Inspiration
Then and Now
How an inventive culture defines Virginia Tech—and saves lives
Under a Watchful Eye: The legend of the gargoyles

Have the gargoyles adorning campus buildings ever stared back at you? In this Halloween season, explore the myths behind Virginia Tech’s gargoyles.

'Raising an Entrepreneurial Ecosystem': Mentors and capital bolster area’s visionaries

Already immersed in his fifth startup venture, Bob Summers (computer engineering ’98) created TechPad in downtown Blacksburg as a place to unite new entrepreneurs with mentors—and to bring ideas to fruition. Along with others, Summers also works to provide seed money to help businesses grow.

Instant Replay: Naturalistic studies provide clues to decreasing crash fatalities

Every 13 minutes, someone on America’s roadways dies in a vehicle-related crash. Thanks to innovative research on distracted driving, Virginia Tech Transportation Institute researchers are helping influence lawmakers and raise awareness to ensure that drivers reach their destinations safely.

Inspiration Then and Now: How an inventive culture defines Virginia Tech—and saves lives

Forty-two years ago, now-retired professor Leon Arp (pictured at right) was saving lives with one of his inventions, an infant respirator. Virginia Tech Magazine reunited Arp with one of those babies—Carrie Darras (at right), now a first-grade teacher with a family of her own. And student researchers in the Pediatric Medical Device Institute are continuing that lifesaving legacy today, mentored by a professor who studied under Arp in the 1970s.

His invention saved her life.

One of Leon Arp’s several remaining infant respirators—seen here and on the cover—serves as evidence of the land-grant university’s legacy of innovation. Read the full story on page 28. Photo by Logan Wallace.

contents

features

Under a Watchful Eye: The legend of the gargoyles

'Raising an Entrepreneurial Ecosystem': Mentors and capital bolster area’s visionaries

Instant Replay: Naturalistic studies provide clues to decreasing crash fatalities

Inspiration Then and Now: How an inventive culture defines Virginia Tech—and saves lives

departments

President’s Message 2
Letters to the Editor 3
Around the Drillfield 5
Corps of Cadets 11
How Tech Ticks 14
Professor Profile 16
Philanthropy 36
Book Notes 39
Alumni Profile 42
Alumni Association 46
Class Notes 55
Still Life 64
It is not hard to read or hear news reports about growing student debt loads. Because of higher education’s essential role in American life, how students pay for college is understandably a topic of national discourse.

Is student debt higher now than, say, three to five years ago? Yes. Is this debt cause for concern? Is student college debt inordinately high? These answers depend on perspective.

While some students borrow heavily—doctors or lawyers, for instance—only about 0.5 percent nationally borrow more than $200,000. Approximately 43 percent of undergraduate and graduate students borrow between $1,000 to $10,000, and another 30 percent borrow between $10,000 and $25,000, according to the National Association of Student Financial Aid Administration (NASFAA).

At Virginia Tech, average student debt loads increased from $19,887 to $24,320 over the past five years, slightly less than the national average. The situation is indeed worthy of examination. Although the exact reasons for the increase are often individualistic, we suspect that factors include national and international economic malaise and rising tuition in the face of historic losses in state funding. Additionally, Congress raised the annual student-loan borrowing limits.

Despite these factors, 48 percent of Virginia Tech students graduate without any debt. We commend those students who work their way through school and those parents whose sacrifices enable young graduates to enter the workforce without the burden of debt.

As expected, much discussion surrounds other comparators. According to the Federal Reserve Bank of New York’s February Quarterly Report on Household Credit, “The outstanding student loan market is estimated at $867 billion, while the mortgage collapse caused losses of almost $8 trillion. NASFAA president Dr. Faust noted that...”

Although some have claimed that student loan debt is the next mortgage bubble, the scale is not comparable. The entire student loan market is estimated at $867 billion, while the mortgage collapse caused losses of almost $8 trillion. NASFAA president Dr. Faust noted that “even if every borrower defaulted on his or her student loan at the exact same time (an impossibly unlikely scenario), it wouldn’t have the same impact on the economy as the housing collapse.”

We believe that rising student debt is troubling but requires serious consideration by state and national policymakers. Colleges and universities must work to contain costs to keep education affordable. For our part, a recent internal analysis revealed that Tech’s administrative costs are about that of peer universities.

The most influential factor driving tuition increases, however, is loss of state funding. States must reconsider their disinvestments and international economic malaise and rising tuition in the face of historic losses in state funding. Additionally, Congress raised the annual student-loan borrowing limits.

Are those appropriate comparisons? Most notably, which of those three loan balances provides a lifetime return on investment? Intelligently used debt is not a bad thing. How many of us could not own a home were it not for mortgages? How many businesses have been able to expand or squeeze past a cash-flow crunch because of sensible credit lines from a bank? In similar fashion, a college education financed by loans pays substantial dividends. College graduates earn more, live longer, vote more, and are more engaged in communities than non-college grads.

At Virginia Tech, the average graduating senior’s debt load is about equivalent to the cost of a new car. Nearly half of the 2011 graduating class (49 percent) reported employment within six months of graduation, and half of those respondents reported a salary of more than $48,500 per year.

The statistics are clear. A college degree is incredibly valuable to young people and reinforces our reputation for academic excellence. Some Perspectives on Student College Debt
Meet Jeronimo Silva, a senior majoring in wildlife sciences who spent this past summer researching the bog frog, an extremely rare species found only in Florida. Jeronimo enjoyed this vital, real-world experience in his field, thanks to the Summer Undergraduate Research Fellowship program, which receives support from donors through Virginia Tech’s Fralin Life Science Institute.

The opportunity afforded to Jeronimo is just one of the many kinds of extraordinary student experiences that you can support with a gift to Virginia Tech. Please visit www.givingto.vt.edu to make your gift or to learn more.

Virginia Tech Office of University Development
333 Tupper Road
Blacksburg, VA 24061
540-231-2801 or 800-533-1144
www.givingto.vt.edu

Virginia Tech Office of University Development
333 Tupper Road
Blacksburg, VA 24061
540-231-2801 or 800-533-1144
www.givingto.vt.edu
Researchers use computer model to probe mysteries of human immune system

A new computational model developed by a team of Virginia Tech researchers and published in the PLoS Computational Biology journal provides a framework to better understand responses of the human immune system’s macrophage cells.

As the security guards of the body, macrophage cells must identify and respond to a pathogen attack while causing as little damage as possible to host cells. An excessive or prolonged immune response could lead to serious, acute and chronic inflammatory diseases such as multiple sclerosis, Type 2 diabetes, and even sepsis. Accordingly, studying how the macrophage immune response could be altered or reprogrammed by sequential pathogen attacks, known as priming and tolerance, is of vital importance to the field.

Football practice facility steered away from woods

In a letter to university President Charles W. Steger in August, Vice President of Administrative Services Sherwood Wilson recommended accepting the recommendation of an advisory committee not to locate an indoor football practice facility in the originally proposed location, the Stadium Woods area directly behind the football practice field. Wilson has directed his staff to “evaluate the options presented by the committee, as well as any other potential sites that may be appropriate.” The university does not plan to take action on another request from the committee to place the woods in a conservation easement or to give a special designation to the property. President Steger has accepted both recommendations.

Designing spaces

These kitchens are truly one-of-a-kind. Our students learn about designing these types of residential spaces by working with a variety of layouts and products. It’s experiential learning at its best, and it’s part of what makes our program at Virginia Tech so innovative.”

— Julia O. Beamish, department head and professor of the Department of Apparel, Housing, and Resource Management, on designing spaces for individuals living with a disability. The topic highlighted an October event to kick off National Disability Employment Awareness Month on campus.

NSF award to help improve the efficiency of DNA fabrication

The National Science Foundation (NSF) has awarded a three-year, $999,531 grant to Virginia Tech to use the tools and methods of industrial engineering to optimize the laboratory processes used to make custom DNA molecules. A transdisciplinary team led by Jean Pecoud, an associate professor at Virginia Bioinformatics Institute, will focus on DNA synthesis. The project will also provide unique cross-disciplinary training for undergraduate and graduate students and post-grad fellows.

Construction of propulsion lab approved

At its quarterly meeting held Sept. 10, the Virginia Tech Board of Visitors approved a resolution that will enable the university and the Virginia Tech Foundation to begin development of an approximately $3.5 million propulsion laboratory at the Virginia Tech Corporate Research Center. Operated by the College of Engineering, the facility will support propulsion research, including next-generation fighter and commercial aircraft engine technology and gas-turbine technology. The specialized facility and equipment will distinguish Virginia Tech as a leader in propulsion research.

Marc Edwards wins public interest award for water safety research

Marc Edwards, the Charles P. Lansford Professor of Civil and Environmental Engineering, received the Carll Barus Award for Outstanding Service in the Public Interest from the Institute of Electrical and Electronics Engineers’ Society on Social Implications of Technology. The award honors Edwards’ tireless effort to expose safety and quality problems in the nation’s public drinking water supplies, specifically in Washington, D.C. While researching metropolitan water-distribution systems, Edwards found that many homes in the nation’s capital were receiving water contaminated with lead leached from city pipes to an extent far exceeding acceptable industry levels.

Minor in civic agriculture and food systems gains ground

The newest minor in the College of Agriculture and Life Sciences blends classroom and hands-on learning about the food production process. Students pursuing a minor in civic agriculture and food systems learn about sustainable agriculture, the food production process, and food sovereignty (the trend of moving away from an industrialized, market-driven food system toward local community farms). Students are required to complete fieldwork in addition to classroom assessments. The program had 21 students its first semester. Two years later, there are 44.
Engineering students’ experiments ride along on NASA rocket into space

College of Engineering students watched their experiments blast into space on Sept. 21 when NASA launched a rocket from its Wallops Flight Facility for an estimated 15-minute flight. The NASA-owned, 40-foot-long rocket carried a series of experiments created by Tech students and student teams from three other U.S. universities.

“Launches at NASA Wallops are a sight to see,” said Stephen Noel, a first-year master’s student in aerospace engineering. Noel, who also serves as the lead student on the project, said each student team designed and built its own experiment. They then gathered in Virginia Tech’s Rocket Science Lab to fly the rocket as a group.

The launch was part of NASA’s RockSat-X program, an educational project designed to provide students with hands-on experience in designing, fabricating, testing, and conducting experiments for space flight. The team was tasked with designing a payload and power system to support several experimental projects, including an optical nitric oxide sensor and an aperture vacuum seal release mechanism for the Space Barometer CubeSat—a miniature box-like satellite—both built by Hokie students. The team was also selected to receive a $48,000 National Science Foundation CAREER Development Award to study inter-hemispheric space weather connections. “Space weather” refers to dynamics in the near-Earth space environment that can have implications for communications, space weather, and computer engineering, will use a five-month NASA fellowship to study inter-hemispheric space weather connections. The study, by Alumni Faculty Fellow of Electrical and Computer Engineering, will use a five-month fellowship to study the seasonal variability of space weather and its impacts on communication systems, and communication networks for cell phones and more. (VTNews)

Undergraduates study vocal-cord paralysis in stroke victims

After a stroke, patients often struggle to speak, swallow, or eat because the incident can cause vocal-cord paralysis. Three undergraduate students are part of a team studying how electrical stimulation may help restore vocal cord function. Garrett Burks (left), a junior mechanical engineering major; Kyle Harring (middle), a senior biological sciences major; and Steven O. Lane (right), a junior mechanical engineering major; Madison Preib (right), a senior mathematics major; and Kyle Harring (middle), a senior biological sciences major, were involved in the research project this summer as part of the Sciencing program, a unique opportunity offered through the Division of Undergraduate Education and funded by a Howard Hughes Medical Institute Science Education Grant. (VTNews)

University ranks among top schools in alumni loyalty, enthusiasm

In a new college ranking system, Virginia Tech ranked eighth among national universities and 24th among all colleges in alumni loyalty, financial success, and various satisfaction measures.

The study, “Forming Strong Bonds with Fellow Students,” was published in the July 11 issue of Nature's Advanced Online Publication. The study, by Alumni Faculty Fellow of Electrical and Computer Engineering, will use a five-month fellowship to study inter-hemispheric space weather connections. “Space weather” refers to dynamics in the near-Earth space environment that can have significant impacts on technological systems such as satellites, electrical power grids, global positioning systems, and communication networks for cell phones and more. (VTNews)

Protecting biodiversity

We need to be as aggressive in eliminating threats outside of park boundaries as we are in establishing new parks, or maintaining existing ones. In many ways, the findings are common sense. However, sometimes we, meaning society, need a wake-up call about the obvious. The take-home point should not be viewed in a negative light, in terms of thinking that hope is lost for biodiversity in the tropics.

— Sarah Karpanty, associate professor of wildlife conservation, whose paper, “Averting biodiversity collapse in tropical forest protected areas,” was published in July by Nature’s Advanced Online Publication.

World Polymer Congress

Virginia Tech and the Macromolecules and Interfaces Institute hosted the World Polymer Congress in June, drawing renowned speakers to campus, including Nobel Prize-winner Robert H. Grubbs (above). More than 1,200 polymer-science experts from around the world descended on campus. The university’s Office of Economic Development estimated that the conference would generate close to $2.5 million in total expenditures in the regional economy.

Infestation of stink bugs continues to spread across state

Virginia Tech researchers and Extension agents are working across the commonwealth not only to find a way to control the brown marmorated stink bug, but also to keep it from spreading farther around Virginia and to other southern states. Since found in Virginia in 2004, the insects have caused millions of dollars in damage, destroying apples and grapes in the Shenandoah Valley, piercing soybeans in northwest central fields, and sucking the proteins and carbohydrates out of corn, tomatoes, green bean, and pepper plants in other areas of Virginia.

This year, stink bugs have been discovered in 20 counties in Virginia, and they are expected to continue to spread throughout the state, infecting more localities than ever before. Across the university and commonwealth, researchers are investigating the bug’s biology and habitat; pesticide levels; the impact on tree fruit; wine grapes, berries, corn, and more. The stink bug’s appetite is as varied as it is voracious. As much as 20 percent of the vegetable crops in Northern Virginia were lost to stink bugs in 2010.
Pamplin graduates find job success

Pamplin College of Business grads are highly sought after, if the numbers are any indication. In 2011, Pamplin's graduate employment rate ranged from 70 to 90 percent. The college helps students prepare for the real world through job search resources and its annual career fair. Last fall, nearly 2,000 students and 150 organizations attended. Virginia Tech was also ranked the 13th best campus for college recruiting in the U.S. by a Wall Street Journal survey.

Majors Fair allows students to explore opportunities for new majors or minors

With the enrollment of hundreds of new first-year students who have yet to pick a major and many returning students seeking to change majors, Virginia Tech hosted the annual Majors Fair to share academic opportunities with students. The Office of Undergraduate Advising and Student Government Association co-hosted the September event. Representatives from all the undergraduate colleges and most of the university's majors were on site to answer student questions and discuss prerequisites and change of major requirements.

U.S. News and World Report gives high marks to engineering, business colleges

Virginia Tech ranks 28th among the top 30 public national universities in U.S. News and World Report's survey of undergraduate programs. The College of Engineering was ranked 16th, and the Pamplin College of Business ranked 40th. Virginia Tech also ranked among the nation's universities in terms of its undergraduate research activity.

A national honor

What is unusual about Patricia Dove’s work is the quantitative rigor with which she approaches these chemical processes. Anyone can view how a mineral forms, and anyone can view that it is beautiful, but what are the chemical controls on making something like that?”

— Alexandra Naliboff, a professor at the University of California-Davis, on Virginia Tech’s Patricia Dove, the C.P. Miles Professor of Science in the Department of Geosciences, who will soon be inducted into the National Academy of Sciences.

Healthier ‘happy meals’

In one of the first-ever studies conducted in a real-world setting with children’s meals, Virginia Tech researchers found that children and parents who are dining out may find it is beautiful, but what are the chemical controls on making something like that?”

— Alexandra Naliboff, a professor at the University of California-Davis, on Virginia Tech’s Patricia Dove, the C.P. Miles Professor of Science in the Department of Geosciences, who will soon be inducted into the National Academy of Sciences.

Oliphant, who transitioned in his junior year to the Citizen-Leader Track after two years of ROTC, decided to stay in the Corps of Cadets because of the value of the training and leadership experience. “After having invested two years, I started to realize all the benefits that I had reaped from my involvement in the corps,” he said. “My leadership and time-management skills, physical fitness, academic achievement, and personal discipline had all improved dramatically. I was also able to apply things I had learned in the many leadership positions I’ve held in the corps to other areas of my life, and I was absolutely fascinated by it. I still am. I just knew I wouldn’t have achieved all this as a regular student. I’m excited to see just how much more I can learn and grow.”

Oliphant also shared his thoughts on leading the corps. “One of the great things about the Corps of Cadets is the fact that cadets are given the opportunity to develop and hone so many valuable leadership skills. I’ve personally been able to use these skills in the military environment of the corps and in [other] areas, such as my extracurriculars at school and volunteer work and internships outside of school. As regimental commander, I plan to expand and utilize this skill set in an effort to place an indelible mark on the corps and the Virginia Tech community at large. It’s possible.”

Cadet Kareim Oliphant, a senior majoring in psychology in the College of Science, has big plans as the Virginia Tech Corps of Cadets regimental commander for the fall 2012 semester. “Not many college students get the opportunity to influence the direction of the professional development of 1,000 of their peers,” Oliphant said. “I’m fortunate to have been granted this opportunity. I’m excited to see what challenges and memorable moments the experience will bring.”

Oliphant is no stranger to serving. A viral member of the corps’ Regimental Band, the Highty-Tighties, he led the Southern Colonels, the band’s 18-piece jazz orchestra, last year. This group performs shows for both campus and community, including the first annual Jazz on the Upper Quad event last April. He also led physical-fitness training for more than 180 cadets in the Citizen-Leader Track program.

Oliphant, who is majoring in psychology in the College of Science, will spend the spring semester abroad. He plans to pursue graduate studies in clinical psychology, focusing on substance abuse counseling and treatment. He is interested in a career in social work and counseling and eventually wants to earn his doctorate in clinical psychology.

While abroad, Oliphant will study psychology and public policy at the University of Oxford, and will hold a position as a research assistant in the psychology department. He will also travel extensively throughout Europe. Oliphant’s time abroad will be an extension of his education and experience in the corps. “This is an opportunity for me to learn and grow,” he said. “That’s a great thing about the Corps of Cadets. It’s an opportunity for people to develop and hone leadership skills. It’s not just a military program; it’s a leadership program.”

Cadet Kareim Oliphant, Leading to Serve by Mal. Carrie Cox

Corps of Cadets
Alumni reflect on their time serving as Virginia Tech’s most beloved bird

The HokieBird debuted its current look in fall 1987. As we celebrate the 25th anniversary, let’s take a look at some fun facts.

The HokieBird made 88 appearances and 181 private appearances in the 2011-12 academic year.

Five students per year serve as the HokieBird.

Four costumes costing $5,500 each are used.

Upkeep is funded by private-appearance fees: $200 per hour, or $50 per hour for nonprofit or Virginia Tech organizations.

Kaboom: (At left) Moments before kickoff at the Sept. 3 home-opener versus Georgia Tech, photographer Jim Stroup found the HokieBird on the Jamerson Athletic Center rooftop. After giving himself a pep talk, the mascot flew down to the tunnel and ran out onto the field. The Hokies won, 20-17, in overtime.

Curtis Dvorak (communication ’96), vice president of mascot operations for the Jacksonville Jaguars and performing as Jaxson De Ville

What are the basic rules of being the HokieBird?
Gotta be able to do “the walk” — the HokieBird has a very specific style to his walk. No talking in costume. Do not allow anyone to see you without the head on. Remember what and who you represent and always respect that tradition.

What was your signature move?
I created the “Scream Machine,” which I think is still used.

Kevin Murphy (political science ’95), working in sales for a medical device manufacturer

What was your most memorable experience as the HokieBird?
Carrying a wedding proposal request out to the field, where we held up a sign, popping the question.

What are the basic rules of being the HokieBird?
Remember that the fans don’t see the person. To them, the bird is Virginia Tech. Encourage that. Don’t be a jerk. Ever.

Matt Quillen (horticulture ’06), owner of The Brick: Charleston’s Favorite Tavern, a Virginia Tech-themed bar in Charleston, S.C.

What was your most memorable experience as the HokieBird?
Wow, there are so many, but I would have to say it comes down to either famous actor Robert Duval asking to take a picture with me during a Miami night game or [when I was] on the field during the second half of the West Virginia game the year they were ranked No. 6. [We] came back and won the game in a torrential downpour. It’s like the rainstorm made our fans go twice as nuts as they normally do.

Todd Maroldo (marketing ’97), who is now Slamson, the Sacramento Kings mascot

What sort of training did you have to do?
We went to mascot camp each summer where they taught mascots the basic principles, but most of the time we came up with crazy stunts and stunts to do on game days (sometimes getting us in trouble).

Did you get into any fisticuffs with other ACC mascots on the football field?
I did indeed get into fistfights. I got into a “minor” altercation with the Miami Hurricane mascot, “Ibis,” back in 1996. He started it, though, and I was just defending myself. All in good, poultry fun.

Whitney White (marketing ’06, M.B.A. ’08), a business development and marketing director for A&K Painting

Tell us about your favorite reaction to the HokieBird.
When we played James Madison at home one year, I went over to the away team’s area with a big dog-catchers’ net and a stuffed dog and waved it in front of their fans and cheerleaders to taunt them. The Duke Dog and cheerleaders got mad and ganged up on me, and I ended up having to fight their mascot off by hitting it with the stick from the net. I later met their mascot without our suits on and the reaction on his face when he saw that it was a girl who was beating him up was priceless!

What's the worst part about being the HokieBird?
The smell! So many different people had sweated in those suits so much that no matter how many times they were washed, they still smelled awful.

To read all of the alumni responses to each question, visit www.vtmag.vt.edu.

The HokieBird and his predecessors appeared in the winter 1988 edition of this magazine. At right, the Jaguars and Kings mascot photos are courtesy of Dvorak and Maroldo, respectively.
Under a Watchful Eye
The legend of the gargoyles

Their hunched bodies and contorted faces are the stuff of legend. Chiseled in stone and calling to mind the rooftops of Paris or the Halloween season, the gargoyles capture Hokie imaginations.

Function and form
Gargoyles might send a shiver down our spines or send our imaginations racing, but they have a purpose beyond mere ornamentation. “Basically, gargoyles are nothing more than waterspouts. They move water from the gutters on the roof away from the building,” said Matthew Gabrielle, an associate professor in the Department of Religion and Culture. The name “gargoyle,” however, is a modern corruption of the French word gargurer (“to gargle”), which the sculptures appear to do with the water they move.

Hugh Latimer, university architect, said not all of the fixtures on campus are true gargoyles, which serve as rainspouts. Many, including the infamous “cowgoyles” in the Ag Quad, are what he refers to as “projected medallions,” meant simply for decoration. Instead of the costly process of carving a gargoyle rainspout out of stone, Latimer said the university typically uses the more economical method of “scuppers”—U-shaped pieces of concrete that serve to drain rainwater from the roofs of campus buildings.

A medieval reminder and modern-day mascot
If gargoyles are merely artful rainspouts, why the monstrous faces? Gabrielle offers one theory. “There’s no one agreed-upon understanding of why they came to be [so grotesque] but most likely, [they] symbolized the dangers lurking outside the walls of the Church and the ever-presence of watchfulness of the demons who caused temptation and sin. From there, they became iconic—simply an architectural feature—by the late Middle Ages.”

But here on campus, some members of the Virginia Tech community see these gargoyles and projected medallions in a much different light: not as monsters, but as unofficial mascots.
Students emerged from the class chatting with new classmates as if they were lifelong friends—and it was only the first week of the semester. Energy emanated via bright eyes and heads held high, smiles and laughter, and a definite liveliness in students’ strides. Billie Lepczyk’s teaching skills were already at work.

“I love teaching, and, of course, I love dance,” said Lepczyk, who, after 29 years at Virginia Tech, approaches each year as a new adventure for both her students and herself.

Lepczyk encourages students to explore movement in an individual and personal way. In her Creative Dance class, advanced-level dancers work side by side with novices in an immensely popular general education course. As Lepczyk tells it, “You don’t need technique in this class; you need imagination and creative abilities.” Students with dance backgrounds and those new to the activity intermingle and “soon learn how to think in terms of movement elements and experience, combining [elements and experience] into a finished product.”

Lepczyk’s initial assignment for students in the class serves as a terrific icebreaker for undergraduates coming from various majors with diverse backgrounds and a broad range of dance experience. In groups of five, students select magazine pictures of humans in various poses and then construct dance sequences with the images. This simple start creates a positive, creative, non-judgmental environment. Everyone gets to know one another by contributing to a team project. Together they figure out transitions from one position to another. Novices overcome that potentially awkward moment of executing their first steps, and experienced dancers come face-to-face with group problem-solving.

After learning how to map out floor plans and performing their first dance, students are asked to reflect on the creative process in a composition, enhancing the core course with an intensive writing component.

“Creative dance has value in education beyond an aesthetic experience and engaging the imagination and creative abilities,” said Lepczyk. “Students learn teamwork and how to contribute and how to be a good citizen. They also become better listeners and appreciate diversity, all while gaining more self-confidence.”

Lepczyk’s initial lesson, carefully constructed following years of inquiry, has been implemented in courses across the country. She has designed 13 classes over her tenure, founded and advised both the Contemporary Dance Ensemble and the Dance Company of Virginia Tech, and clearly has a flair for teaching. In 2009, she was recognized as National Dance Educator of the Year by the National Dance Association (NDA).

Debra Knapp, who teaches at New Mexico State University, served on the selection committee for NDA. Lepczyk “is able to create an atmosphere where students can flourish,” Knapp said. In reviewing videos of Lepczyk’s teaching, Knapp said, “She wasn’t teaching to students. She was sharing the teaching process with her students. And she was learning as she was teaching. I think that is the gift of being a teacher—you’re teaching because you are a learner and you’re a student.”

Lepczyk’s initial assignment for students in the class serves as a terrific icebreaker for undergraduates coming from various majors with diverse backgrounds and a broad range of dance experience. In groups of five, students select magazine pictures of humans in various poses and then construct dance sequences with the images. This simple start creates a positive, creative, non-judgmental environment. Everyone gets to know one another by contributing to a team project. Together they figure out transitions from one position to another. Novices overcome that potentially awkward moment of executing their first steps, and experienced dancers come face-to-face with group problem-solving.

After learning how to map out floor plans and performing their first dance, students are asked to reflect on the creative process in a composition, enhancing the core course with an intensive writing component.

“Creative dance has value in education beyond an aesthetic experience and engaging the imagination and creative abilities,” said Lepczyk. “Students learn teamwork and how to contribute and how to be a good citizen. They also become better listeners and appreciate diversity, all while gaining more self-confidence.”

Lepczyk’s initial lesson, carefully constructed following years of inquiry, has been implemented in courses across the country. She has designed 13 classes over her tenure, founded and advised both the Contemporary Dance Ensemble and the Dance Company of Virginia Tech, and clearly has a flair for teaching. In 2009, she was recognized as National Dance Educator of the Year by the National Dance Association (NDA).

Debra Knapp, who teaches at New Mexico State University, served on the selection committee for NDA. Lepczyk “is able to create an atmosphere where students can flourish,” Knapp said. In reviewing videos of Lepczyk’s teaching, Knapp said, “She wasn’t teaching to students. She was sharing the teaching process with her students. And she was learning as she was teaching. I think that is the gift of being a teacher—you’re teaching because you are a learner and you’re a student.”

Lepczyk’s initial assignment for students in the class serves as a terrific icebreaker for undergraduates coming from various majors with diverse backgrounds and a broad range of dance experience. In groups of five, students select magazine pictures of humans in various poses and then construct dance sequences with the images. This simple start creates a positive, creative, non-judgmental environment. Everyone gets to know one another by contributing to a team project. Together they figure out transitions from one position to another. Novices overcome that potentially awkward moment of executing their first steps, and experienced dancers come face-to-face with group problem-solving.

After learning how to map out floor plans and performing their first dance, students are asked to reflect on the creative process in a composition, enhancing the core course with an intensive writing component.

“Creative dance has value in education beyond an aesthetic experience and engaging the imagination and creative abilities,” said Lepczyk. “Students learn teamwork and how to contribute and how to be a good citizen. They also become better listeners and appreciate diversity, all while gaining more self-confidence.”

Lepczyk’s initial lesson, carefully constructed following years of inquiry, has been implemented in courses across the country. She has designed 13 classes over her tenure, founded and advised both the Contemporary Dance Ensemble and the Dance Company of Virginia Tech, and clearly has a flair for teaching. In 2009, she was recognized as National Dance Educator of the Year by the National Dance Association (NDA).

Debra Knapp, who teaches at New Mexico State University, served on the selection committee for NDA. Lepczyk “is able to create an atmosphere where students can flourish,” Knapp said. In reviewing videos of Lepczyk’s teaching, Knapp said, “She wasn’t teaching to students. She was sharing the teaching process with her students. And she was learning as she was teaching. I think that is the gift of being a teacher—you’re teaching because you are a learner and you’re a student.”
Although his assessment indicated few resources for startups in Blacksburg, Summers chose the town for its quality of life and availability of talent. More than a decade later, those good qualities still ring true—and even better, the lack of resources is becoming a thing of the past. Step into TechPad, launched by Summers as an open, collaborative space for high-tech entrepreneurs, and you’ll begin to see why.

Two years ago, looking for a downtown venue from which to work, Summers toured an empty space above PK’s Bar and Grill. After extensive renovations, Summers opened TechPad, a co-working space designed to nurture startup entrepreneurs through collaboration and mentoring. He quickly discovered an unmet demand, with four other entrepreneurs joining him in the first month alone. Well ahead of its official opening in September, TechPad had already hosted a variety of startup businesses.

On a Tuesday afternoon in August, Braden Croy, the president of the Virginia Tech Entrepreneur Club, was preparing to enter a conference room in the back corner of TechPad’s 6,000-plus square feet of space. The senior geography major would have 10 minutes to convince a room full of hypothetical investors that they should provide critical funding for the roll-out of his business, Cloud Conservatory, an online source for university-level music education.

If practice makes perfect, Croy, whose business is in the pre-launch phase, was in the right place. He was headed into a “Pitch & Polish” clinic, a monthly session at TechPad hosted by the Roanoke-Blacksburg Technology Council that allows entrepreneurs to hone their ideas in front of about 10 investors, venture capitalists, and successful entrepreneurs. After outlining such concerns as American spending on the arts, competition in online music education, the pricing structure for lessons, and revenue projections, Croy listened and responded as the audience asked probing questions about the business plan and offered tips on his presentation—in short, the keys he needed to move forward with Cloud Conservatory.

“T'heir critique of my financials was the most helpful. As in any business, it comes down to money, and when your financials are a bit skewed, investors are going to question the validity of your claims,” Croy said. “The clinic really helped solidify that what I’m doing is viable, and it encouraged me to keep pursuing this great market opportunity.”

Summers, who previously launched a desktop videoconferencing software company serving more than 3 million customers worldwide, is now working out of TechPad on his fifth startup, Friendeo, which aims to offer users a personalized video entertainment channel. In 2005, though, Summers sensed that he needed a fresh perspective. He stepped away from Blacksburg, going to the Massachusetts Institute of Technology (MIT) for an M.B.A. There, he was inspired by a friend’s Cambridge Innovation Center, adjacent to MIT, and borrowed the concept for TechPad: an open, innovative space next to campus, a place where faculty and students could quickly move from an academic to an entrepreneurial context.

“What [an open design] allows for is ad-hoc, unintended, unplanned conversations that can solve real problems,” Summers said, explaining that every entrepreneur is constantly challenged by market, funding, and personnel opportunities. “An open space can help people through these challenges by sharing. I felt that we needed a vessel, a place for our entrepreneurs to meet on a regular basis and a low-friction pathway to getting started.”

Summers and others are doing nothing short of “raising an entrepreneurial ecosystem,” as he put it. He’s not alone in his efforts. A venue similar to TechPad—the Cooperatory—is coming soon to the Virginia Tech Corporate Research Center, a wholly owned subsidiary of the Virginia Tech Foundation. Meanwhile, other university entities—VT KnowledgeWorks, the Office of Economic Development, Virginia Tech Intellectual Properties, and more—support businesses throughout their life cycles.
Visionary capital

Financial backing is an integral part of an entrepreneurial ecosystem. When he returned to Blacksburg from MIT, Summers spent a year investigating the viability of an early seed-stage venture fund. The outcome is 460 Angels, a fund whose 35 accredited investors have already made several investments totaling more than $1 million in the last 24 months. Along with the availability of 20 mentors, Summers’ goal is a $5 million fund that will make 10 investments per year in the $50,000 to $100,000 range.

In the realm of venture capital, Summers and his 460 Angels colleagues are operating alongside a growing number of others. The Virginia Tech Foundation, Carilion Clinic, and Third Security, a Radford-based venture capital firm, teamed up in 2004 to launch the NewVa Fund, investing $13 million in five businesses that, in turn, generated job growth and additional outside investment. Now the same three players are retooling: Earlier this year, they announced their intention to create the Valley Ventures fund, aimed primarily at life-sciences businesses, said John E. Dooley, Foundation CEO and secretary-treasurer.

For the foundation, which exists to support the mission of Virginia Tech, investing in the Roanoke and New River valleys is both an investment strategy and a regional development strategy. By leading to higher-compensated jobs, employment for students and spouses of faculty and staff, and enhanced retail and cultural scenes, economic development efforts yield tangible benefits for the university, said Ray Smoot (English ’69, M.S. educational administration ’71), who retired this summer as foundation CEO.

When it comes to capital, however, the mentors behind the money are far more important than the number of zeroes. Venture capital can accelerate sales or attract talent, but a business needs advisors to properly apply the money—which, Summers said, is the real value of such funds.

Pushing Cloud Conservatory toward viability, Croy recognizes as much. “As a startup [entrepreneur], your success depends on that network of advisors and mentors,” Croy said.

Dooley added that such advice is “critical for the university long-term” because it aids faculty members—already proficient at the art of discovery—with the next step of moving intellectual property into the commercial pipeline.

A thriving ecosystem

The years of steady progress in the region are bearing fruit. Smoot and Dooley agreed that one measure of success is that they’re coming across more and more initiatives that bear no university influence. “There is a growing awareness of opportunity,” said Dooley of the region’s economic climate.

As for TechPad, 20-plus startups have circulated through its doors since it opened. Two businesses have graduated to a nationally known incubator program, while a third, Heyo (formerly Lujure Media, which Summers advises) just raised $500,000 in venture capital.

To be sure, the region’s climate is ripe for entrepreneurs. “I’ve been really surprised by the number of students and faculty entrepreneurs [who] are here and are ready to get started,” Summers said. “There is significant opportunity to grow our entrepreneurial ecosystem, more so than I thought five years ago, and that’s a surprise to have that [finding] validated.”

PROGRESSIVE COMMUNITY | TECHNOLOGY-DRIVEN ECONOMY | THE GREAT OUTDOORS

Montgomery County, Virginia Economic Development Department | YesMontgomeryVA.org | 866-270-9185

If you think our defense works hard, you’ll really enjoy our workforce.
Every 13 minutes, someone on America’s roadways dies in a vehicle-related crash. In an ongoing effort to lower this sobering statistic, the Virginia Tech Transportation Institute (VTTI) conducts naturalistic driving research involving teen drivers, truck drivers, older drivers, and motorcyclists. Superior to other research methods, naturalistic driving studies use sophisticated cameras and instrumentation in participants’ personal vehicles, providing researchers with thousands to millions of hours of data on actual driver behavior and performance. Data is collected through multiple channels of digital compressed video, radar sensors, machine vision-based lane trackers, cell phones, GPS, and instruments that record such vehicle information as braking, acceleration, and yaw.

Participants, who are monitored for periods ranging from six months to three years, are given no instructions other than to go about their normal daily driving activities. As a result, these drivers face real driving conditions and pressures and make real decisions that have real consequences. Drivers participating in traditional controlled experiments, on the other hand, might alter their behaviors to make themselves “look good on camera.” Moreover, police accident reports must rely on information from those involved and from crash scenes from which the vehicles have often been moved. Drivers in crashes may be deceased or injured; pre-crash events occur so rapidly that the driver or passengers often forget key elements; and witnesses frequently leave out important details.

In a nutshell, data from naturalistic driving studies provide greater detail and accuracy regarding driver behavior, driver error, and vehicle performance in a process similar to instant replay in televised sporting events.

The first naturalistic study of motorcyclists

While fatality rates for other road users have been in decline, according to the National Highway Traffic Safety Administration, fatalities from motorcycle crashes increased 128 percent from 1997 to 2007. In addition, AAA Mid-Atlantic reported 78 motorcyclist fatalities and 1,981 injuries in Virginia in 2010.

To address this growing danger, in August 2011, VTTI launched the world’s first large-scale naturalistic motorcycle riding study: the Motorcycle Safety Foundation’s (MSF) 100 Motorcyclists Naturalistic Study, a partnership effort between VTTI and MSF, the largest trainer of motorcycle riders globally.

The study is tracking two age groups, 21 to 34 years and 45 to 64 years, and seven motorcycle models, including sport bikes, cruisers, and touring bikes. Each participating motorcycle is equipped with five color cameras, a GPS, accelerometers, a gyro, forward radar, a machine-vision lane tracker, and front and rear brake sensors. Three different locations are being used for outfitting, tracking, and data collection: VTTI in Blacksburg, MSF headquarters in Superior, Colorado, and a location in the San Francisco Bay Area.

In Naturalistic driving studies, participants are given no instructions other than to go about their normal daily driving activities. As a result, these drivers face real driving conditions and pressures and make real decisions that have real consequences. Drivers participating in traditional controlled experiments, on the other hand, might alter their behaviors to make themselves “look good on camera.” More-
in Irvine, Calif.; and the Motorcycle Mechanics Institute in Orlando, Fla. Researchers expect approximately 500,000 miles of riding data, which will be collected until summer 2013 and studied for an additional year.

“We know of no other naturalistic study for motorcycles,” said VTTI director Tom Dingus. “We expect the study to be very valuable to the MSF’s work since we also will examine where and how crash avoidance is successful. With so much information bandwidth coming from the cameras and instrumentation on each bike, we’ll be able to examine details for years, and the findings will be relevant for decades.”

**Naturalistic studies**

In June 2009, the results of a VTTI naturalistic driving study, “Driving Behavior of Commercial Vehicle Drivers,” provoked a realistic driving study, “Driving Behavior in Commercial Motor Vehicle Operations,” and data was collected from 203 commercial vehicle drivers revealed that drivers who texted were 23.2 times more likely to be involved in a crash or near-crash event.

Another key finding, which brought balance to the debate, indicated that talking or listening on a cell phone or CB radio did not statistically increase crash risk. However, dialing, reaching, and other intensive visual-manual cell phone sub-tasks did.

The results from this study prompted a two-day Distracted Driving Summit in Washington, D.C., and an executive order by the U.S. president that banned texting while driving for government workers operating government vehicles. In January 2010, the U.S. Department of Transportation announced a federal texting-while-driving ban for truckers and bus drivers. Nearly a year later, a Notice of Proposed Rulemaking was released that would restrict, but not ban, cell phone use by truck drivers.

**Distracted driving**

Commercial vehicle drivers aren’t the only ones on the road affected by VTTI’s naturalistic driving research. “Our research has sparked national debate over the dangers of distracted driving and, if nothing else, has made and will continue to make drivers more aware of how quickly situations can change when they take their eyes off the forward roadway,” said Charlie Klauer, research scientist in VTTI’s Center for Automotive Safety Research.

Eye-glance data gathered from more than 6 million miles of driving during VTTI’s various naturalistic driving studies revealed that text messaging, which had the highest crash risk when compared to other distractions, has made and will continue to make drivers more aware of how quickly situations can change when they take their eyes off the forward roadway. “The danger increases exponentially when drivers take their eyes off the forward roadway for extended periods of time for any distracting task,” said Klauer.

In light of these findings, 35 states and Washington, D.C., currently ban texting while driving. In Virginia, texting while driving is considered a secondary offense.

**Tracking teen drivers**

Among several naturalistic driving studies being conducted with teens, an 18-month study sponsored by the National Institutes of Health will determine issues that place newly licensed teenage drivers at a much higher crash risk when compared to other drivers. The study’s results will not only provide transportation researchers with a more complete understanding of how teens learn to drive during the first 18 months of independent driving, but also furnish information to legislators working on graduated driver licensing laws in an effort to reduce teen fatalities.

Combining data from two naturalistic truck-driving studies previously conducted by VTTI, the study evaluated the types, frequency, and impact of driver distraction in commercial motor vehicle operations. Analysis of 3 million miles of motion and video data collected from 203 commercial vehicle drivers revealed that drivers who texted were 23.2 times more likely to be involved in a crash or near-crash event.

Another key finding, which brought balance to the debate, indicated that talking or listening on a cell phone or CB radio did not statistically increase crash risk. However, dialing, reaching, and other intensive visual-manual cell phone sub-tasks did.

The results from this study prompted a two-day Distracted Driving Summit in Washington, D.C., and an executive order by the U.S. president that banned texting while driving for government workers operating government vehicles. In January 2010, the U.S. Department of Transportation announced a federal texting-while-driving ban for truckers and bus drivers. Nearly a year later, a Notice of Proposed Rulemaking was released that would restrict, but not ban, cell phone use by truck drivers.

**Distracted driving**

Commercial vehicle drivers aren’t the only ones on the road affected by VTTI’s naturalistic driving research. “Our research has sparked national debate over the dangers of distracted driving and, if nothing else, has made and will continue to make drivers more aware of how quickly situations can change when they take their eyes off the forward roadway,” said Charlie Klauer, research scientist in VTTI’s Center for Automotive Safety Research.

Eye-glance data gathered from more than 6 million miles of driving during VTTI’s various naturalistic driving studies revealed that text messaging, which had the highest crash risk when compared to other distractions, has made and will continue to make drivers more aware of how quickly situations can change when they take their eyes off the forward roadway. “The danger increases exponentially when drivers take their eyes off the forward roadway for extended periods of time for any distracting task,” said Klauer.

In light of these findings, 35 states and Washington, D.C., currently ban texting while driving. In Virginia, texting while driving is considered a secondary offense.

**Tracking teen drivers**

Among several naturalistic driving studies being conducted with teens, an 18-month study sponsored by the National Institutes of Health will determine issues that place newly licensed teenage drivers at a much higher crash risk when compared to other drivers. The study’s results will not only provide transportation researchers with a more complete understanding of how teens learn to drive during the first 18 months of independent driving, but also furnish information to legislators working on graduated driver licensing laws in an effort to reduce teen fatalities.
Seniors: coming to a stop
To help senior drivers decide if they should stop driving, VTTI has also been conducting research with drivers who are 75 and older.

In a 2007 study sponsored by the National Surface Transportation Safety Center for Excellence, the vehicles of 20 senior drivers were instrumented for one year. During the initial phases of the study, 40 participants—20 senior drivers and 20 seniors who had given up driving within the past two years—underwent a battery of assessment testing that included a driving history and tests of health, vision, physical strength, and reaction time.

Although results are still being tabulated, the study was renewed and continues.

1,500 vehicles instrumented
VTTI is currently managing data collection from more than 1,500 cars, pickups, and SUVs in the Second Strategic Highway Research Program, the largest light-vehicle naturalistic driving study ever conducted. Authorized by the U.S. Congress to address the critical needs of the nation’s highway system, the nationwide study is administered by the Transportation Research Board of the National Academies.

As part of their daily activities, roadway users of all ages and in all vehicle types face risks. With the help of VTTI's naturalistic driving research, the frequency of fatalities and injuries can be greatly reduced, and our roads will be safer for all.

Kayla Czech (communication ’11) was a public relations, marketing, and graphics assistant with the transportation institute.
INSPiRATIONAL

Then and Now

How an inventive culture defines Virginia Tech—and saves lives

by JESSE TUEL

photography by LOGAN WALLACE

Life cycle: Former professor Leon Arp (above left and lower left) mentored Andy Muelenaar ’75, ’79 (above middle and below) in the creation of life-saving medical devices when Muelenaar was an undergraduate, and now Muelenaar is serving in the same role with graduate student Thomas Ruscher (above right, below right) and other students.
The doctor told Air Force Staff Sgt. Paul Spolski to be prepared for the worst.

Born three months premature in 1970, Carrie, his firstborn child, was suffering from respiratory distress syndrome, a life-threatening condition that, at the time, affected 25,000 infants in the U.S. annually and was the leading cause of death in the first week of infants’ lives.

“The air went out of me,” Spolski recalled. “I thought we were going to lose her for sure.”

Spolski, his wife, and newborn daughter were in Langley Air Force Base, but hope was waiting on the other side of the commonwealth. Carrie’s pediatrician recalled an article he’d read about a Virginia Tech professor, Leon Arp, who had invented an infant respirator while he was pursuing his doctorate in industrial education, a degree he completed at Iowa State University in 1965. The pediatrician met with the base’s commanding general. Soon enough, Arp and Gene Dillon, a technician in Tech’s mechanical engineering department, were en route to Langley on the general’s personal jet.

The trip to Carrie’s bedside was documented by Life magazine in a four-page photo essay (which included the image above). The respirator ensured that the Spolski’s first meeting with Arp wouldn’t be their last. Since reconnecting with Arp and his wife, Kathleen (Kathy), about 20 years ago, Darkes and Spolski have kept in touch with the Blacksburg couple.

Darkes credits Arp, a professor emeritus of mechanical engineering, and the infant respirator he invented with saving her life. “It was neat to sit down and actually chat with him,” Darkes said, recounting with emotion her first meeting with Arp. “It felt like we had known each other forever. I think I just hugged him and thanked him. “I’m blessed to be [alive]. Not everybody can say that they’ve been saved by someone and put in Life magazine. It’s pretty incredible.”

On a visit to Blacksburg in September, Darkes and Spolski reunited with the now-82-year-old Arp. “I’m here because of [him],” said Darkes, a first-grade teacher and married mother of two boys who lives in Mountain Home, Idaho. Submitted photos courtesy of Darkes and Spolski.
In a 1970 edition of Virginia Tech’s Context publication, Leon Arp was captured as he checked on an infant’s breathing.

Inhalation and send an exact volume and liseconds to sense the onset of an infant’s breathing, then, the device had only mil-rate far faster than existing adult respirators upward of 100 to 120 breaths per minute, a afflicted infants were breathing at a rate ing measurements, Arp determined that increase his or her breathing rate. Tak-with adequate strength will dramatically surfactant. In a fight for oxygen, an infant absence of a protective substance called terized by stiffened lungs caused by the Respiratory distress syndrome is charac - the medical action protocol for its use.”

Intrigued by the idea of a respirator, Arp discovered that his son’s pediatrician, Dr. William C. McCormack, was just as committed to addressing the syndrome. McCormack spent hours teaching Arp the anatomy and physiology surrounding the problem, and Arp received immediate feedback to his questions. “It was like having a private medical professor at my elbow,” Arp said. “Without his dedicated support, I could never have learned enough about the medical problem to be able to formulate a successful respirator design and the medical action protocol for its use.”

Respiratory distress syndrome is char-acterized by stiffened lungs caused by the absence of a protective substance called surfactant. In a fight for oxygen, an infant with adequate strength will dramatically increase his or her breathing rate. Tak-ing measurements, Arp determined that afflicted infants were breathing at a rate upward of 100 to 120 breaths per minute, a rate far faster than existing adult respirators could handle. For a respirator to aid in breathing, then, the device had only mil-liseconds to sense the onset of an infant’s inhalation and send an exact volume and concentration of oxygen into the lungs.

Moreover, Arp knew that the device had to be supremely sensitive, able to respond to the miniscule negative air pressure exerted by an infant’s tiny lungs at the beginning of inhalation. He developed a sensor that reliably triggered the respirator, and ensured that the device would reset before the next breath.

Because of its sensitivity and short response time, the sensor allowed Arp’s respirator to assist a child’s breathing, as opposed to the rate-controlled method employed by adult respirators. “That [sensor] was the key to the whole thing. That was my first patent,” said Arp, who held four patents by the time he came to Virginia Polytechnic Institute (today’s Virginia Tech) from Iowa State University in 1966. Bringing his invention to Virginia, Arp partnered with two pediatricians in two Roanoke hospitals. In a study from June 1967 to October 1968, they applied Arp’s respirator and his methods to 200 infants in respiratory distress—4.8 percent of the hospital’s live births—and improved the infant survival rate at the hospitals from 62.8 percent for those not treated with the respirator to 86 percent for those treated with it. The group published the results in consecutive 1969 editions of the Anesthesia and Analgesia journal—where Darques’ pediatrician would read about the invention that would save his patient’s life. Alongside such era-defining marvels as the Apollo moon landing, the respirator was named by the National Society of Professional Engineers as one of the top five engineering achievements of 1969.

On the respirator’s success, Arp credited the help he received from machinists and technicians such as Dillon, Jack Gray, Marshall Smith, and Teet Henderson. “I am not an engineer of any kind,” said Arp, whose degrees are in industrial educa-tion—the study of the materials, tools, and processes of industries. “However, I did do my homework, and the device did exactly what it was intended to do.” Incredibly, the respirator didn’t go main-stream. In the early 1970s, it was licensed by a medical-device manufacturer that converted the machine “back into a slow, insensitive” device that was “incapable of assisting the very rapid respiration” of infants with the syndrome, Arp said. Even so, the power of innovation would not be bridled. The torch would be passed.
The solution is now a working prototype—an air-flow sensor for tracheostomy tubes—developed in the Pediatric Medical Device Institute (PMDI), a nonprofit entity led by Muelenaer and Wicks. Thomas Ruscher, a graduate student pursuing degrees in mechanical engineering and computer engineering, has spent two-plus years developing the sensor, and among PMDI’s efforts, the sensor is the closest to being ready for commercialization.

PMDI works with a consortium of children’s hospitals in Virginia and North Carolina to develop medical devices that meet the clinical needs of physicians. Ruscher, who works out of Randolph Hall on PMDI-related research, described the institute as “a nonprofit that solicits ideas from physicians for devices they’d like to see developed.”

One student is studying how to detect early signs of cerebral palsy by placing sensors on an infant’s limbs. Using similar sensors to measure movement, another project aims to help doctors provide precise dosages of medication for newborns suffering from opiate withdrawal. Another student is developing a software program that would help medical providers determine dosages of medications and the size of equipment to use for CPR based on the child’s age, condition, and weight. The institute has a couple dozen devices in the works, in various stages of development.

“The biggest problem for pediatric devices is the typically small market,” said Wicks.

PMDI’s chief technical officer. “Kids tend to be pretty healthy, so the market size tends to be much smaller than the bigger manufacturers want to deal with.” Even so, the air-flow sensor may prove useful for adult tracheostomy tubes. And the institute is able to leverage the resources of consortium hospitals throughout the mid-Atlantic, effectively casting a wider net in the creation of life-saving devices.

“There’s a tremendous amount of need out there for pediatric devices, and we are simply trying to fill the void,” said Wicks.

Andy Muelenaer ’75, 79 works with students, including junior mechanical engineering major Ashley Taylor, to develop medical devices for children.

Leon Arp wasn’t in the car with Dr. Andy Muelenaer and Al Wicks, but his legacy was. In 2004, Muelenaer (biological sciences ’75, M.S. zoology ’79), a Roanoke-based pediatric pulmonologist, and Wicks, an associate professor of mechanical engineering, were driving to Washington, D.C. Muelenaer described an ever-present problem in pediatric pulmonology: monitoring airflow in infant tracheostomy tubes. Blocked tubes account for about a 6 percent mortality rate, Muelenaer said. Wicks had soon sketched on a napkin a solution that involved shooting sound waves through the tube’s air flow, measuring air speed like Doppler radar does.

Leon Arp wasn’t in the car with Dr. Andy Muelenaer and Al Wicks, but his legacy was. In 2004, Muelenaer (biological sciences ’75, M.S. zoology ’79), a Roanoke-based pediatric pulmonologist, and Wicks, an associate professor of mechanical engineering, were driving to Washington, D.C. Muelenaer described an ever-present problem in pediatric pulmonology: monitoring airflow in infant tracheostomy tubes. Blocked tubes account for about a 6 percent mortality rate, Muelenaer said. Wicks had soon sketched on a napkin a solution that involved shooting sound waves through the tube’s air flow, measuring air speed like Doppler radar does.

The solution is now a working prototype—an air-flow sensor for tracheostomy tubes—developed in the Pediatric Medical Device Institute (PMDI), a nonprofit entity led by Muelenaer and Wicks. Thomas Ruscher, a graduate student pursuing degrees in mechanical engineering and computer engineering, has spent two-plus years developing the sensor, and among PMDI’s efforts, the sensor is the closest to being ready for commercialization.

PMDI works with a consortium of children’s hospitals in Virginia and North Carolina to develop medical devices that meet the clinical needs of physicians. Ruscher, who works out of Randolph Hall on PMDI-related research, described the institute as “a nonprofit that solicits ideas from physicians for devices they’d like to see developed.” One student is studying how to detect early signs of cerebral palsy by placing sensors on an infant’s limbs. Using similar sensors to measure movement, another project aims to help doctors provide precise dosages of medication for newborns suffering from opiate withdrawal. Another student is developing a software program that would help medical providers determine dosages of medications and the size of equipment to use for CPR based on the child’s age, condition, and weight. The institute has a couple dozen devices in the works, in various stages of development.

“The biggest problem for pediatric devices is the typically small market,” said Wicks. PMDI’s chief technical officer. “Kids tend to be pretty healthy, so the market size tends to be much smaller than the bigger manufacturers want to deal with.” Even so, the air-flow sensor may prove useful for adult tracheostomy tubes. And the institute is able to leverage the resources of consortium hospitals throughout the mid-Atlantic, effectively casting a wider net in the creation of life-saving devices.

“There’s a tremendous amount of need out there for pediatric devices, and we are simply trying to fill the void,” said Wicks.

Andy Muelenaer ’75, 79 works with students, including junior mechanical engineering major Ashley Taylor, to develop medical devices for children.

Leon Arp wasn’t in the car with Dr. Andy Muelenaer and Al Wicks, but his legacy was. In 2004, Muelenaer (biological sciences ’75, M.S. zoology ’79), a Roanoke-based pediatric pulmonologist, and Wicks, an associate professor of mechanical engineering, were driving to Washington, D.C. Muelenaer described an ever-present problem in pediatric pulmonology: monitoring airflow in infant tracheostomy tubes. Blocked tubes account for about a 6 percent mortality rate, Muelenaer said. Wicks had soon sketched on a napkin a solution that involved shooting sound waves through the tube’s air flow, measuring air speed like Doppler radar does.
Donor Supports Critical Research into Autism

by GARY C OPE ’97

What do a condensed-matter physicist, a social psychologist, and a mathematical economist have in common? They, along with other top researchers, scientists, and students at Virginia Tech, are working to unlock the mysteries of the human brain.

The Computational Psychiatry Unit at the Virginia Tech Carilion (VTC) Research Institute combines technology with neuroscience, economics, and behavioral methods to understand the neural computations involved in human cognition and psychiatric illness.

One of the unit’s areas of brain research is autism spectrum disorder, a focus that prompted one man to donate the proceeds of his softball tournament to the institute. Patrick Patterson, of Montvale, Va., has a vested interest in the innovative research at the institute. His daughter, Brooke, was diagnosed with autism when she was 3 years old.

Patterson said he chose to support the institute after touring the facilities, meeting researchers, and learning about the research there. “We met with Dr. Friedlander and spoke with him,” Patterson said. “He was telling us what they do there, what the money goes toward, and that pretty much sealed the deal.”

Because of the complexity of the human brain, the institute has a variety of brain research programs with different areas of focus, Friedlander explained. “One subset of our programs focuses on understanding brain development, particularly in children,” he said. “Our researchers are using a wide range of innovative technologies to develop new ways to enable very early and accurate diagnoses of autism spectrum disorders, to come up with potential new therapies, and to create precise, scientifically valid methods to evaluate the effectiveness of these and other possible treatments.”

For instance, the computational, or mathematical, approach comes into play for the Computational Psychiatry Unit, which is directed by Read Montague. “The one thing we’ve learned a lot about are the parts that make up the brain and the dynamics among the parts,” Montague explained. “The things we know less about are how to model thoughts and the dynamics of thoughts and how these develop through our life trajectory.”

Montague’s approach to brain research involves identifying patterns and applying mathematics as a way of characterizing and predicting psychiatric and neurological diseases and disorders, including autism spectrum disorder. “Our behavior—however complex it is, or however complex it is for the brain to understand it—is patterned,” Montague said. “[Scientists] recognize patterns; you recognize abnormal patterns. You can tell when somebody is off and when somebody isn’t. And where there are patterns and numbers, there is mathematics.”

The idea, he said, is that if researchers can identify patterns of healthy brains, they will be able to detect abnormal patterns, which could eventually lead to therapies or even treatments for mental illness and disorders.

To tackle such a colossal research challenge, Montague has assembled a team of researchers that includes a condensed-matter physicist, a social psychologist, a specialist in aesthetics, a physiologist, a mathematical economist, and even a doctoral student who is a geneticist and chemical engineer.

Despite the team’s diversity, its members are all committed to a common goal: to gain insight into human cognition through an understanding of brain algorithms and the circumstances that can lead to their disruption.

All the work of the VTC Research Institute’s teams of investigators requires funding that in large part comes from the National Institutes of Health, including the research into autism spectrum disorder, which is currently supported largely by the National Institute of Mental Health. “Grants, however, aren’t the only sources of funding. In fact, private donations often allow researchers the most freedom,” Montague said.

“When somebody hands you a check and says, ‘I’ll fund a postdoctoral position,’ that’s crucial,” Montague said. “[Donors] put in your hands a resource that allows you to do research that you wouldn’t otherwise be able to do, to take a risk you wouldn’t otherwise take, to think about problems differently.”

Patterson’s first charity event proved such a success that he plans to run another one and once again donate the proceeds to the institute. “My ultimate goal is to raise as much money as I can [so that researchers] have what they need to find a definitive, black-and-white answer as to what causes autism,” Patterson said. “And then [they can] move forward as to what they can do to help those who have autism perhaps cope a little better or to find a way to prevent it altogether.”

For Montague and his team, that type of support from the community truly hits home. “It makes what we do a privilege,” he said. © Gary Cope (communication ’97) is a Web editor with University Development.

[web extras]
Go to www.vtmag.vt.edu to find a story and video on Read Montague’s presentation at the TEDGlobal 2012 conference in Scotland and to read a profile of Patrick Patterson that first appeared in the summer 2012 edition of Virginia Tech’s Impact magazine.
“My family found independence, security, community and compassionate care at Rappahannock Westminster-Canterbury.”

— John H. Hunt II, Class of ’59

When John’s aunt, his mother, and then his father-in-law decided they were ready to move from their family homes, they chose Rappahannock Westminster-Canterbury in Irvington, Virginia. They wanted the worry-free lifestyle that RWC afforded, and the peace of mind of continuing care. RWC offered guaranteed lifetime housing, a vibrant, active community and increased levels of care if their needs changed. John and his wife Page are frequent visitors, and through the RWC Foundation, give generously of their time and patronage. For more information about RWC, visit our website at www.embrace lifetrwc.org, or call to arrange for a personal tour.

off the shelf

Submission guidelines are available online at www.vtma g.et/ bookreview.htm. To submit a book, mail it to Book Notes, Virginia Tech Magazine, 202 Media Building, Blacksburg, VA 24061. You can also email your name, the name of the publisher, the genre, and a brief description of the book to vtmag@vt.edu. We must receive the book within one year of its publication date. Photo by Anna Winkeff (right).

book notes

books by faculty/staff

Tiffany Trent (English ’95, MA ’97), communications coordinator, Virginia Bioinformatics Institute, “The Unnaturalists,” young-adult fantasy, Simon & Schuster.

Dwayne A. Bennett (marketing ’87), “The Seven Winning Ways to College Success,” academic and career advice, Rathsi Publishing LLC.


Lawton Griner (M.S. forestry ’02), “I Hike: Mostly True Stories from 10,000 Miles of Hiking,” memoir, Grand Mesa Press.


Wendy Ostroff (M.S. psychology ’98, Ph.D. ’00), “Understanding How Young Children Learn: Bringing the Science of Child Development to the Classroom,” education, psychology, ASCD.


fiction


children’s/teen


320 North Main Street, Suite 1, Blacksburg, VA 24060 • www.hokie realestate.com

John Wilburn REALTOR® Broker, ABR, GRI
540-998-1276
john@hokie real estate.com

Nicole Harless REALTOR®, ABR, GRI
540-250-5887
nicole@hokie real estate.com

Nina Wilburn REALTOR®, ABR, GRI Licensed Assistant
540-998-1275
nina@hokie real estate.com

Bob Locke REALTOR®
540-392-0566
bob@hokie real estate.com

Jim Viers REALTOR®
540-538-8579
jim@hokie real estate.com

HOKIE REAL ESTATE™, INC.
“In more than a decade of living in The Grove, Virginia Tech’s presidential residence, I have admired and enjoyed the artistic creations of Chef Michael ‘Mike’ Arrington, our executive chef and, on occasion, Chef Josef R. Schelch, who has now retired from the university. As a result of these experiences, I am inclined to add cooking to my concept of the arts,” writes President Charles W. Steger in the foreword to “The Grove: Recipes and History of Virginia Tech’s Presidential Residence,” edited and written by Clara B. Cox (M.A. English ’84).

Published by the Virginia Tech Foundation in August, the book is a way to raise money for the Employees’ Spouse and Dependent Scholarship Program endowment.

Cox, the former director of publications for University Relations, retired in 2010, after more than 33 years of service to the university. Her research skills are well-known; she authored an online update of the university’s history and historical data book and was the longtime writer of Virginia Tech Magazine’s In Retrospect section, which profiled individuals whose names grace buildings across campus.

Blending a taste of history with a selection of recipes from the presidential residence, the book features recipes for appetizers, salads, breads, cereals, soups, sauces, entrees, vegetables, fruit dishes, and desserts prepared at The Grove; a history of the residence, built in 1902; recipes dating back to the 1940s from Tech’s first ladies; and menus for events during the Burruss, Newman, McComas, Torgersen, and Steger administrations.

Additionally, short biographies of chefs Mike and Josef and the 10 presidents who lived in the Southern Colonial Revival-style house accompany information on selecting food, using salt blocks in cooking, historic campus recipes, definitions of words used in the recipes, and an index. Photographs of dishes prepared from the recipes and historic photographs highlight the text.

The book is available at the University Bookstore and at Volume Two Bookstore.

Recipe: Grilled Swordfish Steak

**Ingredients:**
- 6 swordfish steaks, 6-8 ounces
- 1 tablespoon sea salt

**Directions:**
1. Brush steaks with oil; season with sea salt.
2. Grill one side for 8 minutes, turning a quarter-turn halfway through. Turn steaks over; grill another 6 minutes, again turning a quarter-turn halfway through.
3. Remove steaks to platter, tent for 15 minutes. To serve, place strawberry and habañero chutney (recipe below) on plate; place swordfish over it. Top with strawberry and habañero relish (recipe below).

Recipe: Strawberry and Habañero Chutney

**Ingredients:**
- 1 teaspoon canola oil
- 2 tablespoons lime juice
- ½ habañero pepper, seeded and minced
- 1 tablespoon white sugar
- ¼ cup seedless strawberry preserves
- 1 tablespoon fresh cilantro, chopped
- 1 cinnamon stick
- ¼ cup tequila

**Directions:**
1. In a saucepan, cook canola oil over medium heat. Add garlic, and sauté until translucent, about 3-4 minutes. Add strawberries, lime juice, ginger, tequila, habañero, water, and cinnamon stick. Bring to a simmer; reduce heat to low. Cook until strawberries are reconstituted, about 20 minutes.
2. Stir in preserves; heat until liquid, another 10 minutes. Remove cinnamon stick; reserve for another purpose if desired.
3. Transfer mixture to food processor; add cilantro. Pulse processor until strawberries are coarsely processed.

Recipe: Strawberry and Habañero Relish

**Ingredients:**
- 1 pint strawberries, hulled and diced
- ½ habañero pepper, seeded and minced
- 1 tablespoon white sugar
- pinch of salt

**Directions:**
1. In a bowl, combine all ingredients. Refrigerate for at least 10 minutes and no longer than 1 hour before serving.
**For Hokie Couple, Education and Art Merge In Yellowstone**

by SUSAN A. STEEVES

The year 2012 marks the 140th anniversary of Yellowstone, the world’s first national park. For two multitalented Virginia Tech alumni, however, the wild wonderland seemingly was created solely for them.

Wife and husband Jenny Golding (forestry and wildlife ’95) and George Bumann (M.S. fisheries and wildlife ’02) may be a long way geographically from where they grew up—Golding in Maryland and Bumann in central New York state just south of the Adirondacks—but their love of wildlife, learning, and teaching began early in their lives. That path led them not only to each other, but also to their current careers. He’s a teacher, guide, and sculptor, opening the wonder of the 2.2 million-acre park to visitors. She is director of education for the Yellowstone Association, the nonprofit partner of the park that provides educational programs for visitors.

Golding and Bumann are hooked on the place, which is evident when they talk about their home in Gardiner, Mont., at the north end of the park, and their adventures. Their path to Yellowstone is a success story that started long ago.

“My grandfather started a cultural history museum on Oneida Lake (in New York), and I was there all the time,” said Bumann. “As a 12-year-old kid, I started giving tours on everything from Paleo-Indian artifacts to the Civil War.”

Bumann said that he’s always been happy anywhere there is wilderness. His sculptor mother contributed art knowledge and know-how to his future career tool kit. Golding’s family lived a number of places when she was growing up, but she came to Virginia Tech from Maryland.

“I was always interested in the outdoors,” she said. “I went camping with my parents as a kid.” In high school, she participated in an Explorer Scout search-and-rescue post. At Virginia Tech, Golding headed the Outing Club and managed Venture Out, a university group that goes on excursions throughout Southwest Virginia.

Coyotes played a part in Bumann and Golding’s first step toward Yellowstone.

In 1997, Golding worked on a coyote research project in the park for Yellowstone Ecosystem Studies. In New York, Bumann was involved with a coyote research project that was connected to a possible reintroduction of wolves to the Adirondacks. A friend told him of a Virginia Tech project seeking a graduate student to investigate the predator aspect in a study on ruffed grouse, and Bumann soon filled the position.

Despite their similar academic pursuits at Virginia Tech, Golding and Bumann didn’t meet until after she had returned to Blacksburg from her stints working in Yellowstone and hiking the Colorado Trail. A mutual friend Rachel Gray (forestry and wildlife ’94, M.S. ’01) introduced them at the old South Main Café, where they were out dancing to “some of that great, traditional old-time music,” Bumann said.

Fast forward to the couple’s 2001 honeymoon, when Golding and Bumann planned to ride bicycles 500 miles, camping and fly-fishing along the way. When illness intervened, they instead went to Yellowstone, where they’d already sent résumés and started meeting people.

One person they met was Jeff Brown, now the executive director of the Yellowstone Association and Golding’s predecessor in the education director position. “They are both so charismatic and quite impressive in their backgrounds,” Brown said. “The reason Jenny and George have made a success here is they love the place. Every weekend they’re out hiking or rafting or doing something in the community.”

After the couple had sold everything in Blacksburg, packed the car, and moved to Yellowstone, their first jobs were seasonal. But Golding and Bumann soon found their niches and moved seamlessly into their careers and into the community: Golding, who used to moonlight as a songwriter, songstress, and guitarist, has organized an annual music festival in Gardiner. Bumann leads the annual butterfly count and is known by the locals as Mr. Butterfly, though he insists he isn’t an expert.

Don’t tell that to little George, Golding and Bumann’s 2-1/2-year-old son, who often accompanies his father on wildlife expeditions, looking at butterflies or working on a sculpture out in the field. One day Golding and little George saw a butterfly. The toddler piped up and told Golding matter-of-factly, “Mom, that’s a Silvery Blue.”

Educating youngsters is part of Golding’s work. Among her responsibilities is organizing the Yellowstone Association field school that hosts about 6,000 participants annually. “We’re really refoocusing our work on youth and the relevance of the park for the next century,” she said.

Golding’s enthusiasm is one of the traits that makes her an effective park educator. “Jenny walks into a room of visitors with a smile on her face and then follows that up with detailed knowledge of her field,” said Brown. “It’s just fun to interact with her. People have a good time, and she opens their minds.”

Opening minds is also Bumann’s aim. He recently taught a course, Sketching in Yellowstone, and leads educational park tours several times a year.
“Art is another way to teach,” he said. For his work, Bumann makes the most of his surroundings by modeling his clay and wax sculptures out where the wild creatures are, a practice that makes his art come alive. His beautiful wildlife statues, cast in bronze, have earned placement in the permanent collections of the National Museum of Wildlife Art in Jackson Hole, Wyo., and the Charles M. Russell Museum in Great Falls, Mont.

The Jackson Hole museum is where Greg Fulton, managing partner for Astoria Fine Art gallery, first crossed paths with Bumann. Now home to 14 of Bumann’s sculptures, the gallery works with many of the country’s established artists, as well as emerging artists such as Bumann, Fulton said, adding that Bumann’s work already is in high demand throughout the United States. Fulton speaks from experience, since he’s a sculptor himself and grew up in Wyoming. “George’s story to me is the perfect one for a wildlife artist; he immerses himself in the wildlife.”

Bumann and Golding are so immersed in the Yellowstone ecology that they’ve become the park’s ambassadors to Virginia Tech, introducing Hokies and friends of the university to the glories of the place. When Paul Winistorfer, dean of the College of Natural Resources and Environment, organized a college development tour to Yellowstone, Bumann spent two days giving a scientific tour of parts of the park. “You ask George anything about the flora and fauna, and he knows it; he brings science to life with his personal perspective and knowledge,” Winistorfer said.

For Golding and Bumann, the most important aspect of their Yellowstone experience is living in a cozy home with little George and two black Labrador retrievers in the midst of one of the most awe-inspiring places on earth.

“Driving through the park, there’s something amazing every day—a coyote with a squirrel, an osprey with a fish in its talons,” said Golding.

Bumann seconded her thoughts. “I’m looking out the window at the view and, even though we own [the house], I keep thinking the landlords will kick us out when they realize how much fun we’re having.”

Susan A. Steeves is the media relations manager for University Relations.

---

Beyond the university, Lepczyk has been invited to state, national, and international conferences to give presentations and workshops on the creative dance curriculum. As a summer Fellow in the university’s Center for Excellence in Undergraduate Education, Lepczyk produced an educational CD-ROM called “Creative Dance.” Similarly, Lepczyk interweaves the latest technology in her courses, encouraging the use of video clips, iPods, and software programs to enhance the overall experience.

“Billie is recognized worldwide as an eminent dance educator and a pioneer in dance-style analysis,” said Terry Redican, professor of health sciences, a longtime colleague of Lepczyk. “Her scholarship on dance style and movement analysis serves as required reading for dance majors at many institutions in the United States and throughout the world.”

Indeed, Lepczyk serves on the board of trustees of an international organization that is guardian of Labanotation, a language of symbols used worldwide that preserves a dancer’s pure essence as a series of notated movements.

Back in the classroom, Lepczyk, who moves about with a grace that confirms an earlier career in professional performance, makes observations with respect and patience. Students are not only learning from a published scholar but also gaining tips from a professor with a dance career that includes stage, television, and film appearances.

At the close of class, student conversations were upbeat. “I heard she was a great teacher,” commented one. “I love the creative analysis and process,” said another.

Lepczyk, clearly pleased, said, “It just keeps getting better and better. And after all these years, students still surprise me.”

Jean Elliott is the communications manager in the College of Liberal Arts and Human Sciences.

---

**Simplified issue group term life insurance available up to $100,000 to alumni under age 60, and renewable to age 75.**

**AlumniTerm 10/20-**

Group 10- and 20-year level term life insurance policies are available up to $1,000,000 for alumni under age 85.

**AlumniTerm 50+**

Basic group term life protection from age 60 to 74, renewable to age 85.
Another banner year serving alumni

Hokie loyalty is unique. I hear this sentiment from alumni relations colleagues around the country who compliment our university’s alumni engagement and enthusiasm in comparison to their own graduates. This incredible loyalty makes our association quite successful at attracting participation.

We have more than 225,000 living alumni at present. Some volunteer to fuel the association’s engine. Others participate in ways other than our association programs—in the athletic booster program through Hokie clubs, in college programs through advisory boards, and through philanthropy that enables institutional excellence and a growing Virginia Tech Foundation endowment. All of the ways our alumni express their loyalty make Virginia Tech’s image enviable. For that, we are eternally grateful.

Over the past year, our alumni association experienced several firsts in our 137-year history. More than 25,000 alumni—a record number—engaged in programs that we originated or sponsored. This number does not include the tens of thousands more who participated in the other ways mentioned above. Such participation testifies to the rich appreciation alumni have for their education and the high regard they have for how Virginia Tech touches lives. Our chapters have developed scholarship programs since the late 1960s; and this past year, we set records for the most funds raised and awarded. We organize an annual advocacy day at the Virginia General Assembly, and the 2012 event attracted 170 participants, including students—our largest ever.

Our career resources program continues to help alumni in their job searches or transitions. We also started planning to more extensively engage alumni in the admissions process through their presence at college fairs and using them to enhance the yield of accepted students. Meanwhile, the Drillfield Series continues to grow in popularity, and its programming will be expanded in 2013 to engage our women graduates and our Corps of Cadets alumni.

A successful year fuels more programs and ideas for the coming year. Take a look at what we have accomplished, and join in.

Tom Tillar ’69
Vice President for Alumni Relations

Vice President for Alumni Relations

Holtzman Alumni Center

www.vtmag.vt.edu
Alumni chapters

The Alumni Association has about 73 active chapters and 30 active clubs with a total of 1,598 volunteers. Sixty-six chapters awarded 2,230 freshman scholarships totaling $378,200.

Chapters and clubs held 1,822 events, including many featuring university speakers, plus students’ families, community service activities, job fairs, and networking events. In-state chapter volunteers supported legislative advocacy efforts at Hokie Day in Richmond.

Reunions, homecomings, and special events

Nearly 3,000 alumni attended class reunion weekends, college homecomings, a Corps of Cadets homecoming, a multicultural alumni gathering, a black alumni reunion, and a Graduate School alumni reunion. In addition, college and other constituency events, in addition to reunions, college and other constituency events, and the Drillfield Series.

Alumni awards

Since 1972, 115 alumni have been honored by the association for achievement in their careers and service to the Alumni Association, Virginia Tech, and their communities (see the awards summary on page 50). Since 1997, 135 alumni have been honored with the Outstanding Recent Alumni Award.

Alumni career resources

Job postings, interview and résumé tips, webinars and seminars, and a career resource library were offered to alumni, in addition to a career-coaches program that features alumni sharing career advice.

Holtzman Alumni Center

Thousands of alumni and students participated in various events held at the Holtzman Alumni Center, including open houses during homecoming weekend, a graduation celebration for seniors, a commencement reception, a poetry prize event, and a wine festival. The Alumni Gallery featured three art and photography exhibits. The center’s museum continues to be a big draw for visitors.

Celebrating faculty

The association recognizes Virginia Tech’s leading professors with Faculty Excellence Awards for excellence in teaching, research, advising, outreach, Extension, and international categories (see the awards summary on page 50). The Alumni Distinguished Professor program designates 10 faculty members for exceptional teaching and scholarship. These and other faculty are featured at alumni chapter events, reunions, and special events.

Alumni tours

More than 180 Hokies traveled on 19 group tours to locations around the globe, including South Africa, Tahiti, and Europe and Mediterranean cruise locations.

Supporting students

The Student Alumni Associates organization, undergraduate class programs, and student transition programs engage students to instill lifelong loyalty to the university.

The association’s scholarship endowment of nearly $2 million, along with other funds raised by alumni chapters, provides merit- and need-based support for students.

Students continue to honor the class ring tradition through the annual Ring Dance. A special Blacksburg Transit bus now displays a distinctive bus-wrap advertisement proclaiming, “Wear the Tradition.”

Benefitting from alumni leadership

By cultivating support among elected officials, Hokies for Higher Education, the legislative advocacy group for Virginia Tech, provides vocal backing on issues of importance for the university and higher education. A record 170 alumni and students visited legislators at the 14th annual Hokie Day at the General Assembly.

The alumni board of directors meets twice each year to advise the association on programming, evaluate progress toward annual goals and strategies, ensure strong fiscal and administrative management, and help create and expand services to alumni.

Approximately 135 chapter volunteers attended the Chapter Officers Leadership Forum, which featured management workshops, a review of best practices, and an emphasis on supporting students. Other leadership-training opportunities were offered through live webinars.

Alumni Association in print and online

In addition to the Alumni Association section in each issue of Virginia Tech Magazine, the association continues to reach out to alumni through newsletters, event announcements, the association’s website, email communications, social media sites, and career resources postings.

Embracing Ut Prosim (That I May Serve)

The Hokie Nation Serves initiative encourages the commitment of service hours beyond normal obligations, especially during the month of April. In April, alumni chapters participated in 54 community service projects. At the fall Chapter Officers Leadership Forum, volunteers joined with local scholarship recipients to write letters of support to the troops serving overseas.
Alumni Awards
William H. Ruffner Medal
Samuel L. Lönngren Jr., ‘62
University Distinguished Achievement Award
Joseph H. Luzing, ‘48
Alumni Distinguished Service Awards
Jean Harshbarger Dodge, ’74
John R. Lawson II, ’75
Graduate Alumni Achievement Award
Satin V. Kulkami, ’72

Graduate Student Awards
Teaching Award
Stephanie Voith, biology
Megan Fisher O’Neill, English
Honorable mention

Service Award
William Collins, civil and environmental engineering
Megan Stuart, population health sciences (honorable mention)

Awards for Faculty Excellence
Graduate Academic Advising
Marc A. Edwards, civil and environmental engineering

Undergraduate Academic Advising
Deborah L. Polko, engineering education

Extension
Din M. Miller, entomology
D. Scott Lees, Russell County Extension agent

International Education
Patricia P. Kelly, educational research and outreach

International Outreach
Akshay Sharma, School of Architecture + Design

International Research
Michael Battle, music and humanities

Outreach
Carli E. Zipper, crop and soil environmental sciences

Research
T. Daniel Crawford, chemistry
Stephen R. Prince, theatre and cinema

Teaching
Alan D. Weinstein, music
Jane A. Wermhoener, English

William E. Wine Awards in Teaching
Billie L. Lapczynski, theatre and cinema

Undergraduate Academic Advising
Deborah L. Polko, engineering education

Chapter Awards
Alumni Distinguished Achievement Award
Satish V. Kulkarni, ’72

University Distinguished Achievement Award
Jean Harshbarger Dodge, ’74

Graduate Alumni Awards
William H. Ruffner Medal
Samuel L. Lönngren Jr., ’62

1971 Alumni Association Annual Report

Service Award
Joseph H. Luzing, ’48

Alumni Distinguished Service Awards
Jean Harshbarger Dodge, ’74
John R. Lawson II, ’75

Graduate Alumni Achievement Award
Satin V. Kulkami, ’72

Teaching Award
Stephanie Voith, biology
Megan Fisher O’Neill, English
Honorable mention

Service Award
William Collins, civil and environmental engineering
Megan Stuart, population health sciences (honorable mention)

Awards for Faculty Excellence
Graduate Academic Advising
Marc A. Edwards, civil and environmental engineering

Undergraduate Academic Advising
Deborah L. Polko, engineering education

Extension
Din M. Miller, entomology
D. Scott Lees, Russell County Extension agent

International Education
Patricia P. Kelly, educational research and outreach

International Outreach
Akshay Sharma, School of Architecture + Design

International Research
Michael Battle, music and humanities

Outreach
Carli E. Zipper, crop and soil environmental sciences

Research
T. Daniel Crawford, chemistry
Stephen R. Prince, theatre and cinema

Teaching
Alan D. Weinstein, music
Jane A. Wermhoener, English

William E. Wine Awards in Teaching
Billie L. Lapczynski, theatre and cinema

Undergraduate Academic Advising
Deborah L. Polko, engineering education

Chapter Awards
Alumni Distinguished Achievement Award
Satish V. Kulkarni, ’72

University Distinguished Achievement Award
Jean Harshbarger Dodge, ’74

Graduate Alumni Awards
William H. Ruffner Medal
Samuel L. Lönngren Jr., ’62

1971 Alumni Association Annual Report
Announcing the 2013 travel tours:

Legacies and Landscapes of Cuba
Distant Horizons
Jan. 4-15 | from $5,840*
(includes airfare from Miami)

Ancient Mysteries of the Americas
Go Next—Oceania Cruises’ Regatta
Jan. 5-23 | from $3,499* (air included)

Jewels of Southeast Asia
AHI—MY Jagan Odyssey
Feb. 1-19 | from $5,195* (special reduced air available)

Caribbean Discovery
Go Next—Oceania Cruises’ Riviera
Feb. 12-22 | from $1,999* (air included)

Marvels of the Panama Canal
Vacations To Go—Celebrity Cruises’ Infinity
April 16-May 1 | from $1,594*

Italian Inspiration
Go Next—Oceania Cruises’ Riviera
April 27-May 5 | from $1,799*
(air included)

Antebellum South
Go Next—Great American Steamboat
Company’s American Queen
May 10-19 | from $2,295*

Italy—Sorrento
AHI—Alumni Campus Abroad program
May 22-30 | $2,795*

Virginia Tech Grad and Young Alumni Trip
Europe itinerary
May 28-June 15 | $3,543

European Mosaic
Go Next—Oceania Cruises’ Nautica
June 5-13 | from $2,199* (air included)

European Tapestry
Hosted by College of Engineering Dean Richard Benson
Go Next—Oceania Cruises’ Nautica
June 12-20 | from $2,199* (air included)

Discover Switzerland
AHI
Aug. 28-Sept. 12 | $3,995*
15-day land journey

Discover Danube Passage
AHI—MS Amadeus Brilliant
Sept. 6-20 | from $4,395*

British Isles and Norwegian Fjords
Go Next—Oceania Cruises’ Nautica
Aug. 14-27 | from $4,999* (air included)

Palladian Europe
Go Next—Oceania Cruises’ Riviera
Sept. 15-28 | from $4,999* (air included)

Pearls of the Mediterranean
Go Next—Oceania Cruises’ Riviera
Oct. 10-18 | from $2,199* (air included)

Villages and Vineyards of the Mosel, Rhine, and Main Rivers
AHI—MS Amadeus Diamond
Oct. 14-22 | from $2,895*

Greek Isles Odyssey
Go Next—Oceania Cruises’ Nautica
Oct. 17-25 | from $2,199* (air included)

Alaskan Adventures
Hosted by College of Architecture and Urban Studies Dean Jack Davis
Go Next—Oceania Cruises’ Regatta
Aug. 5-12 | from $1,999* (air included)

Grand Danube Passage
AHI—MS Amadeus Brilliant
Sept. 6-20 | from $4,395*

Black Sea Serenade
Go Next—Oceania Cruises’ Nautica
Sept. 15-28 | from $4,999* (air included)

Island Escape
Vacations To Go—Royal Caribbean’s Navigator of the Seas
Dec. 8-15 | $594*

St. Tropez
Feb. 15-16
Food for Thought: Culinary and Wine Experience
May 10-11
Focus on Photography 2013
June 21-23
Corps of Cadets Alumni Weekend
July 12-13
Virginia Tech Admissions Weekend
July 19-21
Special Weekend for Alumni

*Dates and prices are subject to change. Pricing is based per person on double occupancy. Pricing is without air, except as noted.

The Alumni Association encourages all alumni to consider purchasing travel insurance. Learn more at www.alumni.vt.edu/travel/insurance.

Travel insurance

2013 Drillfield Series
www.alumni.vt.edu/drillfieldseries

Belize
St. Tropez
Annie Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Invite your friends to join you in the Legends.

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?

Annu Slusser Albert
Charles R. Carder III
Philip L. Baird Jr.
Thomas R. Booth
Charles D. Hall
William H. Ligon
John J. Richardson
Richard M. Hylton
Carl M. Eggleston
W. L. Cobb

Live in the Shadows of Lane Stadium and Cassell Coliseum

How close do you want to be?
John E. Evans (EE), Charlestown, Va., 6/12/12.

Richard L. Hoffman (FDSC), New Bedford, Mass., was appointed to the Academy of Environmental Engineers.

William S. Porterfield (FDSC), Mobile, Ala., received Virginia Tech’s 2012 Sporn Award for Excellence in Undergraduate Education.

Harry M. Channell (EE), Bradford, Pa., 5/26/12.

Brendan J. McDonald (PSCI ’94) and Courtney R. Thurston, Columbia, S.C., 7/10/11.

Leroy E. Hoover, Jr. (DE), Richmond Va., acted as chairman of the Retiring Chairman’s Committee.

Raymond L. Morrison Jr. (PSCI), Chesterfield, Va., is a real estate agent for Colliers International.

Dion D. Johnson (ME, ’79), Blacksburg, Va., was elected Fellow of the Society of Aeronautics and Astronautics Engineers International.

Kathy Largen Patterson (PSCI ’81), Blacksburg, Va., was named the National Board Certified Teacher Certification from the National Board for Professional Teaching.

Saﬁr Rahman (EE), McLean, Va., received the Divisional Professional Leadership Award from the Institute of Electrical and Electronics Engineers.

Mary Lynn Richmond (EDMP, ’81), Elm Grove, N.Y., published an article entitled “The Halloween Dance” and “First Communion Day” in Looking Back Magazine.

Clare Cassell Harmon (MGT ’72), Blacksburg, Va., 12/6/11.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.

Matthew J. McGinniss (SOC), Mobile, Ala., received Virginia Tech’s 2012 Alumni Distinguished Service Award for his contributions to Virginia Tech.

John R. Lawson II (IE), Salem, Va., was inducted into the Academy of Distinguished Alumni in Virginia Tech’s Ye Department of Civil and Environmental Engineering.

William B. Rhodon (EE), Huntersville, N.C., was appointed to the Board of Governors of the International Council on Large Electric Systems.
Principles of Emergency Medicine, Rescue, and First Aid by Charles E. Watson (ENGL), Manhattan, Kan., was named Kansas Society of Professional Engineers (KSPE) 2012 SME Award for Outstanding Contributions to the Kansas Engineering Profession.

The tutoring program focuses on what the children are currently struggling with in school. A teacher hired by Hope Shines works with a team of translators, most of whom are college students in the Generation Rwanda teachers program, which provides full financial support for Rwandan students attending college. Riegler said Hope Shines is fortunate because the same group of children returns each year to build relationships with the kids and provide role models for them. This year, the tutoring program expanded from four to six months. “Our goal is a year-long program, so we’ve been taking small steps in that direction,” said Riegler. “We see it continuing to build. We never want to let the kids down and make them false promises. So, when we say we’re going come back, we always do.”

Emily Goodrich, a sophomore English major, is an intern with Virginia Tech Magazine.

Virginia Tech Magazine 64 2012

A beacon of hope for orphans in Rwanda by DREY GOEDDE

In 2007, April Riegler (clothing and textiles ’00) took a trip to Rwanda that changed her life. After meeting with children at the Robero Orphan Centre in Kigali, Riegler was inspired to create a program, Hope Shines, to provide those children with an education.

“I started the program in 2007 by fundraising and gathering volunteers,” said Riegler. Among those volunteers was Dan Gladden (wood science and forest products ’90), who runs the sports day camps every other year; Maxime Marcot, a freshman university studies major and a cadet; and a number of other Virginia Tech students who volunteer their time and skills for the nonprofit.

“We’ve kept a close relationship with my professors in clothing and textiles and work with [professors] to run a contest for design students to design the camp T-shirts,” said Riegler. “I want to keep Tech involved; it is meaningful to have that community of Hokies.”

Hope Shines began its program in Rwanda with a one-week day camp in 2008 and has expanded to include a second week of day camps and a new tutoring program.

“We focus on creative learning,” Riegler said. “A lot of the education in Rwanda is ‘repeat after me,’ rote memorization. We try to provide full financial support for Rwandan students attending college. Riegler said Hope Shines is fortunate because the same group of children returns each year to build relationships with the kids and provide role models for them. This year, the tutoring program expanded from four to six months. “Our goal is a year-long program, so we’ve been taking small steps in that direction,” said Riegler. “We see it continuing to build. We never want to let the kids down and make them false promises. So, when we say we’re going to come back, we always do.”

Emily Goodrich, a sophomore English major, is an intern with Virginia Tech Magazine.
Richard D. Lewis (HNF ’96), Athens, Ga., was recognized with the University of Georgia Foundation Professorship in Family and Consumer Sciences.

You’ll just love all of the seasons here. Especially when blue and green give way to orange and maroon!

Whether it’s tailgating with friends and enjoying a Tech game, gardening or spending time with family, you want a retirement community that’s a reflection of your personal interests. Set against the beauty of the Blue Ridge and Allegheny mountains, The Glebe is a vibrant community where you can choose a spacious cottage or apartment home, as well as have plenty of opportunities to enjoy the things you love to do. To learn more, call us today. You’ll just love all of the seasons here.

Feed your Hokie Spirit with the VT NetLetter, a slice of campus life delivered monthly to your email inbox. Make sure you’re on our list. Update your email address at www.alumni.vt.edu/gateway/index.html.

- Get the latest need-to-know news
- Explore online features and Web extras
- Read exclusive essays about former alumni
- Keep up with Alumni Association news and events
A stroke in 2004 caused him to lose his sight and change his professional goals. William Catterton (ex-college '99) found success in an unexpected ca-
reer. Catterton had nearly finished his master's degree in electrical engineering when he suffered the massive stroke. “I couldn’t tell when the lights were on or off. I was having trouble getting around, I had to feel my way around,” he said. “It was a pretty terrifying experience.”

Catterton completed a master's degree despite his visual impair-
ment. He realized, however, that he could not pursue a career
in electrical engineering and decided to teach instead. “I made
money in college by tutoring in math and physics. I can still write
on a white board, and even though I might not be able to see
what I’m writing, whoever I’m talking to can still read it.”

CressFit Carmelita High School, a private school in Los Angeles, hired Catterton as an advanced calculus teacher. “My blind-
es didn’t seem to deter them very much, and I really give them
credit for that. I could imagine they were nervous to let a blind
guy start teaching, but they gave me a chance,” he said.

Catterton, who walks one mile to school every day, said his stu-
dents have responded positively to his impairment.

In addition to teaching, Catterton also has a passion for swim-
ing. He started swimming during his junior year and looked to the sport as a form of rehabilitation after the stroke. “It’s exercise I can still
associate in the right way, and to be
honored in that way
was just tremendous.”

Catterton completed a master’s degree despite his visual impair-
ment. He realized, however, that he could not pursue a career
in electrical engineering and decided to teach instead. “I made
money in college by tutoring in math and physics. I can still write
on a white board, and even though I might not be able to see
what I’m writing, whoever I’m talking to can still read it.”

CressFit Carmelita High School, a private school in Los Angeles, hired Catterton as an advanced calculus teacher. “My blind-
es didn’t seem to deter them very much, and I really give them
credit for that. I could imagine they were nervous to let a blind
guy start teaching, but they gave me a chance,” he said.

Catterton, who walks one mile to school every day, said his stu-
dents have responded positively to his impairment.

In addition to teaching, Catterton also has a passion for swim-
ing. He started swimming during his junior year and looked to the sport as a form of rehabilitation after the stroke. “It’s exercise I can still
associate in the right way, and to be
honored in that way
was just tremendous.”

Jenn Bates is a junior communication major, and a intern with Virginia Tech. This story is part of the class notes project.

Virginia Tech Magazine
October 2012
www.vt.edu/autumn12.html

How Tech Ticks answers are provided on page 14
1) Smyth Hall, 2) Eggleston Hall, 3) Saunders Hall, 4) Hillcrest Hall, 5) Smyth Hall

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.

Blair A. Eason (MKT '05) and B.T. Nelson, Virginia Tech, married 5/26/12.
Mark J. Lawson (CSA '05), CSA '99, CSA '99 and Christ-
ina M. Obuom (LAB '09), Chilhowie, Va., married 5/12/12.
The lobby of Randolph Hall is home to DreamVendor, a 3-D printing machine that allows students to create small objects in quick fashion. "If you can dream it, we can build it," said Assistant Professor of Mechanical Engineering Christopher Williams.
We set up a photo booth on our campus and asked students how they are inventing the future. The student story featured here represents just a small sampling of the innovative work that is being done at Virginia Tech.

“I invent smiles, giggles, and discovery.”

Samantha Hugo is inventing the future by designing playgrounds for children with special needs. For many kids, these playgrounds open windows to a new world of discovery. Samantha, a student in Virginia Tech’s top-ranked landscape architecture program, is creating innovative solutions to real-life challenges through her work in the classroom and the community. It’s how we are bettering the world. It’s how students like Samantha invent the future.