



We Remember

A community's resilience on the fifth anniversary of April 16

Automatic

In the region's booming tech sector, robotics company thrives

From us to you

Welcome to your alma mater's redesigned magazine

A full-page background image depicting a surreal space scene. A massive, dark, jagged rock formation dominates the center. In the background, a large, reddish-orange planet is visible against a starry sky. In the foreground, on a reddish, rocky surface, there are two small figures: a person in a white spacesuit on the left and a small, white, bipedal robot on the right. A small, blue, four-wheeled rover is also visible on the left.

THE SCIENCE OF INSPIRATION

HOKIES ENVISION THE NEXT SPACE ODYSSEY

contents

features

Automatic: Like many others in the region, robotics company thrives

Squarely nestled in the Roanoke and New River valleys, the nexus of academia and business is plainly visible in the burgeoning success of companies such as TORC Robotics. In the first installment of a series on the region's tech sector, we examine the increasingly important links between a research university and job creation. **PAGE 14**

The Science of Inspiration: Hokies envision the next space odyssey

From Blacksburg to Houston to Mars, Hokie alumni and faculty weigh in on the future of space flight, including NASA's role in society, traveling farther out into the solar system, and the privatization of the industry. **PAGE 20**

Who's Running the Country? How appointees impact government performance

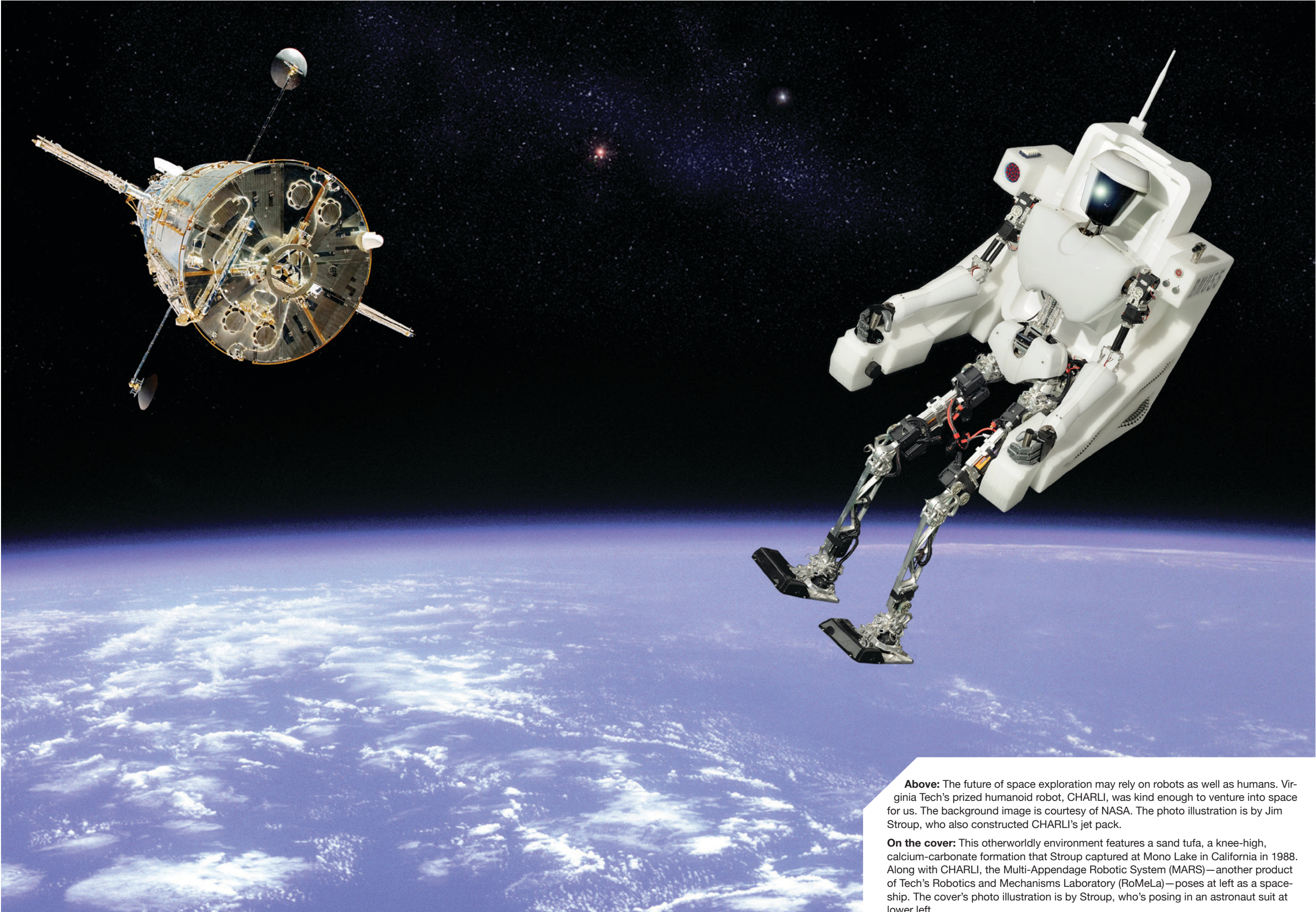
Surveys show that the majority of Americans agree that the federal government is broken, but few understand the complex workings of the system. Researcher Matthew Dull examines the role of political appointees. **PAGE 29**

We Remember: The fifth anniversary of April 16

Five years after the April 16 tragedy, five members of the Virginia Tech community reflect on the resilience, strength, and warmth of the Hokie Nation. **PAGE 32**

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Above: The future of space exploration may rely on robots as well as humans. Virginia Tech's prized humanoid robot, CHARLI, was kind enough to venture into space for us. The background image is courtesy of NASA. The photo illustration is by Jim Stroup, who also constructed CHARLI's jet pack.

On the cover: This otherworldly environment features a sand tufa, a knee-high, calcium-carbonate formation that Stroup captured at Mono Lake in California in 1988. Along with CHARLI, the Multi-Appendage Robotic System (MARS)—another product of Tech's Robotics and Mechanisms Laboratory (RoMeLa)—poses at left as a spaceship. The cover's photo illustration is by Stroup, who's posing in an astronaut suit at lower left.

A Plan for a New Horizon

by CHARLES W. STEGER '69



president, the state has slashed our budgets precipitously. In each instance, the deans, vice presidents, and department heads relied on the common themes of our six-year plans to make investment decisions about Virginia Tech's future.

Long-range plans provide guideposts, not a blueprint, for the future. Our mission and core functions change little over time. However, how we implement our roles can change significantly in just six years' time. Although the previous plans called for emphasis on certain life-science research sectors, for example, we never identified the establishment of a school of medicine or human-health research institute. Yet, that life-science emphasis has radically broadened the institutional research portfolio.

Thus, I encourage you to spend some of your time with the university's Plan for a New Horizon (www.longrangeplan.vt.edu). Our vision for the future of Virginia Tech is far-reaching and dynamic:

- We will be characterized by increased engagement in many dimensions throughout the international arena, including undergraduate and graduate education and research partnerships.
- We will continue expansion of graduate education, particularly in the STEM-H disciplines (science, technology, engineering, math, and health).

"The future will be characterized by geopolitical and geo-economic transition, an accelerated pace of globalization, and structural shifts caused by technological innovation."

The sentiment expressed above opens our dialogue in the next iteration of the university's strategic-planning process. Technology applications and globalization are rapidly changing our patterns of life, business, and education.

Many shy away from formal long-range planning. Many in the academy place little stock in the process. Yet, I have found few documents, few processes, more important to the overall health of the institution than the collective brainstorming and communal commitment embedded in a formal plan for our future. It is an invaluable exercise to engage the entire university community and give voice to people outside of formal leadership roles to help guide the future of the institution.

Most importantly, strategic planning guides decision-making in good times and bad, particularly in terms of resource allocation. Twice since I was appointed

- We will look to create special "faculties" in the health sciences and in computational/informational sciences.
- We will continue to invest in a comprehensive educational portfolio in which the arts, humanities, business, and social sciences have an essential role in individual and social transformation.
- Undergraduate education, characterized by a "hands-on, minds-on" philosophy, will connect real-life experience with academic concepts through actual research experiences or experiential learning. Indeed, we believe that knowledge creation at the undergraduate level helps to differentiate a Virginia Tech education.
- In the interests of efficiency, adaptability, and global competitiveness, we must consider new combinations of majors and minors and encourage students to double-major. E-learning must be an important component of such a strategy.
- We have identified certain themes to undergird our research and outreach expansion—security, resilience, health, and sustainability. In much the same way that "discovery domains" informed the last strategic plan's research portfolio, these themes will inform business, industry, and policy-relevant research.
- Most importantly, we strive for excellence and must continue to stress quality in our students, faculty, and institutional performance. Our marketplace is worldwide, just as the nation's businesses compete globally. Our programs must be among the best as compared to those around the world.

Your alma mater remains strong, and in a year marking the 150th anniversary of federal legislation creating land-grant universities, we are well positioned to continue the tradition of preparing committed and engaged graduates who are ready to change our world. □

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A legacy carved in Hokie Stone

Much has been said about Hokie Stone over the years, but nothing has been mentioned about the stone contractor responsible for a great deal of the stonework completed between 1959 and 1983. My father, Dante O. Martin Jr., was that man.

While his father, my grandfather, was in charge of the stonework on several buildings on campus, notably Burruss Hall, Newman Library, War Memorial Gymnasium, and some classroom buildings, it was my dad who was responsible for the beautiful stonework on a great number of buildings at Virginia Tech. He brought us to live in Blacksburg in 1959, where he bid successfully on one construction project after another. The years passed, and his stonework graced the War Memorial, Lane Stadium, and Rector Field House; classroom buildings such as McBryde Hall and Whittemore Hall; and dorms such as Ambler Johnston, Slusher, Slusher Tower, Pritchard, and Vawter.

There are many more, and I wish I could name them all. But sadly, the one who knows—my father—passed away in 1983, not long after retiring. His last stone project was the new addition to Newman Library.

My mother, Ada A. Martin, still lives in Blacksburg. She always was by dad's side, and she is a wealth of information on all of the years he spent making Virginia Tech more beautiful than it already was. As for me, I love to view the campus as a wonderful set of monuments to my dad.

*Elissa Martin Devens (French '77)
St. Augustine, Fla.*



Living Pylons: A call for submissions

In a series of alumni-penned essays, we want to share with readers the stories from your diverse academic, personal, and professional backgrounds that express how you live out the Pylon values. To be considered, select a Pylon value, and send a 100-word abstract to vtmag@vt.edu.



Correction

In a winter edition Class Notes wedding entry, Erika A. Weiberth's first name was incorrect. Virginia Tech Magazine regrets the error.

From us to you: a refreshed magazine

Welcome, readers, to your alma mater's re-imagined Virginia Tech Magazine.

Starting in early November, as the regular production process continued on the winter edition, a core group of editors and graphic designers began meeting on a weekly basis to redesign the magazine—all of it, from the page numbers to the font, from the table of contents to the paper width.

Drawing from countless other magazines published inside and outside academia alike, we methodically narrowed the stacks into our favorite approaches, mimicking some sections here, inventing others there. Wide-ranging discussions ensued, and our attention to detail was just as rigorous as the way we construct the magazine on a regular basis.

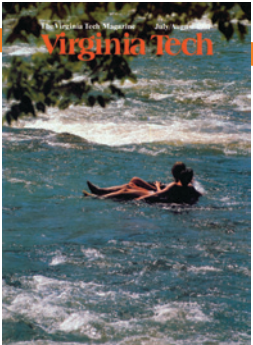
In your hands is the end result, a publication we feel is just the right blend of best practices and brand-new: more contemporary and dynamic while respecting the powerful traditions of the Hokie Nation. Among other features, note the larger paper, larger font size, more-arresting presentation of photographs, and icons for online content.

We invest so much care in the magazine for sound reasons. A fall 2010 readership survey revealed that the magazine is your primary source of collecting information about the university and that it strengthens your connection to Virginia Tech at a rate above the national average for alumni magazines. In a summer 2011 survey, we learned that readers of the print edition remember more of the stories than do our online readers.

In other words, you've told us the magazine is valuable; and if you've read this far, we hope you'll keep turning those pages. As always, we welcome your feedback.

Jesse Tuel, Editor
vtmag@vt.edu

30 years ago



20 years ago



10 years ago



Last year



Addressing issues faced by women in science

Virginia Tech hosted "A Showcase of Female Scientists" to explore the unique struggles of female scientists to balance work and family issues, along with what women in science can do to help advance their careers while maintaining a healthy personal life. The March 12-13 event was organized in part by AdvanceVT, which helps the university prepare, recruit, and retain world-class female faculty members.

Virginia Tech again cited among "best value" public universities

Virginia Tech is again one of the "best value" public universities in the U.S., according to The Princeton Review Best Value Colleges for 2012 list, which consists of 75 public and 75 private colleges and universities. Institutions were selected based on surveys of administrators and students at more than 650 public and private colleges and universities.

Kiplinger's Personal Finance also named Tech to its list of

100 best values in public colleges for 2011-12. The ranking recognizes four-year colleges and universities that combine an outstanding education with economic value. Each year since the ranking began in 2006, Kiplinger's has included Virginia Tech among the top public universities for its value.

Exploring the benefits of the human-animal bond

The Virginia-Maryland College of Veterinary Medicine is adding to the body of evidence about the benefits of the human-animal bond and is also reaching out to the

local community to increase these interactions through the Center for Animal-Human Relationships.

In January, representatives from the veterinary college and its partners convened to form an advisory group to direct the center's clinical and research activities. "We aim to discover new knowledge about the benefits people and animals derive from one another and provide opportunities for people to experience the therapeutic benefits of companion animals," said Dr. Bess Pierce, associate professor in the Department of Small Animal Clinical Sciences.

White House welcomes computer science student

Elena Nadolinski, a freshman computer science major, was one of six women honored at the White House as a recipient of the National Council for Women in Information Technology Award for Aspirations in Computing. The award recognizes young women at the high-school level for their computing aspirations and achievements. Nadolinski was attending W.T. Woodson High School in Fairfax, Va., when she learned of this honor, but the trip to the White House did not occur until December 2011.

Rescue Squad wins life support skills competition

Members of the Virginia Tech Rescue Squad placed first in the Advanced Life Support Skills competition at the National Collegiate Emergency Medical Services Foundation Conference in Baltimore on Feb. 25-26. By winning the event, the Virginia Tech Rescue Squad qualified to compete in the Journal of Emergency Medical Services (JEMS) Games held in Baltimore on Feb. 29. There, the Virginia Tech team placed eighth out of 14, including teams from such major metropolitan areas as New York City.

Jury returns verdict against commonwealth

The trial of Peterson/Pryde v. Commonwealth was heard in Montgomery County in March concerning the deaths of two students in the April 2007 shootings on campus.

A jury returned a verdict against the commonwealth and, in effect, the university. Although the jury returned a large award amount, based on current state code the commonwealth's liability is limited to \$100,000 per plaintiff.

"Certainly, we are disappointed with the decision," said President Charles W. Steger in a letter to the university community. "We stand by

our long-held position that the administration and law enforcement did their best with the information available. The heinous crimes committed by Seung-Hui Cho were an unprecedented act of violence that no one could have foreseen.

"The tragedy of April 16 will live long at Virginia Tech. That sorrowful day brought unimaginable horror and heartbreak. This university community, and especially the families of those who perished or suffered, endured pain that, to this day, is hard to describe."

A decision whether to appeal rests with the Office of the Virginia Attorney General. As of press time, no decision had been made.

Hokie Spirit blooming in Virginia

A daylily adorned in orange and maroon has taken root, courtesy of alumna Linda Pinkham (ornamental horticulture '69). First developed by Pinkham in 2008 at Virginia Tech's Institute for Advanced Learning and Research in Danville, Va., the *Hemerocallis* "VT Spirit" was bred as part of the Beautiful Gardens program, which spurs economic growth of Virginia's plant industry while creating new homegrown plant varieties, according to Lisa Lipsey, program coordinator. Engineered to ensure a prolonged bloom season, the daylily is gaining popularity among Hokie gardeners. Brent and Becky's Bulbs in Gloucester, Va., is the first to offer the "VT Spirit" daylily to customers. "In the future, it will be available at garden centers across the state," said Pinkham.

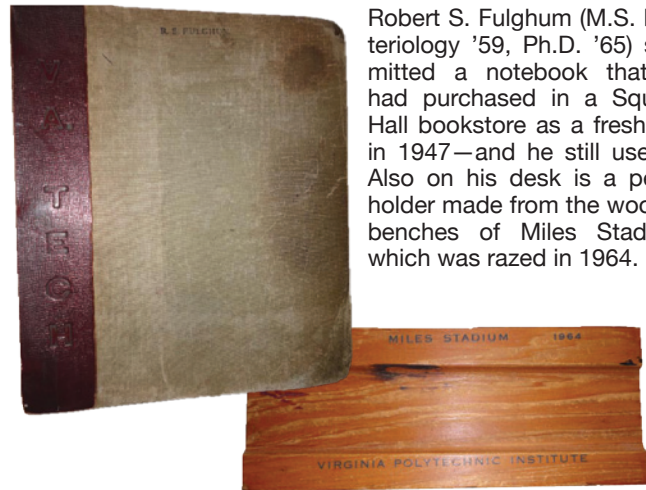
by SARAH FITZGERALD



MICHAEL JAMES DEFAMIO

What do you hold dear, Hokies?

Your passion for Virginia Tech has no doubt led many of you to keep mementos of your relationship with the university. Whether it's a ticket stub from the first football game you attended or a copy of that first paper you aced, we want to share the keepsakes you cherish. Check out www.vtmagazine.vt.edu/mementos.html to see Hokie mementos and also upload your own.



Robert S. Fulghum (M.S. bacteriology '59, Ph.D. '65) submitted a notebook that he had purchased in a Squires Hall bookstore as a freshman in 1947—and he still uses it. Also on his desk is a pencil holder made from the wooden benches of Miles Stadium, which was razed in 1964.

Mark Butler (electrical engineering '86) submitted a rendering of a window on Tech's campus.



Disappearance of mammals in Everglades linked to pythons

Collaborative research led by John "J.D." Willson of Virginia Tech's College of Natural Resources and Environment and Michael Dorcas of Davidson College has linked precipitous declines in formerly common mammals in Everglades National Park to the presence of invasive Burmese pythons. The most-severe declines, including a nearly complete disappearance of raccoons, rabbits, and opossums, have occurred in the remote southernmost regions of the park where pythons have been established

the longest period of time. In this area, populations of raccoons dropped 99.3 percent, opossums 98.9 percent, and bobcats 87.5 percent. Marsh and cottontail rabbits, as well as foxes, were not seen at all.

U.S. News ranks engineering, business, public affairs programs among best

Virginia Tech's College of Engineering again ranked among the nation's 25 best engineering schools for graduate studies, according to U.S. News & World Report's America's Best Graduate Schools 2013

survey released in March. The Pamplin College of Business also ranked high—37th among part-time master's of business administration programs, as did the public affairs program, part of the College of Architecture and Urban Studies' public affairs program.

The latest annual survey ranks the College of Engineering at 24, the same slot it held in the previous report.



To read more about the U.S. News rankings, go to www.vtmag.vt.edu.

At Rolls-Royce plant, Obama discusses economy, partnerships

President Barack Obama touted the Commonwealth Center for Advanced Manufacturing, a private-partnership between Rolls-Royce and Virginia Tech and other leading Virginia universities, during his March 9 visit to the Rolls-Royce Crosspointe plant in Prince George County, Va.

Obama described his proposed National Network for Manufacturing Innovation. Budgeted at \$1 billion, the network will consist of more than a dozen Institutes for



In 2003, we started instrumenting the football players with six accelerometers that measure the head acceleration and transmit that [data] wirelessly to the sidelines, where we capture every single impact in practices and in games. We did this for the past eight years. And if you look at all of our programs, we have over a million head impacts we can analyze, so we know exactly how many times players are hit, what direction, and how hard. We used that information to develop the basis and the foundation for our helmet evaluation system."

—Stefan Duma, professor of biomedical engineering and sciences at the Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, on the research behind a groundbreaking helmet-rating system, the first of its kind to gauge how well commercially available football helmets protect against concussions and other head injuries. Now Duma is studying children's sports helmets.



web extras

View a video interview with Duma at www.vtmag.vt.edu.

Manufacturing Innovation around the nation, each serving as a regional manufacturing hub designed to increase manufacturer competition and encourage U.S. investment, according to the White House.

"It's a partnership between manufacturers—including this one—U.Va., Virginia Tech, Virginia State University ... the commonwealth and the federal government," Obama said of the center. "So think of this as a place where companies can share access to cutting-edge capabilities. At the same time, students and workers are picking up new skills. They're training on state-of-the-art equipment; they're solving some of the most important challenges facing our manufacturers."

Students brainstorm solutions to alleviate retirement problem

What started out as a class project for four Tech seniors and aspiring financial planners has turned into one of the most rewarding experiences of their college careers, said the participants. In recognition of their innovative ideas to address declining savings rates in America, the team won the grand prize in the 2011 iOME. Challenge (Meaning "I owe me," iOME encourages youth to think about their futures.) The students also received a \$10,000 cash prize and an all-expenses-paid trip to Washington, D.C., in late April to present their

ideas to policymakers and members of Congress. The annual competition encourages the 80 million members of the millennial generation to help solve America's retirement problem and change the world by investing now in their own lifelong financial security. The students' proposal? An increase in hands-on financial education and availability of financial counseling.

Kathleen Alexander receives NSF grant to research human-animal linkage in water quality

Kathleen Alexander, associate professor of wildlife in the College of Natural Resources and Environment, has received a \$250,000 National Science Foundation grant to investigate the links between humans' and animals' influences on water quality and, in turn, how water quality affects their health. Alexander's research will focus on the Chobe River region of northern Botswana, where she has lived for most of the past 20 years.



LOGAN WALLACE

Forecast: 70-plus degrees—and snow

The VT Snow Freestyle Team brought winter back to Virginia Tech with SnowJam 2012. On March 15, the student organization piled more than 30 tons of snow onto the Drillfield to host a snowboarding and skiing performance event. Skiers and snowboarders from six colleges and universities showcased their skills on a freestyle arena constructed specifically for the event.



web extras

For photos and a video of the event, go to www.vtmag.vt.edu.

Robert Dunay named a most-admired educator

Robert Dunay, the T.A. Carter Professor of Architecture in the School of Architecture + Design, was named one of the 25 Most Admired Educators of 2012 by the magazine DesignIntelligence. This marks the third time that Dunay, who is also the director of the Center for Design Research, has received such recognition from the magazine, which released its annual list of admired educators in the November/December 2011 edition.

Tech receives funding to develop middle school STEM programs

The School of Education at Virginia Tech and the College of Education at the University of Kentucky were awarded \$1.3 million from the National Science Foundation to implement and evaluate an inquiry-based after-school program for middle school students in Appalachia. The three-year project, entitled “Studio STEM: Engaging Middle School Students in Networked Science and Engineering Projects,”

uses engineering design activities that integrate digital modeling, social media, and game development tools to engage youth in investigating science, technology, engineering, and mathematics (STEM) concepts and skills.

Installation of university’s first major solar panel system under way

The installation of Virginia Tech’s first major solar photovoltaic power system, to be located on the top level of the Perry Street Parking Garage on the Blacksburg campus, is under way. Once completed,

 **web extras**

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the photovoltaic system will include 480 solar panels covering about 16,000 square feet. Annually, the system is expected to generate about 136,000 kilowatt-hours, or about 13 percent of the parking garage’s annual energy use. Scheduled to be completed later this spring, the \$1.2 million project was funded through a grant from the American Recovery and Reinvestment Act of 2009.



WORLD WILDLIFE FUND

For Sumatran tigers, human disturbance leaves nowhere to hide

A new study has found that the Sumatran tiger subspecies is nearing extinction as a result of human activity, particularly the conversion of natural forests into forestry and agricultural plantations, leading to habitat loss.

The study, conducted by Virginia Tech and the World Wildlife Fund (WWF), is the first of its kind to systematically investigate the use of different land-cover types—both forests and plantation areas—for tiger habitat.

The authors—WWF-Indonesia tiger expert Sunarto (Ph.D. fisheries and wildlife sciences ’11), an Indonesian who goes by one name, and co-author Marcella Kelly, an associate professor in the Department of Fish and Wildlife Conservation and Sunarto’s graduate advisor—found that Sumatran tigers strongly prefer forests over plantations of acacia and oil palm trees and tend to avoid plantation areas unless they contain thick, ground-level vegetation and have extremely low levels of human activity.

The most notable find was the tigers’ strong predilection for sites with understory cover—vegetation cover at the ground level—which suggests that the availability of adequate understory cover serves as an environmental necessity for tiger habitat, regardless of location.

The authors hope that the findings can influence habitat management for tigers, which now occupy just 7 percent of their historic range. There are estimated to be as few as 3,200 tigers left in the wild, and fewer than 400 Sumatran tigers.

Three of a kind

Triplets Mike, Matt, and Chris Chegin made life a lot easier for their parents when they chose to attend Virginia Tech. “When we were deciding on colleges, our mom would say, ‘If you go to three different schools and your graduations were on the same day, there’s only two of dad and me, so [who] would get left out?’” Mike said.

Luckily, when the brothers graduate together in May, there’s no risk of that happening.

For the record, there are a few other similarities: Mike, Matt, and Chris each majored in industrial and systems engineering (ISE), played baseball in high school, interned at the same company, joined the same fraternity, and share an apartment and car. They serve as ambassadors for ISE and teaching assistants for a theory class, and their GPAs are all within about a tenth of a point.

“We’ve done a lot of the same things. We’ve even gone on the same job interviews with the same qualifications, and they [the interviewers] thought it was a prank. But we’re all trying to branch out also,” said Chris.

As they prepare to leave Tech, the triplets are receptive to the possibility of separating. Matt, the oldest of the three by “just a minute or two,” has accepted a job for a consulting company. “I’m

happy to have a job lined up, but at the same time, I can’t be completely excited yet because these two [Mike and Chris] are still looking,” said Matt. “Once they find something, then we can all be happy.”

“It’ll be interesting to see what happens in the next few months, but we’ve enjoyed our time here together. It’s probably a good thing to go on our own paths and have our own experiences,” said Mike.



LOGAN WALLACE

(From left) Chris, Mike, and Matt Chegin

by ROMMELYN CONDE '07

Solar house team wins prestigious architectural award

The team behind the Virginia Tech Lumenhaus has been awarded a 2012 AIA Honor Award for Architecture from the American Institute of Architects. The award is considered among the highest accolades given to practicing architects and marks the first time a university team has received the honor.

 **web extras**

For full coverage of Lumenhaus, visit www.vtmag.vt.edu.

The innovative solar house, which provides all the amenities of a modern home while drawing no outside electricity, was designed and built by faculty and students from the School of Architecture + Design and other schools within the College of Architecture and Urban Studies (CAUS), as well as several departments in the College of Engineering.

“It is truly remarkable that our academic team can compete and win against the top professional architecture firms in the country. This is one of the highest honors we can achieve as architects and designers,” said Joseph Wheeler, an as-

sociate professor of architecture who led the project with fellow faculty members Robert Dunay, David Clark, and Robert Schubert.

Said CAUS Dean Jack Davis, “This outstanding academic team has placed design research and the practice of architecture at the highest level in both the national and international arenas. [The Lumenhaus] is not simply testing an idea until it appears to work; this is the sharing of critical knowledge through excellence in design, detailing, and construction for the greater public good.”

“I teach because it’s an exciting environment. It’s a discovery every day. Every day, it’s new. Every day, there [are] new problems, new things to solve. And every day, one of my students does something amazing.”

—Ed Dorsa, associate professor, College of Architecture and Urban Studies, in the “My Virginia Tech” video series.

 **web extras**

Search www.vt.edu for the “My Virginia Tech” series, and we promise you’ll be delighted. The series aims to give an inside look at Virginia Tech through the words and experiences of students, faculty, and staff.

The lint rollers resting on a windowsill inside the main entrance to Brodie Hall testify to a truism anyone who's spent time on the Virginia Tech campus can tell you: Cadets must pay an impressive amount of attention to their attire.

The training begins early. Each July, new cadets file into the university's tailor shop for fittings. Led by manager Dean Miller, the shop's staff of six prepares uniforms. The "Dress A" uniform (worn by Daniel Tolbert at right) is one of the most recognizable. Let's take a look at the significance of selected elements—and the exacting standards in which they're displayed.

A Tailored Tradition

by ROMMELYN CONDE '07

1 Service cover

The cover is worn with the visor two finger-widths from the nose. Upperclassmen have the privilege of wearing the wind strap down, which helps keep the cover in place. Gold bands identify officers and silver bands identify fifth-year cadets.

Many cadets line the inside of their covers with photos. "The pictures that I keep in my cover are of me and my little brother and sister. I am the oldest of seven children, and they are the youngest. ... Having them in my cover is a constant reminder of my love for them," said cadet Jacqueline Jackson (at left).

2 Collar detail

Commonly referred to as a headlight, a brass VPI insignia is placed on the left side of the collar; seniors wear their branch of service insignia instead. On the right side of the collar, among other variations, Civilian-Leader Track cadets wear a crossed cannon disk or a sword pin, and underclassmen wear a ROTC headlight. Cadet Meghan Gilliam and her collar are pictured below.

3 Blue blouse

While seated, cadets may unzip the blouse up to two inches. "It can get pretty warm wearing the blouse because it's wool-lined, but you can't take it off. You can unzip it to a certain point, but your undershirt can't be seen," said cadet Daniel Syed Jr.

The tailor shop performs a critical function: ensuring that each cadet's appearance leaves a lasting impression. For the 2011-12 academic year, here's a sample of some of the items the tailor shop ordered, according to shop manager Dean Miller.

Blue blouses: 218 • Gray short-sleeve shirts: 542 • Gray long-sleeve shirts: 616 • White trousers: 900 • White shirts: 1,492 • Gray trousers: 596 • Battle dress uniform shirts: 474 • Battle dress uniform trousers: 600 • Sweatpants: 450 • Sweatshirts: 456 • Gray T-shirts: 1,080 • White T-shirts: 1,188 • Shorts: 1,050 • Brown T-shirts: 756 • Cadre T-shirts: 588 • Maroon polos: 534 • Shoes, various styles: 1,420 • Covers (hats), various styles: 1,646 • Boots: 388



PHOTOS BY JIM STROUP AND ANNE WERNIKOFF

Citation cords 4

Cords are worn on the left shoulder of the blue blouse and signify membership in a particular organization or unit. Every company vies to earn one of the corps' most-coveted privileges, the Beverly S. Parrish Jr. Memorial Award and its accompanying gold citation cord, which indicates the unit that accumulates the greatest number of competitive points for the academic year.

Insignia of rank 5

Indicative of rank, chevrons are cut by hand at the tailor shop, where at least 750 pairs are made each year, Miller said.

Crossbelts and wrap 6

Underclassmen in "Dress A" wear both crossbelts, while seniors wear only one crossbelt and a maroon officer-of-the-guard wrap.

Saber 7

Officers may carry a saber. "The corps provides sabers to seniors who want to have them. ... I decided to use my own saber, which is like a family heirloom. It dates back to the Civil War and is one of my most prized possessions," said cadet Daniel Tolbert (at left).

Ribbons, pins, medals 8

Ribbons, pins, and medals are added in recognition of accomplishments, membership, and special distinctions.

Class service stripes 9

Gold stripes near the cuffs of the blouse sleeves signify the number of years a cadet has been in the corps and indicate a cadet's privileges, duties, and position eligibility. The glove, meanwhile, may be cut to reveal a class ring.

Shoes 10

Black, plain-toed, low-quartered shoes must always be immaculate. "Typically, we probably spend 15 minutes twice a week polishing shoes. Once you've been polishing them for a while, it doesn't take as long," Tolbert said.

Rommelyn Conde (communication '07) is a graduate assistant for University Relations.



web extras

Unlike that of a typical undergraduate's closet, the contents of a cadet's closet are highly regimented. Visit www.vtmag.vt.edu for an audio slideshow as cadets walk us through what's in their closets. You'll also find photos of cadets modeling the various uniforms.

Gary Downey: When Worlds Collide

by SARAH FITZGERALD

Snowflakes fell gently outside a Lane Hall classroom on a Wednesday morning. Inside, as graduate students filtered in, Gary Downey prepared for another educational expedition. The Alumni Distinguished Professor of Science and Technology in Society (STS) guided the students through “check-in”: Each person shared stories, issues, or concerns, weaving an oral tapestry that depicted their intersecting and divergent paths of life.

“Each class is an experiment. I never know where it’s going to go, and that’s incredibly exciting,” said Downey. “I’m challenging students to become critical of their own knowledge and values and to understand the world through others’ eyes, and I get to learn from them in the process.”

These expeditions into the minds of his students have become a trademark of Downey’s teaching. Investigating how knowledge shapes people has allowed him to link research, service, and teaching, and his dedication earned him the State Council of Higher Education for Virginia’s 2011 Outstanding Faculty Award.

As an undergraduate at Pennsylvania’s Lehigh University, Downey began his studies in mechanical engineering. But his interest in controversies over nuclear power and the environment would reshape his educational trajectory.

“I understood everyone’s arguments, both for and against, because I was well-trained in a technical sense as an engineer,” said Downey. “What I couldn’t understand is why they were arguing. What was at stake, politically or ideologically? The more I studied the debates, the more I got interested in the social dimensions of the issues at hand, and that really changed things for me.”

Downey transferred into a five-year program that led to degrees in both engineering and social relations and then took a “flying leap,” as he called it, into cultural anthropology at the University of Chicago. Uniting the technical nature of engineering with liberal arts took full flight when Downey, teaching STS at Tech, decided to focus on the study of engineers themselves. He wanted to delve more deeply into a personal observation—that an engineer’s technical thinking process often relies on solving a problem rather than thinking about how the problem is defined and how others might define it.

“I often found that, for me as well as many other engineers, we’re learning to solve problems and get [the answer] right. It’s either right or it’s wrong. You do this enough times, there’s a predisposition, a tendency, to divide the world into two parts: right and wrong. I became interested in how engineers can learn to work effectively with both

engineers and non-engineers who define problems in a different way than they do.”

Downey’s inventive interdisciplinary approach played a foundational role in the developing field of engineering studies, which draws on but extends beyond STS. As his teaching assistant, Tom Faigle, said, the field “explores the questions that engineers often ask but don’t have the [time or training] to explore.”

Sumitra Nair, a Ph.D. advisee of Downey, admired his professor’s approach. “His view that ‘we’re all in this together’ ... tells us that there is value in re-examining ideas, to never assume we know something fully from the inside out.”

In his construction of the engineering studies field, Downey first developed a new course, Engineering Cultures. By composing video lectures and making them available online at no charge, Downey extended his lessons beyond Blacksburg. Since the 1990s, more than 10,000 students and engineers from all over the world have benefited from Downey’s teachings;



Leaning into life: Around Blacksburg, Downey is known for his moped—and his sense of humor.

LOGAN WALLACE

and as the class’s popularity grew, so did interest in expansion of the field.

The professor’s focus on contrasting perspectives caught the eye of the departments of sociology, women’s and gender studies, and engineering education at Tech, all of which extended him the title of affiliated professor.

Downey built the infrastructure for an entire professional society as founding organizer of the International Network for Engineering Studies. He is also founding editor of the organization’s journal, Engineering Studies, and editor of a book series by the same title—all in addition to a frenzied schedule of workshops, lectures, research publications, and teaching. While many may find his undertakings and accomplishments overwhelming, Downey said there is much more to do.

“My ambitions far exceed my capabilities; the work is just getting going. I’m proud, in a way, of having solved a difficult identity crisis I long had, as an engineer who was also an anthropologist and an STS scholar, [of] how to pull that all together.

— continued on page 40

About Downey

- Internationally recognized as a leader in engineering studies, committed to asking questions such as “What is engineering for?” and “What are engineers for?”
- Alumni Distinguished Professor of Science and Technology Studies (STS), affiliated professor in women’s and gender studies, sociology, and engineering education
- Outstanding Faculty Award, State Council of Higher Education for Virginia, 2011
- Virginia Tech awards: William E. Wine Award, 2004; XCaliber Award for high-quality instructional technology, 2003; Diggs Teaching Scholar Award, 1997
- Author or editor of four books and three special journal issues, including “The Machine in Me: An Anthropologist Sits Among Computer Engineers”

web extras

For a glimpse into Downey’s personality, go to www.vt-mag.vt.edu to watch a video of his fall 2008 commencement speech.

The **nexus** of ACADEMIA and **Jobs**

If you have not been back to campus or the New River Valley in recent years, you might not recognize your alma mater or the region. There are new highways, roads, and shopping centers; however, the changes are more than physical: The New River and Roanoke valleys have become a tech hub for the southwest corner of Virginia.

Beginning with this edition, Virginia Tech Magazine will feature periodic articles highlighting local entrepreneurs, university spin-offs, the technology-business community, and the increasingly important academic connection between a research university and job creation.

A 2009 study by the Roanoke Blacksburg Technology Council (RBTC) revealed that tech companies comprise 18 percent of regional employment. The study estimated almost 40,000 tech-sector jobs in the greater Roanoke and New River Valley regions. Additionally, the area added 382 new tech companies between 2002 and 2009.

Whether you enjoyed your college years in the '60s or '90s, or just finished your degree last year, you know the special quality of life in Blacksburg and Southwest Virginia. Yet, many Virginia Tech alumni are surprised to also find a vibrant and mature business infrastructure that supports local startups or relocated businesses. We invite you to read on, share your thoughts about job creation, and consider how you might be part of this special community.

As always, we welcome your response to this series and other parts of the magazine.

Robotics'R'Us:
TORC Robotics co-founder and CEO Michael Fleming '02, '03, with his team.



JOHN MCCORMICK

AUTOMATIC

Like many others in the region,
robotics company thrives

by RICHARD LOVEGROVE

As Michael Fleming and a visitor walked by, TORC Robotics software writers were “in the zone,” and Fleming was loath to interrupt their concentration. He knows precisely where a large part of the magic happens for his company, a rising star in the highly competitive autonomous vehicles industry.

Touring TORC in the Virginia Tech Corporate Research Center (CRC), Fleming (mechanical engineering '02, M.S. '03), the company's CEO and co-founder, also pointed out a lab where engineers build and assemble robotics prototypes. He noted the communications specialists working on publicity for the company's latest project for the U.S. Marine Corps, the Ground Unmanned Support Surrogates (GUSS). The business team was huddled in a glass-walled conference room, planning an upcoming project.

Collectively, TORC's components demonstrate why this university spinoff company is a success story—one of many in the Roanoke and Blacksburg regions. Technology companies account for 18 percent of regional employment; and between 2002 and 2009, the area added 382 such companies, according to a 2009 study by the Roanoke Blacksburg Technology Council (RBTC).

Founded in 2005 and now employing about 35—with plans to add more in the near future—TORC itself is a microcosm of this remarkable regional growth. Fleming arrived at Virginia Tech in 1997, and while earning his undergraduate and master's degrees and engaging in robotics research, including an intelligent ground vehicle competition that Tech won five years in a row, he spotted a disturbing trend. Bright and talented students would work with exceptional professors to develop groundbreaking innovations, only to “graduate and their technology would die,” Fleming said. “And then the cycle would repeat itself. ... Technology needed to be transitioned and commercialized to change the world and make robotics commonplace in society.”

In response, Fleming—who apologizes when his passion for robotics repeatedly carries him off on tangents—co-founded what is now known as TORC Robotics with the mission, as he describes it in the most basic terms, “of developing commercial technology that allows a computer to do what you and I do driving from home to work every day.” Generally speaking, TORC concentrates on software and systems technology “building blocks” that allow the hardware (vehicles) to see what humans see, plan the

way humans plan, and control itself the same way people control vehicles with their hands and feet. The company installs and calibrates robotic components, such as actuators, sensors, and computers, that turn formerly manned vehicles into autonomous ones. Often, TORC partners with Virginia Tech professors and students who specialize in the hardware.

In the early days, TORC worked with engineering professors Charles Reinholtz (who has since left Tech), Al Wicks, and Dennis Hong—who were overseeing the DARPA Urban Challenge effort at Tech—along with the professors' students. They jointly converted a Ford Escape Hybrid into an autonomous vehicle that successfully navigated 60 miles of urban environment and took home a third-place prize of \$500,000 in 2007. “These professors were supportive of the Virginia Tech-TORC partnership,” Fleming said. “Without their support and vision, TORC would not be where we are today.”



Driven: TORC and Virginia Tech are developing GUSS, the Ground Unmanned Support Surrogate. Among other tasks, the vehicle can carry heavy payloads so that Marines don't have to.

COURTESY OF TORC ROBOTICS



JOHN MCCORMICK

“We can set our own rules and when you hire great people, you don't need a lot of rules.”
—TORC's Michael Fleming '02, '03, pictured at left

In a world where technology changes so fast that by the time an inventor obtains a patent the technology might no longer be useful, partnerships are essential for a research university. “The focus of the collaborations is to leverage the research capabilities of the university with the commercialization capabilities of a small business,” said Wicks, who pointed out that collaborations such as the one with TORC also give teachers more time to focus on their primary “deliverable”—educated students. “TORC is a great example of the talent we have at Tech,” he added.

Companies such as TORC benefit from an entrepreneurial mindset among Tech faculty members. As president of Virginia Tech Intellectual Properties (VTIP), Mark Coburn oversees an organization that helps faculty members and researchers measure the

commercial viability of their ideas and bring inventions to the marketplace. Compared to the average, VTIP counts twice as many patent applications, issued patents, and disclosures per university research dollar, Coburn said. And while Tech administrators do their part in supporting an entrepreneurial culture, Coburn noted that “there seems to be a bubbling up from the bottom of entrepreneurialism, and I think it's driven by faculty recognizing [that] their students desire real-world experience.”

Because TORC “planned for success early on” by focusing on what potential customers might want even before starting development, Fleming said, the TORC technology that helped make Tech's Victor Tango DARPA team a winner has found its way both into an autonomous military vehicle that saves lives in Afghanistan by clearing explosives ahead of

“There seems to be a bubbling up from the bottom of entrepreneurialism, and I think it's driven by faculty recognizing [that] their students desire real-world experience.”
—Mark Coburn,
Virginia Tech Intellectual Properties

dismounted soldiers and into gigantic 700-ton Caterpillar surface-mining trucks that will improve safety and profitability. Now the company is working on GUSS, an autonomous mule-like vehicle to carry the equipment that Marines or soldiers usually have to haul on their backs.

A fully established and self-sufficient company that has grown and profited every year since its inception, TORC made use of the advantages offered at the CRC and of the expertise and business-startup assistance provided by VT KnowledgeWorks, from which TORC has since “graduated.” “We were one of the first companies into their program,” Fleming said.

And in an effort to give back to the university, TORC advises and sponsors student robotics teams. Students intern at the company, and Fleming has been working with the university to set up a robotics minor. According to Fleming, the symbiosis of small companies like his working with larger companies and academia has brought millions of dollars to Tech. “It’s apparent to me that [the symbiosis is] working,” he said. “I want to accelerate that.”

Fleming becomes particularly animated when talking about what he envisions in the future. “TORC and Virginia Tech are primed to make autonomous vehicles on public roads a reality in the next five years” because legislative and liability barriers are starting to crumble, said Fleming. In addition, TORC works extensively with the Virginia Tech Transportation Institute (VTTI), which already has an “outstanding” test site for auton-

“

TORC and Virginia Tech are primed to make autonomous vehicles on public roads a reality in the next five years.”

—Michael Fleming '02, '03

mous driving. “We are working to expand the envelope of autonomous technology by increasing the speed at which autonomous vehicles can drive” in highly congested traffic that’s moving quickly, he said.

Back at TORC’s headquarters in the CRC, Fleming has recognized something else valuable: Humans have to play. After all, they’re not robots.

At the end of one hallway is a room with a huge flat screen and Nintendo Wii, right next to the kegerator. Through another door are the poker, ping-pong, and pool tables. All are essential.

“We can set our own rules, and when you hire great people you don’t need a lot of rules,” Fleming said with a grin. “We have a lot of fun at work.”

When a company hires great people, it’s clearly a part of a regional trend. Driven by a prevalence of resources offered from inside and outside the university, the tech-sector is taking on a life of its own. The RBTC study estimated almost 40,000 tech sector jobs in the greater Roanoke and New River Valley regions—proof that those looking to merge into the fast lane of innovative entrepreneurship need look no farther than Southwest Virginia. □

Richard Lovegrove is an editor with University Relations’ marketing and publications unit.

Autonomy: A vehicle built for The Blind Driver Challenge—yet another headline-maker for Virginia Tech—carries the imprint of TORC Robotics. National Federation of the Blind executive Mark Riccobono drove the vehicle at the Daytona International Speedway.



STEVEN MACKAY

web extras

To hear what drives Fleming—and what keeps him up at night—check out the podcast at www.vtmag.vt.edu.

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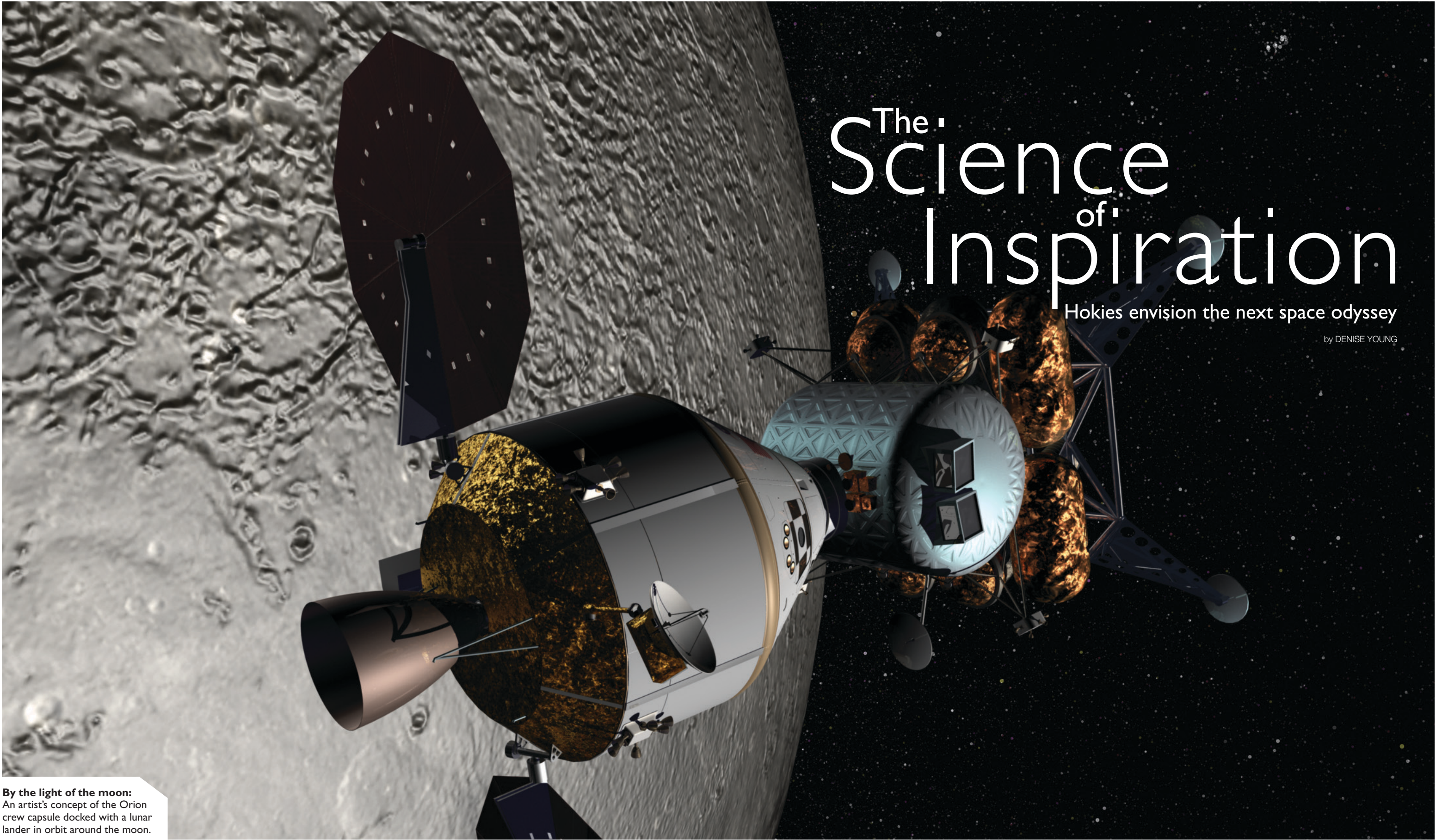
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The Science of Inspiration

Hokies envision the next space odyssey

by DENISE YOUNG

By the light of the moon:
An artist's concept of the Orion crew capsule docked with a lunar lander in orbit around the moon.

COURTESY OF NASA

Standing on the edge of the runway at Kennedy Space Center last July, Chris Edelen (aerospace and ocean engineering '89), a National Aeronautics and Space Administration (NASA) flight director, watched the space shuttle Atlantis return from its final voyage. "It was the culmination of many years in space," Edelen said as he wistfully recalled the moment.

Atlantis may have landed—and along with it, NASA's famed shuttle program—but the moment is far from an end to our quest for the heavens.

Not surprisingly, there seem to be as many opinions about the future of space travel as there are stars in the night sky. At the center of the projections and prognostications, which include everything from robots to asteroid mining to colonies on Mars, is NASA, the U.S. agency that has come to epitomize American innovation. Indeed, since that first small step and giant leap, the agency has remained a shining example of what humans can achieve when they shoot for the stars.

Talk abounds about what trajectory space travel will take in the future, including pushing the boundaries of science and technology and the privatization of space flight. A number of Hokies, faculty and alumni alike, have their sights set upward, studying the sun, the solar system, and the moon; and others are looking closer at the third rock from the sun.

Fire away: A rocket motor designed to mimic NASA's Space Launch System booster is tested at NASA's Marshall Space Flight Center.



COURTESY OF NASA/MARSHALL SPACE FLIGHT CENTER

"I still see NASA's role as pushing the science [of space travel] and also for human exploration of space. NASA is one of the few federal agencies that everyone around the world not only knows of, but also likes," said Virginia Bioinformatics Institute researcher Kevin Shinpaugh. "People see NASA as representing Earth, not just the U.S."

Inspirational science

In the eyes of many, NASA's primary role is as a source of inspiration, pushing the boundaries of technology and science. "I think having that rallying point gives our children something to aspire to, but it also makes us want to push science and technology forward, not just in space, but in our quality of life," said Troy Henderson, College of Engineering (COE) assistant professor and a researcher at the Center for Space Science and Engineering (Space@VT), a group of faculty, students, and staff devoted to investigation of the space environment. As he spoke of NASA's work, he pointed to a drawing of a rocket ship on the whiteboard in his office, sketched in blue and red by his then-6-year-old son. "This is why every kid dreams of being an astronaut at one point or another."

Floyd Bennett (aerospace and ocean engineering '54) was one of those kids. "I never thought of going to college, but in 1950, I said, 'Man's going to go to the moon in my lifetime,' and I wanted to be a part of it." Following graduation, Bennett took a job with the National Advisory Committee for Aeronautics (NACA), NASA's predecessor, and later worked in the Flight Operations Directorate on the lunar landing phase of all Apollo manned

lunar landings. He retired from NASA in 1982. "Working on the Apollo program was like working on a dream. It was something a lot of people wanted to be a part of. We'd looked at [the moon] for so long and didn't know what was up there."

Drawing from the lessons of lunar trips and more, NASA has a knowledge base from which to explore other mysteries. Essentially, the end of the shuttle program opens other doors for the NASA of tomorrow.

"With the space shuttle retiring, it has freed up money to develop the Space

"I still see NASA's role as pushing the science [of space travel] and also for human exploration of space. NASA is one of the few federal agencies that everyone around the world not only knows of, but also likes. People see NASA as representing Earth, not just the U.S."
-Virginia Bioinformatics Institute researcher Kevin Shinpaugh

Launch System (SLS) and the crew capsule known as the Orion, [which] will provide deep-space exploration capability," Edelen said. "Both of those projects are under active [development]. You'd have to cancel the shuttle at some point to free up money for these projects."

Gregory Earle, a COE professor of electrical and computer engineering and Space@VT researcher, pointed to another open door for NASA. "In the '60s, exploration meant an astronaut had to fly on the mission. To my son, who's 10, the video or virtual world is more standard than it was in that era, so to his generation, exploring robotically is normal. I believe that future science missions—20, 30, 40 years into the future—will be almost completely robotic."



Brain trust: (From left to right) Scott Bailey, Troy Henderson, Wayne Scales, Gregory Earle, and Kevin Shinpaugh are among the Virginia Tech experts investigating the next chapter of space exploration.

Whether robotic or manned, those missions could play a critical role in inspiring a new generation of engineers. Bob Castle (electrical engineering '76, M.S. '78), who retired from NASA in 2010, said the agency draws young people toward STEM (science, technology, engineering, and mathematics) disciplines. "There are other countries that don't inspire their kids, and they end up having to import their engineers. And we can't let that happen to this country."

Chris Kraft (aerospace engineering '44), NASA's first flight director and namesake of the Christopher C. Kraft Jr. Mission Control Center at the Johnson Space Center, lamented the role budgeting and politics has played in the agency. "Many [politicians] don't see the value and importance of what space flight does for the country. They don't see that

it promotes new technology; they don't see that it promotes applied technology; they don't see that it promotes education and the need for engineering and science in our country—because our country runs on engineering and science." He credits his alma mater with fulfilling a vital need for brainpower in a technology-driven society. "That's the reason Virginia Tech is so important—to not only Virginia but the whole United States."

Former astronaut Charlie Camarda (Ph.D. aerospace and ocean engineering '90) is doing his part to ensure that today's youth learn firsthand the value of inspirational science and technology. As a senior advisor for innovation at NASA, Camarda teaches young engineers how to use the right side of the brain to look at other ways of solving

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"Many [politicians] don't see the value and importance of what space flight does for the country. They don't see that it promotes new technology; they don't see that it promotes applied technology; they don't see that it promotes education and the need for engineering and science in our country."

—Chris Kraft '44,
NASA's first flight director

problems.

He's also involved in a pilot program being hosted at MIT this summer that will engage students from middle school

to graduate school in applying STEM knowledge to real-world problems. "Kids are losing touch with how course work relates to their passions," Camarda said, noting that the program shows students how their classroom knowledge can lead to scientific advances. "How can students use chemistry and biology to help build a colony on Mars, for example?"

For Camarda, who has the atypical experience of having served both as a research engineer and as an astronaut—at age 44—the pilot program is more than just bolstering enthusiasm for STEM. "Entrepreneurship is the way of the future. Companies become big, bloated, and bureaucratic, and we need to fuel the next generation of engineers and entrepreneurs."

Epic challenges

A dose of that creativity and innovation may well prove valuable when it comes to the future of space flight. With the end of the shuttle program, many have set their sights on a more distant destination: Mars. Not unlike humankind's first flight to the moon decades ago, a journey to Mars presents a unique set of challenges.

Earle, who builds instrumentation for near-Earth orbital and suborbital science missions, said that space is an especially harsh environment—the parts he designs have to be specially made to withstand radiation associated with energetic particles.

Time spent in deep space or zero-gravity

conditions introduces a distinct set of problems, noted Earle. Since the human body evolved based on earthly conditions, preparing a spacecraft to accommodate humans requires precision and forethought. Life-support systems, protection from space radiation, and numerous safety protocols all take time and effort to develop. Zero-gravity conditions affect bone density, and prolonged exposure leads to muscle atrophy. Add those effects to the radiation hazards and it becomes clear that space is a very hostile environment for humans.

"I got to see firsthand how much the emphasis on astronaut health and safety drives the whole operation," said Earle, who worked on two shuttle programs. "Manned missions cost at least 100 times more than unmanned missions. If your money [goes] 100 times further, that's



For a video of Kevin Shinpaugh and his spacecraft-design students discussing their work, go to www.vtmag.vt.edu.

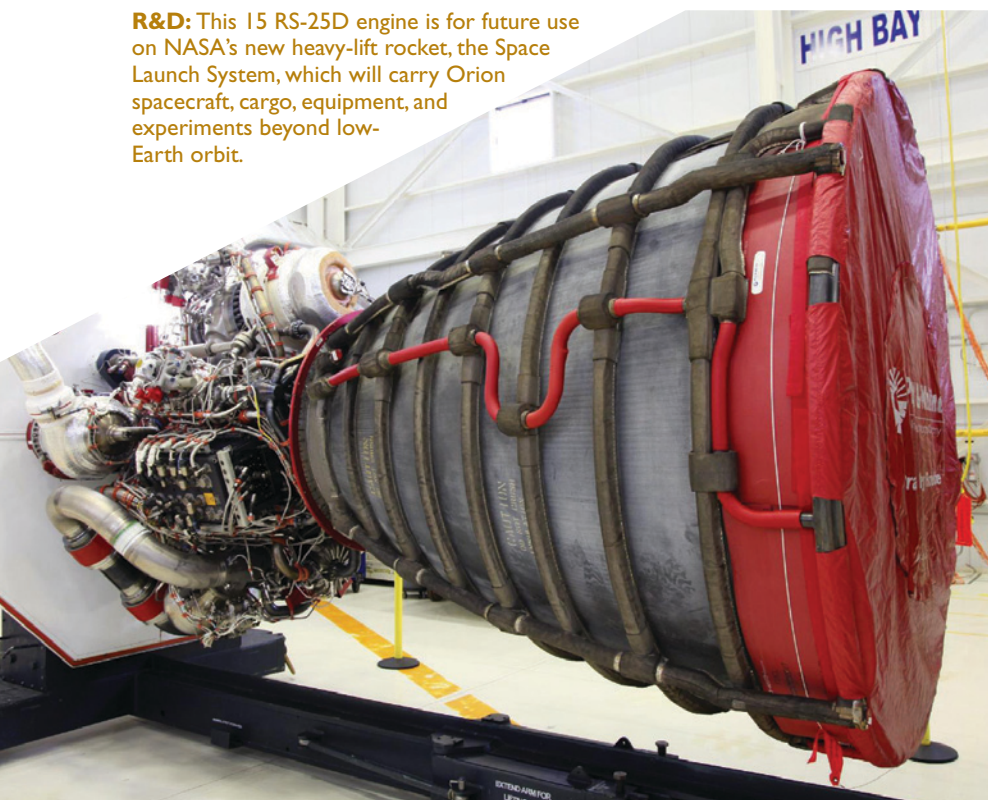
amazing. One hundred times the science return for every dollar you spend [is] a tremendous benefit." Given the harsh conditions of space and the higher costs of manned space flight, Earle advocated for robotic space missions. "There's no reason to put a human footprint on Mars. ... Robotics are safer and cheaper."

"The big challenge," said Shinpaugh, "is that these people will be separated from Earth for two years, so it's not like they can call up and order a pizza." Shinpaugh is one of a number of Tech researchers engaged in NASA-funded research, and students in his yearlong spacecraft-design course focus on tackling real issues faced by organizations like NASA, developing plans for a habitation module with artificial gravity, for example, or lunar robotics.

Edelen sees a balance between robotic and human exploration, explaining that robots push the boundaries of technology so that humans can follow. "Having humans on site complements the scientific return of robotic missions, since humans are more adaptable to unexpected conditions," Edelen said.

Edelen said the International Space Station serves as a test bed for many technologies that will be necessary for space travel, including an advanced carbon-dioxide removal system that doesn't need to be replaced (the shuttle used one-time filters, which is not a viable option for the nine-month-long, one-way trip to Mars) and a water-recycling system. "Those types of systems will be in use 20, 50, 100 years from now. We're blazing a trail into the future."

R&D: This 15 RS-25D engine is for future use on NASA's new heavy-lift rocket, the Space Launch System, which will carry Orion spacecraft, cargo, equipment, and experiments beyond low-Earth orbit.

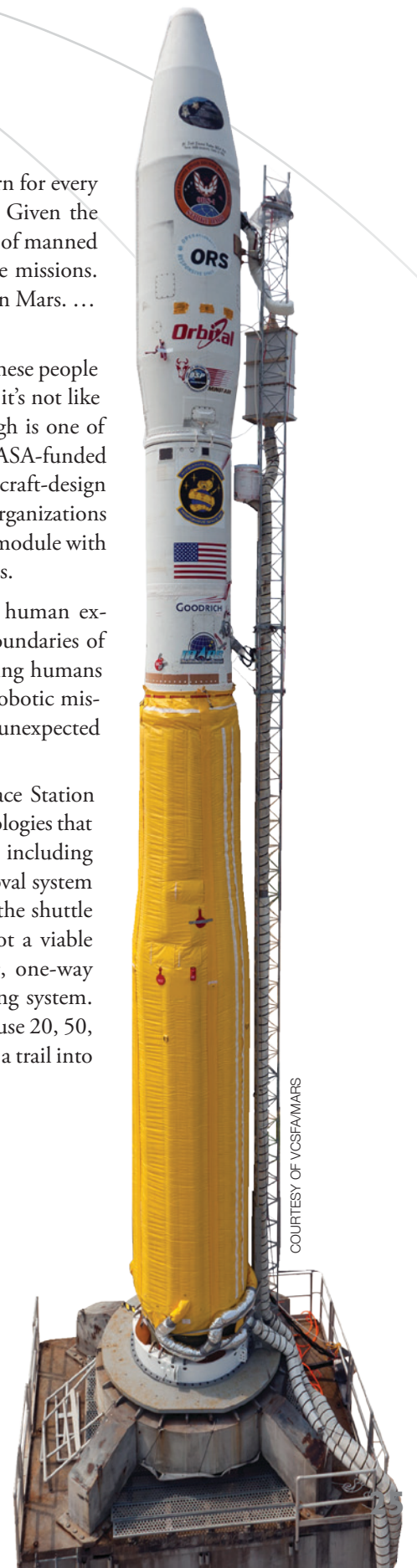


COURTESY OF NASA/KENNEDY SPACE CENTER



JOHN MCCORMICK

Know-how: In 2005, former astronaut Charlie Camarda '90 spoke on campus (left). At right, ORS-I (the first operational prototype satellite for Operationally Responsive Space) launched from the Mid-Atlantic Regional Spaceport on June 29, 2011. ORS-I provides critical capabilities to U.S. forces around the world.



COURTESY OF VCSF/MARS

“

You'll always find people who are willing to take the risk.”

—Gregory Earle, Space@VT researcher

One of Shinpaugh's students, senior aerospace engineering major Maria Rye, said her studies have allowed her to combine a love of astronomy with hands-on engineering. She is part of a student team tasked with creating a viable and profitable way to send 1,000 people yearly into low-Earth orbit, either for tourism or scientific purposes. Pondering the idea of aiming for Mars, Rye echoed a sentiment that many might have once felt about putting a man on the moon: “If we can get that far, what else can we do?”

Meanwhile, researchers are examining the solar system's weather. Because space weather, which is influenced by the sun, can affect navigation and GPS, communications, and

Fail-safes: A launch-abort system is prepared for a test at the U.S. Army's White Sands Missile Range in New Mexico. The system is designed to pull the module and crew to safety in the event of an emergency.

astronauts, members of Tech research group SuperDARN—a subgroup within Space@VT—are investigating weather patterns far above us.

“If you want to look at exploration of other planets, you have to know how space weather affects those planets,” said Wayne Scales, Space@VT director and professor of electrical and computer engineering. The knowledge garnered from the work of teams like SuperDARN could one day lead to overcoming or mitigating the impact of solar events on travel to other planets—just one of the many epic challenges that space flight poses.

The space race

Whether hauling cargo to the International Space Station, putting telecommunication satellites into place, or sending thrill-seekers into low-Earth orbit, the opportunities for private-sector space flight seem abundant. But many engineers and scientists caution that the commercialization of space travel—particularly the concept of “space tourism” that sends our imaginations soaring—is much farther off than private companies or the general public might think.

“If we're going to reap the benefits of flying in space, I think the private sector has to step up, and we have to find a commercial avenue that attracts the masses to flying in space,” said Camarda. “We can't just have engineers, scientists, etc., but a large mass of people, to get that quantum mass in space flight.”

Camarda points to NACA and its role in the aeronautics industry as a good blueprint for NASA today. “NACA was formed to give the U.S. an edge in aeronautics. ... We should do with space what we did with aeronautics. NASA

needs to take the next step and [investigate] sustainable human exploration of the solar system.”

“The private sector is in a position to provide a spectrum of products to the space flight industry, from launch capability to civilian astronaut training and space tourism. Companies seeking to profit from this demand have developed business cases that show potential profit and draw investors,” said Zigmond “Zig” Leszczynski, deputy director of the Virginia Commercial Space Flight Authority (VCSFA) and the Mid-Atlantic Regional Spaceport (MARS) on Wallops Island. “Given a substantive demand signal, the future of commercial space flight is only limited by the imagination, vision, and perseverance of these companies.”

The commercialization of space has already begun. In April 2012, SpaceX has scheduled a launch of their craft, Dragon, to transport cargo. The launch will mark the vehicle's third test launch and its first

time docking at the space station. Another company, Orbital, is planning to launch its vehicle, Cynus, this fall.

“The challenge this year will be that these are new rockets, new vehicles, so there will be technical challenges to overcome,” said Edelen, whose day-to-day job is overseeing the mission control team during space station operations. He points out that these issues are not unique to these companies, but rather the nature of space flight.

“

It's not any more dangerous than sailing across the ocean 100 years ago or flying in an airplane 50 years ago. But if a vehicle crashes in the middle of a city, who's responsible?”

—Bob Castle '76, '78, a former NASA flight director

“The ability to abort from a failing booster over the Atlantic is a lot more difficult than most people realize,” said Castle, who said that adding in redundancies and fail-safes is one of the most complex issues to overcome. “In terms of cargo, it's not as big of a deal. It's not a once-in-a-lifetime thing on most cargo.”

Ample space: The Mid-Atlantic Regional Spaceport on Virginia's Eastern Shore is one reason the commonwealth is well positioned to play a role in the privatization of space flight.

The liability of space travel doesn't just apply to those onboard. “You'll always find people who are willing to take the risk,” said Earle. The greater liability may be to people on the ground.

“It's not any more dangerous than sailing across the ocean 100 years ago or flying in an airplane 50 years ago,” said Castle. “But if a vehicle crashes in the middle of a city, who's responsible?”

Earle echoed this concern. “Until somebody develops the ‘space bus,’ it's not profitable. Legal liabilities and risks make it a deterrent for investors. Investors more likely would invest in companies putting up satellites.” He points to GPS and its use in disaster relief as an example. “Everyone in the developed world benefits from satellite technology. And to make the most money, you serve the greatest number of people. We'll see the fastest and greatest growth there.”

Scales believes that NASA should return to more-fundamental scientific work. “I think the private sector should come in and take over and let NASA focus on getting farther out into space,” Scales said.

Castle, who was a flight director for 15 years before working on the now-canceled Constellation program and retiring in 2010, pointed out that many great technological innovations, from the Panama Canal to the Internet, were government endeavors that went on to have economic benefits. “There's no reason for private industry to invest [in travel to Mars]. Going to space is inherently governmental. Satellites are already commercialized because there's a business case for it. It's harder to make a business case for research on a space station.”

“Commercializing missions to Mars is much further in the future,” agreed Earle.



COURTESY OF THE U.S. ARMY



COURTESY OF VCSFA/MARS

“

“With satellite imagery, it’s easier to visualize Earth as one place, humanity’s home. The perspective of looking at the Earth from the outside will go a long way to getting people to think in terms of Earth as our home, independent of national boundaries. A more global perspective could be a deterrent to war—and a reminder that Earth’s resources are finite.”

-Gregory Earle, Space@VT researcher

“There’s no commodity there that we’re lacking, so such a mission has to be justified purely on scientific and technical grounds. It’s interesting from a science prospective, [but] it’s not immediately apparent to me that there’s a commercial aspect to it.”

However the privatization of space flight progresses, the Commonwealth of Virginia could be well positioned to play a vital role. “It’s a no-brainer,” said Scales of Virginia’s potential, listing such assets as the Wallops Island spaceport, a prevalence of private-sector companies in Northern Virginia interested in the industry, and the engineering and scientific know-how at Virginia Tech.

Leszczynski said that Virginia has both the political will and the workforce brainpower to take the lead in the aerospace industry. In addition to VCSFA and MARS, both NASA’s Langley Research Center and the National Reconnaissance Office provide research capabilities. And he cited statistics from the Information Technology and Innovation Foundation: Among states, Virginia ranks first in the number of scientists and engineers as a percentage of workforce, third in the concentration of high-tech jobs as a percentage of workforce, and sixth in non-industry investment in research and development.

When the private sector is ready, Virginia may very well be the launch pad for the developing industry.

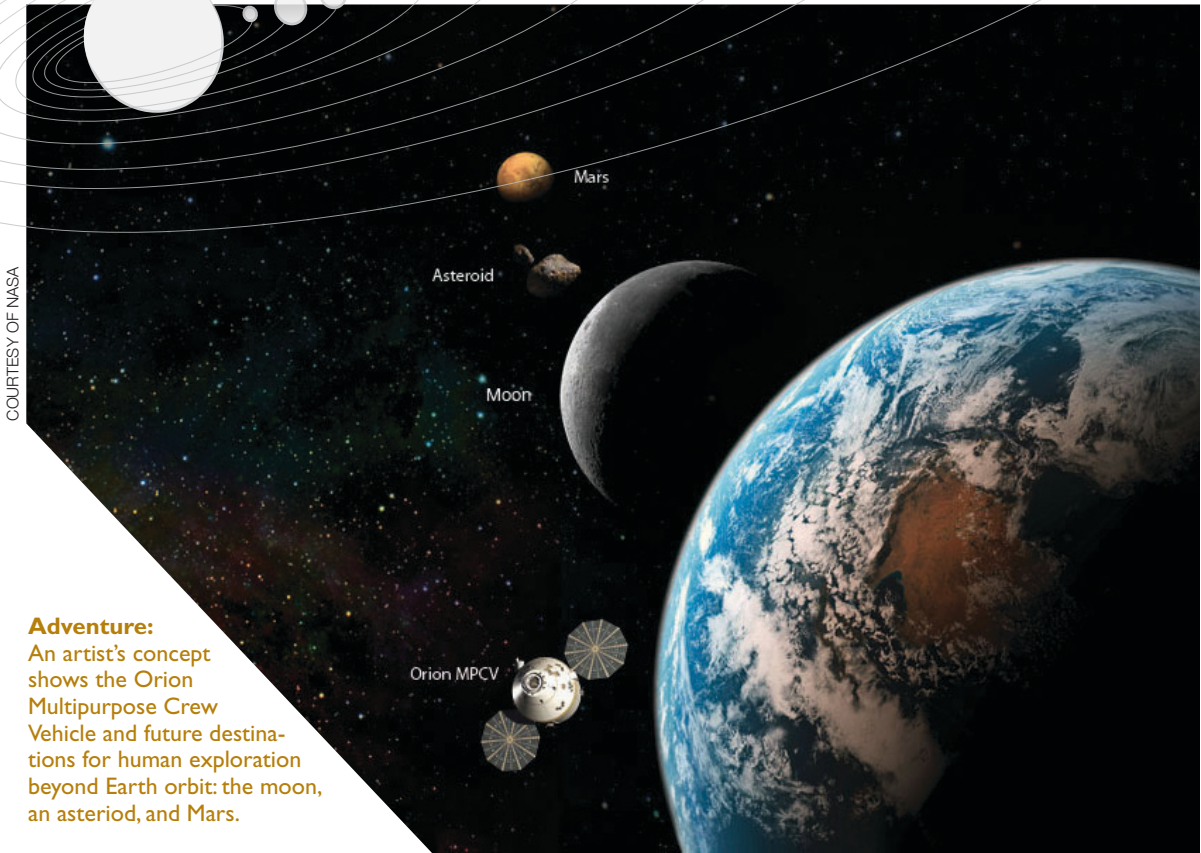
Gazing back at Earth

The greatest implications for space research might not be discoveries on Mars or an as-

teroid, but rather how humans understand our own planet. “For me, you study the atmosphere, and you can’t help but be impressed by how unique the Earth is. It’s a very fragile balance that’s easily disrupted,” said Scott Bailey, an atmospheric scientist and COE associate professor of electrical and computer engineering whose research is funded primarily through NASA. “NASA inspires all of us. The engineer in me loves the idea of standing up to those challenges [in space flight]. But the scientist in me is looking at what’s going on in the atmosphere [in regards to climate change] and wishes we would stand up to those challenges. I’d like to see people be as excited about understanding the atmosphere and climate change—the changes going on in Earth’s atmosphere—as they are about putting people on Mars.”

Earle shares a similar sentiment. “With satellite imagery, it’s easier to visualize Earth as one place, humanity’s home. The perspective of looking at the Earth from the outside will go a long way to getting people to think in terms of Earth as our home, independent of national boundaries. A more global perspective could be a deterrent to war—and a reminder that Earth’s resources are finite,” he said.

Stretching from Earth’s surface to the deepest, unknown mysteries of outer space, the human capacity to dream—sparking an innate need to innovate—is sure to fuel the continued quest into space. □



Adventure: An artist's concept shows the Orion Multipurpose Crew Vehicle and future destinations for human exploration beyond Earth orbit: the moon, an asteroid, and Mars.

Who’s Running the Country?

How political appointees impact government performance

by DANA CRUIKSHANK



Matthew Dull is working to fill the gaps in what we know about how our government works—and how sometimes it doesn’t.

Turn on a prime-time cable channel or talk-radio show, and the message is clear: Our federal government is broken. This consensus is shared by the more than 75 percent of Americans who recently told the Pew Research Council they feel “angry” or “frustrated” about the federal government.

Dull, assistant professor with Virginia Tech’s Center for Public Administration and Policy, sees a paradox in this sentiment. While almost everyone agrees that the federal bureaucracy is broken, we know strikingly little about how government actually works.

Consider political appointees, individuals who are appointed by the president and confirmed by the Senate to run federal agencies. The number of appointed administrators throughout the federal government has been growing, according to Dull. The ranks of second- and third-tier appointees—undersecretaries and assistant secretaries—swelled in the mid-20th century; and more recently, appointees in agencies such as the Department of Commerce have increased due to pressure from interest groups.

Throughout history, political appointees have been accused of cronyism and corruption, and there have been numerous proposals to reform the system. Research by Dull and center colleagues Patrick Roberts and Sang Ok Choi shows, however, that what we “know” about appointees is often based on assumptions or old data. “Ask even close observers of the federal government how long appointees serve, and they will invariably say something like two years,” said Dull, who noted that the most recent hard data reflecting this estimate was a 1990 study. With research

help from graduate assistants Michael Keeney and Tara Bryan, the team meticulously pored through agency reports and other resources to create a comprehensive dataset tracking appointee turnover and tenure from 1989 through 2009.

One finding is an enormous variance in duration among positions. Most federal agencies, Dull explains, have an appointee responsible for congressional or legislative affairs. Such individuals are generally the “in-and-out” appointees who serve for about two years, with only about 15 percent serving out a full four-year presidential term. “These are politically sensitive positions, and almost invariably these appointees go on to lucrative positions in lobbying firms and private firms,” Dull said.

Compare these short tenures with those of agency inspectors general (IGs), appointees designed to exercise independence and oversight from within the agency. Dull and his colleagues found that half of all IGs serve four years or longer, and many serve a decade or more. For example, John Layton served as Department of Energy IG from 1986 to 1998, and John Martin served as Environmental Protection Agency IG from 1983 to 1997.

Dull emphasized that duration, as a source of both competence and credibility is a vital component of agency leadership. The research team’s analysis of 2,200 appointments showed that a position’s insulation, independence, and formal authority all matter to duration. “Two measures of insulation from politics—fixed terms and inspector general status—are associated with longer tenure. Our research shows that agencies staffed by proportionately more professionals, such as the National Oceanic and Atmospheric Administration, are associated with longer tenure,” Dull said.

Dull acknowledged there is a long way to go in understanding how appointees affect performance of government, but one aspect that he is clear on is the impact of vacancies—what he calls the ghosts in leadership posts. “There is a serious problem in leadership,” said Dull. “Agencies can’t make long-term decisions when they don’t have a confirmed head. Those agencies are rudderless.”

An example is the directorship of the Bureau of Alcohol, Tobacco, Firearms, and Explosives (ATF). “[The post] was made an appointed position in 2005, and has been vacant since,” said Dull. He blames this lack of leadership for “Operation Fast and Furious,” a flawed decision to give guns to Mexican criminals in order to track the guns and discover gun-smuggling networks. The tracking effort failed, and some of the guns were found at crime scenes in Mexico, according to media reports. An appointed and approved leader might

“

There is a serious problem in leadership. Agencies can’t make long-term decisions when they don’t have a confirmed head. Those agencies are rudderless.”

—Matthew Dull, based in the National Capital Region, is an assistant professor with Virginia Tech’s Center for Public Administration and Policy.



JIM STROUP



have been more politically savvy and, before acting, more likely to coordinate with other agencies working in the border region before acting.

Dull and his colleagues have specific recommendations for addressing vacancies, such as forming an independent commission to reduce the number of appointed positions. They are most adamant about the need for and importance of reliability and transparency. In an article in Presidential Studies Quarterly, Robert and Dull noted that “despite mandated agency reporting under the Vacancies Reform

Act, reliable and useful information on appointee vacancies is not systematically available from government sources.”

“The simple truth behind this failure of government transparency is that none of the actors with a direct stake in appointee politics—committees, agencies, the White House, interest groups—see an obvious benefit from greater transparency,” said Dull.

Because Dull’s work provides useful, nonpartisan data and perspectives, it is an example of how the Center for Public Administration and Policy fits into Virginia

Tech’s land-grant mission of generating scholarship in service to the public. “We’re all ‘good government’ people here at the center,” he said. “We’re here to help make government work. We’re unapologetic about that.” □

Dana Cruikshank is the College of Architecture and Urban Studies’ communications manager. The full version of this article first appeared in Virginia Tech Research, a magazine published by the Office of the Vice President for Research, and can be viewed online at www.research.vt.edu/resmag/.

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On the fifth anniversary of the
April 16th tragedy,
We remember.

Participants in the 2010
Run in Remembrance pass by the
April 16 Memorial.

Ross A. Alameddine
Christopher James Bishop
Brian R. Bluhm*
Ryan Christopher Clark
Austin Michelle Cloyd
Jocelyne Couture-Nowak
Kevin P. Granata
Matthew Gregory Gwaltney
Caitlin Millar Hammaren
Jeremy Michael Herbstritt
Rachael Elizabeth Hill
Emily Jane Hilscher
Jarrett Lee Lane
Matthew Joseph La Porte
Henry J. Lee
Liviu Librescu
G.V. Loganathan
Partahi Mamora Halomoan Lumbantoruan
Lauren Ashley McCain
Daniel Patrick O'Neil
Juan Ramon Ortiz-Ortiz
Minal Hiralal Panchal
Daniel Alejandro Perez Cueva
Erin Nicole Peterson
Michael Steven Pohle Jr.
Julia Kathleen Pryde
Mary Karen Read
Reema Joseph Samaha
Waleed Mohamed Shaalan
Leslie Geraldine Sherman
Maxine Shelly Turner
Nicole Regina White

JOHN MCCORMICK

Before and After:

Desk graffiti provides a striking chronicle of campus moods

by WILLIAM E. SNIZEK

“

I realized we possessed a unique set of benchmark data that gave insight into the campus culture.”

—William Snizek, Alumni Distinguished Professor Emeritus

2004



In 2004, desk-graffiti themes focused on the school (e.g., “VT,” “Hokies”).

2007



Post-April 16, themes were markedly introspective. One student wrote, “Why do I always want to cry?”, to which another replied, “I know how you feel, trust me, talk to someone.”

2008



By 2008, the themes had rebounded, returning to campus themes, such as the HokieBird.

us all and epitomize the resiliency of the Virginia Tech community.

It is to this resiliency to which I now turn. Based on research that a graduate student and I conducted, it is clear that Tech’s students have adjusted remarkably well. Let me elaborate on how we came to that conclusion.

A major obstacle to behavioral science research is something called the sensitizing effect: Subjects realize they are being studied and modify their behaviors. One technique used to minimize this effect is to record indirect indicators of the behavior being studied. Following April 16, student-authored graffiti on classroom desktops became our study’s indicator of student resiliency.

During almost 40 years on the Tech faculty, I was fascinated by the graffiti I found on desktops. In December 2003, this fascination prompted me to work with a graduate student, Daisy Ball, to take and analyze digital photos of some 1,800 pieces of graffiti on 419 desktops in nine Tech classrooms.

Shortly after April 16, I realized we possessed a unique set of benchmark data that gave insight into the campus culture. In August and December of 2007 and May of 2008, Daisy and I returned to those same classrooms (desks are cleaned after each semester), taking photos of some 1,400 examples of graffiti.

Comparing graffiti pre- and post-April 16, we were struck by how noticeably students’ thoughts and the themes portrayed in their graffiti

Numerous acts of heroism have surfaced, such as the law enforcement personnel who rushed into Norris Hall, the students and faculty who laid down their lives to delay the shooter, and the families and friends who have endured without loved ones. Their actions give strength to

graffiti had changed. In December 2003, the dominant theme was the university itself (e.g., the letters “VT,” the word “HOKIE,” and HokieBird drawings). By contrast, graffiti found in August and December 2007 was markedly introspective, sober, and fatalistic. One student, for example, wrote, “neVer forgeT 4-16-07”; another, “Please God help me.” Another student drew a sketch of a gun firing a bullet into a human skull. On one desktop, a student wrote, “Why do I always want to cry?” And just below that, another responded, “I know how you feel, trust me, talk to someone.” The predominantly positive themes found in 2003 were absent in 2007, when severe depression, frustration, and morbid reflection were more prevalent.

By May 2008, however, student graffiti was markedly more upbeat and less self-reflective. Back were the positive references to Virginia Tech in the form of “Go, Hokies,” the Greek letters of fraternal organizations, and the lyrics of pop music.

For me, the takeaway is that while the horrific events of April 16 will never be forgotten, students have demonstrated incredible resiliency and perhaps today have a stronger sense of community than before. Judging from the content of student graffiti, the healing process is well under way. □

William E. Snizek is an Alumni Distinguished Professor Emeritus in Sociology.

Finding Myself

A community embrace

by RHITWIK SENSARMA

I chose Virginia Tech because I had heard so much about the community. I wasn’t used to large communities, however, so I was skeptical. For a university with more than 23,000 undergraduates, “community” had to be something people just said, just marketing. If it was real, maybe they bonded because the food was so good. Could the quality of food lead to a strong community?

“No, Rhitwika, you are oversimplifying,” I told myself.

Upon arrival, though, I began to understand where the university’s idea of community comes from. For instance, classes are far from cutthroat. For the first time in years, I felt comfortable enough with my teachers to approach them. I sought to excuse my stuttering, explaining that I was extremely introverted. “Yes,” they would say, “I noticed something like that.” As I explored topics awkwardly, trying to explain to my teachers just how sincere I am about humanities, sciences, and, really, everything, they would respond with equal enthusiasm. I wasn’t an aimless, naïve student; I was an adult, and they let me know that I was doing all right.

Staff members in my residence hall ask students to build community, to ask what community is, and to find interesting people you can talk to. I like to joke that nobody knows if I exist because there are so many students, but people keep proving me wrong. Everyone takes the time to talk to each other, to read each other’s blogs, to gather every Friday for soup and tea, and just to be a family.

“

I never could have imagined a place whose people could teach me to trust, to speak out, and to feel.”

—Rhitwika Sensharma, freshman

April 16 didn’t factor into my decision to come to Blacksburg, so my experience with tragedy at Virginia Tech is more recent. On Dec. 9, 2011, the Drillfield was a dense cluster of stars in memory of police officer Deriek Crouse, who was killed Dec. 8. Thousands of people holding candles coalesced into a mass, sharing warmth, light, and the humbling sense of a sorrow beyond what could be felt by a single person—the sorrow of an entire community.

Here at Tech, I find people willing to accept me as an individual, and I feel a sense of community despite every assumption I made otherwise: that the university was too large, that the teachers had too much work, and that there were too many

students in the dorms. I never could have imagined a place whose people could teach me to trust, to speak out, and to feel. I can barely imagine how many others have been affected like me and how many will continue to be affected. In the purest sense of the word, this place is a community. □

Rhitwika Sensharma, a freshman chemical engineering major, is a University Honors Program student who arrived in Blacksburg last fall.

Rising from the Chaos

Center emerges as a leader in peace and violence studies

by JAMES E. HAWDON

Born from the contrast of the horror of April 16 and the acts of compassion and solidarity of the Hokie community that followed, a vision emerged. It was simple yet powerful one: to transform the space of suffering and violence—in Norris Hall—into a place that promotes peace. This vision, held by dedicated faculty and staff members, students, and administrators, resulted in the Center for Peace Studies and Violence Prevention (CPSVP). Founded in 2008, CPSVP is quickly becoming as an internationally recognized leader in the understanding of violence and the promotion of peace. Building on the initial work of Jerzy Nowak, founding director and professor emeritus, CPSVP continues to foster creative approaches to the study and practice of violence prevention by integrating research, education, and outreach.

CPSVP-affiliated faculty conduct research and teach classes on the numerous causes of and potential solutions to the violence that afflicts our societies, workplaces, schools, streets, and homes. Examples of recent research include studying the causes of school violence and the effectiveness of anti-bullying programs in preventing it, the ability of neighborhoods to work with police to reduce violent street crimes, the role of communities in recovering from tragedies and disasters, strategies for combatting terrorism, and the emergence of hate groups in online communities.

This research informs our efforts to educate the next generation of peace scholars, and affiliated faculty teach courses from a variety of disciplines. We offer a capstone course for students interested in peace and nonviolent conflict resolution, and our proposal for an interdisciplinary minor in peace studies is currently under review.

To further our collaboration with researchers from around the globe, CPSVP is holding its second student symposium in November. The symposium is a forum for student-scholars to present research, participate in workshops, and network with world-renowned peace researchers. CPSVP also supports student organizations devoted to building a more inclusive campus community and sponsors public speakers to heighten awareness about the

causes of and efforts to reduce violence.

Ultimately, CPSVP aims to build a world in which conflicts are resolved without violence, and the rights of everyone are protected without prejudice or repression. □

James E. Hawdon, a professor in the Department of Sociology, is the Center for Peace Studies and Violence Prevention director.

For the 32

“Be strong, stand tall, and live for the 32.”

by ADEEL KHAN '09

Iremember the moments immediately following the events of April 16 and the urgency with which community, campus, and student leaders began to plan the remembrance of those we lost and to help our wounded campus heal.

Driven by a love for our community, we lived our school's motto, *Ut Prosim* (That I May Serve), during the university's time of greatest need. We accomplished much in a short amount of time: a candlelight vigil with more than 40,000 community members gathered to remember, the ad-hoc memorial created by students, the numerous outlets created for students to honor our lost Hokies, a permanent memorial dedicated, a concert, and more. In the days, weeks, and months following the tragedy, it was so clear what was important.

As we look to the future, the clarity of purpose isn't as pronounced, but the lives we live to honor those we lost, define us most as Hokies. The words I spoke during the April 16 Memorial dedication continue to be the wish I have for myself and for our community: “I hope you are inspired to work harder to honor the 32. Share your talents with the

Rescued

“I knew April 16 would either destroy us or strengthen us. We chose the latter.”

by MATT JOHNSON '10

One night shortly after the 2008 memorial service, I paused at the memorial around 2 a.m. I was the Virginia Tech Rescue Squad's duty officer. Not a single car passed in the hour or so I was there. The events of the past year came flooding back—how close the squad had become, the outpouring of support, and the selflessness of the university community. Only then did it all sink in. Standing in front of Burruss Hall, I shed a few tears—some springing from sadness, perhaps, but more so, pride in the squad and the university.

On April 16, I was one of two officers coordinating the response of 30-plus squad members, 14 assisting agencies, 27 ambulances, and more than 120 personnel who came to our aid. From May 2007 to May 2010, I was the captain, leading a squad that responds to all emergency medical and technical rescue calls on campus—about 1,500 a year.

It was difficult for me to see members graduate and move on, as there were fewer who could share the same memories and heartache. Today, my biggest fear is that the squad will forget what happened that day.

The squad was right in the middle of the response. Our members were the first EMS providers to enter Norris Hall and the last to leave. I knew that the squad's involvement wasn't over on the night of April 16. There would be intense media coverage, after-action reports, and enormous healing. As the incoming captain, I had to look toward the squad's future. I knew that the events would either destroy and dissolve us or strengthen us. We chose the latter—and came out stronger than before.

I saw the resiliency of the Virginia Tech community right away. The outpouring of support was incredible. On April 16, several squad alumni drove to Blacksburg, bringing their experience in post-incident stress management. Care packages and phone calls came in. For an entire year, the station was fuller than ever before. The best medicine for squad members was fellowship and the strength of individual relationships.

Local churches provided emotional support and even food. The General Federation of Women's Clubs of Virginia spearheaded fundraising for an additional ambulance. While I was captain, the squad grew from about 30 to 50 members, tripled the number of personnel with advanced certifications, and increased its budget by 100 percent. Other members and I were able to share the importance of collegiate EMS with peers at national conferences. Reaching out to others allowed us to personify the university's motto, *Ut Prosim* (That I May Serve).

I think it is hard for people who aren't Hokies to understand how the Virginia Tech community could band together and become so much stronger following the tragedy. Hokies carry themselves with a sense that they're blessed to be a part of the family. They're protective, and this notion only increased following the tragedy. Feeling vulnerable, Hokies stood up to defend the university.

world for the 32. Achieve your dreams for the 32. Be more compassionate, friendly, and thoughtful for the 32. Be better for the 32. ... Most importantly, we must and will move forward, while always keeping the 32 in our hearts and minds. Be strong, stand tall, and live for the 32.” □

Adeel Khan (accounting and information systems '09), the Student Government Association president from 2007 to 2008, is now teaching high-school English in an underserved area in metro Atlanta via Teach for America.

“

The best medicine for squad members was fellowship and the strength of individual relationships.”

—Matthew Johnson '10, former rescue squad captain

There was time for grieving, and there still is. But when I look at where the university is today, I think it is safe to say that the university as a whole did not lose focus of its future goals. Students have led the recovery. They continue to compete to gain admission and join the Hokie community. In the fall of 2007, rescue squad applications were up about 200 percent.

I lost an academic year after April 16, scaling back my class load as I focused on the health and recovery of the rescue squad. I had to retake a few classes. It took me six years to graduate. In hindsight, would I go back and do things the same way? Absolutely.

I'm tremendously proud of how the squad and the university community responded. We have not forgotten those we lost and the survivors, but we have moved forward—perhaps with more fervor than before. □

Matthew S. Johnson (construction engineering and management '10) is now an emergency management coordinator for East Carolina University, addressing such issues as incident management and mass notification systems.

Expressions of remembrance on April 16, 2008



JOHN MCCORMICK



Letitia Long: A Global Vision

Alumna leads intelligence agency
in new era of collaboration

by DENISE YOUNG

life-and-death situations. “I would like the war-fighter to have the best and most recent classified geospatial intelligence when planning or in the middle of an operation,” Long said. Access to the information NGA provides also helps determine the extent of natural disasters and aids first-responders in search and rescue. When Navy SEALs planned a clandestine operation against Osama bin Laden, when Hurricane Irene struck the East Coast, and when a massive earthquake rocked Haiti, NGA played a vital role in putting the right information in the right hands.

Guided by Long, the agency is tackling a number of issues, such as decreasing resources, the pitfalls of bureaucracy, and changes in information technology. “It’s a bureaucracy, so trying to keep forward momentum is a challenge.” Still, she doesn’t let anything slow her down. “I like to take what some might see as challenges and turn them into opportunities,” said Long, who applied to a number of schools, including Stanford and MIT, before a visit to the Virginia Tech campus on a warm spring day won her over.

The National Geospatial-Intelligence Agency (NGA) headquarters in Springfield, Va., isn’t what one might picture for an intelligence agency. Its sprawling atrium, the ceiling covered with Mylar fabric to let in ambient light, provides a wide-open gathering place for staff. The openness is no accident, but rather an intentional design meant to facilitate a culture shift that promotes face-to-face collaboration, especially among analysts.

At the head of the agency, in an office that looks out onto the rolling Virginia mountains, is Director Letitia “Tish” Long (electrical engineering ’82). Time spent with Long reveals a leadership style that depicts this shift toward openness and collaboration occurring, post-9/11, across the intelligence community, a shift she described as the transition from a “need-to-know” atmosphere to a “need-to-share and need-to-provide” culture. She greets everyone with a warm smile, listens closely to those around her, and asks genuine questions. NGA staff members praise both her down-to-earth attitude and her deft leadership.

NGA’s work is serious business. In an era of instantaneous access to information and rapidly evolving technologies, the agency fuses satellite imagery, photos, analysis, and information about a point and place on the Earth, providing intelligence data to a wide range of clients, from the military to first-responders who are often operating in

The conflict between the occasionally cumbersome and slow-to-change aspects of a bureaucracy and the swiftly evolving way society communicates, shares, and analyzes data is one of the primary challenges—she refuses to use the word “obstacles”—Long faces at the helm of NGA. As technology evolves, the intelligence community needs to keep up, she said, noting that many federal and Department of Defense laws were written in a time before smartphones and Google. Nevertheless, change is happening—a shift symbolized by the state-of-the-art Springfield headquarters.

She also notices a growing emphasis on diversity, including what she calls “diversity of thought.” “In solving intelligence problems, including diversity of thought is essential,” said Long. “[In] the Osama bin Laden operation, the intelligence community witnessed the true value of merging many thoughts and perspectives, and we must to continue to replicate this kind of integration across the enterprise in the future.”

Long’s journey to NGA director started before she’d even crossed the stage at commencement. Her long history of civilian federal service dates back to 1978, when she started as a project engineer-in-training with the U.S. Navy, where she continued her work after earning her degree in 1982. She’s taken on a number of roles since then, including deputy director for information systems and services for the Defense Intelligence Agency and that agency’s first chief information officer. She was named to her current post in August 2010.

Lynn Schnurr (health and physical education ’75), chief information officer for Army Intelligence and director of the Intelligence Community Information Management Directorate, has known Long for more than 15 years. “[Long’s]

“

In the bin Laden operation, we witnessed the true value of merging many thoughts and perspectives. We must replicate this integration.”

—Letitia Long ’82,
the first woman to lead a major intelligence agency

reputation is just impeccable throughout the community as someone who’s a natural leader. She’s humble, has the intellect to understand and make the right decisions, [and is] someone who listens extremely well to people,” Schnurr said. “[We can] feel so comfortable knowing that someone like her is in such an important position.”

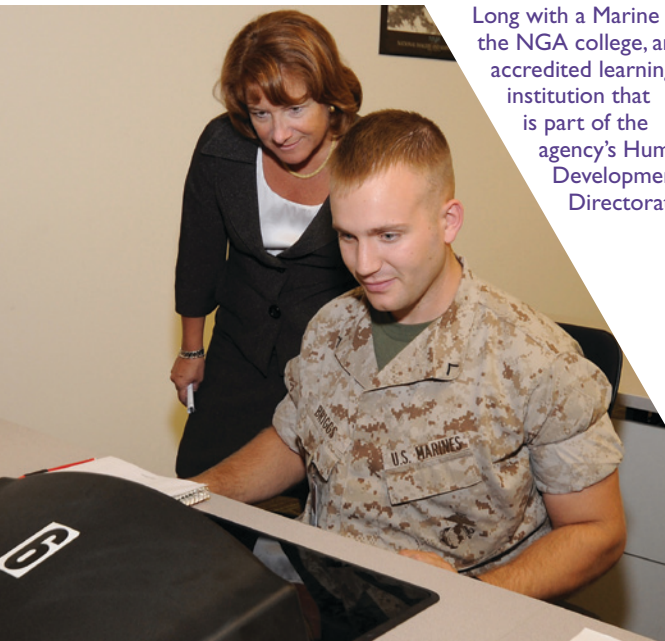
Long credits her success to a number of factors, including seeking out strong mentors and taking the jobs she knew would push her to grow professionally. “I tell people, if you take the job you’re perfectly ready for, you’ll be bored.” Though Long calls herself an introvert, she works hard to engage others in an extroverted fashion.



Vision: At right, Long shakes hands with Rep. Jim Moran, of Virginia, as Director of National Intelligence James Clapper looks on. Below, Long gives the secretary of the U.S. Air Force a tour of the new NGA headquarters.



PHOTOS COURTESY OF TONY BOONE, NGA



Long with a Marine in the NGA college, an accredited learning institution that is part of the agency's Human Development Directorate.

The first woman to lead a major intelligence agency, Long said she'd offer the same advice to anyone, male or female. "Be excellent at all you do. Build the skills you need to be excellent in your field. ... Speak with authority, but be a good team player." She added, "Always be honest. Don't compromise yourself or your values."

In a new era of information-sharing, Long, because of her personable demeanor and extensive history of dedication to the intelligence community and public service, is well equipped to lead an agency tasked with ensuring that information reaches those who need it most. In short, Long personifies the NGA motto: "Know the Earth ... Show the way ... Understand the world." □



professor profile, continued from page 13

But the real challenge is to make a difference, both in the world of engineering and in the worlds in which people deal with the effects of engineering."

Downey's enthusiasm for bringing students' points of view alive also inspires other teachers. He mentors Saul Halfon, an associate professor in STS who recognizes the precedent Downey sets.

"He represents the best of what faculty teaching and scholarship should be," said Halfon. "[Downey] sets a tone that is very much about caring for the students. He's developed an inward focus on student

education and research within the department and the university, and he combines that with a strong outward focus toward building an academic field."

In 2007, while compiling an advisory committee for his doctoral studies in STS, Faigle initially was nervous about meeting a tenured professor of Downey's stature. But Faigle discovered a professor who worked tirelessly to further STS and engineering studies—and who had an even more important quality. "Dr. Downey always asks me about my son before anything else when we meet," Faigle said, "this is the greatest compliment that anyone can show me as a parent, as it's a sign that he cares about not only my research and work but the things that matter to me most."

Though Downey has already shaped engineering studies and STS in significant ways, many pathways remain uncharted. While helping students figure out where they want to go and how to get there, Downey eagerly challenges himself as well.

"I view myself as this working-class kid from Pittsburgh who gets to interact every day with an amazing range of talented and interesting people. I didn't know back then that all these worlds existed. Exploring them has been a great adventure, and it continues to be—I don't want it to end." □

Sarah Fitzgerald, a junior majoring in communication and English, is an intern with Virginia Tech Magazine.

VPI Company Prepares Civilian Leaders

by RANDAL D. FULLHART

It is an exciting time to be in the Corps of Cadets. As many of you know, we began this year with the largest corps since 1969: 949 cadets. Not as widely known is the fact that cadets in the Civilian-Leader Track, known as VPI Company, now comprise nearly 20 percent of the total. These are hard-working, dedicated cadets who see the value in developing their leadership skills, and their majors are as diverse as those of the corps as a whole.

Established more than 10 years ago as the first structured professional-development program for non-ROTC cadets, the Civilian-Leader Track allows cadets to graduate with the same great corps leadership and development experiences available to their classmates destined for the armed forces. Whether they're organizing blood drives, collecting for the food pantry, or sending packages overseas to the troops, these cadets hone their leadership skills through service to others. When they graduate, they, too, will be serving their country—but will do so in the business, government, and nonprofit sectors.

As we upgrade the curriculum and programs for all cadets, we are also creating unique opportunities geared toward the special circumstances of those in the Civilian-Leader Track. Successful Tech alumni



ROCK ROSZAK

VPI company commander Patrick Nichols (left) and first sergeant Kareim Oliphant (middle) fine-tune their résumés and leadership skills under the tutelage of Col. Dave Miller and Maj. Carrie Cox.

frequently visit to share their life experiences and corps alumni discuss how their unique corps experience helped them add value to the organizations that hired them. VPI Company cadets also benefit from presentations by experts in résumé writing, job searches, interviewing techniques, and other skills that will help these cadets launch their careers.

Working with the university's Career Services office, the corps is connecting with organizations and businesses that are interested in tapping cadets for internships and job opportunities. Many businesses and government agencies are sending representatives to campus specifically to speak to VPI Company about the benefits of joining their team. At a time when ethical leadership and proven organizational skills are at a premium, more and more employers are finding their way to the Corps of Cadets.

Our goal is for every one of our Civilian-Leader Track cadets to record at least two internships before graduating.

We're asking Virginia Tech alumni to consider being part of the internship initiative. If you have a LinkedIn account, request to join the Virginia Tech Corps of Cadets group to view a list of cadets interested in internships or full-time employment, and you can match your organization's openings to the cadets' qualifications and interests.

To learn more about how a cadet, as an intern or an employee, can add value to your organization, contact Col. Dave Miller at 540-231-9455 or dmiller3@vt.edu. □

Maj. Gen. Randal D. Fullhart is the commandant of cadets at Virginia Tech.

Center for 21st Century Studies Broadens Students' Horizons

by ALBERT RABOTEAU

As English Professor Robert Siegle described how Mohandas Gandhi used insights into both India's and England's cultures in his campaign for India's independence, students listened attentively in the small, dark theater used for the first of three courses in the College of Liberal Arts and Human Sciences' new signature program, the Center for 21st Century Studies.

The program's second course will take place in dramatically different surroundings, as Siegle and his students travel to Morocco, Turkey, and Sri Lanka. They will stay with local families, work on service-learning projects, and have discussions with faculty members at several universities.

The goal is for the students to develop a deeper understanding of each country and the historical, social, political, and economic issues that affect it. During a third course in the fall, that firsthand knowledge will help students a great deal as they read academic literature on the countries and

write research papers, Siegle said.

The program, which he directs, is one of the college's flagship initiatives and is a major focus for fundraising.

"It's important that we subsidize the cost of the travel through private funding because we don't want that [expense] to be prohibitive to any student," said Sue Ott Rowlands, the college's dean.

While the ultimate goal is to create a permanent endowment for the program, donors have already contributed significantly to help with travel costs.

James Asselstine (political science '70), of New York, a managing director at Barclay's Capital, is one of several alumni to donate to the program so far.

"I think university graduates who have an understanding and appreciation of different political and economic systems and cultures are going to be increasingly valued by potential employers, and I think international experience has become an

increasingly important part of a well-rounded education," he said.

Asselstine added that traveling to the Netherlands and meeting with government officials there was one highlight of his own experience at Virginia Tech.

Another program donor is Jerry Hulick (political science '73), of Spotsylvania, Va., a general agent emeritus of MassMutual and currently the senior planner of The Washington Group Special Care Planning Team.

Though he did not study abroad while at Tech, he said many Hokies who did have told him how valuable it was. "What I hear from students and alumni repeatedly is that their international experiences while in school were a huge factor in their success and made an impact after they graduated," Hulick said.

Eighteen students are scheduled to travel with the program in its first year, including James Flanagan, a sophomore international studies major who is in the Air Force ROTC and plans to work in intelligence.

"What I really want to get from these courses is the ability to think in different ways," he said. "Being able to understand people helps you to make a more informed analysis of them, even if you don't necessarily agree with them."

Flanagan added that he was "extremely grateful for this opportunity."

Albert Raboteau is the director of development communications.



Illumination: English Professor Robert Siegle leads students toward global perspectives as James Flanagan listens in the middle of the second row.

LOGAN WALLACE



Comer Yeatts '36 and Maria Luise Yeatts

Husband's International Career Inspires Widow to Support Budding Engineers

by ALBERT RABOTEAU

When a 17-year-old farm boy from Virginia's Pittsylvania County arrived at what was then Virginia Polytechnic Institute with \$200 on loan from an aunt and a desire to become an engineer, it's unlikely he or his family imagined the distinguished international career that lay ahead of him.

But such a career quickly took shape. Immediately after earning his civil engineering degree in 1936, Comer Yeatts was hired by fellow Hokie Gordon Jones (civil engineering '32) to work as a field engineer for the M.W. Kellogg Company. Yeatts was sent to work in Texas City, Texas, and, within a few years, he was assigned his first of many complex international projects.

Yeatts' postings included Canada, England, India, Iran, Pakistan, and multiple U.S. locations. But his "crowning achievement," according to his widow, Maria Luise Yeatts, was serving in South Africa as the resident construction manager for the world's largest plant to make oil, gasoline, chemicals, and waxes out of coal.

During that project, which he ran from 1951 to 1956, Comer Yeatts had to contend with a remote site, an international workforce, and numerous technical challenges, according to a profile of him in one of his company's newsletters from the early 1960s.

"To watch his jobs go up, you might wonder if there were a two-fisted, fire-eating boss inside the construction shack," the profile stated. "Instead, Comer is a smiling, cordial, soft-spoken, Virginia gentlemen [sic] of friendly, but few, words."

After retiring in 1976, Comer Yeatts returned to Pittsylvania County, where he and his wife lived on a farm until his death in 1990. A few years later, inspired by the way education had opened up otherwise unimaginable opportunities for her husband,



Maria Luise Yeatts, who now resides in Williamsburg, Va., established the Comer V. Yeatts '36 Engineering Scholarship.

"Virginia Tech's education allowed him to reach his potential," she said. "I wanted to provide the same opportunity to other prospective engineering students from the Pittsylvania County area to achieve their dreams of going to Virginia Tech."

The most recent scholarship recipient, junior computer engineering major Benjamin Smith, of Danville, Va., hopes to pursue a career programming intelligent systems that control robots or autonomous vehicles.

As a boy, Comer Yeatts used to take his toys apart to see how they worked, his widow said. Smith, who also displayed an engineer's mindset early on, built his own computer out of parts at age 9, but said that "if it wasn't for scholarships and grants, [Virginia Tech] wouldn't have been an option."

Since its creation in 1996, the Yeatts scholarship has helped several aspiring engineers like Smith to pursue their ambitions, just as their scholarship's namesake was able to do.

Albert Raboteau is the director of development communications. Portrait photos courtesy of Maria Luise Yeatts; photographed by Logan Wallace.

Submission guidelines are available online at www.vtmagazine.vt.edu/bookreview.html. To submit a book, mail it to Book Notes, Virginia Tech Magazine, 105 Media Building, Blacksburg, VA 24061. You can also email a high-resolution cover image, along with 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.

BOOKS BY FACULTY/STAFF
nonfiction
critical/reference

Alan Bayer, professor emeritus of sociology and director emeritus and founder of the Virginia Tech Center for Survey Research, et al., “Professors Behaving Badly: Faculty Misconduct in Graduate Education,” reference, The Johns Hopkins University Press.

Harold Burkhart, University Distinguished Professor, et al., “Modeling Forest Trees and Stands,” reference, Springer.

J. Michael Kelly, College of Natural Resources and Environment dean emeritus, et al., “Getting Published in the Life Sciences,” reference, Wiley-Blackwell.

Charles Lytton, senior Extension agent emeritus, “The Cool Side of the Pillow,” memoir, Southern life, Penworthy LLC.

Daniel J. Schneck, professor emeritus of engineering science and mechanics, “Omniology: A Unified Approach to the Study of Everything,” philosophy, CreateSpace.

Dean Stauffer, professor of wildlife and associate dean of academic programs, College of Natural Resources and Environment, “Ecology and Management of Appalachian Ruffed Grouse,” reference, Hancock House.

BOOKS BY ALUMNI
nonfiction
critical/reference

Robert L. Clark (physics ’68), “Crossing Wall Street: The Road to Independent Financial Security,” investing, Saint George Seminary Press.

Sylvia DeSantis (M.A. English ’93), “Watercharms: Ocean-Reiki Meditations,” self-healing, Schiffer Books.

Dan Hague (forestry and wildlife ’79), et al., “Redpoint: The Self-Coached Climber’s Guide to Redpoint and On-Sight Climbing,” reference, rock-climbing, Stackpole Books.

Kristi Hedges (communication ’92), “The Power of Presence: Unlock Your Potential to Influence and Engage Others,” how-to, American Management Association.

Kathy Jordan (Ph.D. education and student personnel ’94), “VOICES: Words from Wise Women,” women in leadership and career, MAS Publishing LLC.

G. Alexander Kish (M.A. political science ’88), “The Origins of the Baptist Movement Among the Hungarians,” critical, Brill.

Laura Starr Levangard (hotel, restaurant, and institutional management ’90), “Exercise for the Masses: Are You Fit to Pray?,” relationship between fitness and prayer in world religion, CreateSpace.

Garret Mathews (economics ’71), “Folks Are Talking,” oral history, journalism, American life, self-published; and “Sandra’s Story: It’s Not Gonna Be a Very Good Day,” nonfiction, urban poverty, Plugger Publishing.

Bob Polomski (M.S. horticulture ’86), “Carolina Gardeners Resource,” gardening, Cool Springs Press.

William R. Schilling (civil engineering ’56), ed., “Nontraditional War and Peace: Twenty-First Century Challenges and Solutions,” Nontraditional Warfare Institute.

Victor E. Sower (chemistry ’68), et al., “Better Business Decisions Using Cost Modeling,” Business Expert Press.

Ashok Vaseashta (Ph.D. materials engineering science ’90), et al., “Technological Innovations in Sensing and Detection of Chemical, Biological, Radiological, Nuclear Threats, and Ecological Terrorism,” nanomaterials and nanotechnology, Springer.

memoir
Stafford Vermont Camp III (general agriculture ’54), “The Camps of Barn Tavern, Va.,” memoir, history, CreateSpace.

Angelina Hopkins (education specialist, educational leadership and policy studies ’99, Ed.D. ’01), “What If Angie Don’t Like Cabbage: Triumphing from Foster Care to Adulthood,” memoir, Publishing Connections.

fiction
Douglas Cameron (Ph.D. mathematics ’70), “The Body in the Perch Pond,” mystery, A-Argus Better Book Publishers LLC.

Pete Delohery (civil engineering ’65, M.S. ’71), “Lamb to the Slaughter,” boxing, Xlibris.

James Kennedy George Jr. (electrical engineering ’64), “Reunion,” coming of age, family, Southern life, Authorhouse.

James D. Kellogg (biology ’92, M.S. civil engineering ’96), “E-Force,” thriller, Wild Child Publishing.

Lewis King (business administration ’58), “Over the Shoulder,” short story collection, CreateSpace.

Eric Mosher (communication ’00), “Lost at Comic Con,” CreateSpace.

Domingo Rocha (physics ’78), “Death Across the Pond,” and a sequel, “Death Down Under,” thrillers, Old Line Publishing.

Elisabeth Staab (management science ’01), “King of Darkness,” paranormal romance, Sourcebooks Casablanca.

poetry
George A. Bowers Sr. (agricultural education ’86), “Valley Verses, Vol. II,” poetry collection, Lulu.

Donna Lewis Cowan (English, psychology ’92), “Between Gods,” poetry collection, Cherry Grove Collections.

children’s/teen
Suzy Beamer Bohnert (communication ’83), “Game-Day Youth: Learning Basketball’s Lingo,” reference, B&B Publishing.

Scott Freund (mechanical engineering ’91), “Rise of the Hokie Nation,” picture book, Mascot Books.

Shannon Milliken Pappert (communication ’95), “Boddler Bites, Food in a Flash: The ABCs of Feeding Your Boddler (older baby + younger toddler),” parenting, cooking, self-published.

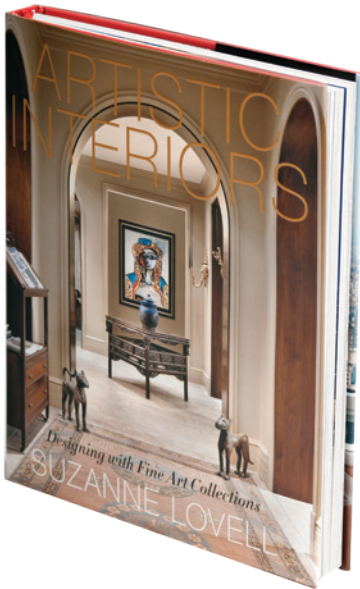
featured author:
Suzanne Lovell, “Artistic Interiors: Designing with Fine Art Collections”

For more than a quarter of a century, Suzanne Lovell (architecture ’83), who studied under Olivio Ferrari at Virginia Tech, has transformed home interiors into functional, elegant spaces.

Today, Lovell is founder and principal of Suzanne Lovell Inc., an architectural interior design firm with Chicago headquarters and a New York City studio, specializing in residential interior architecture, design, and decoration. She is widely recognized as an expert in art, antiques, textiles, and furnishings and is a sought-after lecturer.

Lovell’s first monograph, “Artistic Interiors: Designing with Fine Art Collections,” was published by Stewart, Tabori, & Chang, a division of Abrams Books, in October 2011. An excerpt, reprinted with the publisher’s permission, follows:

“If you were to ask most people what, exactly, an interior designer does, they would probably say something about the decoration of homes. That’s not entirely inaccurate. But after 25 years of practice, my firm has developed a signature working method that is more broadly multidisciplinary—one based on decades of immersion in the study of architecture, the decorative arts, and, not least, art history—and is aimed at producing fully integrated “couture” environments that, above all else, express the special personalities of the individuals for whom we work.”





The graceful pair of Joseph Piccillo charcoal drawings, Candida Höfer's bravura photograph on the dining room wall, and the Robert Polidori peeking out from beneath the stair attest to [the] client's love of portraiture and personality. Despite the great expanse of French limestone floor, the space is warmed up by the dark, rich walnut lining the archways and openings and making its way up the Georgian-style stair. The balance of architectural materials is as important to the success of the design as the art and furnishings.

IMAGES COURTESY OF SUZANNE LOVELL



Suzanne Lovell '83

A series of drawings, etchings, and lithographs by Matisse, Bissière, and Toulouse-Lautrec—all of them portraits made in the 1920s, and with stylistic elements common to the period—line the stairway wall in this Lincoln Park residence. They strike an intimate moment in this four-story, 15,000-square-foot (1,394-square-meter) home. The bust of Shiva is from Indonesia.

“Our interiors derive from three elements. Each serves as a stage for what comes next. Having begun my professional life as an architect at the corporate modernist firm Skidmore, Owings & Merrill, I understand that what’s most important in home design is to first create a clear, authoritative architectural foundation—one that, through its consistent language of material, detail, and color, conjures a legible environment that can be quickly, reassuringly understood. On top of this aesthetic legibility, we construct a timeless and elegant interior design scheme in which every space is meant to be used, and there is no moment in which one can’t sit down and feel comfortably held. Finally, these interiors serve as the frame for the third and most important component of all: the fine art and collections. By capturing the spirit of the residents, these make a house into a true and genuine home.”

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contributors

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



Commentary

Even the buses in Blacksburg aspire to wear class rings.

Bus-wrap art has become increasingly popular in cities across the country, and one of the newest wraps in Blacksburg's fleet calls attention to the Virginia Tech class ring. The wrap's bold title, "Wear the Tradition," is fitting for a university ring program that boasts the second-highest number of ring sales a year (behind Texas A&M). Virginia Tech is one of the few institutions to design a unique collection specifically for each rising junior class.

Despite the recent surge in the cost of gold, students remain eager to invest in this symbol of their experience as Hokies. The Ring Dance, held each spring in Squires Student Center, remains as popular as ever. The Class of 2011 celebrated the 100th year of the university's ring tradition with a giant commemorative ring cast in bronze, currently on display in the Squires lobby.

Every year, hundreds of alumni contact the Alumni Association, wishing to purchase a ring or have their current one repaired. In order to validate the eligibility of the purchaser, their names must be authorized with the appropriate ring manufacturer before a new ring is made.

The class ring tradition continues to thrive, as it ties alumni to the rich history, heritage, and values of the university. Now, Hokies will be reminded of that special connection as they see this handsome ring rolling through the streets of campus and Blacksburg.

Tom Tillar '69

Vice President for Alumni Relations

Alumni benefit from career resources program

In 2010, the Alumni Association launched a career resources program focused on assisting alumni who are changing jobs or looking for new opportunities. The program offers career consultation by phone or in person with Nancy Brittle, the program's director, and a website featuring helpful links and resources.

The Hokie Nation Network, which allows employers to post available jobs, is also a significant component of the program. Many employers who have hired Hokies have said they want to hire more in the future. As Zach Miller, executive recruiter from The Mergis Group, noted, there are some benefits to working with fellow Hokies: "Our company culture is excellent, especially for a Virginia Tech graduate. The owner closes the office on the Fridays before a home football game, so [employees] can directly support the team."

The program has already helped many alumni, some of whom have expressed their appreciation:

- "Thank you for taking time with me to discuss my résumé and net working opportunities. This was just what I needed to move forward."
- "I was amazed at how quickly you could assess my needs and provide quality advice, suggestions, and resources for me to draw upon."
- "Your advice and professional approach truly helped a great deal in putting many of my anxieties to rest. I am extremely excited to get serious about this next stage of my life, and, with the tools you helped me discover today, I am more confident in that than ever before."



LOGAN WALLACE

Career coach Mark Whitehouse '80 and Nancy Brittle '72, career resources program director

The career resources website includes a growing list of multimedia content from successful alumni reaching out to help fellow Hokies. A webinar archive features tips from industry experts, including Virginia Secretary of Natural Resources Doug Domenech (forestry and wildlife '78) speaking about natural resources; Debbie Petrine (management '78) discussing the health care industry; and Kurt Krause (marketing management '80) providing tips on business networking.

Last fall, a career coaches program was initiated. In short podcasts tailored toward specific fields, industry experts describe trends, offer advice on skills and education requirements, and pass along general tips on applying for jobs and achieving success. Tips have included the following:

- "Research the job before your interview by talking to other financial planners so you know what will be expected in [a] sales career. Applying for the job online is not enough," said **Eric Long** (history '80, M.S. '82), Edward Jones, financial advisor.
- "The best way to get where you want to go is to do the best job you can wherever you are. Take a job that will get you in the door and then exceed employers' expectations," said **Mark Whitehouse** (marketing management '80), owner of Whitehouse & Blakely, specializing in structured investing.
- "Add qualitative and quantitative skills to your résumé and customize your résumé to every job you apply for. Know what the job is, and practice for the interview," said **Curtis Mabry** (management '89), director of staffing and recruiting at Virginia Tech.
- "Don't take just any job. Do what you have a passion for. If you don't know, discover your skills and interests before getting employed and moving from job to job," said mortgage planner **Chris Young** (marketing management '90), owner of The Young Team.

The Alumni Association remains committed to helping Hokies who are going through job or career changes. For more information on the program, visit www.alumni.vt.edu/career or contact Nancy Brittle at nbrittle@vt.edu or 540-231-8904.



For more, check out www.alumni.vt.edu/hnn and www.alumni.vt.edu/career.

Connect with alumni

- Keep your mailing and email addresses current to receive the VT NetLetter and announcements for alumni chapter events, class year and other reunions, college homecomings, travel tours, and more. www.alumni.vt.edu/gateway/index.html
- Provide news on career highlights, weddings, births and adoptions, or deaths for Virginia Tech Magazine. www.vtmagazine.vt.edu/submit-class-note.php
- Register for the Hokie Nation Network, an online social network listing employment opportunities and more. www.alumni.vt.edu/hnn
- Keep your vt.edu email address for life. www.alumni.vt.edu/google
- Find alumni in our secure online directory. www.alumni.vt.edu/directory
- Find the Alumni Association online. www.alumni.vt.edu
www.facebook.com/virginiatechalumni
www.twitter.com/vt_alumni



2012 Drillfield Series offers memorable summer weekends May 4-5

The Drillfield Series continues this summer with weekends devoted to photography, health and wellness, and family fun. Make plans now to attend these programs designed exclusively for alumni and their families, and take advantage of the specially discounted accommodations available at The Inn at Virginia Tech.

Focus on Photography: Seeing Photographically

Take your photography to the next level! Sessions allow for plenty of hands-on learning that reinforces principles and leads participants toward seeing photographically. Several meals are included.

- **Introduction to Seeing Photographically:** Learn to translate your intentions into decisions.
- **Blue-Hour Light Painting:** Head outside for light painting in the evening, when the sky will appear deep blue in photographs.
- **On-Campus Photography Hunts:** Learn about light, quality, and direction; vantage point and framing; slow-shutter photography; selective focus; and simplicity versus clutter.
- **Closing Banquet:** See a slideshow and hear a discussion of participants' images.

Adults: \$135 • Children ages 13-17: \$79

June 1-3

Hokie Fitness, Health, and Wellness

During a vacation weekend for all ages, stimulate your senses as you learn about Tech's programs focused on healthy lifestyles. Highlights include the following:

- **Healthy Living Cooking Demonstration:** Learn how to embark on a lifelong habit of healthy cooking and living.
- **Explore the Gerontology and Child Development Centers:** The Center for Gerontology's research helps improve the quality of care and life for people in middle and old age. The Child Development Center for Learning and Research provides high-quality, field-based educational opportunities for students and sponsored research in early education and child development. Learn more about these centers and the interesting work they are doing.
- **VT Recreational Sports and Circuit Workout:** Discover what VT Recreational Sports has to offer, and join group-exercise classes with 15-minute previews of Zumba, BODYPUMP, BODYSTEP, yoga, and Spin City.

Registration: \$150 • Optional New River canoeing adventure: \$35

Come home, Hokies!

reunions

2012 Class Reunions

- Sept. 2-3** - Georgia Tech
Young alumni reunion
- Sept. 7-8** - Austin Peay
Class of 1982 30th anniversary
Class of 1987 25th anniversary
- Sept. 21-22** - Bowling Green
Class of 1972 40th anniversary
- Oct. 11-13** - Duke
Class of 1962 50th anniversary
- Nov. 8-9** - Florida State
Class of 1967 45th anniversary
- Nov. 23-24** - Virginia
Class of 1977 35th anniversary
Class of 1992 20th anniversary



REBECCA CRAIG

Festive reunions planned

Class reunions from the 20th to the 50th anniversaries are held at five-year intervals. Each reunion includes optional campus tours, a Friday evening meal, and plenty of time for reminiscing. Saturdays generally feature a morning brunch and pregame festivities. Thanks to special seating for reunion registrants, seeing the Hokies play in sold-out Lane Stadium is a treat for all.

The exception to the typical Friday/Saturday reunion is for a Thursday evening game, when the banquet follows on Friday. Rooms are reserved at the Inn at Virginia Tech for reunion registrants.



www.alumni.vt.edu/reunion



BRAD KLODOWSKI

2012 Homecomings

- Sept. 3** - Georgia Tech
College of Science homecoming
College of Architecture and Urban Studies homecoming
- Sept. 8** - Austin Peay
College of Veterinary Medicine homecoming
College of Natural Resources and Environment homecoming
- Sept. 22** - Bowling Green
Corps of Cadets homecoming
College of Liberal Arts and Human Sciences homecoming
- Oct. 13** - Duke
College of Engineering homecoming
Highly-Tighty reunion
- Nov. 8** - Florida State
College of Business homecoming
College of Agriculture and Life Sciences homecoming
- Nov. 24** - Virginia
Multicultural alumni homecoming
Graduate School alumni homecoming

Homecomings await alumni

Spread across the schedule of home football games, homecomings are hosted for the alumni of eight colleges, along with homecomings for Graduate School, Corps of Cadets, and multicultural alumni. Homecomings are open to all alumni of the constituent groups, regardless of graduation year. In each case, there is a game-day gathering, good food, and the opportunity to reunite with friends, faculty, and staff. Lodging and game tickets (if needed) are available to registrants on a first-come, first-served basis, so it's best to register early.



www.alumni.vt.edu/reunion

homecomings



JIM STROUP

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2012 Drillfield Series
www.alumni.vt.edu/drillfieldseries

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July 5-8

HokieCation: Family-Fun Vacation, Hokie Style

Join this special vacation opportunity for families to enjoy outdoor adventures, campus tours, and demonstrations. An optional Cascades hiking adventure through the VT Venture Out program is available. Highlights include the following:

- Hahn Horticulture Garden presentations for children and adults
- Healthy Kids Day: Enjoy face painting, family-oriented exercise classes, kids' yoga, an obstacle course, and much more. Learn about bike safety, nutrition, and germs. Virginia Tech athletes will also be present to interact with children.
- Swim and Film: Swim in the pool in McComas Hall while watching "Finding Nemo."
- Enjoy the Scenic New River Valley: Activities such as hiking the Cascades or Dragon's Tooth, biking, tubing on the New River, golf, tennis, and more will be available.

Adults: \$149 • Children ages 13-17: \$89 • Children ages 4-12: \$69 • Children 3 and under: free

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Historic Reflections: Mediterranean
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AHI Travel
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European Mosaic
Go Next (Oceania Cruises' Riviera)
June 16-27 • \$3,999* (air included)**

Waterways of Russia
AHI Travel
July 4-17 • \$4,111*

Best of Australia
Continuum Education Travel
July 14-24 • \$3,500*
Optional Fiji extension July 23-26 • \$1,500*

Scotland: Stirling
AHI Travel
Aug. 15-23 • \$3,050*

NEW! Epic Civil War River Cruise
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Aegean Marvels
Go Next (Oceania Cruises' Marina)
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Ancient Civilizations
Go Next (Oceania Cruises' Nautica)
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Say hello to the future.



Meet Chrissy Kayanan, a junior history major who hopes to work for an international aid organization such as the Peace Corps. She's wanted to make a difference abroad ever since visiting the Philippines while in high school. This summer, she will gain valuable experience through service-learning projects in Morocco, Sri Lanka, and Turkey.

Chrissy is one of more than a dozen students scheduled to study and work in those nations as part of a new program administered by the College of Liberal Arts and Human Sciences. Donations are helping to keep the program affordable for its students.

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Alumni, we want to hear what you've been doing. Although we cannot print stories or obituaries, we can post online photographs of weddings, babies, and spirited alumni, with some images appearing in print. Mail photos to Virginia Tech Magazine, 105A Media Building, Blacksburg, VA 24061, or email them to vtmag@vt.edu.

Please mail career, wedding, birth, and death news to Alumni Notes, Virginia Tech Alumni Association, Holtzman Alumni Center, Blacksburg, VA 24061; email them to fleets@vt.edu; or submit them online <http://www.vtmagazine.vt.edu/submit-classnote.php>.

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



PHOTOGRAPHIC DREAMS BY MICHAEL KEYS

'96 Christina M. Diamond and '98 Ryan J. Walters, Alexandria, Va., 10/29/11.

- weddings
- births and adoptions
- deceased

- '34 William A. Cox Jr., Virginia Beach, Va., 12/6/11.
- '37 J. Nelson Liskey, Penn Laird, Va., 7/9/11.
Hazel Robinson Smith, Charlotte, N.C., 5/31/11.
William M.B. Williams, Austin, Texas, 10/26/11.
- '39 Franklin S. Adkins, Cape May Court House, N.J., 12/1/11.
Jack M. Mason, Newport News, Va., 9/25/11.
- '40 M. Winston Redford, Brooklyn, N.Y., 9/6/11.
- '41 Irving Abel, Sunland, Calif., 12/11/10.
Robert N. Hampton, McLean, Va., 7/26/11.
- '42 William P. Andrews Sr., Richmond, Va., 11/18/11.
B.L. Givens, Salem, Va., 10/22/11.
John W. Martin Jr., Springfield, Va., 10/19/11.
Reese O. McCormick Jr., Courtland, Va., 10/29/11.
Mary Ellen Reed Moses, Christiansburg, Va., 8/22/11.
Edward M. Sears, Melbourne, Fla., 1/26/11.
Mary Owen Whatsitt, Austin, Texas, 10/24/11.

- '43 Robert M. Rubush, Seminole, Fla., 12/30/11.
- '44 Joseph F. Guza, Lynchburg, Va., 9/26/11.
Doris Cline King, Hampton, Va., 7/16/11.
- '45 Charles E. Taylor Jr., Bethlehem, Pa., 8/20/11.
R.G. West, Roanoke, Va., 10/17/11.
- '46 John P. Hughes III, Lynchburg, Va., 12/11/11.
Robert E. Jordan, Ashland, Va., 8/24/11.
- '47 William W. Dillon Jr., Blacksburg, Va., 1/9/12.
Billie C. Pearce, Charles City, Va., 10/26/11.
Linvil G. Rich, Anderson, S.C., 9/29/11.
- '49 James E. Bondurant, Fort Mill, S.C., 11/19/11.
Robert N. Hufnell, Bon Air, Va., 8/17/11.
A. Jesse Thompson, Chattanooga, Tenn., 10/15/11.
- '50 Joseph H. Collie (CHE), Durham, N.C., received the Virginia Tech College of Engineering 2011 Distinguished Service Award.
Lawrence F. Knowles (FW), Lakewood, Colo., authored the book "Korean War Letters from a Lieutenant and His Bride."

- William H. Batts, Carrollton, Va., 7/18/11.
Charles E. Brown, Painted Post, N.Y., 12/28/11.
Betty Harman Cooper, Pearisburg, Va., 1/4/12.
James E. Coutts, Smithfield, Va., 10/4/11.
Lewis F. Garber, Los Angeles, Calif., 7/2/11.
Arthur E. Reynolds Jr., San Antonio, Texas, 8/8/11.
Jack K. Spruhan, Charlotte, N.C., 10/6/11.
Robert L. Toye, Spring Hill, Fla., 10/15/11.
Lloyd H. Weatherly Jr., Etowah, N.C., 10/2/11.
- '51 Norman A. Amendola, Rochester, N.Y., 5/27/11.
J. Robert Dobyns, Blacksburg, Va., 1/1/12.
Marguerite Shannon Gerhardt, Chesapeake, Va., 10/5/11.
Stephen F. Hart Jr., Richmond, Va., 7/16/11.
Lynwood D. Wells, Martinsville, Va., 11/8/11.
- '52 George A. Miller (DASC '56, DASC '56), Columbus, Ohio, was inducted into the Virginia Livestock Hall of Fame.
- John W. Hammock, Danville, Va., 10/2/11.
L. Harold Lingerfelt, Richmond, Va., 11/21/11.
Dewey L. Stinson Jr., Newport News, Va., 1/8/12.
- '53 Don S. Cassell Sr., Chattanooga, Tenn., 12/1/11.
- '54 Richard R. Graves, Fork Union, Va., 11/18/11.
- '55 Lawrence N. Rorrer, Harrison, Ark., 8/23/11.
Doraine Sanzio, Blacksburg, Va., 11/13/11.
- '56 Eugene D. Callaway, Richmond, Va., 12/3/11.
Matt McCulloch, Washington, D.C., 7/20/11.
Richard L. Thompson, Merritt Island, Fla., 7/18/11.
- '57 Collins A. Chapman, Richmond, Va., 4/15/11.
Jack Deskins, Pelham, Ala., 2/12/11.
Karl A. Kalber, Marion, Va., 11/17/11.
Edsel H. Lester, Roanoke, Va., 1/8/12.
James B. Loving, Newport News, Va., 10/7/11.
- '58 James C. De Jarnette IV, Richmond, Va., 10/16/11.
Hugo D. Glenn, Suffolk, Va., 10/23/11.
Dennis F. Hasson, Severna Park, Md., 11/15/11.
G.H. Lindsay, Ashburn, Va., 7/13/11.
Willborne A. Smith, Hillsville, Va., 10/25/11.
Robert J. Whitmire, Ruskin, Fla., 11/6/11.



'02 Lauren Duvall Heisey and her husband, Chris, Falls Church, Va., a son, 12/19/11.



'06 Gregg M. Nelson and **'07** Kate Haas, Cranford, N.J., 6/11/11. The bride and groom are in the center, surrounded by Hokie alumni in attendance.

'59 **William A. Cozier**, Los Angeles, Calif., 10/20/11.
Charles A. Gross, Blue Ridge, Va., 11/19/11.
Philip A. Jaskowiak, Virginia Beach, Va., 9/22/11.
F. Wayne McKenzie, Sarasota, Fla., 1/17/11.
John A. Muir, Lake Oswego, Ore., 9/4/11.
W.C. Olsen, Palm Beach Gardens, Fla., 8/22/11.
Raymond O. Terry Jr., Winston-Salem, N.C., 8/27/11.
Penn M. Warriner, Knoxville, Tenn., 8/24/11.
Richard L. Williams, Columbia, Md., 10/6/11.

'60 **C.A. Featherston**, Richmond, Va., 10/3/11.
Lewis B. Mills, Richmond, Va., 10/12/11.
Lenard A. Old Jr., Fairfax, Va., 7/16/11.
'61 **Thomas A. Caldwell**, Smithfield, Va., 10/31/11.
James R. Flynt Jr., Beaufort, N.C., 10/2/11.
'62 **Lawrence B. Roberts**, Daleville, Va., 10/24/11.
'63 **Thomas B. Cleaton**, Boykins, Va., 11/1/11.
Don G. Lambert, Blacksburg, Va., 12/23/11.
R. Wayne Musick, Bluefield, Va., 7/23/11.



'08 Belilta Asfaw (ARCH), Alexandria, Va., was part of a design team for a new student center at the University of the District of Columbia that earned a 2011 Professional Design Excellence Award from the National Organization of Minority Architects.



PARTNERS IN FINANCIAL PLANNING

'70 James E. Pearman Jr., Salem, Va., was recognized by Virginia Business magazine as a 2011 Virginia "Super CPA" in the personal financial planning category.

'64 **Edward A. Wyatt V** (PAD), Wilson, N.C., is interim city manager for Roanoke Rapids, N.C.
 Thomas H. Rose, Raleigh, N.C., 10/10/11.
'65 **Irving M. Blank** (PAD), Richmond, Va., received the Virginia Lawyers Weekly's 2011 Leader of the Year award.
'66 **Robert S. Ford**, Ebony, Va., 7/20/11.
'67 **R.A. Boynton** (ARCH '69), Richmond, Va., was appointed by Gov. Bob McDonnell to a four-year term on the Virginia Fair Housing Board.

G. William Kingsbury Jr. (URPL), Snellville, Ga., is director of the Gwinnett County Neighborhood Stabilization Program, which allows local communities to buy, rehabilitate, and sell foreclosed properties to low- and middle-income families.

William C. Archer, Oakboro, N.C., 10/13/11.
James M. Knight, Lake Mary, Fla., 11/1/11.
'68 **Michael H. Brooks**, Norton, Va., 11/6/11.
William E. Hardy Jr., Auburn, Ala., 10/14/11.

'69 **D.H. Horsley** (ANSC '70), Virginia Beach, Va., received the Virginia Farmer of the Year award for his contributions to the commonwealth's agricultural industry.
 G.C. Miller Jr., Seymour, Tenn., 10/27/11.
'70 **Donald R. DelBalzo** (PHYS, PHYS '71), Slidell, La., is a defense contractor for QinetiQ North America, developing an ocean wave-energy harvesting buoy for the Navy.
James E. Pearman Jr. (ACCT), Salem, Va., was recognized by Virginia Business magazine as a 2011 Virginia "Super CPA" in the personal financial planning category.
C.J. Pettus (PSCI), Holts Summit, Mo., retired from the Missouri Department of Corrections after 28 years of service.

weddings
 births and adoptions
 deceased

'72 **Gregory T. Deshields**, North Myrtle Beach, S.C., 11/7/11.
Stephen I. Robertson, Burleson, Texas, 10/17/11.
Howard J. Tabor, Montpelier, Va., 11/18/11.
Ellen Haun Williams, East Quogue, N.Y., 10/15/11.

'73 **William D. Engelke** (EE '74), Northport, Ala., is project manager for the Center of Advanced Public Safety for the University of Alabama.
William R. Fisher (MINE '74), Richlands, Va., retired from Consol Energy after 38 years of service in the coal industry.
Henry Samuel Mattox (HPE), Richmond, Va., earned his Certified Property Manager designation from the Institute of Real Estate Management.
Marc W. Sheffler (ASE), Bear, Del., retired from the Boeing Company after 38 years of service and is now president of the Delaware branch of the Juvenile Diabetes Research Foundation.

Lacy C. Harold, Buchanan, Va., 12/25/11.

'74 **R. Michael Akers** (BIOL, DASC '76), Blacksburg, Va., was reappointed as the Horace E. and Elizabeth F. Alphin Professor of Agriculture and Life Sciences by the Virginia Tech Board of Visitors.
R. Keith Daly (ECON, ECON '80), Annandale, Va., retired from the U.S. Department of Commerce after 37 years of federal service.
'75 **Jerry L. Archer** (EE '76), Round Hill, Va., received the North American Information Security Executive of the Year award for 2011.
Jane Miller Tabb (DASC), Kearneysville, W.Va., was named 2011 West Virginia Woman in Agriculture and received the Distinguished Service to West Virginia Agriculture, Natural Resources, & Design Award of Merit from the West Virginia University Chapter of the Gamma Sigma Delta honor society of agriculture.

Leslie O. Chambers, Goodview, Va., 12/27/11.

'76 **William A. Gray** (PSCI '77), Glen Allen, Va., was elected as a shareholder for Sands Anderson Law Firm.
 Mary Burnette Giles, Blacksburg, Va., 8/27/11.

'77 **Earl M. Gaughan** (BIOL), Blacksburg, Va., is a clinical professor of large animal surgery at the Virginia-Maryland Regional College of Veterinary Medicine.
Maury S. Saunders (ARCH), Herndon, Va., is design director for the Naval Facilities Engineering Command in Washington.

Franklin D. Lauderdale, Forest, Va., 10/1/11.
Lois B. Rambo, Fredericksburg, Va., 11/12/11.
Richard G. Thornhill, Tyrone, Pa., 10/21/11.

'79 **L. Michael Ewald** (ACCT), Woodstown, N.J., is a Bank Secrecy Act senior compliance officer and vice president at M&T Bank in New Jersey.
Leigh Newton LaClair (HORT), Oilville, Va., is the deputy chief facilities officer at Virginia Tech.

Mary Leigh Wolfe (AGE, AGE '81), Blacksburg, Va., is the head of the Department of Biological Systems Engineering at Virginia Tech.

Vernon C. Bono, Williamsburg, Va., 10/6/11.
David E. Fulton, Tewksbury, Mass., 10/14/11.
Raymond E. Leonard, Elizabeth City, N.C., 10/12/11.
Robert W. Rives, Long Beach, Calif., 10/17/11.

'80 **Charles M. Earley III** (ARCH), Winterport, Maine, designed and patented a one-piece, multi-use, no-squeeze clipping device known as Eclipse.
Gerald H. Luttrell (MINE, MINE '82, MINE '86), Blacksburg, Va., received the 2012 Robert H. Richards Award from the Society for Mining, Metallurgy, and Exploration.
Jennifer Morris Sauer (ACCT), Richmond, Va., is vice president of finance and administration at Immaculata University.
P. Bradner Walker (MGT), Atlanta, Ga., was promoted to general manager of Printpack's medical packaging division.



Alumni spread culture of caring

In 1991, Alumni Distinguished Professor E. Scott Geller coined the term "actively caring," describing behavior that goes beyond the call of duty to care for others.

In the wake of April 16, 2007, "actively caring" took on a renewed importance. In 2008, Brandon Carroll (applied economic management '11) and Shane McCarty (marketing management '11) approached Geller with the idea of applying "actively caring" to the university. Under Geller's direction, Carroll and McCarty—along with Taris Mullins (English '09), Ryan King (finance, accounting, and information systems '11), and Joey Zakutney (marketing management '11)—founded Actively Caring For People (AC4P), an organization seeking to establish a more civil, compassionate, and interdependent culture inspiring intentional acts of kindness. AC4P draws upon research principles from the Center for Applied Behavior Systems and Center for Peace Studies and Violence Prevention at Virginia Tech. Five years later, the movement has spread to other colleges and universities and K-12 schools.

McCarty, a Ph.D. student in industrial and organizational psychology, conducts research associated with "actively caring" and reducing bullying behavior in schools. "We certainly have a vision to affect education nationwide. Our 'actively caring' process that we're currently evaluating in middle schools [is one that we hope can] become a foundational program for this entire movement," said McCarty. The group has presented the concept around the

country, including in Virginia, Ohio, California, Arizona, and New York.

Geller initially coined "actively caring" to encourage workplace safety in industrial settings. "I have been at Virginia Tech 43 years and continue to love my work. Why? Because I see the fruits of my labor, and what these students are doing to promote Actively Caring in schools says it all," said Geller.

Playing a visible role in the movement, green silicon wristbands are passed from person to person during acts of kindness and can be tracked online using serial numbers. "You can now log online and share your story and then track where [the bracelet's] been. In some cases, you can see five or six people who got it before you. It really creates a sense of community," said Mullins.

Since graduation, Carroll, McCarty, Mullins, King, and Zakutney have each pursued separate career paths, but maintain close relationships because of AC4P. "We were all certainly friends before all of this started, but it's only strengthened the relationships we have," McCarty said.

By Rommelyn Conde (communication '07), a graduate assistant for University Relations.



web extras

For a video on AC4P, visit www.vtmag.vt.edu.

Alumna offers treasure trove of parenting tips

Drawing upon 30 years of research in child development, Karen DeBord (management, housing, and family development '76, Ph.D. family and child development '91) knows that the best answer to many parenting problems is to be proactive.

COURTESY OF KAREN DEBORD



After retiring as a North Carolina State University child development professor, DeBord launched Possibility Parenting, a website to support parents. She developed a number of tips, many of which focus on establishing exactly what children yearn for: a true connection with the most important people in their lives—their parents.

1. Meet emotional needs. “A child’s task the first year is learning [how to] trust. Gaze at the child. Let the baby hear the rhythm of your voice. Sing and read. A baby’s brain is making connections that can be healthy and warm or [accustomed] to arguing. It does matter how adults act around an infant.”

2. Practice makes perfect. “Often, parents feel frustration about having to tell their children over and over again to do things. This is part of being a parent and part of the development of children. They must practice in order to learn.”

3. P’s and Q’s take time. “Intellectually, preschool children don’t understand rules. Observe a toddler playing a game like Go Fish; you end up sorting the cards by color or suit. Rules click in by the time a child is about 6 years old.”

4. Embrace tradition. “Family routines, special occasions, and rituals are fodder for good memories. Think about how you are establishing traditions, and remember to keep them going.”

5. Disconnect to connect. “Often, parents are at a loss for how to connect with children. Avoid the TV as a quick fix. Reading, cooking, or even gardening are all fun ways to [develop] a closeness that will create resiliency in the relationship for the tough years ahead.”

6. Impulsivity is okay. “Adolescent children often act first, then step back and say, ‘Whoops!’ They will learn greater self-control through experience and brainstorming with parents about how to make a decision.”

By Sarah Fitzgerald, a junior majoring in communication and English and an intern with Virginia Tech Magazine.

’81 Steven S. Prevette (CE), Graniteville, S.C., received a Fellow grant from the American Society for Quality for achieving distinction and pre-eminence in the technology, theory, educational application, or management of quality control.

Sally N. Schwartz (MKTG), Chicago, Ill., was named one of the Top 50 Global Event Planners by Special Events Magazine and recognized as the Midwest’s premier market organizer.

James L. Smith (FOR), Switzerland, Fla., had the International Spatial Accuracy Research Association’s Early Career Scientist award named after him. In 2010, the U.S. Geological Survey recognized Smith with the John Wesley Powell Award.

Colette Reeves, Suffolk, Va., 10/21/11.

Annette M. Sheydwasser, Kingston, Pa., 7/22/11.

’83 Suzanne Beamer Bohnert (COMM), Arlington, Va., has received a variety of awards for several of her books, including “Game-Day Goddess: Learning Football’s Lingo,” “Game-Day Goddess: Learning Basketball’s Lingo,” and “Game-Day Goddess: Learning Baseball’s Lingo.”

Michael L. Burton (ME), Grand Blanc, Mich., is director of global aftermarket engineering for Dana Holding Company.

Mary Kathryn B. Owens (ENGL), Midlothian, Va., was named one of the 2011 Legal Elite by Virginia Business magazine.

Alexandria C. Roe (ARCH), West Hartford, Conn., was named a Woman of Accomplishment in the Architectural/Engineering/Construction Industry for 2011 by the Connecticut chapter of Professional Women in Construction.

Sheila Denlea Honan, Stuart, Fla., 7/21/11.

’84 Sally Frank Phillips (MKTG), Mooresville, N.C., is vice president of marketing at Mariner.

Eric N. Fink, Fairfax, Va., 10/12/11.

Melinda Watson Lautenberger, Jefferson, Md., 11/3/11.

C.E. Marr Jr., East Hampton, N.Y., 11/17/11.

Nancy Bowman Sauer, Englewood, Colo., 2/1/12.

David L. Swain, Roanoke, Va., 10/21/11.

’85 Jeffrey N. Johnson (ARCH ’86), Alexandria, Va., received the 2011 Andrew Lytle Fiction Prize from The Sewanee Review.

’86 Kevin J. Brimhall (IEOR), Raleigh, N.C., is a leadership and business development consultant as well as a recently certified personal and business coach with JFD Performance Solutions.

James C. Hardter (AOE), Poolesville, Md., earned his master’s degree in mechanical and aerospace engineering from George Washington University.

Thomas A. Schubert (EE), Crofton, Md., is chief engineering officer for Gibbs & Cox Inc.

’87 William R. Sarvis (HIST, HIST ’90), Eugene, Ore., authored a book entitled “The Jefferson National Forest: An Appalachian Environmental History.”

Gregory B. Streit (IEOR), Charlottesville, Va., is assistant dean for building services at the University of Virginia School of Law.

David R. Winston (DASC, DASC ’98), Blacksburg, Va., received the honorary American Future Farmers of America degree, awarded to teachers who have created high-quality agriculture education programs that inspire and motivate students.

Carl W. Cormia, Cedar Park, Texas, 10/29/11.

’88 Jessamine Kane-Wiseley and **’98 Colin Wiseley**, Christiansburg, Va., 4/29/11.

’90 David C. Osucha, Paducah, Ky., 8/25/11.

’91 Terri T. Mitchell (ACCT), Christiansburg, Va., is associate vice president for administration and controller for the Virginia Tech Foundation.

Paul D. Wylie III (FIN), Villa Rica, Ga., is president and COO of K.B. Industries Inc. of Largo, Fla.

’92 Jennifer L. Bay (ENGL, ENGL ’95), West Lafayette, Ind., is an associate professor of English at Purdue University.

James D. Bennett (LASC), Red House, Va., was inducted into the Virginia Livestock Hall of Fame in recognition of contributions to the state’s livestock industry and its people.

Jennifer L. Bay, a daughter, West Lafayette, Ind., 5/12/11.

Leisl B. Edwards, a daughter, Ellicott City, Md., 5/6/11.

’93 Sylvia M. DeSantis (ENGL), State College, Pa., authored a book, “Watercharms: Ocean-Reiki Meditations.”

weddings

births and adoptions

deceased

Kimberly J. McGovern-Shanahan (FIN), Leesburg, Va., is managing director of Korn/Ferry’s Human Resources Center of Expertise, North America.

Christina Shepherd Meade (COMM), Wise, Va., earned a master’s degree in library and information science from the University of South Carolina.

Blake Beach and **’97 Ryan Esleeck Beach**, Atlanta, Ga., a daughter, 11/11/11.

Susan Goodman Schaub, a son, Denver, Colo., 10/6/11.

’94 Mark A. Clark (COMM), Stoneridge, Va., produced an action-thriller film, “Sinners and Saints.”

Thomas R. Hergert (EDCI, EDCI ’97), Manassas, Va., is dean of learning and technology at Northern Virginia Community College.

Donna C. Noll (MATH), Deltona, Fla., was named Teacher of the Year at Seminole High School in Sanford, Fla.

Jill E. Norris (FIN), Christiansburg, Va., is the recruiting officer for the Virginia-Maryland Regional College of Veterinary Medicine.

Dennis Papa (ESEN), Moseley, Va., is vice president and COO for REMSA Inc., an environmental and engineering consulting firm.

Jennifer L. Byrnes, a son and daughter, Gallipolis, Ohio, 11/17/10.

Nathaniel H. Hunt, Alexandria, Va., 9/5/11.

’95 Scott N. Armstrong (COMM), Lewisville, N.C., received his National Board Certification for teaching.

Scott W. Weimer (PSCI), Radford, Va., is director of continuing and professional education, part of outreach and international affairs at Virginia Tech.

Stephanie Hartmann Paget, a daughter, Glen Allen, Va., 10/7/11.

Lynn Barber, Blacksburg, Va., 11/27/11.

Rita Kern Voke, Norfolk, Va., 11/12/11.

’96 Duane M. Blackburn (EE, EE ’01), Fredericksburg, Va., completed an eight-year nonpolitical assignment in the White House’s Office of Science and Technology Policy.

Christina M. Diamond and **’98 Ryan J. Walters**, Alexandria, Va., 10/29/11.

Sara Fletcher Lough and **William J. Lough**, Chantilly, Va., 11/5/11.

Michelle Africa Agnoli and **’96 Nicholas W. Agnoli**, Little Falls, N.J., a son, 5/11/11.

Amanda K. Alger, a son, Charlottesville, Va., 4/19/11.

’97 Brian M. Sandifer (MSCI), Bristow, Va., is associate pastor of Heritage Presbyterian Church in Warrenton, Va.

John C. Distler and **’99 Mary Kallio Distler**, Severna Park, Md., a daughter, 10/11/11.

Lauren Desrochers Niffenegger and **’97 Lee E. Niffenegger**, Santa Clarita, Calif., a son, 11/18/11.

Nora James Spangler, Floyd, Va., 12/31/11.

’98 James W. Lanham III (ELPS ’98), Sanford, Fla., retired as a teacher and administrator in Virginia after 33 years of service. He is now director of secondary education at the University of Richmond.



LOGAN WALLACE

Lost—for nearly 40 years—and found

In 1974, John Wright’s class ring and other jewelry were stolen from his home in Hingham, Mass. Hoping to locate the ring, Wright (chemical engineering ’57) and his wife, Mira, searched area pawnshops, with no luck. Years passed, and the Wrights moved; they now live and run a business in Albuquerque, N.M.

In December, a package containing a 1957 class ring was delivered to the university’s Office of the President. Enclosed was a note from

Joshua A. Snyder (HIST ’98), Cameron, N.C., was selected as the Hokie Hero for the Virginia Tech vs. Wake Forest game.

Pavlos P. Vlachos (EM, EM ’00), Blacksburg, Va., was named the John R. Jones III Faculty Fellow in Mechanical Engineering by the Virginia Tech Board of Visitors.

Cynthia Rogers Butler, Fairhope, Ala., a son, 6/23/11.

Jodie Schwarz Goldberg, Washington, D.C., a son, 4/19/11.

Sharon Sweet Smidler and **’99 Jeffery A. Smidler**, Glen Allen, Va., a daughter, 10/19/11.

Dana Lapiska Willis, South Riding, Va., a daughter, 10/24/11.

Walter C. Hensley, Duffield, Va., 10/19/11.

’99 Jessica Savitsky McNeil, Salt Lake City, Utah, a daughter, 7/4/11.

’00 Heather Will Beman (BIOL), Mount Pleasant, S.C., is a neonatologist for Bon Secours/Roper St. Francis Hospital System in Charleston, S.C.

Gary R. Kirk (URBA, EDP ’04), Harrisonburg, Va., is director of the Center for Student Engagement and Community Partnerships at Virginia Tech.

Michael R. Munsey and **Jennifer Belcher**, Roanoke, Va., 10/15/11.

Troy S. Smith and **Stacy L. Smith**, Virginia Beach, Va., 6/25/11.

Sean Sullivan and **’02 Melanie Burgess**, Aldie, Va., 5/29/11.

Heather Will Beman and **’01 Scott Beman**, Mount Pleasant, S.C., a daughter, 7/11/11.

Charity Gravitt Chung, Montgomery Village, Md., a son, 1/11/11.

Jason W. Galloway, Waxhaw, N.C., a son, 7/30/11.

Stephen T. Mason, Miami, Fla., a son, 10/12/11.

Garrett A. Mears and **’00 Kimberly Housman Mears**, London, United Kingdom, a son, 4/27/11.

Claude E. Skelton II and **’02 Susanna Wohlford Skelton**, Sunnyvale, Calif., a son, 12/28/10.

’01 George J. Flynn III (BIT), Oceanside, Calif., was selected as the Hokie Hero for the Virginia Tech vs. University of Virginia game.

Fangxing Li (CPE), Knoxville, Tenn., is an associate professor in the Department of Electrical Engineering and Computer Science at the University of Tennessee at Knoxville.

Donald S. Haga III and **Kristen L. Ball**, Austin, Texas, 5/13/11.

Thomas R. Greer III and **Erika A. Weiberth**, Centreville, Va., 7/9/11.

a man named John Kichler, which read: “I have found this ring in Hingham, Mass., and thought you could return [it] to the owner.” Inside the ring’s band, there was an inscription: “John L. Wright.”

Almost 40 years later, Wright was reunited with his lost ring. “[I was] quite excited because it’s one of those things that, if you don’t wear it all the time, you at least keep it as a lifetime keepsake,” Wright said. “It still fits just as well as it did when I first got it.” Wright proudly wears the ring on a daily basis. “I have 10 grandkids, and now they say, ‘I’ve never seen you wear jewelry before, Grandpa.’”

—Rommelyn Conde ’07

👤 **Marilyn Kay Eames Kitchell**, Morris Plains, N.J., a daughter, 10/3/11.
Leanna Konowicz McDonald, Port St. Lucie, Fla., a son, 8/8/11.
Kenneth E. O'Brien and **'02 Abigail Perlstein O'Brien**, Barrington, N.J., a daughter, 4/22/11.
Mark A. Sager and **'01 Whitney Simmons Sager**, Staunton, Va., a son, 8/29/11.
Sherry Hall Thompson and **'02 Michael A. Thompson**, Charlotte, N.C., a son, 3/4/11.

'02 Matthew R. Cook (HNFE '03), Daito-Shi, Osaka, Japan, formerly with the Japan Exchange and Teaching program, lent a helping hand after the Japanese tsunami.
Daniel M. Kane (IDST), Manhattan, Kan., was selected as the Hokie Hero for the Virginia Tech vs. Georgia Tech game.
William B. Lewis (COMM '03), Chevy Chase, Md., is chief of speech-language pathology at Fort Belvoir Community Hospital.
Russell L. McLaughlin III (ISE), Sanford, Fla., is a licensed professional engineer in the State of Florida.



Delaware's roads under alumna's watchful eye

As chief engineer and director of transportation solutions for the Delaware Department of Transportation, Natalie Barnhart (civil engineering '89) oversees all road and bridge projects for the state.

Barnhart's career at the department began right after graduating. "I started in the engineering trainee program, which has you rotate through different divisions to help you find the particular area that suits you," Barnhart said. The prospect of hands-on work kept Barnhart interested in construction. Given the chance to work outdoors, oversee projects from start to finish, and even commute to work using the very same roads and bridges she helped with, Barnhart remained in the construction division until being appointed to her current position in 2009. "There's a great sense of satisfaction in my line of work, seeing the projects come to life and seeing people en-

Jeremy R. Moss (PSCI, SOC), Alexandria, Va., was named Educator of the Year by the Washington metropolitan chapter of the Community Associations Institute.

👤 **Jennifer Padrick Duszak** and **David A. Duszak**, Wilmington, Del., 4/30/11.
👤 **Michelle Guerra Brown**, Yorktown, Va., a daughter, 9/12/11.
David D. Francke and **'03 Rebecca Heath Francke**, Huntington, W.Va., a daughter, 11/11/11.

Kevin M. Gallagher and **'03 Krista Pratt Gallagher**, Arlington, Va., a son, 11/2/11.
Elizabeth Lee Senft and **'03 Michael S. Senft**, Spring Lake, N.C., a son, 5/6/11.
Heather Parks Turner, Hardy, Va., a daughter, 6/15/11.
Phillip A. Wadl and **'08 Erica Fritz Wadl**, Powell, Tenn., a son, 5/2/11.
Michael T. Walton, Pilot, Va., a son, 9/27/11.

👤 **Heather Moore Bernard**, Earlysville, Va., 11/17/11.

'04 Katherine L. Weeks (HD), Richmond, Va., launched Vanguard Training Institute, a company providing customized leadership training to student, corporate, and civic leaders.

👤 **Joshua M. Fink** and **'04 Katherine K. Mason**, Baltimore, Md., 9/10/11.
👤 **Kristen Chiasson Barton**, Seattle, Wash., a son, 9/30/11.
Brendan C. Gower and **'04 Jessica Swicegood Gower**, Greenville, S.C., a daughter, 6/26/11.
Michael R. Shannon and **'05 Jennifer George Shannon**, Alpharetta, Ga., a daughter, 9/28/11.

'05 Catherine W. Harrison (PAPA), Cartersville, Va., is director of community integration for Virginia's Olmstead Initiative, reporting to the commissioner of the Virginia Department of Rehabilitative Services.
Waldo D. Jaquith (PSCI), Keswick, Va., is an open government technologist for the White House.
Lindsay B. Lally (CE), Christiansburg, Va., is a project task manager for Draper Aden Associates.
Patrick B. Lowther (PSCI), Navarre, Fla., was selected as a Hokie Hero for the Virginia Tech vs. Duke University game.
Christopher J. Parker (HNFE), Eden, N.C., was named the 2011 National Association of Collegiate Directors of Athletics/Under Armour AD of the Year in the junior/community college category's southeast region.

joy [them] for years to come," Barnhart said. "Also, knowing that we're keeping people safe on our roads [is] a big part of our work."

Currently, Barnhart is overseeing completion of the Indian River Inlet Bridge, a \$150 million cable-stayed span. Some 2,600 feet long and 108 feet wide, the bridge offers residents and visitors access to Delaware's beaches. Presently, the bridge has two traffic lanes, which will double to four lanes by the end of construction. The official dedication is scheduled for late spring 2012. "It's been a long time getting here, so it's nice to see people starting to enjoy the bridge and drive on it. It's the highlight of my career so far," said Barnhart.

Barnhart, who earned an M.B.A. at the University of Delaware, cherishes her time in Blacksburg. "My experience at Tech was great. It wasn't just a great technical education, but a well-rounded education," she said. "It prepared me well for my profession."

By Rommelyn Conde (communication '07), a graduate assistant with University Relations. Photo courtesy of the Delaware Department of Transportation.

👤 weddings
👤 births and adoptions
👤 deceased

👤 **Morgan L. Bracken** and **'05 Erin C. Hawkinson**, Arlington, Va., 9/17/11.
👤 **Hunter K. Dickenson** and **'06 Erin Leonard Dickenson**, Glen Allen, Va., a son, 9/28/11.

'06 Amir A. Abu-Akeel (AE), Centreville, Va., was selected as the Hokie Hero for the Virginia Tech vs. University of North Carolina game.
Lachelle M. Waller (GSCR, GBCB '10), Kernersville, N.C., was inducted into Chowan University's Athletic Hall of Fame.

👤 **Cory A. Martin** and **Kristen L. Brown**, McKinney, Texas, 3/26/11.
Seth R. Morris and **'08 Lauren E. Wilson**, Portsmouth, Va., 9/10/11.
Gregg M. Nelson and **'07 Kate Haas**, Cranford, N.J., 6/11/11.
Lindsay Caine Wetzel and **Ryan A. Wetzel**, Greenwood, S.C., 10/30/10.
Randall L. Wright Jr. and **'08 Courtney A. Mason**, Charlotte, N.C., 9/10/11.

'07 Hari K. Pyla (CSA), Blacksburg, Va., received the 2011 John Vlissides Award in recognition of his contributions to computer science.
Adrienne M. Trier-Bieniek (GSCR, SOC), Orlando, Fla., received a doctorate in sociology from Western Michigan University.

👤 **Joseph M. Derlaga** and **'09 Anna Pearl Blevins**, Blacksburg, Va., 8/13/11.
Charles A. Neagle Jr. and **'08 Rachel A. Marksteiner**, Henrico, Va., 12/10/11.

'08 Belilta Asfaw (ARCH), Alexandria, Va., was part of a design team that earned a 2011 Professional Design Excellence Award from the National Organization of Minority Architects.
Katie Netherton Boes (VM), Blacksburg, Va., is an instructor of clinical pathology at the Virginia-Maryland Regional College of Veterinary Medicine.

Wiljeana J. Glover (ISE '07, ISE '10), Blacksburg, Va., received a Philanthropic Education Organization Scholar Award for 2011-12.
Nathan T. Kane (MKTG), Dumfries, Va., was selected as the Hokie Hero for the Virginia Tech vs. University of Miami game.
Andrew T. Kinney (COMM), Sanford, Fla., received the Bronze Star Medal and the Combat Action Badge from the U.S. Air Force.
Faren M. McNabb (HTM), Arlington, Va., is a conference center manager for Virginia Tech Research Center Arlington.

👤 **Tara Brown Morris** and **'11 Kent Morris**, Blacksburg, Va., 8/13/11.
Tiffany Francis Reaves and **Jesse L. Reaves III**, Williamsburg, Va., 9/10/11.
Nicholas S. Saunders and **'08 Jenna L. Wolfe**, Carlsbad, Calif., 7/16/11.

👤 **Andrew R. Drozinski** and **'08 Callie Pope Drozinski**, Charlotte, N.C., a daughter, 10/9/11.
Amanda Smithies Jones, Harpers Ferry, W.Va., a daughter, 7/15/11.
'09 Taylor A. Hathaway (PSCI), Ashland, Va., earned a master's degree in health administration from the University of South Florida and is a business-development management analyst at Mount Sinai Medical Center in New York.
Amy L. Carrozzino-Lyon and **'11 Scott W. Lyon**, Christiansburg, Va., 8/6/11.

'10 Nathaniel Buss (PAPA '10), Washington, D.C., was named a Presidential Management Fellow by the U.S. Office of Personnel Management.
Patricia Urlick Ryder (PSCI '10), Falls Church, Va., was selected as the Hokie Hero for the Sugar Bowl.

'11 Angela H. Jones, Blacksburg, Va., 8/20/11.

obituaries

Nancy Bowman Sauer (industrial engineering and operations research '84), of Englewood, Colo., died Feb. 1. The international president of the Virginia Tech Alumni Association from 1996-97, Sauer later served on the College of Engineering's Committee of 100, chaired the Department of Industrial and Systems Engineering Advisory Board, and in 2008, was honored with the Alumni Distinguished Service Award, the association's highest honor. She reactivated the Denver chapter in the mid-1990s, served as chapter president for more than five years, and worked to establish a chapter scholarship for Colorado students attending Virginia Tech.

As an undergraduate, Sauer was among the first inductees into the university's Order of the Gavel, following her leadership as 1983-84 president of the Residence Hall Federation.

She was the president of D2Xchange, a data and document management solutions provider in Denver, and chaired the board of directors for KidsTek, a nonprofit organization dedicated to closing the technology gap for underserved K-12 students. She is survived by her husband, Ron, and two children, Morgan, 14, and Ryan, 10.

Faculty/staff deaths

Alfred H. Krebs, former vice president for administration at Virginia Tech, died Nov. 17 in Trumansburg, N.Y. Krebs came to Virginia Tech in 1969. He served as head of agricultural education and was appointed director of the summer school program. He became assistant vice president for academic affairs in 1972, vice president for special projects in 1975, and vice president of administration in 1977, retiring in August 1981.

Derwin Edward Stafford, Ware Lab shop supervisor, died Jan. 6.



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'84 Nancy Bowman Sauer

hokie business showcase

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“Rhododendron Gem,” a painting by Michael St. Germain, an ecologist in the College of Natural Resources and Environment’s Conservation Management Institute, depicts a Canada warbler.

JOHN MCCORMICK



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Share the Hokie Spirit with other alumni!

2012 Class Reunions

Sept. 2-3 - Georgia Tech

Young alumni reunion

Sept. 7-8 - Austin Peay

Class of 1982 30th anniversary

Class of 1987 25th anniversary

Sept. 21-22 - Bowling Green

Class of 1972 40th anniversary

Oct. 12-13 - Duke

Class of 1962 50th anniversary

Nov. 8-9 - Florida State

Class of 1967 45th anniversary

Nov. 23-24 - Virginia

Class of 1977 35th anniversary

Class of 1992 20th anniversary

2012 Homecomings

Sept. 3 - Georgia Tech

College of Science homecoming

College of Architecture and Urban Studies
homecoming

Sept. 8 - Austin Peay

College of Veterinary Medicine homecoming

College of Natural Resources and
Environment homecoming

Sept. 22 - Bowling Green

Corps of Cadets homecoming

College of Liberal Arts and Human
Sciences homecoming

Oct. 13 - Duke

College of Engineering homecoming

Highly-Tighty reunion

Nov. 8 - Florida State

College of Business homecoming

College of Agriculture and Life Sciences
homecoming

Nov. 24 - Virginia

Multicultural alumni homecoming

Graduate School homecoming

