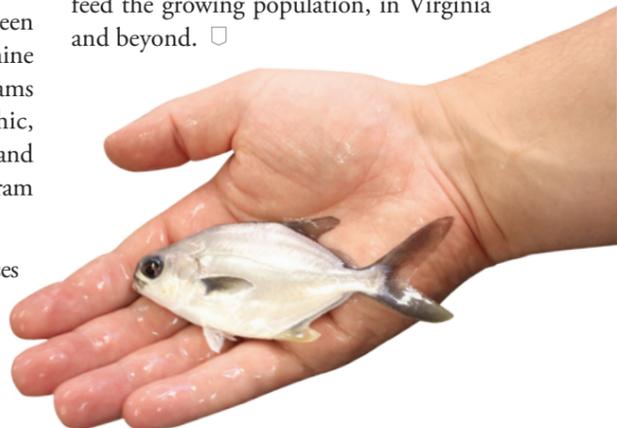
Perhaps the fullest expression of Virginia Tech's support for new farmers, however, is the Virginia Beginning Farmer and Rancher Coalition, a partnership between Tech, Virginia State University, and nine programs around the state. The programs range in style and target demographic, reaching new farmers of all ages, races, and socioeconomic backgrounds, said program director Kim Niewolny.

"The Beginning Farmer program addresses food security. We need to have a viable food production system," Niewolny

said. "It's not just [that] we need to grow new farmers—that's important—but we need to have a diversity of farmers, moving them through the system and building their communities as they grow with their farms."

The coalition trained 528 beginning farmers and ranchers through seven regional programs last year, while an additional 445 participants benefited from webinars, workshops, and self-study with the program's curriculum.

Some of those new farmers likely will show up at Kentland Farm and Virginia Tech's ARECs for future field days and training sessions. They'll contribute, too, to helping feed the growing population, in Virginia and beyond. □



100 years of **Extension**

by LORI GREINER



LOGAN WALLACE

Extension agent Sarah Burkett teaches about nutrition and exercise at Dublin (Virginia) Elementary School.

To find Virginia Tech employees in service to their community, look no further than Virginia Cooperative Extension and its agents in more than 100 localities around the commonwealth.

Since the 1914 Smith-Lever Act established the national system, Extension has delivered the knowledge and resources of the state's two land-grant universities—Virginia Tech and Virginia State University—to the people. Extension carries out a wide range of programs addressing not just agriculture, but economic, environmental, and social issues.

While society and its issues have changed during the past 100 years, Extension's mission has never wavered.

"We still work with people where they live and deal with the issues they face every day. We help them use the knowledge from the land-grant universities to improve their quality of life and economic prosperity," said Edwin Jones, Extension's director. "The biggest difference between now and then is that today's issues are much more complex."

Today, Extension expands beyond the farm fields and the kitchens of rural Virginia. **Professionals in 107 county and city offices, as well as in a dozen Agricultural Research and Extension Centers (ARECs) and six 4-H centers, conduct programming in classrooms, workplaces, and online. In 2013, they reached more than 2.6 million participants statewide.**

In a typical week, Sarah Burkett, senior family and consumer sciences agent in Pulaski County, conducts more than 10 educational programs for children and adults. During the school year, she provides nutrition lessons to second- and third-graders.

Burkett and other agents enlist the help of volunteers to extend Extension's presence in the community. Nearly 30,000 people volunteered in 2013, contributing more than 966,000 hours of service valued at more than \$23.8 million.

Among them is Andy Hullender, a bank manager and a Master Financial Education volunteer for the last four years. He helps Burkett teach classes on basic banking, how

interest is calculated, managing credit and identity theft, and negotiating with debt collectors, among other topics.

Hullender said he particularly likes programs that tie financial education with nutrition. "Finances and health go hand in hand," he said. "When people aren't working, they don't have an incentive to be healthy."

While Extension expands its knowledge base to address economic, environmental, and social concerns, agriculture remains a core component of the program.

Cattle producers such as Joey Davenport say they rely on Extension's ability to provide relevant industry information.

Davenport manages a 200-head cow-calf operation in Washington County for Bill Hayter Farms. Davenport and other producers use programs such as the Master Cattleman Course to influence most of their management decisions. The course, offered throughout Virginia, helps new and experienced producers enhance their knowledge of beef nutrition, reproduction, marketing, herd health, genetics, forages, and economics.



4-H activities teach youth a variety of indispensable skills. Photos by Logan Wallace.



A brief glance at the some of the various “master” volunteer programs administered by Extension shows the diversity of its reach:

- **Master Food volunteer**—trained in up-to-date, research-based knowledge on food preparation, nutrition, food safety, and physical activity;
- **Master Gardener**—trained to encourage and promote environmentally sound horticulture practices through sustainable landscape-management educational programs;
- **Master Financial Education volunteer**—trained to help individuals and groups reconcile debts, set goals, budget their spending, save money, organize financial records, and learn sound money management skills;
- **Master Well Owner**—trained in the proper design, management, and maintenance of private water supply systems (springs, wells, and cisterns);
- **Master Naturalist**—trained to provide education, outreach, and service dedicated to the beneficial management of natural resources and natural areas within their communities;
- **Energy Master volunteer**—trained to deliver community education and outreach programs in energy efficiency, weatherization, and water conservation techniques.

“If it weren’t for Extension, I’d be lost. They bring the education out to us and help us apply it,” Davenport said. “Extension remains the go-between, bringing research and new developments to the field.”

Perhaps no other component of Extension has greater impact than its 4-H programs for young people. Through hands-on experiences, youth discover and build their abilities to make good decisions, manage resources, work effectively, and communicate successfully.

“4-H has helped me gain leadership skills,” said Kate Belcher, of Abingdon, Virginia, a second-year student majoring in animal and poultry sciences and agribusiness who has been involved with 4-H for 14 years and is a past president on the Virginia State 4-H Cabinet. “4-H has helped me develop teamwork skills and taught me how to work with different personalities to reach a common goal. I’m more open to others’ suggestions and ideas, and I’ve learned how to take criticism and bring others to consensus.”

Said Jones, “Educating youth is at Extension’s core. Our programs help prepare Virginia’s youth to take on today’s challenges and contribute to their communities.”

Those challenges will continue to get more complicated, Jones said, but through Extension’s access to new research and a network of more than 3,000 local offices, the organization will be able to find answers to issues and shape solutions.

Lori Greiner is the communications manager for Virginia Cooperative Extension.

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Campus Canines

Exploring the human-animal bond at Virginia Tech
by JESSE TUEL

SHERRIE WHALEY

“Up Pup. Pup is up.

Cup Pup. Pup in cup.

Pup Cup. Cup on pup.”

The first three pages of Dr. Seuss’ classic, “Hop on Pop,” feature a playful puppy, a character recently brought to life at the Blacksburg library when 6-year-old Emma read “Hop on Pop” aloud.

The dog listening to Emma wasn’t a puppy but an adult golden retriever named Yogi, trained for just this sort of thing. The PAWS to Read program, a service function of the Virginia-Maryland College of Veterinary Medicine, uses dogs as a sounding board for children learning to read.

The reading program is just one of the outreach activities at the Center for Animal-Human Relationships and one of many ways—including an innovative project to film puppies in 3-D—in which canines take part in campus life at Virginia Tech.



MICHAEL KEERNAN

The bond

When Yogi visits the library with his owner, Dr. Virginia Corrigan, a veterinarian and community practice resident in the vet med college, reading to him is simple: just sign up for a 10-minute time slot. Hui Li has noticed that the dog’s presence helps her 6-year-old, Ryan, concentrate, even though her son is usually hesitant around other dogs.

“He seems very relaxed today instead of nervous,” Li said after her son read “Oscar and the Frog” to the dog.

Said Corrigan, “Yogi makes them feel more comfortable. Yogi seems to respond to them, too. He knows his role for this. He gets really calm. He’s really sweet.”

An article on canine-assisted reading programs in the October 2013 edition of “The Reading Teacher,” the International Reading Association’s peer-reviewed journal, reported that the heart rate and blood

pressure of children decreased when they were in contact with a dog while reading, and that the reading programs produce measurable improvements in reading fluency. In medical, therapeutic, and educational settings, well-trained dogs can produce, in humans, “emotional and social benefits such as quelling anxiety, facilitating coping, and reducing the perception of discomfort for a wide span of ages and populations,” according to the article.

In other words, the myriad benefits of the human-animal bond are on full display in PAWS to Read and CENTAUR, an academic center that promotes education, research, and service in the field. One of the center’s most visible efforts is VT Helping PAWS (Pet-Assisted Wellness Service), a therapy animal program that provides training and certification for vet med faculty, staff, and students and their animals. Approximately 20 owner-and-animal teams actively serve the community in nursing



TRENT DAVIS

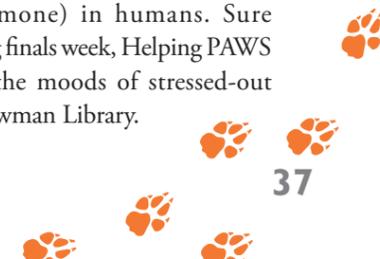
Outreach: VT Helping PAWS animals are used across campus—for reading programs that put children at ease, for stress relief in the library during finals week, and even for counseling sessions. Moose, above, regularly participates in sessions at Cook Counseling Center.

homes, assisted living centers, libraries, schools, and even at Tech’s Cook Counseling Center and the Women’s Center.

Five days a week, Trent Davis, a staff counselor at Cook, utilizes a trained dog—either his yellow Labrador, Moose, or Yogi—for counseling sessions. Of the 1,000 or so students he has counseled in the past few years, only three weren’t interested in the dog—and two of those simply thought they would be distracted.

“The students come to rely on the dog as a friend, a safe element in the room,” Davis said. “The dogs have a sense of when someone is struggling. They’ll nuzzle a person. I think it’s pretty clear that they can smell stress and understand fear.”

Davis said the presence of dogs is known to reduce cortisol (the stress hormone) and increase oxytocin (often called the bonding hormone) in humans. Sure enough, during finals week, Helping PAWS dogs lighten the moods of stressed-out students at Newman Library.





MICHAEL KIERNAN

“You just see the stress melt away from their face,” said Dan Muehlhaupt, a veterinary student who co-chairs VT Helping PAWS with fellow student Virginia Yarrington, under the guidance of Dr. Bess Pierce, associate professor of community practice in the Department of Small Animal Clinical Sciences and CENTAUR director. Said Muehlhaupt, the impact of human-animal encounters is “usually very obvious, and it can be very dramatic.”

At nursing homes, older people tend to tell stories about their dogs. Those who are disabled or mentally handicapped are equally enthralled with the animals. “Animals don’t judge you. They’re not looking at your inability,” said Muehlhaupt, a third-year student pursuing a doctorate of veterinary medicine and a master’s of public health for infectious diseases. “The human-animal bond is incredibly strong, and working

in a therapy program solidifies the need for the bond.”

In addition to VT Helping PAWS, the center operates Caring for Canine Heroes, which benefits service and working dogs and their handlers in law enforcement and search-and-rescue in the region; and a pet loss support hotline. The center trains and advocates and cares for animals—not just dogs, but horses, cats, and more—that act as service animals (such as seeing-eye dogs), therapy animals (those employed in animal-assisted activities), and working animals (such as law enforcement and military animals).

Puppies in 3-D

Inside a circular fence and surrounded by multiple cameras, several puppies were immersed in a research project to produce benchmark data for canine socialization

and movement ... which, to them, meant being puppies.

“They’re lively. They’re cute. They’re all over the place,” said Thomas Tucker, associate professor of creative technologies in the School of Visual Arts. “One second they’re gnawing their brother in the ear; the next second they’re scratching. And the next second they’re trying to climb out of the pen.”

Why all the cuteness in 3-D? The practical application is in analyzing how dogs move—and how owners can intervene with treatment when something goes awry. Working dogs, for instance, tend to suffer from lower-back problems, where the hips and vertebrae connect, because the animals are often standing on their hind legs.

Pierce and Tucker share an interest in the three-dimensional modeling of how dogs move, and they landed, as co-principal in-



SHERRIE WHALEY



SHERRIE WHALEY

Smiles: (At left) At the library, the stress of finals week melted away. (Above) Yogi, a golden retriever, befriended Charlotte and Alex Horn as they practiced reading. Elsewhere on campus, members of BARC (Bonding with Animals through Recreation on Campus), a student-run club, help care for the vet med college’s animals.

investigators, a SEAD (Science, Engineering, Art, and Design) Major Initiative Program grant from Virginia Tech’s Institute for Creativity, Arts, and Technology to conduct a pilot study on the feasibility of a visual tool that merges a dog’s external movements with skeletal movements.

Tucker used multiple cameras to capture three-dimensional movements on a dog’s outer skin, while a Georgia Tech colleague wrote the algorithms and software to unite the visual data in a dense point cloud. A radiologist, meanwhile, took CT scans of dogs to produce skeletal readings that can be integrated with the point clouds.

Tucker worked this summer to combine the outer and inner data. Next, he and Pierce plan to seek federal funding to develop a larger, more portable, automated system with eight to 10 cameras that can be easily transported and then clipped in at

exact angles, allowing researchers to collect data for a broad library of body types.

A working canine can be quite an investment—the military spends \$30,000 to \$45,000 to train a dog, Tucker said—and such a system would allow trainers to more quickly identify health and socialization issues before the issues become problematic. As Pierce noted, the interdisciplinary project fits well with CENTAUR’s mission of keeping dogs healthy so that they can serve their communities.

At the library, as Yogi patiently listened, Corrigan slid her index finger across the pages of “Hop on Pop,” under the words. The six-year-old girl placed her hand over Corrigan’s, reading the words aloud. When they came across the book’s most difficult words, Corrigan helped her sound out the consonants.

“My father can read big words too, like Constantinople and Timbuktu,” read the girl.

One word at a time, one dog at a time, the human-animal bond is alive and well at Virginia Tech. □

Boris on patrol

The VT Helping PAWS dogs aren’t the only canines visible on campus. Boris, the Virginia Tech Police Department’s apprehension and narcotics detection K-9, retired in March for health reasons after more than five years protecting the university community.

“Boris was an important member of our department, the university, and the region. He kept Virginia Tech safe and was an excellent community resource,” said Kevin Foust, police chief. “Boris was really a bridge between the police department and the students. They loved seeing him around campus.”

Boris was the model for the Virginia Police Canine Memorial, which stands outside the Virginia-Maryland College of Veterinary Medicine. The memorial honors police dogs that have been killed in the line of duty in Virginia.

A slower life awaits Boris in retirement. He has been adopted into the family of his handler, officer Jaret Reece. “He’s always been a part of our family,” Reece said. “Now it will become official.”



On a mission:

To read a story about Brooke Corson '01, who founded Mutts with a Mission Inc. to provide service dogs to veterans and wounded warriors—and to watch a video about the 3-D puppy project—visit www.vtmag.vt.edu.

The Voyager

by MADELEINE GORDON



COURTESY PHOTO

Carolyn “Lonnie” Schorer (M.Arch. ’86) has jumped out of planes, worked the Olympic Games, completed six marathons since age 50, and dined with Eleanor Roosevelt. She calls Buzz Aldrin a friend and will soon search for a sunken aircraft carrier under the Pacific Ocean.

The 73-year-old has lived around the world—in Thailand, Turkey, Italy, Norway, the former Soviet Union, and Blacksburg, where she pursued a master’s degree in architecture—all while raising three children with her husband, David.

Living abroad for a total of 22 years as part of David’s career with the U.S. Department of State, Schorer learned more than five languages, including Russian, Turkish, Italian, Thai, and Norwegian, while engaged in efforts such as UNESCO World Heritage programs.

And then there are the experiences she can’t discuss, such as her early career with the CIA.

After Schorer watched on television as President John F. Kennedy briefed the nation on the Cuban missile crisis, the patriotic Connecticut College student switched her major from French to Russian. For the sake of appearances, Schorer searched for jobs before graduation—even though, by her junior year, a CIA position was already waiting for her.

As their careers progressed side by side, the Schorers found it challenging to raise their family with a sense of normalcy and balance amid extremism, military coups, and cultural biases and terrorist threats against Americans. “We made sure to not transmit any sense of danger to the kids, and we made sure every place we lived felt like home. We always lived in the neighborhood, not in an embassy complex,” said Schorer, who is now retired from the CIA.

While this lifestyle wouldn’t suit everyone, Schorer has never turned down an opportunity for learning and discovery.

“There is a quote about a mind that is stretched never going back to its original dimension,” she said. “So as you stretch your capabilities and your mind, of course everything expands. The network of people you meet, the skills you have, and the knowledge you have all just grow and grow. You can’t know that if you say no. Humanity is naturally curious, seeking to know and understand. Perhaps I am just willing to be swept along in the wave.”

Taking flight

As an adventurous toddler, Schorer once ran off with the family dog. In her childhood, she would often ask her father to take her to the airport to watch planes take off and land. As she grew older, she ventured off to be an American Field Service high school student in Istanbul and later joined the St. Michael’s Angels Skydiving Club.

Schorer’s family was populated with builders on her father’s side and artists and sculptors on her mother’s side. When she sensed that the doors for women in architecture were beginning to open, she stepped through. “With architecture as the blending of construction and art, I had grown up with appreciation for both disciplines and was just waiting” for an opportunity, she said. “The privilege of walking through the doors in Cowgill Hall as a grad student in 1981 was a special gift.”

Degree in hand, Schorer first worked for an Italian architect, documenting and drawing an entire medieval hilltown north of Rome. It was a “total immersion” project, she said, much like her government role. Later, in Norway, the architect was involved with housing and historic projects. In recent years, Schorer has worked with architectural firms in the Washington, D.C., area.

One of Schorer’s role models is Amelia Earhart, who disappeared in 1937 while

attempting to become the first female to complete an around-the-world flight.

“She encouraged women to not be afraid to try. Teachers say that students today, especially girls, have low self-esteem and are risk-averse,” said Schorer, who holds Air Single Engine Land and Air Single Engine Sea piloting licenses. “Amelia demonstrated many firsts.”

Schorer eagerly accepted the chance to test the theory that Earhart had landed and eventually died on Nikumaroro, an island in the western Pacific Ocean. In 1997, 2007, and 2010, she traveled to the island as a member of The International Group for Historic Aircraft Recovery (TIGHAR) team.

“It’s fascinating to be part of history by participating in the present,” said Schorer, who learned the importance of preserving culture from her uncle, Deane Keller, one of the World War II Monuments Men featured in Robert Edsel’s book “Saving Italy.” (Edsel also wrote “Monuments Men,” the book on similar events in Europe that was made into a recent movie by the same name.)

Zest for life

Through TIGHAR, Schorer was asked to work with the National Oceanic and Atmospheric Administration’s (NOAA) Office of National Marine Sanctuaries as an archival researcher with NOAA’s Maritime Heritage program.

In one project, she was tasked with locating three U.S. Navy ships lost during the Battle of the Coral Sea in World War II in May 1942. The battle, which pitted the Japanese naval and aerial forces against those of the U.S., was the first between aircraft carriers.



COURTESY PHOTO

Globetrotter: Employing kite aerial photography on Nikumaroro, an island in the western Pacific Ocean, Lonnie Schorer ’86 (left) helped to search for Amelia Earhart’s resting place. She was also the senior vice president for design and construction for decks 5-12 of *The World at ResidenSea* (above), the world’s first private residential community at sea.

Sequestered in the U.S. National Archives and the Washington Navy Yard, Schorer spent five months reconstructing the battle and identifying all the ships involved. Following a detailed search of deck logs, action reports, and images, she was able to triangulate the positions of the aircraft carrier *USS Lexington*, the battleship *USS Sims*, and an oiler, *Neosho*. As a result of her findings, Australia declared that region of the Pacific Ocean a historic area.

During her search, Schorer discovered a note from a U.S. Navy pilot that read, "Scratch one flattop." He had just sunk a Japanese carrier. Said Schorer, "In disbelief, I was holding the original note in my hands—an unsurpassed academic exploration, experienced sitting quietly alone in the archives."

Moments like these keep Schorer motivated.

"It shows how we're tied to the future and tied to the past. I've learned so much history, and it has had such an impact on me to be connected to these historic events and to bring them back to the present," Schorer said. "To be in the mix of it all is very exciting and stimulating—to think that the piece of paper you are holding can bring the battle back. All of the torpedoes, the fires and the yelling and the chaos, it all recreates in your mind when you're connected by participating in history in the present."

In 2015, Schorer and a team will travel to the Coral Sea to try to locate the ships. She will serve as the battle historian and the co-identifier of forensic aircraft parts.

Another NOAA project involves the *USS Macon*, a dirigible aircraft carrier that crashed into the sea off Point Sur,

California, in 1935, with four F9C Sparrowhawks on board. In early 2015, she will serve as an aquanaut and help crew a submersible that will map the site, more than a thousand feet underwater, in three-dimensional detail.

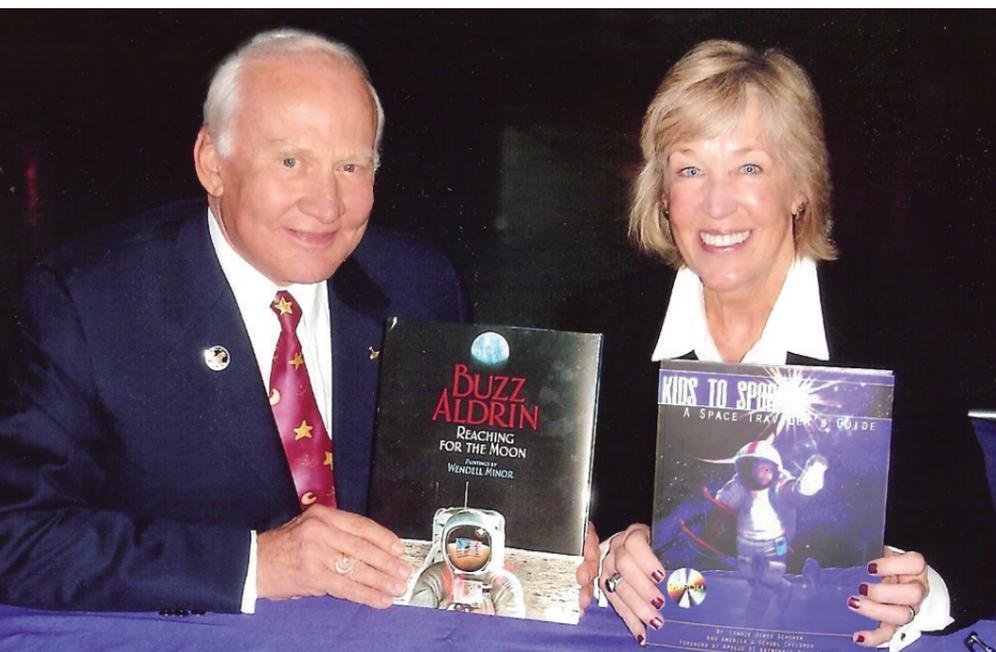
The greatest risk

Schorer is quite comfortable at sea. She served as the senior vice president of design and construction for decks 5-12 of *The World of ResidenSea*, the first-ever private residential community at sea, living in Oslo, Norway, and on the luxury ship under construction in Rissa, Norway, from 1997 to 2002.

"I believe that *The World* is a prototype for learning to live in new environments, at sea or in space," said Schorer, who was drawn to the project for its impact on the future of exploration. "Those going to live on the moon will have to rely on themselves. Those who have the courage and vision to be the first on one frontier will also be among the first on the next frontier."

Members of the space community, including Buzz Aldrin, took note of the innovative strides of *The World*, believing that the future of space travel, with its demands for self-sustained, long-term transportation, might be modeled on the cruise ship industry. Aldrin enlisted Schorer's expertise to encourage space exploration. Together, they founded a company called Global Space Travelers to promote the idea of private citizens in space.

"One of our missions was an outreach to children in schools," Schorer said. "I found that kids give up on their dreams as early as fifth grade, and so we came up with a project to engage their interest and involve them in their own futures."



COURTESY PHOTO

Final frontier: Lonnie Schorer's design work for a luxury residential ship caught the attention of astronauts like the famed Buzz Aldrin (at left), who told her, "You're encapsulating people's environments in steel. We're doing the same in space, but you're ahead of us in designing for what the private sector will expect, versus what NASA and the military get," said Schorer. The two friends formed a company to promote the idea of private citizens in space.



Adventures:

Q: What else will you explore?
A: "Who knows? That's the beauty and wonder of it all!"

Read more of Schorer's inspired worldview in the Q-and-A at www.vtmag.vt.edu.

Schorer authored a series of children's books entitled "Kids to Space." She hopes to inspire children, like her own four grandsons, to test the boundaries and think about their future in space.

"Pushing to frontiers is the essence of greater knowledge and survival," said Schorer, who returned this summer from a cattle drive in Wyoming. "Otherwise, we will stall in complacency and not advance as a civilization. Failing to risk, explore, and discover is the greatest risk of all."

Schorer's zest for life motivates those around her.

"In the 20 years that I've known Lonnie, there is no one that I have met that I would consider a mentor in my life (other than Lonnie) as far as the way she carries herself and her innate desire for excellence,"

said Holly Abernathy, who worked with Schorer during the 1996 Olympics in Atlanta. "She definitely has this sort of character and spirit in her that brings out the best in others."

For the '96 games, Schorer was the director of national Olympic committee services for the canoe/kayak slalom village on Tennessee's Ocoee River, where she was responsible for the participating countries' teams. Prior to that, she staffed several committees for the Olympics and Paralympics in Atlanta and in Lillehammer, Norway, for the 1994 winter games.

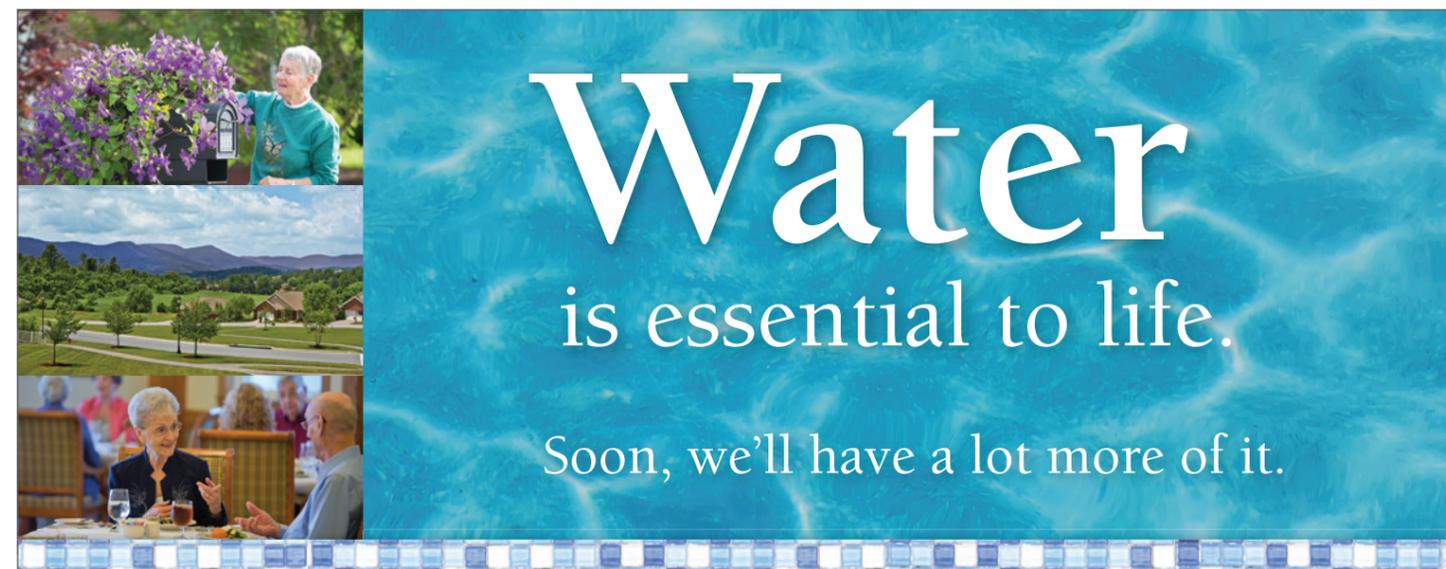
Schorer's younger brother, Russ Jones, said his sister has an extraordinary mix of characteristics and experiences. "She has lived several lifetimes all packed into one, and she continues to do it. She is now

in her seventies, and she is not showing any signs of slowing down or being less interested. She takes on new things all the time," Jones said.

Enjoying life between Virginia and New Hampshire, Schorer has no plans to resign to a quieter life.

"I know that when things become too still, quiet, and comfortable, that's the very moment that I take on a new challenge." □

Madeleine Gordon, a senior majoring in English and communication, was a Virginia Tech Magazine intern.



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At the spring game in 2010, Scott "Ponch" Frank '00,'01 proposed to Mitzi Frank '97 in Lane Stadium.

During the 2010 spring football game, players on the maroon squad beat their teammates on the white side, 16-0.

Although the game was just a scrimmage, the biggest winner in Lane Stadium that day was arguably Scott Frank (civil engineering '00, M.S. '01).

While former standout players were being introduced at halftime, he pulled out an engagement ring, got down on one knee, and asked for his girlfriend's hand in marriage.

"Just as I [had] asked her to marry me and she said 'yes,' people started applauding for Michael Vick, but I told her it was for her, of course," said Frank, who goes by the nickname "Ponch."

His proposal came well after he and Mitzi Frank (psychology '97) had graduated, but the seeds of their relationship were planted long before, although the Franks never dated in college.

"I was the orientation leader and literally the first girl he met at registration," Mitzi Frank said.

Although they occasionally ran into each other on campus, it was not until 2007 that they would reconnect and begin their romance. Eventually, Mitzi Frank, who worked for Morgan Stanley in London, relocated to Florida, where Ponch Frank worked for a major highway contractor, Ranger Construction Industries Inc.

Residents of Jupiter, Florida, they are still with those companies. She is an executive director, specializing in emerging markets. He is vice president of operations.



The Franks with their son, Hagen

Though the chance to join Morgan Stanley took her in another direction, Mitzi Frank said her experience working in the office of Virginia Tech's dean of students, taking graduate courses in higher education, and working abroad helped prepare her for the internationally focused career she now enjoys.

Along with the facts that she met her husband at Virginia Tech and has a brother who earned his degree there in 2010, her past experiences brought the university to the front of her mind when she and her husband were considering making a significant charitable donation.

After learning about some of the programs under way at the Graduate School, they established the Ponch and Mitzi Frank Graduate Fellowship, structuring the gift so that it will support a master's degree student in the College of Science in even-numbered years and a master's degree

student in the College of Engineering in odd-numbered years.

"Over the years we've both given to charities, but always felt like there was more we could do," Mitzi Frank said. "When we were approached by the Graduate School, it felt like both our [philanthropic] needs were being met. We could give to a place that was so influential to us and participate in a charity that felt natural."

Ponch Frank said one of his most memorable experiences at Virginia Tech was an engineering class taught by then-university President Paul Torgersen. While considering setting up a fellowship, he took into account something Torgersen once said.

"Dr. Torgersen said going from a top 100 to a top 50 university was a huge leap, but going from a top 50 to a top 20 was another huge leap," Ponch Frank said. "Things like having a medical school help

toward that path, but you need a top graduate school too."

Graduate School Dean Karen DePauw said the Franks' generosity is deeply appreciated.

"Ponch and Mitzi's enthusiasm for their university is infectious and inspiring," she said. "I'm glad their undergraduate and graduate experiences made such an impression on them, and am extremely grateful that they've chosen to give back by creating a fellowship that will help us recruit extraordinary graduate students in science and engineering."

Ponch Frank said that back when he was a student, he would look for opportunities to stay in Blacksburg even when class was not in session. He participated in student government and was the male member-at-large for the Class of 2000. He was in the German Club. And, like his wife-to-be, he served as an orientation leader.

Mitzi Frank said that as someone who has lived in various locations for work, being a Hokie helped her to meet many people, make friends, and feel at home even when she was far from members of her immediate family.

Now that she has a family of her own, with a 1-year-old son she hopes will attend Virginia Tech in the future, she continues to find ways to feel connected to her university despite living far away.

One of those ways is by giving back to create a fellowship. Another is by getting back to Blacksburg when she can. And an additional opportunity came up when she and her husband got a chocolate Labrador several years ago. They named her "Lane," in honor of the stadium, of course. □

Albert Raboteau is the director of development communications.

alumni association

alumni association

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contributors

Tom Tillar '69	Vice President for Alumni Relations
Dave Hunt	Communications Director
Shirley Fleet	Class Notes Editor

NETWORKING

Alumni networking strengthens the Hokie Nation

For most of our Alumni Association's nearly 140-year history, we have focused on creating networking opportunities for alumni, and that focus remains true today. Enabling alumni to connect in person and online is critical in today's society—and highly valued by our alumni. Networking, particularly among those who share an alma mater, offers opportunities that otherwise might remain undiscovered. Apps, Google, and Twitter don't seem to allow the benefits of more personal exchanges,

but in-person networking often leads to business relationships, collaboration, intellectual discovery, and richer social interaction.

The Alumni Association's approach to networking is multifaceted. Through specific networking events, alumni come together in their communities and learn more about each others' interests and careers. Most often, the events are for all alumni who are able to gather and get acquainted. Other events may be centered

on a particular profession or academic discipline. Our alumni chapters are committed to staging more of these opportunities around the country. To make sure you learn about upcoming events, please confirm that your address and email are current via the link at www.alumni.vt.edu. A list of chapters, which follows on page 50, can also be accessed online in an interactive map that links directly to chapter contact information.

On the Web, the Hokie Nation Network enables alumni to connect via a free online directory. On LinkedIn, where more than 120,000 Hokies are registered, there is a Virginia Tech-specific networking community. The association's career resources program encourages networking through LinkedIn, including listing internship and job notices for Hokies. Throughout the year, career webinars showcase speakers who offer tips on job-searching, interviewing, marketing yourself, and more. Refer to the webinar schedule link on our website,

where past programs are archived for your viewing. All of these resources are provided for free by the Alumni Association.

Networking with other dedicated and helpful alumni is among the most significant benefits of membership in the Hokie Nation. Virginia Tech graduates are frequently described as displaying uncommon school spirit and loyalty. "It may be hard to describe, but you know it when you see it" is a sentiment we often hear. Maybe it's a shared work ethic. Maybe it's the bond of *Ut Prosim* (That I May Serve). Maybe

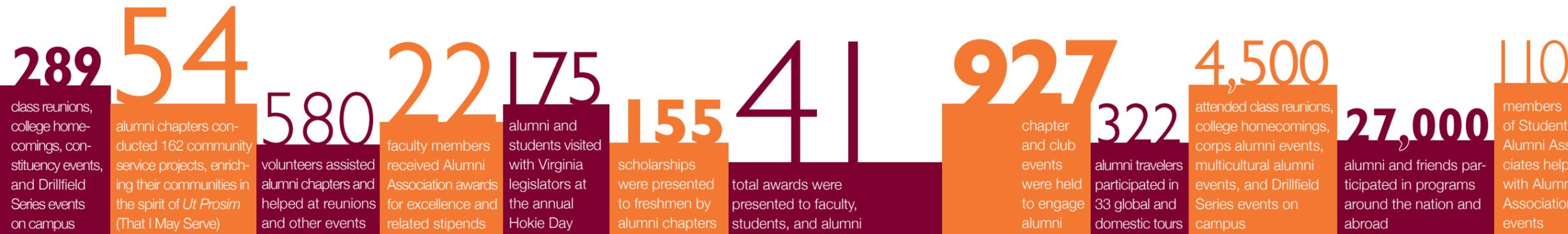
it's recalling a special professor who mentored you and encouraged a particular career path. Or maybe it's simply trusting a fellow Hokie whom you met while networking.



Tom Tillar '69

Vice President for Alumni Relations

2013-14 annual report by the numbers



Alumni awards

William H. Ruffner Medal: G. Robert "Bob" Quisenberry (statistics '62)

University Distinguished Achievement Award: Robert Lewis Turner (architecture '72)

Alumni Distinguished Service Awards: Curry A. Roberts (political science '80), Wayne H. Robinson (finance '80)

Graduate Alumni Achievement Award: John P. Grotzinger (Ph.D. geological sciences '85)

Awards for faculty excellence

Graduate academic advising: Srinath Ekkad, mechanical engineering

Undergraduate academic advising: Rosemary C. Goss, apparel, housing, and resource management

Extension: Kelly J. Liddington, unit coordinator and senior Extension agent; Brian L. Benham, biological systems engineering

International education: Andrew S. Becker, foreign languages and literature; Trudy H. Becker, history

International outreach: LuAnn R. Gaskill, apparel, housing, and resource management

International research: Nancy G. McGehee, hospitality and tourism management

Outreach: Michael S. Rosenzweig, biological sciences

Outreach (team): Shamindri M. Arachchige, chemistry; Karen J. Brewer, chemistry

Research: Elizabeth Struthers Malbon, religion and culture; Shashank Priya, mechanical engineering

Teaching: Dana M. Hawley, biological sciences; Terry Lynn Clements, architecture and design

William E. Wine Awards in teaching: Elizabeth Struthers Malbon, religion and culture; Wing F. Ng, mechanical engineering; Donald J. Orth, fish and wildlife conservation

Graduate student teaching: Kelli Karcher, mathematics; Marwa K. Abdel Latif, chemistry; Paige H. Horst, curriculum and instruction (honorable mention); Stephanie Houston, biological systems engineering (honorable mention)

Graduate student service: Natasha Amanda Cox, human development

Outstanding Recent Alumni awards

Kimberly Lane Tabor Kreitlow (Ph.D. entomology '04), College of Agriculture and Life Sciences

Steven A. Sanderson (industrial design '02), College of Architecture and Urban Studies

Thomas J. Fast (management and finance '06), Pamplin College of Business

David O. Childress (civil engineering '06), College of Engineering

Pardha Saradhi Pyla (M.S. computer engineering '02, Ph.D. computer science and application '07), College of Engineering

Atia Abawi Powell (communication '03), College of Liberal Arts and Human Sciences

Jeremy P. Stovall (Ph.D. forestry '10), College of Natural Resources and Environment

Abhishek Roy (Ph.D. macromolecular science and engineering '08), College of Science

Melinda G. McCall (D.V.M. '04), Virginia-Maryland College of Veterinary Medicine

Chapter awards

Outstanding Chapter awards

Gold

Alleghany Highlands, Atlanta, Baltimore, Charlotte, Denver, First State, Houston, Minnesota, National Capital Region, Richmond, Roanoke Valley, San Antonio, Seattle, Tidewater

Silver

Central Florida, Chicago, Fredericksburg, Kentuckiana, N.C. Triad, New River Valley, Palmetto

Bronze

Chattanooga, Columbia, Dallas/Fort Worth, East Tennessee, Emporia/Roanoke Rapids, Franklin County/Smith Mountain Lake, Grand Strand/Myrtle Beach, Jacksonville, Rockbridge, San Diego, Shenandoah, Tampa Bay, The Villages, Tideneck, Triangle, Williamsburg

Superlative awards

Outstanding Chapter Event:

Baltimore - 46th annual Baltimore Hokies Crabfeast

Outstanding Community Service Project:

Tidewater - The Big Event 2014

Outstanding Golf Tournament:

Charlotte - 15th annual Charlotte Virginia Tech Alumni Golf Classic

Outstanding Fundraising Event:

San Diego - San Diego Hokies Raffle and Silent Auction

Outstanding Chapter Website:

New River Valley - nrvhokies.com

Innovation Award:

North Alabama - An Evening with the Commandant

Broadening Alumni Engagement Award:

Baltimore - Fun Run to Support Change

Most Improved Chapter:

North Alabama

Outstanding New Chapter:

Greenville, N.C.

Outstanding Chapter Volunteer:

Jina Gaines (communication '03, M.A. '05), Tidewater, and Yvette Johnson (business information technology '05, M.I.T. '11), National Capital Region

Outstanding Chapter Officer:

Debbie Barackman-Flipppo (marketing management '83), Denver

Hall of Fame Award:

Richmond-Central Virginia Wine Festival



2015 DRILLFIELD SERIES
Feb. 20-21: Food For Thought
This delectable food and wine-pairing weekend features hands-on cooking in the Department of Hospitality and Tourism Management kitchen.

March 20-21: What Fuels Our Planet?
Hear perspectives on energy sources from Virginia Tech faculty and graduate students, including tours of energy research facilities.

June 5-6: The Rich Heritage of Southwest Virginia
Enjoy lectures and tours of regional homes in this historical look at the pioneers who settled the area in the 18th and 19th centuries, leading to the founding of Virginia Agricultural and Mechanical College (today's Virginia Tech).

July 10-11: Alumni and Legacy Weekend
The "Day in the Life of College Admissions" program assists 2016 and 2017 high school graduates and their parents in navigating the application process.

July 17-18: Women's Weekend
Connect and celebrate with women who love Virginia Tech. Join us for an enjoyable weekend of fun, relaxation, networking, and enlightenment with alumnae, friends, families, and fans, as well as faculty, administrators, and students.

Other 2015 events
May 20-22: Old Guard alumni reunion, which includes special anniversaries for the classes of 1945, 1950, 1955, and 1960

June 15: 3rd Annual Hokie Classic Golf Tournament, Pete Dye River Course

June 27: 2nd Annual Summer Beer Festival at Virginia Tech

Accommodations at The Inn at Virginia Tech are available for all events.

VIRGINIA TECH ALUMNI CHAPTER CONTACTS

Get involved with the Alumni Association and one or more of its 130 chapters and clubs around the world. Find a chapter or club near you today, and make a difference with the Hokie Nation. For more information or to volunteer to lead a chapter, contact Ginny Ritenour, ginnyrit@vt.edu.

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bia - Carolyn Fisher, colahokies@gmail.com **Grand Strand/Myrtle Beach** - Dorothy Long, dorothy.long79@aol.com **Hilton Head Island** - Judy Brooks, jbrooks@brooks-solutions.com **Palmetto** - Brian Moran, bmoran@vt.edu **TENNESSEE: Chattanooga** - Keith Hagy, keith.hagy@gmail.com **East Tennessee** - Keith Parker, etvtaa@gmail.com **Knoxville** - Mary Shaffer Gill, maryshaffergill@gmail.com **Memphis** - Dave King, dave.king@att.com **Middle Tennessee** - Katherine Forbes, katherineforbes@icloud.com **TEXAS: Austin** - Kiel Dolence, kiel.dolence@gmail.com **Dallas/Ft. Worth** - Kelly Van Arsdale, dfwhokies@gmail.com **Houston** - Grace Eckhardt, graceeckhardt@gmail.com **San Antonio** - Greg Wattis, gwattis@swbell.net **UTAH: Marita Viselli**, mviselli@sisna.com **WASHINGTON: Greater Seattle** - Gautam Sawhney, [\[gmail.com\]\(mailto:gmail.com\) **WEST VIRGINIA: Kanawha Valley** - Volunteer needed **WISCONSIN: Volunteer needed**

INTERNATIONAL: Australia - Cathlin Norris, \[cathlinell@aol.com\]\(mailto:cathlinell@aol.com\) **China \(Beijing\)** - Ben Redden, \[bennyr@vt.edu\]\(mailto:bennyr@vt.edu\) **Egypt** - Mohamed Ibrahim Saleh, \[msaleh@vt.edu\]\(mailto:msaleh@vt.edu\) **Hong Kong** - Kelly Cox, \[coxkelly@yahoo.com\]\(mailto:coxkelly@yahoo.com\) **India \(Hyderabad\)** - Sujana Mayreddy, \[reddeysujana@gmail.com\]\(mailto:reddeysujana@gmail.com\) **India \(Mumbai\)** - Mayor Aggarwal, \[mayoraggarwal@gmail.com\]\(mailto:mayoraggarwal@gmail.com\) **Malaysia** - Edy Wan, \[wanedey@mas.po.my\]\(mailto:wanedey@mas.po.my\) **Panama** - Anabel Tatis, \[tatisana@pan.ops-oms.org\]\(mailto:tatisana@pan.ops-oms.org\) **Paris** - Wilfried Duchez, \[wilfried-duchez@net-courrier.com\]\(mailto:wilfried-duchez@net-courrier.com\) **Philippines** - Cora Villareal, \[cdvenetgazer@com.ph\]\(mailto:cdvenetgazer@com.ph\) **Spain** - Alan P. Campbell, \[acampbel@me.com\]\(mailto:acampbel@me.com\) **United Kingdom** - Sunil Vaswani, \[Sunil.r.vaswani@gmail.com\]\(mailto:Sunil.r.vaswani@gmail.com\)](mailto:gautam.k.sawhney@</p>
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A message from Alumni Association President Matt Winston



COURTESY PHOTO

The more things change, well, the more they change. This year, our alma mater has witnessed and embraced a great deal of change as we continue to grow. Of course, the most significant change is the transition of leadership as we welcome new president Timothy Sands to the helm. President Sands hit the ground running, bringing new ideas and energy to the institution while building upon the many accomplishments of his predecessor, Charles W. Steger, as well as all of the presidents who have served since our founding in 1872. I know that you join me in your support of our new leader. I have assured him that there is no stronger alumni network in the land than that of the Hokie Nation, and we stand with him as Virginia Tech prepares to soar to new heights.

We also welcome two new leaders in the athletic program, Athletic Director Whit Babcock and men's basketball head coach Buzz Williams. The success of the athletic enterprise and the student-athletes who represent us on and off the field is of high interest to our alumni. The work of these leaders, along with the entire athletic staff, continues to shine.

The change that matters the most is in our growing Hokie Nation. At the spring Commencement, Virginia Tech released another 5,500 bright young minds to go "conquer the world." President Steger served us admirably for more than 14 years, and his signature is on almost 107,000 Virginia Tech diplomas—nearly half of our living alumni. And with each graduating class, we become larger and more diverse. As we change, our Alumni Association is prepared to meet the challenges and needs of our newest alumni.

What will not change is our Alumni Association's desire and ability to deliver strong programming and services that cater to Hokies of all backgrounds, professions, and lifestyles—both on campus and in the communities, where they form strong, vibrant alumni chapters. Our highest priority is engaging and serving all alumni so that together we can contribute to the overall success of the university. Another magical year lies ahead for Virginia Tech, and the world will continue to take note of all that our Hokie Nation can accomplish. Remain connected to our beloved alma mater, and let it remain connected to you. Go, Hokies!



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AHI
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Cuban Discovery

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April 9-17 • \$5,399*

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May 1-9 • \$3,669*

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Isles and Empires of the Adriatic

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Nordic Pathways

Hosted by Patricia A. Perillo, vice president for student affairs
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Baltic Marvels

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Coastal Maine and New Brunswick

AHI
Aug. 26-Sept. 2 • \$3,895*

Tuscany - Alumni Campus Abroad

AHI
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Iberian Princes and Palaces

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Nov. 6-18 • \$3,999* (air included)

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www.alumni.vt.edu/travel

* Dates and prices are subject to change. Pricing is based per person on double occupancy without air, except as noted. Free air is based from select North American gateway cities. The Alumni Association encourages all alumni to consider purchasing travel insurance.



Book Notes

nonfiction

Mary Beth Baptiste (M.S. wildlife management '77), "Altitude Adjustment: A Quest for Love, Home, and Meaning in the Tetons," memoir, TwoDot/Globe Pequot Press.

Kristin Barton Cuthriell (education '91), "The Snowball Effect: How to Build Positive Momentum in Your Life," self-help, AuthorHouse.

Christina (Moldenhauer) Daves (political science '89), "PR for Anyone: 100+ Affordable Ways to Easily Create Buzz for Your Business," marketing, Morgan James.

Dayna (Rinne) Frei (liberal arts and sciences '91) and Stacy Smith-Bradfield, "Type I Diabetes and Babysitting: A Parent's Toolkit," parenting, Science Horse Publications.

Newton Lee (computer science '83, M.S. '85), "Digital Da Vinci: Computers in Music," music, computing, Springer.

Garret Mathews (marketing management '91), editor, "Columnists: While We're

Still Around," journalism, self-published.

Mike Michalowicz (finance '93), "Profit First: A Simple System to Transform Any Business from a Cash-Eating Monster to a Money-Making Machine," business, Obsidian Press.

Jim Mizem (forestry '75, M.S. agricultural economics '77), "A Creek Trickles Through It," fishing humor, self-published.

James L. Moore III (M.A.Ed. counselor education '97, Ph.D. '00) and Chance Lewis, "African American Male Students in PreK-12 Schools: Informing Research, Policy, and Practice," textbook, Emerald Group Publishing.

Tracey Moore (industrial engineering '86), "The Exceptional Man: Love Poems and Inspirational Writings Celebrating Godly Men and Great Relationships," religion, relationships, self-published.

William "Bill" Ogden (electrical engineering '59, M.S. business administration '62),

"A Life of Determination and Love: Biography of Sam Ogden," biography, Outskirts Press.

Peter Ozolins (Ph.D. environmental design and planning '10), "Sustainability and Scarcity: A Handbook for Green Design and Construction in Developing Countries," construction, environment, Routledge, Taylor & Francis Group.

Charles "C.K." Robertson (communication '85), "The Book of Common Prayer: A Spiritual Treasure Chest—Annotated and Explained," religion, Skylight Paths Publishing.

Uwe Tauber, professor, physics department, "Critical Dynamics: A Field Theory Approach to Equilibrium and Non-Equilibrium Scaling Behavior," textbook, physics, Cambridge University Press.

John Wiley Jr. (communication '80), editor, "The Scarlett Letters: The Making of the Film 'Gone with the Wind,'" cinema, Taylor Trade Publishing.

Wendy Williamson (hotel, restaurant, and institutional management '93) and Honora Rose, "Two Bipolar

Chicks: Tips for Living with Bipolar Disorder," psychology, self-help, Post Hill Press.

fiction

Katherine Cordani (communication '99), writing as Kathryn Ascher, "What It Takes," romance novel, BQB Publishing.

Shane Dalton (English '04), "The Bear and His Boy," novel, self-published.

Thomas Fugate (communication '78), "Spy Dreams," novel, self-published.

Emilie McGee (child and family development '78), "No River Too Wide," novel, Mira Books.

Cliff Sturgill (management '92), "Blood Tides," novel, self-published.

Bill Yancey (general science '72), "Reluctant Intern," novel, self-published.

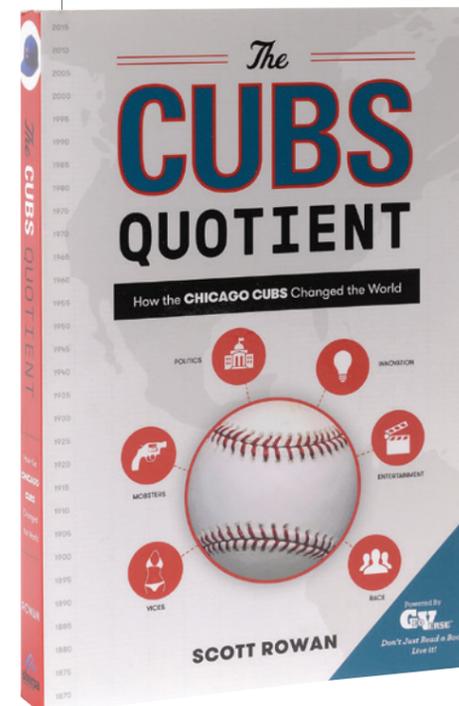
children's

K.A. Steed (biological sciences '00, M.S. '03), "We Can't Do It," children's, Tate Publishing.

featured author

Scott Rowan (English '91) has worked in sports publishing since 1995 as a newspaper journalist and book executive, collaborating on more than 1,000 sports books. After years as a volunteer educator at the local aquarium teaching marine biology to the public, Scott started a series of projects using sports as a fun way to teach global history to sports fans of all ages. "The Cubs Quotient: How the Chicago Cubs Changed the World," published by GeoVerse, is the first book in the series. An avid Hokie, Scott never misses pizza, dessert, or a Virginia Tech football game. Below is an excerpt from the book, reprinted with the author's permission.

It is fitting that the City of Big Shoulders once embraced a fire hydrant of a man as hero. ... Everything about Lewis "Hack" Wilson was too short—including his height, his career, and even his life. Everything, that is, except his legacy. Wilson's 191 RBI in 1930 is still the MLB record, and it appears to have little chance of being topped. ...



In the middle of his historic 191-RBI season, it was Wilson himself who believed he needed protection. To whom does one of the stockiest players in baseball history turn for help when he needs it? The only guy in Chicago who could pull more weight than Wilson: Al Capone. ...

Violent was the world that Wilson saw around him during the 1930 season. The rise in violence hit too close to home that summer when a local gang member, Jack Costa, was shot dead in the apartment building where Wilson's family lived. An apparent retaliation for a previous act of violence, Costa's murder proved that being friends with Capone was a dangerous business. Wilson began to fear for the safety of his family (wife, Virginia, and son, Bobby).

"Murders and kidnapping were commonplace among gangsters and bootleggers, and even their acquaintances," biographer Clifton Blue Parker explained in his book "Fouled Away: The Baseball Tragedy of Hack Wilson." "In fact, Hack Wilson's prominent visibility as the biggest sports star in the city made him a possible target of inter-cine intrigue. As Hack was on friendly terms with Al Capone, and was making good money himself, concern existed that Bobby might be a target for Capone's enemies—perhaps a kidnapping possibility. And so, a mysterious and silent figure named "T Bone" was assigned to walk Virginia and Bobby to Wrigley Field and sit with them during the games." No harm ever came to Virginia, Bobby, or Hack.

Wilson was soon traded, his final appearance as a Cub coming on August 30, 1931. Six weeks later, on October 18, Capone was found guilty of tax evasion and given an 11-year sentence that he served first in Atlanta and then at Alcatraz.

Capone's unpublicized protection of Wilson was just one of the many ways the underworld figure helped the Chicago Cubs. In hindsight, the fear that Commissioner Kenesaw Mountain Landis had of mobsters becoming involved in Major League Baseball was clearly justified, especially considering that Capone had plans to alter his occupational choice from illicit to athletic.

Capone planned to buy the Chicago Cubs, making team owner William Wrigley the original "offer he couldn't refuse," later altered slightly (to a movie producer, not baseball team owner) and made popular in the 1972 film, "The Godfather."

Submission guidelines are available online at www.vtmag.vt.edu/bookreview.html. To submit a book, mail it to Book Notes, Virginia Tech Magazine (MC0109), 205B Media Building, Virginia Tech, 101 Draper Rd. NW, Blacksburg, VA 24061. You can also email your name, the name of the publisher, the genre, and a brief description of the book to booknotes@vt.edu. We must receive the book within one year of its publication date. Photos by Jim Stroup.

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; or submit the news online at www.vtmag.vt.edu/submit-classnote.php, where photos may also be uploaded for consideration.

Alumni mailing addresses may be viewed online at www.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



Bruce E. Garnes '96 and Ashleigh D. Waddle '07, Blacksburg, Va., 6/7/14.

KATIE NESBITT PHOTOGRAPHY

- '31**  **Frederick S. Bock Jr.** (EE), Frisco, Colo., 12/6/13.
- '38**  **G.P. George Schrader Jr.** (CE), Denver, Colo., 6/4/14.
Dolores Beamer Showalter (GSC), Hiwassee, Va., 12/28/13.
- '40**  **Harry C. Archer** (ME), Perrysburg, Ohio, 4/8/14.
I.F. Frank Carpenter (FW), Fairfax, Va., 3/29/14.
- '41**  **J.B. "Jake" Huffman** (FW), Gainesville, Fla., 6/5/14.
G. "Garland" J. Kidd (AGED), Roanoke, Va., 6/10/14.
- '42**  **Edwin H. Ivey** (CHE), Houston, Texas, 10/23/13.
- '43**  **Lester B. Cundiff** (CHE), Roanoke, Va., 4/29/14.
S.M. "Mc" Rogers (CE), Onancock, Va., 5/14/14.
- '44**  **James R. Chaffin** (BAD), Richmond, Va., 5/1/14.
L. Bane Coburn (BC '48), Roanoke, Va., 4/20/14.
Alvin W. Dyer Jr. (CE), Henrico, Va., 5/27/14.
G. James Hays (IE '46), Scottsdale, Ariz., 3/25/14.
Edith M. Frye Hencke (CHEM '43), Allentown, Pa., 4/24/14.

- C. Allen McClaugherty** (AGED '47), Narrows, Va., 5/1/14.
Robert J. Pancoast Jr. (BAD), Greenville, N.C., 5/30/14.
Francis B. Talbott (BAD), Daytona Beach, Fla., 6/1/14.
David W. Woodson (BAD '47), Suffolk, Va., 6/24/14.
- '45**  **Max Quillen** (HORT), Waynesboro, Va., 5/8/14.
- '46**  **George J. Bogese Jr.** (BAD '49), Colonial Heights, Va., 5/4/14.
Warren N. Dannenburg (BIOL), Henrico, Va., 8/2/13.
John A. Davis (CHE '49), Charlotte, N.C., 4/30/14.
Carl M. Lindner Jr. (BC '49), Richmond, Va., 4/4/14.
Richard W. Mellon (BAD '48), Cranberry Township, Pa., 5/8/14.
James F. Robertson (EE), Hope, Ind., 5/15/14.
- '47**  **Henry A. Allison Jr.** (EE), Warrenton, Va., 3/15/14.
John W. McNair Jr. (CE '55), Waynesboro, Va., 6/18/14.
B. Vaughan Noble (ACCT), Richmond, Va., 6/1/14.
S.S. Sig Swensson (IE, IE), Hockessin, Del., 3/26/14.
- '48**  **J. Stuart Barret** (IE '49), Newport News, Va., 10/12/13.

- Bruce I. Crabtree Jr.** (BC), Nashville, Tenn., 5/3/14.
Herbert L. Duff Jr. (ME '49), Burlington, N.C., 6/4/14.
D. Everette Hudson (ANSC), Amherst, Va., 3/1/14.
John A. Lansing (ARE), Royal Oak, Mich., 5/27/14.
Roy S. Whitescarver (BAD), Roanoke, Va., 6/20/14.
- '49**  **B. Douglas Bruce** (BAD), Shalotte, N.C., 6/1/14.
Elder G. Glenn Jr. (IE), Chattanooga, Tenn., 4/11/14.
William S. Jones (AGED), Lynchburg, Va., 5/19/14.
Francis H. Walters Jr. (ME), Fountain Hills, Ariz., 4/17/14.
- '50**  **W. Sterling Carter** (BAD), Charlottesville, Va., 4/19/14.
Ralph L. Givens (ME), Narrows, Va., 7/1/14.
Bennie "Buck" H. Griffith (IAED '59), Fincastle, Va., 6/19/14.
John F. Hasselmann Jr. (BAD '52), Roanoke, Va., 7/1/14.
William T. Lindemann (CE '51), Clermont, Fla., 3/22/14.
Winston Dwight Wood Jr. (DASC '54), Greensboro, N.C., 5/10/14.
- '51**  **James Atkinson** (CE), Roanoke, Va., 4/11/14.

- Carolyn Jeffers Bowers** (HEED), Deland, Fla., 5/13/14.
Richard B. Carter Sr. (AGED, AGED '54), Appomattox, Va., 6/13/14.
Joseph S. Dollard Sr. (IE), Catonsville, Md., 5/11/14.
Thomas J. Hampton (ME), Richmond, Va., 3/21/14.
J. Fred Hoefler Jr. (BC '52), Pickens, S.C., 4/19/14.
Odell A. Morris (ASE), Seaford, Va., 3/21/14.
Reginald H. Nelson IV (AGRN), Henrico, Va., 5/13/14.
Edward M. Pugh (IE), Wallingford, Pa., 5/2/14.
Paul E. Zender (ME), Lawrence, Kan., 5/22/14.
- '52**  **Lawrence B. Bartlett** (IE), Torrance, Calif., 1/19/14.
John "Jack" H. Gale Jr. (BAD), Williamsburg, Va., 1/3/14.
Richard E. Oliver Sr. (CE), Portsmouth, Va., 6/22/14.
Hensel Ike D. Riddleberger Jr. (BC), Harrisonburg, Va., 6/6/14.
Paul W. Stoneburner (AGE), Bridgewater, Va., 4/25/14.
- '53**  **Elwood B. Canada Jr.** (CHE), Mountain Brook, Ala., 4/26/14.
H. Dudley Dewhirst (CE), Knoxville, Tenn., 5/14/14.

-  career accomplishments
-  weddings
-  births and adoptions
-  deceased

- Charles L. Eaton** (ACCT), Pinchurst, N.C., 6/25/14.
Benjamin S. Fox (GAG), McKinney, Texas, 5/15/14.
A.S. "Buddy" Gallup (CE '54), Virginia Beach, Va., 4/18/14.
- '54**  **Donald F. Caskie** (BC '61), Richmond, Va., 7/23/13.
W. Gene Davis (DASC), Dayton, Va., 5/25/14.
Larry J. Dunn (BAD), Roanoke, Va., 5/7/14.
Joe H. France (AGE '59), Manassas, Va., 5/29/14.
W. Park Lemmond Jr. (BAD), Williamsburg, Va., 7/7/14.
Preston L. Parrish Jr. (CHE), Mechanicsville, Va., 5/26/14.
Henry "Hank" M. Rickman (BAD '53), Harrisonburg, Va., 5/20/14.
J.C. Jim Wilkinson (DASC), Chilhowie, Va., 3/26/14.
- '55**  **Roger E. Bonney** (ACCT), Irving, Texas, 3/6/14.
John J. Jones (ME), Wood Dale, Ill., 9/3/13.
Billy R. Manning (BC), Hayesville, N.C., 1/10/14.
John R. Pastore (CHE), Rockville, Va., 4/24/14.
- '56**  **R.W. Hibarger** (CE), Harrisonburg, Va., 4/27/14.
Ray L. Hooper (EDBS, EDDBS), Bristol, Va., 5/6/14.
Benford H. Johnson (ASE), Merritt Island, Fla., 5/9/14.
Sidney D. Rogers (ANSC), Winchester, Va., 6/17/14.
Ralph D. Wilson Jr. (ME), Richmond, Va., 6/16/14.
- '57**  **Charles J. Franks** (AGED), Durham, N.C., 6/8/14.
- '58**  **James G. Adams** (EE), Mesa, Ariz., 6/12/14.
Cecil R. Brooks (AGRN, AGRN '61), Huddleston, Va., 5/17/14.
Harry Clay Gilley (CE), Oak Hill, Va., 4/6/14.
George W. Johnstone Jr. (EE), Oak Island, N.C., 6/5/14.
Alfred J. Meintel (ME '59), Newport News, Va., 4/29/14.
- '59**  **Louis L. Guy Jr.** (CE), Norfolk, Va., 5/8/14.
Paul A. Morie (AGEC), Williamsburg, Va., 6/1/14.
- '60**  **W. Denman Zirkle** (BAD), Edinburg, Va., is managing partner of the Richard Bocking Winery at Traben-Trarbach in Germany's Moselle Valley.

-  **Frank H. Barrett Jr.** (CE '61), Redwood City, Calif., 2/7/14.
Patricia Doggett Dunn (GHEC), Glen Allen, Va., 5/25/14.
Thomas E. Hawks (EDBS), Hillsville, Va., 2/14/14.
Richard Poss E. Horton (BAD), Terrell, N.C., 4/1/14.
Horace J. Towler (EE '61), Orefield, Pa., 4/6/14.
- '61**  **James T. Steffens** (ARCH, URPL '63), Bradenton, Fla., was named a Fellow by the Institution of Fire Engineers.
 **Charles E. Bedall** (AGED '69), Glen Allen, Va., 6/23/14.
Wayne "Matt" E. Dillon (BC '63), Richmond, Va., 5/20/14.
Jack L. Warner (STAT '66, STAT '66), Fredericksburg, Va., 10/9/13.
- '62**  **James "Tom" Roberts Jr.** (BAD), Savannah, Ga., received the 2013-14 Savannah State University Urban Planning Award for Community Resilience.
G. Robert Quisenberry (STAT '63), Richmond, Va., received the William H. Ruffner Medal, Virginia Tech's highest honor.
 **William R. Ferrante** (EM), Saunderstown, R.I., 6/14/14.
Wilson H. Greenlaw (ANSC '63), Fredericksburg, Va., 5/9/14.
C. Warren Price Jr. (MGT '63), Beaufort, S.C., 5/29/14.
Thomas E. Shotton III (BAD), Virginia Beach, Va., 4/22/14.
- '63**  **James L. Bradley** (EE), Danville, Va., 3/22/14.
Malcolm L. Hughes Jr. (EE '65), Raleigh, N.C., 3/25/14.
Samuel Guy Sturt III (AGEC '68), McKenney, Va., 4/18/14.
William G. Tunstall (BC), Mechanicsville, Va., 6/12/14.
- '64**  **Fred L. McConnell** (CE, CE '67, CE '72), Glen Allen, Va., 4/12/14.
Frederick C. Nisbeth Jr. (BAD '63), Richmond, Va., 5/6/14.
- '65**  **J. Douglas Barnette** (BAD '68), Roanoke, Va., 4/16/14.
- '66**  **John R. Lowman** (BAD), Roanoke, Va., 4/17/14.



The Mars rover was guided by alumnus Dave Lavery '81.

Alumnus guides Mars rover

by MADELEINE GORDON

Like many who grew up in the dawn of space exploration, Dave Lavery always wanted to be an astronaut. Despite challenges that didn't allow him to go into space, he never let his childhood dream die.

"I found out my eyesight was so bad that I was never going to be able to qualify," said Lavery. "So I figured that if I can't go myself, then I'm going to work on the machines that can go into space and let them be my proxies."

Lavery (computer science '81) began working in NASA's Telerobotics Research Technology Program, which led to involvement on flight missions and flying robots in space. Now a NASA program executive for solar system exploration, Lavery leads the ongoing Curiosity rover mission on Mars.

The rover landed in August 2012, and soon completed its objective: finding evidence that the planet once had an environment that could have supported life. The rover located the likely site of an ancient riverbed where water had flowed for a long period of time.

These findings have rewritten the textbooks on Mars and earned Lavery and his Mars Science Laboratory Team the prestigious 2013 Samuel J. Heyman Service to America Science and Environment Medal. Lavery accepted the award, presented by President Barack Obama, on behalf of the team in October 2013.

"It was a huge effort with over 6,000 people involved," Lavery said. "We knew, in our community, that this was important ... but to have the government and the rest of the country recognize that as well was an enormous validation of what we were doing."

Lavery is looking forward to Curiosity's future discoveries on the red planet. Staying inspired is easy, he said. "It gives you a rush every single day when you realize that we are actively exploring someplace that is a few hundred million miles away through the eyes of a robot. Just being able to do that and, most importantly, being able to share that with everyone in the world is an honestly gratifying thing to be able to do."

Madeleine Gordon, a senior majoring in English and communication, was a Virginia Tech Magazine intern.

'67 **S. Hardy Duerson** (ME), Raleigh, N.C., 6/24/14.
Harry E. Ranson (CE), Pamplin, Va., 4/12/14.

'68 **Randal S. Scott** (ARCH), URPL '74, Fairfax, Va., retired after 42-plus years of service with the Environmental Protection Agency, the Department of Energy, and the National Nuclear Security Administration.

William Harrison Armstrong Jr. (GSC), The Plains, Va., 6/7/14.
Walter G. Behrens Jr. (BAD), Virginia Beach, Va., 4/16/14.
John Houghtaling (GBUS), Brandon, Fla., 6/4/14.
Robert L. Jennings (ECAS, BAD '83), Danville, Va., 7/7/14.

'69 **Wolfgang F. Preiser** (ARCH), Scottsdale, Ariz., co-authored a book, "Enhancing Building Performance."

J. Walter Berger (IE '70), Brentwood, Tenn., 4/18/14.
Stanley A. Brantley Jr. (ME, ME), Ivor, Va., 4/18/14.
James M. Carroll (GBUS), Kingsport, Tenn., 4/24/14.
L.G. Lowell Hess (MINE '70), Honaker, Va., 4/16/14.
Donald A. Pinney III (BAD '70), Palm Coast, Fla., 6/2/14.
Charles R. Rhodes (MGT), Richmond, Va., 4/7/14.

Klaus C. Wiemer (Ph.D. physics '69), a supporter of the College of Science and Virginia Tech, died Aug. 8. He was a long-time member of the college's Roundtable Advisory Board as well as the Department of Physics Advisory Board. He served as chairman of Techulon, an entity created by Hokies that is growing in prominence in the world of innovative investment and entrepreneurship.

'70 **Otis "O.T." Crowther Jr.** (PSCI), Midlothian, Va., is director of development at the Virginia War Memorial Educational Foundation.
Steven L. Stephenson (BOT, BOT '77), Fayetteville, Ark., visited Vietnam's Hanoi National University of Education as a result of a Fulbright Specialist Award.

Brian M. Flattery (EM '71, EM '71), Cary, N.C., 5/20/14.

Frank M. Highley III (CE, PHYS), Raleigh, N.C., 5/24/14.
Roger S. Wetzel (CE), Morgantown, W.Va., 5/5/14.

'71 **John N. Crist** (PAD), Harrisonburg, Va., was selected by the Rockingham County Judicial Circuit as the Harrisonburg/Rockingham County commissioner of accounts.

Robert C. Aebersold Jr. (ME), Kennesaw, Ga., 6/24/14.
Hamilton "Craig" Ballagh Jr. (PHYS), Evinston, Va., 3/24/14.
T. Duane Long (EDBS, ELED), Christiansburg, Va., 3/29/14.
Arthur A. Shrader (GEOL '72), Columbia, S.C., 6/24/14.
Charles W. Smart (FW, FIW '76), Norris, Tenn., 3/25/14.

'72 **Robert L. Turner** (ARCH), Blacksburg, Va., received Virginia Tech's 2014 University Distinguished Achievement Award.

Beverly L. Githens (PSCI), Raleigh, N.C., 6/16/14.
Stephen G. Schwillie (ASE), Lansdale, Pa., 5/24/14.

'73 **Edgar R. Butts** (PLPP), Fairfield, Conn., 4/8/14.
James B. Chapman (MHFD), Saltville, Va., 7/25/13.
Bobby R. Moore (ACCT), Midlothian, Va., 4/9/14.

'74 **R. Douglas Parris** (ARCH, ARCH '76), Columbus, Ohio, was named a Fellow by the American Institute of Architects.
John F. Sparks (ME, ME '76, ME '81), Warrenton, Va., received the Virginia Tech College of Engineering's 2014 Distinguished Alumnus Award.

B. Jeffrey Backman (ARCH), Huntington Beach, Calif., 4/3/14.
Cornelius J. Comber (EDBS '75), Clermont, Fla., 4/15/14.
Philip C. Cooper (ANSC), Virginia Beach, Va., 4/21/14.
Anna Lee Lewis Eden (TA), Martinsville, Va., 5/29/14.

'75 **Andrew V. Bailey** (UA '76), Hague, Va., is president of Louis Berger Services.

Rosemary Carucci Goss (MHFD '76), Blacksburg, Va., received Virginia Tech's 2014 Alumni Award for Excellence in Undergraduate Academic Advising.

Elizabeth May Brown (HORT), Forest, Va., 5/17/14.
Gerald L. Henson Jr. (UA), Warrenton, Va., 6/21/14.
Edward A. Steffen (PSCI '76), Burke, Va., 6/15/14.



Sarah A. Milans '03 and Seth A. Milans '03, Herndon, Va., a son, Tobias Thomas Milans, 3/10/14.



Brandon Shue '06 and Sara Jasin '06, Mont Tremblant, Canada, 2/8/14.



Alexis Kelly Berkowitz '05 and Justin David Blackford, Cornelius, N.C., 12/14/13.



Andrew Jones '13 and Andrea Jones '13, Roanoke, Va., 6/8/14.



Elizabeth Derise Abernethy '10, Ellicott City, Md., a daughter, Violet Marino Abernethy, 12/27/13.



Edgar Restrepo '00, Cherry Hill, N.J., a son, Ian James Restrepo, 2/28/14.

'76 **Harry J. Khamis** (MATH, STAT '81), Uppsala, Sweden, was named a Fellow of the American Statistical Association.

Rex H. Crews (ANSC), Halifax, Va., 6/13/14.
Philip M. Evans (MGT), Bloxom, Va., 5/31/14.

'77 **Sandra Hopkins Keefer** (ART), Virginia Beach, Va., received a master's degree in library science and a graduate academic certificate in youth services in libraries and information settings from the University of North Texas.

Gregory C. Thompson (ACCT), Atlanta, Ga., received the Atlanta Business Chronicle's 2014 CFO of the Year award in the large public company category.

Tej R. Gupta (EM '78), Ormond Beach, Fla., 5/7/14.

'78 **Rex L. Bishop** (EDCC), King George, Va., received the College of Southern Maryland's 2014 Faculty Excellence Award.

Carl E. Garrison III (FW), Gordonsville, Va., received the Virginia Tech College of Natural Resources and Environment's Alumni Award of Achievement.

Gregory L. Haifley (BC), Millers, Md., 7/5/14.

'79 **Anne J. Zimmermann** (FW), Springfield, Va., received the Gerald E. Cross Alumni Leadership Award from the Department of Fish and Wildlife Conservation at the Virginia Tech College of Natural Resources and Environment's Leadership Institute.

James Brockman (CE), Farmington, Conn., 4/22/14.
Douglas A. Hull (ARCH), Ruckersville, Va., 5/11/14.

John W. Pence (PSCI), Saint Petersburg, Fla., 5/31/14.

Steven B. Taylor (FIN), Stony Creek, Va., 6/3/14.

'80 **Curry A. Roberts** (PSCI '81), Richmond, Va., received Virginia Tech's 2014 Alumni Distinguished Service Award.

Wayne H. Robinson (FIN '81), Greensboro, N.C., received Virginia Tech's 2014 Alumni Distinguished Service Award.

Ramona Dedavies Turpin (EDCI), Roanoke, Va., 6/7/14.

'81 **Steven M. Culver** (ENGL, EDRE '87), Blacksburg, Va., is assistant provost for assessment and evaluation at Virginia Tech.

Reuben E. Moore (CE), Sylva, N.C., retired from the North Carolina Department of Transportation and joined the J.M. Teague Engineering consulting team as a traffic engineering specialist.

'82 **Lawrence N. Sewell** (CSA), Laurel Fork, Va., received Virginia Tech's 2014 Staff Career Achievement award.

'83 **Robert J. Hironimus-Wendt** (SOC, SOC '88), Macomb, Ill., is a professor of sociology at Western Illinois University.

Mary Kathryn Burkey Owens (ENGL), Chesterfield, Va., was selected for inclusion in the 2014 edition of Virginia Super Lawyers and also the Top 50 Richmond, Top 50 Women, and Top 100 Virginia Super Lawyers lists.

'84 **V. Randall Tinsley** (FIW), Summerfield, N.C., was recognized as an environmental industry leader in the 2014 edition of "Chambers USA: America's Leading Lawyers for Business."

Timothy P. Williams (MSCI '85), Mechanicsville, Va., is the new adjutant general of Virginia, commanding the Virginia Army National Guard, the Virginia Air National Guard, and the Virginia Defense Force.



Charles Gilmer '00 and Craig Short '92 met while designing a next generation submersible.

Hokies develop SEALS sub

by MADELEINE GORDON

After almost 30 years as a Navy SEAL and two decades in the reserves, Cmdr. Craig Short (M.B.A. '92) was called upon to return to active duty: as the commanding officer over a special warfare unit supporting project to develop the most technologically advanced the world has seen for the next generation of Navy SEALs.

Although a few decades separate Short and Gilmer, they found they shared many friends and similar childhood experiences. Both were able to break the mold of the "small-town mentality" by pursuing higher education and working their way up to projects like the SWCS.

"People (in small towns) are sometimes told, 'You're a just country bumpkin, and not as smart as other people in cities,'" Short said. "But there is nothing special about myself or Charles: We just stepped out and went into a different world."

The reunion of the two Hokies quickly turned into pride for their origins and accomplishments. "It makes me proud of where we come from. We're just two country boys," Gilmer said.

Short hopes that their story will inspire others in small communities. "It's neat when somebody comes out of that community and [knows] that they are a part of something bigger, and [it's important] that we communicate that back," Short said. "It's important, primarily for me, for the kids to realize, 'You know what? There is a whole world out there and the things you can do [are incredible] if you believe in yourself.'"

Madeleine Gordon, a senior majoring in English and communication, was a Virginia Tech Magazine intern.

The Navy awarded Teledyne Brown Engineering (TBE) Inc., located in Huntsville, Alabama, the contract to design the Shallow Water Combat Submersible (SWCS). The first prototype is due to be delivered by year's end. While attending a design review presentation at TBE, Short spotted a fleck of maroon and orange. The presenter wore a Hokie lanyard—and spoke with a familiar country twang.

The presenter was Charles Gilmer (mechanical engineering '00), a TBE engineer focused on the sub's system weight and balance. The two Hokies were surprised to learn that they had grown up just 13 miles apart in a small Southwest Virginia community in Scott County.

-  career accomplishments
-  weddings
-  births and adoptions
-  deceased

'85  **John P. Grotzinger** (GEOL), San Marino, Calif., received Virginia Tech's 2014 Graduate Alumni Achievement Award.

Kathryn Wright Hosig (HNF), Blacksburg, Va., was inducted into Purdue University's Department of Nutrition Science Hall of Fame.

Thomas J. Payette (FST), Rapidan, Va., was elected to a three-year term on the Virginia Wine Council.

Jennifer M. Dixon Reed (MKTG), Alpharetta, Ga., is a remodeling consultant for the MOSAIC Group in Atlanta.

Charles K. Robertson (COMM), Glen Ridge, N.J., received an honorary doctor of a divinity degree from General Theological Seminary.

Charles K. Robertson (COMM), Glen Ridge, N.J., was accepted for membership into the Council on Foreign Relations.

 **Michael G. Duerbeck** (ME), Leesburg, Va., 6/6/14.

Joyce A. Habel (EDAD), Roanoke, Va., 5/6/14.

Rosallen S. McMath (EDCI, EDCI '93), Staunton, Va., 3/31/14.

Brian K. Roberts (UA), Washington, D.C., 4/22/14.

'86  **Sheila Byerley Flynn** (MKTG), Fayetteville, N.C., received a master's degree in communication disorders from North Carolina Central University.

Tracey L. Moore (IEOR), Norfolk, Va., authored a book, "The Exceptional Man: Love Poems and Inspirational Writings Celebrating Godly Men and Great Relationships."

 **Michael P. Rybitski III** (IEOR), Charlottesville, Va., 5/2/14.

'87  **Rodney W. Good** (ART), Elkton, Va., 3/11/14.

'88  **Steven D. Brooks** (CE, CE '89), Wise, Va., is vice president of engineering at Thompson & Litton.

Nigel A. Greene (PSCI), Elkins Park, Pa., was named vice chair of the American Bar Association's Tort

Trial and Insurance Practice Section Commercial Transportation Litigation General Committee for the 2014-15 fiscal year.

Christina M. Baum McIntyre (HNF, HNF '95), Eggleston, Va., is interim director of Virginia Tech's University Honors Program.

Thomas G. Stickney (BAD), Vienna, Va., retired from the U.S. Army Reserve after 30 years of service.

 **Elma G. Williams** (EDVT), Richmond, Va., 4/14/14.

'89  **Jack Murphy** (ARCH), Radford, Va., is vice president of project management for Thompson & Litton engineering firm.

'90  **Michael S. Rosenzweig** (BIOL, BIOL '94), Blacksburg, Va., received Virginia Tech's 2014 Alumni Award for Outreach Excellence.

 **Katherine Wagner** (EDSP), Fairfax Station, Va., 4/27/14.

'91  **David H. Kiel** (ME, ME '93), Hickory, N.C., is chairman of the board for the Fiber to the Home Council Americas.

Sudha Mudgale (CE), Glen Allen, Va., is a transportation project manager for Gannett Fleming.

 **Raymond M. Patterson Jr.** (ECAS), Vienna, Va., a son, 12/4/13.

 **Kevin S. Butts** (CE), Plantation, Fla., 4/5/14.

Catherin L. Rounds Dawley (MATH), Chesapeake, Va., 3/27/14.

Rebecca Burroughs Mitchell (EDSP), Hendersonville, N.C., 5/14/14.

'92  **Brent A. Burger** (ENGL), Oakland, Maine, is chairman of the board for True Value Co.

Robert A. Canfield (EM), Blacksburg, Va., received the American Institute of Aeronautics and Astronautics' 2014 Multidisciplinary Design Optimization Award.

Pascha T. Gerni (ACCT), Blacksburg, Va., is director of finance at the Virginia Tech Transportation Institute.

 **Stephen J. Bissinger** (CE), Charlotte, N.C., 5/22/14.

Bryon W. Garvin (COMM), Portland, Ore., 7/28/13.

'93  **Wendy K. Williamson** (HRIM), Rumson, N.J., co-authored a book, "Two Bipolar Chicks Guide to Survival: Tips for Living with Bipolar Disorder."

 **Bruce E. Garnes** (PHED, EDSP '96) and **Ashleigh D. Waddle** (APSC '07, DASC '07, AAEC '09), Blacksburg, Va., 6/7/14.

 **Jerry E. Breeding** (ME), Christiansburg, Va., 7/2/14.

'94  **Gregory H. Hurst** (ENE), Richlands, Va., is executive vice president of Thompson & Litton engineering firm.

Nancy G. McGehee (SOC, SOC '99), Blacksburg, Va., received Virginia Tech's 2014 Alumni Award for Excellence in International Research.

Daniel W. Phillips III (SOC, SOC '97), Russell Springs, Ky., founded and is current editor of the North American Social Science Review.

 **Gregory M. Killinger** (FIW), Sitka, Alaska, 5/25/14.

'95  **James Jay A. Rosenstock III** (FIN), Mendham, N.J., is president of Discovery Education International.

 **Stefanie F. Lazanov Wood** (SOC) and **Randy A. Wood**, Vienna, Va., 6/21/14.

'96  **Robin Raines Elliott** (ARCH), Asheville, N.C., is vice president of and partner at Rowhouse Architects.

 **Sara Fletcher Lough** (ISE), Rockville, Md., a son, 7/9/13.

'97  **Deborah H. Bell** (FST), Roanoke, Va., was appointed by the Virginia attorney general to serve as a community outreach coordinator for the Medicaid fraud control unit in Roanoke.

James L. Moore III (EDSP, EDCO '00), Alexandria, Va., was named a Fellow by the American Counseling Association.

'98  **Kenneth J. Anand** (COMM), Chappaqua, N.Y., is co-owner of and chief operating officer for FutureHits.tv, a collection of independent music available for licensing.

Rohsaan C. Settle (EDSP), Christiansburg, Va., is interim director for student conduct at Virginia Tech.

'99  **Myra Blanco** (ISE, ISE '02), Christiansburg, Va., is director of Virginia Tech Transportation Institute's automated vehicle center.

Steven K. Kuntz (CE), Haymarket, Va., is associate vice president of the Dewberry office in Fairfax, Va.

Brian D. Reynolds (HIDM), Apex, N.C., was named to the Advanced Select Member group of Lincoln Financial Advisors Corp./Sagemark Consulting for the second year.

'00  **Adam H. Doyle** (MATH), Chantilly, Va., co-founded GobbleBox, a location-based social media app.

J.C. Smith (ISE), Gainesville, Fla., chairs the industrial engineering department at Clemson University.

 **Edgar S. Restrepo** (CE, CE '02), Cherry Hill, N.J., a son, 2/28/14.

 **Ryan E. Cahoon** (CHEM), Norfolk, Va., 5/17/14.

'01  **Jenna L. Cosby Bazardaric** (BIT), Jamesville, N.Y., triplets, 4/10/14.

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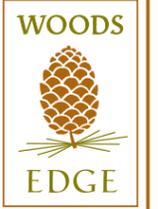



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Say hello to the future.



As a member of environmental clubs in high school, Anna McAuley developed an awareness of the importance of forests to the Earth's environment. As a senior in Virginia Tech's College of Natural Resources and Environment, she's accumulating the knowledge, skills, and experiences it will take to succeed in her preferred field: urban forestry.

Thanks to assistance from her college, including the Herman William Gabriel Endowed Scholarship, Anna has been able to maximize her education by studying in Ireland, volunteering at a farm near campus, and participating in student organizations such as the Natural Resources Recreation Society—experiences she expects to draw upon in her career.

To learn more about how scholarship donations and other types of philanthropy help students like Anna, or to make your own gift to Virginia Tech, visit www.givingto.vt.edu.

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'02 **Sara J. Baker** (COMM), Lincoln, Neb., received a doctorate in communication from the University of Nebraska-Lincoln and accepted a tenure-track position with Eastern Illinois University's Department of Communication Studies.

Timothy L. Belcher (CE), Centreville, Va., is a senior associate with the Dewberry office in Fairfax, Va.

Caleb D. Welty (MKTG), Charlottesville, Va., is chief marketing and information officer for the National Association of College Auxiliary Services.

David W. Deuyour (BIOL) and **Kimberly L. Smith** (BIOL '03), Newport News, Va., 3/22/14.

Carolyn McKendree Fetsch (MKTG) and **Michael M. Fetsch** (OE), Norfolk, Va., a daughter, 1/10/14.

Zebulon B. Sale (BIT), Winchester, Va., a daughter, 11/24/13.

'03 **Arun M. Dotson** (ME) and **Megan P. Dotson**, Arlington, Va., 5/3/14.

Keith P. Madsen (APSC) and **Sara P. Madsen** (APSC, APSC '09), Burlington, N.J., a son, 1/31/14.

Sarah Ammons Milans (MGT) and **Seth A. Milans** (FIN), Herndon, Va., a son, 3/10/14.

'04 **Melinda G. McCall** (VM), Louisa, Va., was named the Virginia-Maryland College of Veterinary Medicine's Outstanding Recent Alumna of 2014.

Clarice E. Sollog (ARCH), Orlando, Fla., is a registered architect in Florida and received the American Institute of Architects' Fred H. Pryor Architects Forum Achievement Award.

Valerie M. Foster Mabrey (ACIS) and **Joshua Mabrey**, Roanoke, Va., 11/2/13.

Sebastian A. Burzacchi (ISE), Darien, Conn., a daughter, 3/6/14.

Blair A. Eason Nelson (MKTG), Virginia Beach, Va., a daughter, 6/20/14.

Jody M. Wolverton (PSYC), Edinburg, Va., 4/2/14.

'05 **John G. Cannon** (EDCT), Boise, Idaho, is associate professor for the University of Idaho's Department of Curriculum and Instruction.

Mark A. Pierson (MATH '00, MATH '05), Blacksburg, Va., was named the first director of Virginia Tech's nuclear engineering program.

Reforming language instruction in Japan

Many Americans spend a couple of years in martial arts classes before moving on to other hobbies, but for **Matthew Cook** (human nutrition, foods, and exercise '02), the hobby became a lifelong pursuit that ultimately led him to become the first foreigner in Japanese history to work as a government civil servant.

After graduation, Cook, who was born in New Jersey but grew up in Danville, Virginia, took over his former grandmaster's dojo in Charlotte, North Carolina. He discovered a love of teaching and decided that to truly understand martial arts, he must travel to Japan. He found that opportunity through the Japan Exchange and Teaching program, which placed him in a classroom in a socioeconomically disadvantaged area in the Osaka prefecture.

After a year, he moved to another school, where the administrator gave him more freedom to teach classes and use technology the way he saw fit. Cook soon was chosen as a member of the Osaka prefecture's project team to reform English language instruction. (Cook since has been elected as chairman of the National Association for Japan Exchange and Teaching.)

Today, he works to reform the teaching of English in the Osaka prefecture, which includes roughly 1 million students. It's the second most populous district in Japan; the only U.S. school system comparable in size is New York City.

"The failure of Japanese education in the past has been this focus on treating foreign language as a math or science—something that can be figured out," Cook said. "The entire test is based on a little bit of listening and mostly reading comprehension. There's no spoken or written output, much less an integrated test."

He's worked to change that in Osaka through a shift in instruction techniques as well as a pilot project involving the use of iPad technology. In doing so, Cook hopes to prepare Japan's students for an economy that transcends borders and languages.

"In a global society the students need to be able to interact via email or Skype calls," Cook said. "This is going to benefit anyone, even if they are in Japan and never meet face to face with another foreigner."



Matthew Cook '02

David M. Sykes (ME, ME '07), Midlothian, Va., was named one of Florida High Tech Corridor's 2014 "Faces of Technology."

Glenn E. Braunstein Jr. (HTM), Ann Arbor, Mich., 4/21/14.

'06 **Erin E. Zlomek** (COMM), New York, N.Y., was named one of 10 national winners of the Knight-Bagehot Fellowship from Columbia University's Graduate School of Journalism.

Alexis Berkowitz Blackford (ME) and **Justin D. Blackford**, Cornelius, N.C., 12/14/13.

Sean E. Cutchin (PHYS, PHYS '08, PHYS '11) and **Kelly G. Goad Cutchin** (ENGL '09), King George, Va., 6/20/13.

Kara Plauger Dupuis (BIOL) and **Kurt J. Dupuis**, Pittsburgh, Pa., 9/7/13.

Lauren Pike Reinking (HD) and **Douglas P. Reinking**, Chicago, Ill., 4/26/14.

Thomas B. Ross (MKTG), Centerville, Va., a daughter, 5/12/14.

James W. Rutledge II (DASC) and **Kaitlin S. Sweeney Rutledge** (APSC '06), Street, Md., a son, 2/3/14.

Christopher C. Hall (CS) and **Alison E. Doherty Hall** (ARCH '06), Charlotte, N.C., a son, 3/11/14.

Lambrini Drosos Vatikiotis (BIT), Leesburg, Va., a daughter, 3/10/14.

Erin E. Zlomek (COMM), New York, N.Y., was named one of 10 national winners of the Knight-Bagehot Fellowship from Columbia University's Graduate School of Journalism.

Brandon L. Shue (ESM) and **Sara J. Jasin Shue** (ESM), Baltimore, Md., 2/8/14.

Thomas B. Ross (MKTG), Centerville, Va., a daughter, 5/12/14.

James W. Rutledge II (DASC) and **Kaitlin S. Sweeney Rutledge** (APSC '06), Street, Md., a son, 2/3/14.

Lori A. Blanc (GSCR, BIOL), Blacksburg, Va., received Virginia Tech's 2014 Diggs Teaching Scholars Award.

Nicholas T. Fisher (HNFE), Forest, Va., earned a doctorate in pharmacy from Virginia Commonwealth University.

Anthony O. Kane (ARCH), Stafford, Va., is vice president for operations and research and development for the Institute of Sustainable Infrastructure.

E.T. Leaton (MGT, COMM), Glendale, Calif., is the night lead assistant editor for "America's Got Talent."

Anne-Marie C. Overstreet (BCHM), Cincinnati, Ohio, received a doctorate in microbiology from Iowa State University.

Brandon M. Harvey (FIN) and **Jenna G. Glotz Harvey** (MKTG '08), Falls Church, Va., 4/12/14.

Katie N. Fondren (MKTG) and **Kyle F. Fondren** (MKTG), Richmond, Va., a daughter, 4/8/14.

Seanene R. White (ARCH), Christiansburg, Va., a son, 2/19/14.

-  career accomplishments
-  weddings
-  births and adoptions
-  deceased

'08  **Beth Fairchild Mace** (AE) and Joe Mace, Allen, Texas, 11/2/13.

 **Brian M. Eason** (BC), Chula Vista, Calif., a daughter, 5/22/14.
Mackie U. Neely (COMM) and **Ryan C. Neely** (MKTG '09), Greensboro, N.C., a son, 8/16/13.

 **Dorothy M. Henggeler** (COMM), Ellicott City, Md., 4/3/14.

'09  **Stephen M. Biscotte** (EDCI), Roanoke, Va., is coordinator of the general education initiative at Virginia Tech.
James W. McMullen II (PSYC), Virginia Beach, Va., received the Outstanding Service to the Chapter Award from Chi Sigma Iota, the international honor society for professional counselors.

'10  **Kristofer D. Kusano** (ME, ME '13), Blacksburg, Va., received the Society of Automotive Engineers International's Russell S. Springer Award.
Steven W. Thai (BIOL), Fairfax, Va., earned a doctorate in pharmacy from Virginia Commonwealth University.

 **Daniel O. Thomas** (BC) and Laura Schisler, Virginia Beach, Va., 5/3/14.

 **Elizabeth Derise Abernethy** (ACIS), Ellicott City, Md., a daughter, 12/27/13.

 **Porter A. Knight** (ESEN), Ashland, Va., 3/25/14.

'11  **Christopher R. Cooke** (CE), Towson, Md., received Pi Kappa Phi Fraternity's 2014 Thirty Under 30 Award.
Marcus T. DeBonis (IT), Christiansburg, Va., is director of Virginia Tech's collaborative computing solutions unit.
Danielle M. Jakubowski (AHRM), Atlanta, Ga., earned a master of architecture from Clemson University and joined the Rule Joy Trammel + Rubio architecture firm.

 **Camille M. DaDamio** (ISE) and Brian Siskoy, Berkley, Mich., 5/17/14.

 **Elizabeth A. Reichling** (PSYC, COMM), Annandale, Va., 3/15/14.

'12  **Christopher Tomlinson** (CE), Blacksburg, Va., received the Woodrow Wilson New Jersey Teaching Fellowship from the Woodrow Wilson National Fellowship Foundation.

 **Maria A. Aoki** (ISE) and **J.B. Calpo** (EE), Westford, Mass., 5/31/14.

'13  **Ruoxi Chen** (HD), Blacksburg, Va., won the American Association for Marriage and Family Therapy's Outstanding Dissertation Award.

Stephanie N. Lewis (GSCR, GBCB), Blacksburg, Va., received the Distinguished Mid-Atlantic Alumni Award at the 2013 Mid Atlantic PREP (Post-Baccalaureate Research and Education Program) and IMSD (Initiative for Maximizing Student Development) Research Symposium, an effort supported by Tech's College of Agriculture and Life Sciences and other institutions.

Derick A. Maggard (ISE) Blacksburg, Va., was named director of Virginia Tech's new Center for Innovation and Entrepreneurship.

 **Andrea D. Jones** (ENGL, COMM) and **Andrew D. Jones** (EE), Farmington, Mich., 6/8/14.

obituaries

faculty/staff
Alan E. Bayer, professor emeritus of sociology and founding director of the university's Center for Survey Research, died May 30. A member of the Virginia Tech community from 1982 until he retired in 2006, Bayer made significant research contributions in the sociology of education. He published five books and more than 125 articles, chapters, and technical reports. He also served as head of the Department of Sociology for seven years.

Christa Thomas, retired graduate program coordinator for the Department of Physics, died June 15. She joined the university in 1975 as a clerk typist, moving on to become an accountant in 1981, an executive secretary in 1990, and a program support technician in 1995 before becoming the graduate program coordinator in 1997. In April, she received the Staff Career Achievement Award and in 2009 she earned the President's Award for Excellence.

Donvontae Walton, a newly hired residential learning coordinator in Pritchard Hall, died in early July.

students
Alexander "Alex" Hable, of Midlothian, Va., and formerly of St. Paul, Minn., a junior majoring in management, died July 4.

Darren Hankins, of Chesapeake, Va., a junior majoring in theatre arts, died July 2.

Ryan McGuinness, of Lopatcong Township, N.J., a senior majoring in architecture, died Aug. 2.

hokie business showcase

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Becoming cadets: The school year started early for 335 first-year cadets who reported for New Cadet Week training on Saturday, Aug. 16. Keeping step with a meticulously planned schedule of paperwork, haircuts, and uniform fittings, the new cadets used every free moment to study the Guidon, the manual of information they must learn as members of the Virginia Tech Corps of Cadets. At the end of the week, the Class of 2018 cadets participated in their first official formation and pass in review on the Drillfield.

Photos below by Logan Wallace.



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