Paths to New Horizons

Annual Report 2012-13
Because of the dedication, talent, hard work, and spirit of amazing faculty, staff, students, and friends of the university, a number of outstanding things have happened in the intervening years, and most of our goals have been achieved. It is fitting, then, to transition to new leadership as the university embarks on a new blueprint for inventing our future, embodied in the strategic plan “A Plan for a New Horizon: Envisioning Virginia Tech 2012-2018.”

Looking back, the past 14 years have been have been by far the highlight of my 40-year career at Virginia Tech. In 2000, we set a goal to become one of the top research universities in the country. As a result, our research funding increased $192 million to $454 million. At the same time, we moved into developing areas of research — such as human health and sustainability — that were barely on our radar 15 years ago.

We adopted a business model that invested in seven large centralized research institutes. This format allowed Virginia Tech to compete for and win large-scale multidisciplinary contracts. At the same time, while we did not envision a relationship with Carilion Clinic in 2000, we seized the opportunity to partner with them to establish the Virginia Tech Carilion School of Medicine. The adjacent Virginia Tech Carilion Research Institute is conducting groundbreaking work in brain research and other areas.

In 2000, we were already attracting high-caliber students, but we set a goal to seek out scholars of ever-increasing academic abilities and more diversity while also making sure that all who gained admission could afford Virginia Tech. Since that time, overall enrollment has grown by 3,200, the average high school GPA of entering students has risen from 3.54 to 3.92, and underrepresented undergraduate enrollment has increased by 55 percent. We have expanded our financial aid programs, created the Funds for the Future initiative, and completed a major fundraising campaign, surpassing its $1 billion goal.

Early in my presidency, Tech faced a long list of critical space needs, and still does to a lesser degree. Since 2000, we have added or are constructing more than 3 million square feet of space valued at more than a billion dollars, primarily for new classrooms and instructional space, research, student services, and athletics.

One of the critical shortcomings we faced was a lack of space for the fine and performing arts; now we have Theatre 101 and since the end of the fiscal year, we have completed the magnificent Moss Arts Center. Other notable additions include The Inn at Virginia Tech and Conference Center, the Holtzman Alumni Center, south- and west-side expansions to Lane Stadium, Signature Engineering Building, Latham Hall, three buildings for the Institute for Critical Technology and Applied Science, the Virginia Bioinformatics Institute complex, the Virginia Tech Research Center — Arlington, several residence halls, and more.
Leaving the Big East was not part of our plans in 2000, but in 2004 we took advantage of the opportunity to realize a 50-year-old dream to join the Atlantic Coast Conference (ACC). Since then, we’ve won four ACC football titles and, more importantly, raised the caliber of athletics in general and the national profile of the university.

We also imagined a new direction for the land-grant university mission, helping to create Southside Virginia’s Institute for Advanced Learning and Research in Danville, thus marrying the three-part mission of outreach, instruction, and research with high-tech initiatives and local funding.

The years since 2000 haven’t been without adversity. The nation has suffered through Sept. 11, 2001, and two recessions, and the university has weathered severe state appropriation reductions. The tragedy of April 16, 2007, was an unprecedented and unimaginable event that tested the mettle of the Hokie Nation.

But through those years, we followed a plan. We seized opportunities that we could not have foreseen. And we have been successful. Together, we laid the groundwork for the “Plan for a New Horizon” that will guide the university’s future. And in this annual report covering the 2012-13 year, you will see numerous examples of how we’ve already taken steps toward that horizon.

As a three-time graduate of this institution, I am grateful for the opportunities for leadership and personal fulfillment that Virginia Tech has afforded me. And even as I prepare to step down, I am eager to see the future unfold — because I am assured of the university’s guiding characteristics: Virginia Tech is a dynamic institution with an indomitable spirit, an entrepreneurial culture, the creativity and the ability to leverage our strengths, and a willingness to take calculated risks that sets us apart from other universities and propels us forward. The promise of this university eclipses all the challenges.

Since President Charles W. Steger stepped in to lead Virginia Tech in 2000, the university has added or started constructing 3 million square feet of essential teaching, research, living, and athletic space, including the impressive Signature Engineering Building (below). Another addition, the Moss Arts Center, will help attract more luminaries like Toni Morrison (left), who was honored in Blacksburg in 2012.
A Plan for a New Horizon

Few documents or processes are more important to the overall organizational health of Virginia Tech than the collective brainstorming and communal commitment embedded in a formal plan for the future.

Even as President Charles W. Steger leaves the helm of Virginia Tech, his imprint on the university will carry on in many ways, including those in the newest strategic plan, “A Plan for a New Horizon 2012-2018.”

Crafted by 60 people who represent every facet of the university and who put 10 months into gathering input, the plan is guided by four structuring challenges that affect the entire university:

• the implications of global interdependence;
• the challenges of a data-driven society;
• meeting research expectations; and
• the continuing need to focus on organizational efficiency and flexibility.

Following are a number of the points in the plan that will pave Virginia Tech’s path to the future and help the university address the challenges of tomorrow. In this year’s Annual Report, you will also see ways in which some of the critical areas were already being addressed in 2012-13.

• 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 (science, technology, engineering, math, and health) disciplines.
• 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.
• Undergraduate education, characterized by a “hands-on, minds-on” philosophy, will connect real-life experience with academic concepts through research experiences or experiential learning.
• 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. 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.
As part of "A Plan for a New Horizon," Virginia Tech is searching for new ways to strengthen science, technology, engineering, mathematics, and health (STEM-H) among STEM-H and non-STEM-H students alike. Here, graduate students in the Department of Aerospace and Ocean Engineering work to reduce jet engine noises.
Challenging academics elevate standards

In academics, keeping an institution’s sights on the horizon requires constant alteration and adaptation in order to continue offering the most challenging and comprehensive course work that will prepare well-rounded students for their futures. Updating and improving the institutional strategic plan is a crucial part of that work.

Among the important goals in “A Plan for a New Horizon” and in the provost’s implementation plan for selected academic elements is incorporating into the general curriculum different ways of thinking, including computational thinking and informatics fluency — skills that are becoming increasingly necessary across all disciplines.

In 2012-13, the National Science Foundation (NSF) awarded Virginia Tech an EArly-concept Grant for Exploratory Research (EAGER) to explore innovative ways to incorporate engineering literacy into the general education curriculum. This past year was dedicated to curriculum planning, with a pilot project scheduled to launch in 2013-14. NSF will then evaluate the project’s results to determine if additional money, potentially millions of dollars, will be provided to continue the project long-term.

“Virginia Tech is a leader in the science, technology, engineering, and mathematics (STEM) fields,” said Daniel A. Wubah, former vice president for undergraduate education. “While most students are exposed to science and math in general education courses, engineering has not traditionally been included. Because of the strength of engineering education at Virginia Tech, it is logical to make it part of the core education of all our STEM majors and non-majors as well.”

The project’s goal is to strengthen STEM education at Virginia Tech, for STEM majors and non-majors alike, with a particular focus on early exposure to and development of engineering design-based teaching, supported by integrated technology tools.

This grant also complements plans to revamp the university’s general education requirements, known as the Curriculum for Liberal Education.

Summer and winter academics revisited

Virginia Tech is putting summer months and the winter break to better use academically in hopes of helping students get a better start and enhancing the overall educational experience.

The Virginia Tech Summer Academy, which welcomed its first cohort of students in late summer 2012, is designed to ease the transition from high school to college. It allows first-year students to jumpstart their college careers by moving to campus in the summer for a specially designed program of academic and co-curricular activities.

Participating students enrolled in 13 different learning tracks in discipline-specific areas. Some earned credit toward their major, while others fulfilled general education requirements. The result, according to Alumni Distinguished Professor Emeritus of Biological Sciences George Simmons, was outstanding. “I think this is one of the greatest things to happen at the university since I have been here,” said Simmons, who taught biology to academy students.

The small class size gave Simmons an opportunity to try things that are not possible in his typically large classes, such as a botany bicycle field trip on the Huckleberry Trail. “When was the last time I had seven students in one class?” he asked.
Outside of the classroom, students participated in workshops and seminars to become better acquainted with the university and its academic support resources. Peer mentors provided academy participants with guidance and community-building activities.

The academy also supports several state and university goals and initiatives. In addition, the Virginia Higher Education Opportunity Act of 2011, known as “Top Jobs 21,” challenges institutions to create programs to promote progress toward earning a degree, enhance enrollment of underrepresented populations, and optimize physical resources beyond the traditional semester.

During 2012-13, university officials were also making plans for a similar session to be held during the traditional winter break. Courses will be delivered in multiple formats, including online, in residence, in a blended format with online and face-to-face interactions, and in specialized education-abroad opportunities.

**New horizons in the classroom**
Students will also benefit from a whole array of new majors, minors, and programs, as well as learning spaces designed to cross disciplines and capitalize on the university’s current strengths while reaching to fulfill society’s future needs.

For instance, the State Council of Higher Education for Virginia approved a bachelor’s degree program in real estate, a first of its kind at Tech and nationally. A partnership among six colleges, the program intentionally crosses disciplinary lines to produce well-rounded professionals who can understand and manage financial transactions, permitting and site design, building construction, and property management.

Another new major in environmental informatics, based in the Department of Forest Resources and Conservation in the College of Natural Resources and Environment, brings together information technology, data analysis, natural resources, geospatial science, and ecological modeling. In the College of Liberal Arts and Human Sciences, students have a new foreign language major — Russian.

A minor in biomedical engineering in the College of Engineering will help meet demand for one of the fastest-growing engineering fields in the world. The minor also is expected to increase awareness of the graduate program at the Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences, which has garnered international headlines for its research, especially in the field of preventing and/or minimizing head traumas among soldiers in battle and football players during games and practices. Other new minors include diversity and community engagement, peace studies and violence prevention, communication, and entrepreneurship.

New master’s and doctoral degree programs in nuclear engineering have grown out of a master’s degree in mechanical engineering with a nuclear certificate, reflecting Tech’s dedication to educational programs and research in the production and delivery of energy. Meanwhile, the departments of Religion and Culture and History in the College of Liberal Arts and Human Sciences, and Art History in the College of Architecture and Urban Studies have collaborated on a new master of arts program in material culture and public humanities. By combining the studies of...
material culture and public humanities, students will learn to interpret physical objects and artifacts within historical and cultural frameworks, preparing them for a broad range of careers in museums, historical societies, humanities foundations, and community or cultural organizations.

Academic excellence isn’t just about the courses taught or majors offered, it’s also about the ways students learn and the facilities in which they learn.

One such facility that is expected to change the very landscape of the university, just as it has altered its physical horizon, is the Moss Arts Center. The center, which Steger envisioned early in his presidency, includes a 1,260-seat, state-of-the-art performance hall for music, theatre, and dance performance, and visual arts galleries for traditional, digital, and new media exhibitions. The lineup for the first season, which started in November 2013, ranges from timeless classics and family-friendly offerings, to works with deep meaning and global themes, to events with a fresh and sometimes unexpected perspective.

**Students achieving their best**

Excellence in academic offerings and teachings leads to excellence in student endeavors both in and outside the classroom, as seen in numerous ways in 2012-13.

For instance, the Clifton Forge Masonic Amphitheater, designed and built by 16 third-year architecture students in the College of Architecture and Urban Studies’ design/buildLAB, was named American-Architects Building of the Year 2012. The award was based on a popular vote from among 50 Buildings of the Week highlighted on www.american-architects.com. The students’ effort competed against a number of structures designed by well-known architects and firms.

In the design/buildLAB, a studio course that provides valuable hands-on, minds-on experience, students work on a real-world project from conception to completion, a process that hones their skills in design, construction, communication, and administration. The Clifton Forge project transformed a derelict tire factory into a gathering place for the community.

Keith and Marie Zawistowski, faculty members in the School of Architecture + Design, are the co-founders and directors of the lab. “It removes the abstraction from education,” said Keith Zawistowski. “Instead of just proposing a concept, they have a means to tangibly test that concept and realize the work. They have real clients and work with real consultants.”

**Julia Button**, a junior honors student majoring in biological sciences and biochemistry, was awarded a Barry M. Goldwater Scholarship. She was among 271 sophomore or junior students across the nation selected for the honor. Button is involved in cancer and drug research, and hopes to pursue a Ph.D. in cancer biology.

Eight Virginia Tech students presented their undergraduate research and scholarship at the eighth annual ACC Meeting of the Minds Conference in April. The students included **Kathryn Battle**, a junior majoring in wildlife science; **Kenneth Black**, a senior architecture major; **Katelyn Griffin**, a senior in English; **Carolyn Hughes**, a sophomore majoring in biochemistry and chemistry; **William Klima**, a senior majoring in electrical engineering; **Andrea Ledesma**, a junior majoring in history; **Huanqing (Quinn) Liu**, a computer science sophomore; and **Lauren Withers**, a junior majoring in biochemistry.

A team of **six students** from the Myers-Lawson School of Construction took first place in the Associated Schools of Construction National Sustainable Building and LEED (Leadership in Energy and Environmental Design) Competition, recording the highest total score ever in the competition. They competed against 12 other collegiate teams from across the country.

Two computer science doctoral candidates received an IBM Fellowship by competing in an international program honoring exceptional doctoral students who have an interest in solving problems essential to innovation. They are **Bireswar Laha** and **Min Li**, who was awarded the fellowship for the second consecutive year.

A team of **seven geography and forestry graduate students** took home Virginia Tech’s second consecutive title in the national GeoLeague Challenge at the American Society for Photogrammetry and Remote Sensing conference. The team was composed of students from the College of Natural Resources and Environment and the College of Agriculture and Life Sciences.

**Xie Xin**, a graduate student in interior design, won an interior design competition sponsored by the Bienenstock Furniture Library, receiving $10,000 to continue her studies in interior design. Entrants were asked to complete a design project that incorporated residential and commercial spaces meeting certain specifications. Xie Xin’s winning design was an organization for runaway youth.
Janine Hiller, professor of business law (left), and Patrick Fan, professor of accounting and information systems (below), help inspire students to blaze their own trails.
Inspirational trailblazing

Faculty members who inspire and educate are the ones who show eager, inquisitive students the path to the future. At Virginia Tech, we have nationally and internationally recognized teachers who help define our horizons.

Commonwealth kudos

In 2012-13, the commonwealth recognized three of Virginia Tech’s top educators. Harold E. Burkhart, University Distinguished Professor and the Thomas M. Brooks Professor of Forestry in the College of Natural Resources and Environment, and Patricia M. Dove, C.P. Miles Professor of Geosciences in the College of Science, were named Virginia Outstanding Scientists. And Stephen Edwards, associate professor of computer science with the College of Engineering, was named a 2013 Virginia Outstanding Faculty Award winner.

Edwards’ award, the commonwealth’s highest honor for university faculty, comes on the heels of the Virginia Tech Board of Visitors honoring him with the W.S. “Pete” White Chair for Innovation in Engineering Education for leading two computer science curriculum reform efforts during the past decade.

Edwards’ most-prominent educational project is called the Web-based Center for Automated Testing, or Web-CAT, which has been adopted by 75 institutions nationwide. Web-CAT is the most widely used open-source academic grading tool of its kind in the world, with nearly 10,000 users. It provides rapid, directed comments on student work, encourages students to write software tests for their own work, and empowers students with the responsibility of demonstrating the correctness and validity of their own programs.

“Forest scientists consider Harold Burkhart the father of forest biometrics, which explores the theory and applications of quantitative models of forest stands,” noted President Charles W. Steger. “Harold’s international leadership in this basic research vastly improved forest development, particularly in the South.”

Burkhart’s principal trailblazing achievement was the development of a comprehensive, integrated set of forest-yield forecasting models for stands subjected to a wide variety of management treatments. Peers call Burkhart a world-class scientist who has been one of the top leaders for more than three decades.

“Professor Burkhart’s modeling methods have been adopted, extended, and applied in Virginia, across America, and around the world, thus contributing to the goal of sustainable management of forest resources,” explained Paul Winistorfer, dean of the College of Natural Resources and Environment.

Patricia Dove, who in 2012 was elected to the National Academy of Sciences, is the director of the Biogeochemistry of Earth Processes research group. By us-
ing chemical principles and nanoscale analytical methods, Dove has become an international leader in the field of biomineralization — the processes by which animals grow skeletons and other functional structures. Her work at the interface of earth and life is also providing insights into how fossil skeletons record changes in environmental conditions over geologic time.

“Trish has that impeccable genius of looking at nature in ways that form the most critical and fundamental questions — and then comes the hard part,” said Nancy L. Ross, professor and head of the Department of Geosciences. “She goes into her lab and she re-creates on a nanoscale the chemical processes that give rise to the beautiful minerals, crystals, and structures we see in nature.”

Dove and her students are also working on projects of significant concern to society, such as investigating the effects of rising carbon dioxide levels on the survival of photosynthetic organisms that create much of Earth’s oxygen.

**BOV recognizes top professors**

The Board of Visitors bestows the title of University Distinguished Professor on no more than 1 percent of faculty members whose scholarly attainments have attracted national and international recognition. In 2012, they honored Patricia Dove (profiled above for her statewide award), and Dr. X.J. Meng, a professor of molecular virology and the first person from the Virginia-Maryland Regional College of Veterinary Medicine to hold the title.

After earning his medical degree from China’s Binzhou Medical College, Meng briefly practiced medicine part-time. After completing a master’s degree in microbiology, he came to the United States and pursued a doctorate in immunobiology from Iowa State University’s College of Veterinary Medicine. Viruses, especially emerging and re-emerging animal viruses, have been Meng’s obsession ever since.

Meng’s long list of achievements includes the discovery of two new viruses — the swine hepatitis E virus and the avian hepatitis E virus from chickens — and the invention of the first fully licensed commercial vaccine against a deadly swine disease. Today, Meng’s laboratory in the Center for Molecular Medicine and Infectious Diseases is considered one of the world’s leading hepatitis E virus research centers.

**Faculty excellence abounds**

**Eric Wiseman**, associate professor of urban forestry and arboriculture and an Extension specialist in the College of Natural Resources and Environment, received the International Society of Arboriculture’s Early Career Scientist Award, which recognizes scientists in the field of urban forestry and arboriculture who demonstrate exceptional promise and high career potential for producing internationally recognized research.

**Jeffrey Kirwan**, professor emeritus and forestry Extension specialist, was awarded the Virginia Department of Forestry’s highest civilian honor, the Crown Award, which recognizes an individual or entity that has gone beyond the call of duty. Kirwan, who dedicated many years to researching trees in Virginia as coordinator of the state’s Big Tree Program, is only the fourth recipient in the award’s history.

**Janet W. Rankin**, professor of human nutrition, foods, and exercise in the College of Agriculture and Life Sciences and associate dean of the university’s Graduate School, was elected the next president of the American College of Sports Medicine, the largest organization of its kind in the world.

**W. Lee Daniels**, professor of environmental soil science in the College of Agriculture and Life Sciences, received the William T. Plass lifetime achievement award from the American Society of Mining and Reclamation for his work in the reclamiation and rehabilitation of lands damaged by mining, waste disposal, road building, and other disturbances.

**Gary Downey**, Alumni Distinguished Professor of Science and Technology in Society, was elected the 20th president of the Society for Social Studies of Science. Downey is recognized internationally as a founding leader of a unique interdisciplinary field called engineering studies.

The Association of Collegiate Schools of Architecture recognized Donna Dunay, G.T. Ward Professor of Architecture, with the 2012-13 Distinguished Professor Award. The prestigious national honor is presented to just four professors annually in recognition of their achievements in teaching, design, scholarship, research, or service.

**Leigh McCue-Weil**, an associate professor with the Department of Aerospace and Ocean Engineering, received the Rosenblatt Young Naval Engineer Award from the American Society of Naval Engineers. The award honors promising engineers younger than 35.

**Andy Norton**, associate professor of mathematics in the College of Science, received the Association of Mathematics Teacher Educators’ 2013 AMTE Early Career Award. The association presents the
award annually to a member who has made significant contributions within the first decade of receiving his or her doctoral degree.

The Association of Collegiate Schools of Architecture recognized Marie Zawistowski and Keith Zawistowski, both professors of practice in the School of Architecture + Design, with a 2012-13 Design Build Award for best practices in design-build education. The Zawistowskis received the award based on the excellence of the concepts and approach behind their design/buildLAB for third-year architecture students.

Gerald (Jerry) H. Luttrell, the E. Morgan Massey Professor of Mining and Minerals Engineering, was one of 69 new members elected to the National Academy of Engineering. Luttrell’s nomination was based on his advancement of separation technologies for the mineral and coal industries, pioneering new technology in the environmentally clean processing of mined materials.

Howard Feiertag, hospitality and tourism management instructor in the Pamplin College of Business, was honored with two awards, the Winthrop W. Grice Award for public relations excellence from the Hospitality Sales & Marketing Association International and the Virginia Society of Association Executives Lifetime Career Services Award.

David A. Dillard, who holds the Virginia Tech Adhesive and Sealant Science Professorship, received the 2013 Wake Memorial Medal from the Society for Adhesion and Adhesives. The Wake Medal is awarded triennially to a person who has made outstanding contributions to the field over a substantial period of time. There are only eight previous recipients.
Searching for the next horizon

Y.H. Percival Zhang, associate professor of biological systems engineering, is finding new energy and food sources.
Searching for the next horizon

For decades now, Virginia Tech has committed itself to discovery that serves the good of local communities, the commonwealth, and beyond. As the university’s research program has continued to expand ($454 million in fiscal year 2012 with sights set on a $600 million horizon), it has concentrated more and more on practical, translational efforts in areas like medicine, agriculture, natural resources, engineering, and the biological, behavioral, and social sciences. In addition, research will continue to focus on four strategically important discovery areas identified in the new strategic plan: national and local security; the resiliency of systems, organizations, communities, and ecosystems; health and medicine; and sustainability.

Potential breakthroughs in food, energy

When most people think about renewable energy and sustainable food sources, they imagine solar panels and wind turbines, low-impact agriculture and local food-sheds. Y.H. Percival Zhang sees carbohydrates — and his vision led to two incredible breakthroughs in one year.

Zhang not only found ways to inexpensively produce hydrogen to power cars, but he’s also discovered a mechanism to turn any plant into a food source.

“What we are doing in my lab is revolutionizing the biotechnology paradigm to come up with solutions that could help solve some of the biggest challenges facing our planet,” said Zhang, an associate professor of biological systems engineering in the College of Agriculture and Life Sciences and the College of Engineering. “I propose what I am calling the ‘electricity-hydrogen-carbohydrate cycle’ to jump-start sustainability efforts around the world.”

Zhang’s projects have received an enormous amount of attention around the world. One paper highlights how he has been able to extract large amounts of hydrogen from any plant, a breakthrough that has the potential to bring a low-cost, environmentally friendly fuel source to the world.

The other paper, which appeared in the Proceedings of the National Academy of Sciences of the United States of America, demonstrates how Zhang has been able to create starch from plants not traditionally thought of as a food source. This would allow farmers to grow a large amount of biomass on marginal lands for food and biofuel without requiring fertilizers, pesticides, and massive amounts of water.

In the fuel project, Zhang’s team liberates high-purity hydrogen under mild reaction. To extract the hydrogen, the researchers manipulate xylose, a sugar that makes up as much as 30 percent of plant cell walls.

Enzymes also are critical for Zhang’s project with starch. His new approach takes cellulose from nonfood plant material, such as corn stover (the stem, leaves, and husk of the corn plant remaining after ears of corn are harvested), and converts about 30 percent to amylase, a component of starch. However, the process works with cellulose from any plant.

This bioprocess is easy to scale up for commercial production. It is environmen-
Neutrino puzzle solved
One of 2012’s top scientific breakthroughs (according to Science Magazine) took place at Virginia Tech. Physicists, as part of a collaboration with U.S. and Chinese researchers, found the third and final known neutrino mixing angle, a discovery that could have a significant impact on physics and the universe as we understand it.

Among the scientists at Virginia Tech who took part were Leo Piilonen, department of physics chair; physics professors Patrick Huber and Jon Link; postdoctoral researcher Deb Mohapatra; Joseph Hor, of Hong Kong; Meng Yue, of Qiqihar, China, both doctoral students in physics; and lab technician Jo Ellen Morgan.

And the discovery of the last mixing angle isn’t the end of the line for Virginia Tech researchers. In fact, the discovery may have opened exciting new doors in physics.

“The standard model of particle physics … works so well that for decades everywhere we’ve looked we’ve found things to be in agreement with the model,” Link said. “If that keeps up, we’ll be done measuring the known parameters in 15 years.

“But in neutrino physics there may be something interesting going on, and Virginia Tech has been at the forefront of studying this for some time,” he added. “There is evidence of a fourth type of neutrino and possibly more.”

Tapping into higher levels of thinking
In the area of health and medicine, the Virginia Tech Carilion Research Institute (VTCRI) has become an important part of the path to the university’s new horizon. The institute creates a bridge between basic science research at Tech and clinical expertise at Carilion Clinic, and it increases translational research opportunities for both partners in a unique public-private endeavor that also includes the Virginia Tech Carilion School of Medicine.

Many of the current research teams at the institute are dedicated to the brain: its influence on all aspects of our bodies and our behavior, its adaptive capabilities, and, in certain instances, its potential for training and retraining.

“All brain disorders combined — including stroke, Alzheimer’s disease, traumatic brain injury, depression, addiction, post-traumatic stress disorder, Parkinson’s disease, and developmental and intellectual disabilities such as autism spectrum disorders — have a greater economic impact on the country and the world than any other type of disorder, and that includes cancers and heart disease,” said Michael Friedlander, executive director of the institute, which is comprised of more than 20 world-class research teams.

Stephen LaConte, an assistant professor at the institute and at the Virginia Tech-Wake Forest School of Biomedical Engineering and Sciences, helps people who have a mild traumatic brain injury, such as a concussion, rebalance their default mode network, regions in the brain that seem to be connected to non-taxing mental tasks, such as daydreaming. Scientists believe this network becomes disrupted when the brain is injured, causing delays in recovery.

Brooks King-Casas, an assistant professor at the institute and in the College of Science, studies brain function in the context of social interaction, examining how the brain makes decisions. In a study funded by the U.S. Department of Veterans Affairs, King-Casas is examining post-traumatic stress disorder and mild traumatic brain injury among returning veterans. “We are interested in how stressful experiences affect how people make decisions in both social and nonsocial contexts,” he said.

Research in Friedlander’s lab is directed at revealing the physical changes that occur at the synaptic connections between individual brain cells during learning. The research compares these processes in normal developing brains with those in injured brains.

Sharon Ramey, a distinguished research scholar at the institute and a research professor of psychology in the College of Science, and her colleagues at the VTCRI Neumotor Research Clinic — which is co-directed by Stephanie DeLuca — are studying highly intensive forms of therapy to promote motor function in children with cerebral palsy and other brain injuries.

Until now, there hasn’t been a way to measure a person’s mental health in a computational manner, such as the way...
lipids and cholesterol are measured, but Read Montague, a professor at the institute and in the Department of Physics in the College of Science, is changing how mental health is physically assessed. “I am a computational neuroscientist,” he said. “I turn feelings into numbers.” As director of the Human Neuroimaging Lab, Montague leads a group of social-cognition researchers at the institute who study people’s awareness of social interactions.

Montague also directs the Roanoke Brain Study, a project aimed at understanding decision-making through the lifespan and its relationship to brain development, function, and disease. The study will be the world’s largest lifespan study of the brain, drawing in thousands of participants from the Roanoke area and several sites in London.

**Banking on the wind**
The Virginia Tech Advanced Research Institute (ARI) is part of a Dominion Virginia Power-led team that was one of seven selected by the Department of Energy to receive $4 million in federal matching funds to undertake initial engineering, design, and permitting for an offshore wind-turbine demonstration facility. The Department of Energy will select up to three teams out of the seven for an additional $47 million each for actual construction and demonstration.

“Virginia expects to be a major player in off-shore wind energy development and Virginia Tech can contribute very significantly,” said Saifur Rahman, the Joseph R. Loring Professor of Electrical and Computer Engineering and director of ARI.

Offshore wind represents a large, untapped energy resource for the United States — offering more than 4,000 gigawatts of clean, domestic electricity potential, four times the nation’s current total generation capacity.

**Boosting bioscience**
The Virginia Biosciences Health Research Corp., formed by Virginia Tech, Eastern Virginia Medical School, George Mason University, the University of Virginia, and Virginia Commonwealth University, will foster collaborative scientific research innovation and provide a new program for public/private partnering with Virginia universities.

In announcing the new collaboration, Gov. Robert F. McDonnell said, “Bioscience is on the forefront right now, and R&D investments have a tremendous economic impact in total jobs and increased annual state tax revenue. The Virginia Biosciences Health Research Corporation is another great example of a public-private partnership that will bring companies in the life sciences industry in direct collaboration with leading universities to build on Virginia’s growing momentum in this booming sector.”

Increasingly, leading pharmaceutical, medical device, and biotechnology firms are establishing themselves in Virginia. Opportunities exist for co-location and cooperative relationships with Virginia’s universities, federal labs, and other research entities, and the new corporation is designed to promote and foster these partnerships and increase the commonwealth’s standing in life sciences nationally.

The corporation will be funded with $5 million for 2013-14 from the commonwealth’s General Fund. The five founding institutions will each make a $50,000 cash contribution in each of the first and second years.
Technology innovation leading the way

Quinton Nottingham, associate professor of business information technology, teaches distance-learning students.
Technology innovation leading the way

Advances in technology are dramatically reshaping educational horizons, and not just in the classroom. Skills that students must acquire in order to excel in complex and changing digital and networked environments are expanding rapidly. E-learning courses that leverage technology and teaching-learning processes are now embraced and expected as part of educational experiences.

Increasing Distance-Learning Efficiencies

Virginia Tech has long been at the forefront of distance-learning technology as a crucial path to the future, starting in the 1970s when the university distributed videotapes. The enterprise expanded in the 1980s with satellite and video conferencing, and again in 1994 with the first online courses. By 1997, Virginia Tech was offering its first online graduate degree.

Since then, advances in technology have changed the landscape of distance learning. Currently, all undergraduate students take at least one online course before they graduate. In 2011-12, there were more than 18,000 undergraduate enrollments in online courses and almost 6,000 graduate course enrollments. The university offers 27 graduate degree and certificate programs entirely online in addition to eight blended graduate programs (online and interactive videoconferencing).

Given Tech’s past track record of success in distance learning and use of technology within the physical classroom, the university is ready to further enhance those methods, as called for in “A Plan for a New Horizon,” as well as the “Distance Learning Strategic Plan.”

As a result, Tech intentionally reorganized administrative units to give the university a better platform to increase quality and growth in this area. Two units — the Institute for Distance and Distributed Learning and the Division of Learning Technologies — were combined into one stronger unit, Technology-enhanced Learning and Online Strategies, allowing for increased efficiencies.

The collaboration provides the prospect of exploring new financial and tuition models that will enhance quality and enrollment. The university provides teaching incentives and funds research into new ways to learn with vehicles like its Enterprise Fund and the Provost Course Development Fund, which in spring 2013 supported the development of or significant updates to 14 online courses. As a result, Tech was selected by the National University Technology Network to receive its 2013 Institutional Achievement Award.

“By funding distance learning research … Virginia Tech not only develops distance learning programs, but more importantly, seeks to improve the quality, expand access to, and minimize the cost of education,” said the award panel.

Meanwhile in 2012-13, U.S. News & World Report named the university’s online master of information technology degree program as one of the nation’s best...
distance-learning courses in its second-annual Top Online Education rankings. The program, offered by the College of Engineering and the Pamplin College of Business, was ranked third in the U.S. The program is a partnership among the Department of Computer Science, Bradley Department of Electrical and Computer Engineering, Department of Accounting and Information Systems, Department of Business Information Technology, and Department of Management.

In addition, the College of Engineering ranked 13th overall in the nation for Best Online Graduate Engineering Programs, according to the 2013 list. It is the only engineering distance-learning program ranked in the commonwealth.

University IT gets a new leader
To direct the university’s overall information technology enterprise, including applying technology to learning and research, President Charles W. Steger announced that Scott F. Midkiff, professor and head of the Bradley Department of Electrical and Computer Engineering, would become Tech’s new vice president for information technology and chief information officer.

“We recently concluded a nationwide search involving some of the brightest minds in the business. Yet, we realized that the best candidate to lead us forward, [someone] also among the nation’s leading lights, was already on our campus,” said Steger. “Professor Midkiff is a recognized authority on wireless networks, mobile systems, and pervasive computing. With his extensive academic background, he can address university computing, telecommunications, and network needs from multiple standpoints ... as a researcher, faculty member, department head, and senior administrator.”

“Information technology has never been more important to an organization than now, especially a research university,” said Midkiff. “High-performance computing is fundamental and essential to the research endeavor. In addition, we have already demonstrated the important linkage between information technology and the learning-teaching environment.”

Midkiff arrived at Virginia Tech in 1986 and has developed and taught undergraduate and graduate courses in networking, wireless networks and mobile systems, network applications, and telecommunications. He was appointed head of the Bradley Department of Electrical and Computer Engineering in 2009. He also worked at Bell Laboratories, Carnegie Mellon University, and on special assignment as a program director at the National Science Foundation.

Midkiff is the author of more than 125 peer-reviewed journal and conference publications. He received Virginia Tech’s XCAliber Award for teaching with technology in 2004 and the Dean’s Award for Excellence in Teaching from the College of Engineering in 2005.

New levels in high-performance computing
In 2011, Virginia Tech announced the creation of HokieSpeed, a supercomputer so energy efficient that it was the highest-ranked commodity supercomputer in the U.S. on the Green500, a ranking of the most energy-efficient supercomputers in the world.

Wu Feng, associate professor of computer science, designed and built HokieSpeed, with a National Science Foundation instrumentation grant for a modest $1.4 million.

Feng believes he and his team can do even better, and so does the Air Force’s Office of Scientific Research (AFOSR), which awarded him $3.5 million over three years with the option for a two-year extension at another $2.5 million. The award will allow Feng to pursue a substantial increase in the simulation speed of the computational fluid dynamics of its micro air vehicles (MAV), a class of unmanned aerial vehicles, using accelerator-based supercomputers like HokieSpeed.

To achieve this target, Feng said his objective is to herald a new age in multi- and many-core parallel computing that he believes will “transform supercomputing.” To accomplish that, he has pulled together an internationally recognized team of researchers from Virginia Tech and North Carolina State University, including aerospace and mechanical engineers, computer scientists, and mathematicians.
Blacksburg isn’t generally a home to jellyfish, much less ones the size of a grown man — at least not until College of Engineering researchers unveiled a 5-foot 7-inch, 170-pound creature as part of a U.S. Navy-funded project.

The prototype robot, nicknamed Cyro, is a larger model of a robotic jellyfish the same team — headed by Shashank Priya, professor of mechanical engineering — unveiled in 2012. The earlier robot, dubbed RoboJelly, is roughly the size of a man’s hand, typical of jellyfish found along beaches.

Both robots are part of a multi-university, nationwide $5 million project funded by the U.S. Naval Undersea Warfare Center and the Office of Naval Research. The goal is to place self-powered, autonomous machines in waters for surveillance and monitoring the environment, including studying aquatic life, mapping ocean floors, and monitoring ocean currents.

“A larger vehicle will allow for more payload, longer duration, and longer range of operation,” said Alex Villanueva, a doctoral student in mechanical engineering working under Priya. “Biological and engineering results show that larger vehicles have a lower cost of transport, which is a metric used to determine how much energy is spent for traveling.”

Because jellyfish consume little energy due to a lower metabolic rate than other marine species, they are attractive candidates to mimic. Additionally, they appear in a wide variety of sizes, shapes, and colors, allowing for several designs. Priya’s team is building the jellyfish body models, integrating fluid mechanics and developing control systems.

As with the smaller models, Cyro’s skin is comprised of a thick layer of silicone, squishy in one’s hand. When moving, the skin floats and moves with the robot, looking weirdly alive.

“It has been a great experience to finally realize the biomimetic and bio-inspired robotic vehicles,” Priya said. “Nature has too many secrets and we were able to find some of them but many still remain. We hope to find a mechanism to continue on this journey and resolve the remaining puzzles.”
Austin Larrowe, student founder of Feed by Seed, exemplifies Ut Prosim every day.
Reaching out for a brighter horizon

Academics are the primary focus for students at Virginia Tech, but the lessons they learn in classrooms and in extracurricular endeavors can be put to use to pave a path to a better future for others by following the university’s motto, *Ut Prosim* (That I May Serve).

**Food self-sufficiency**

Austin Larrowe, a junior majoring in applied economics management and agricultural sciences in the College of Agriculture and Life Sciences, garnered one of 72 presidential fellowships from the Center for the Study of the Presidency and Congress to research how international agriculture education can be a tool to enhance national security.

To do that, he married his passions for international affairs and agriculture through the nonprofit organization he started his freshman year, Feed by Seed. The organization has access to 18 acres of land in a poverty-stricken area of Nicaragua, where volunteers work with two local schools to teach vital skills to students and their families.

“Our vision is to make an economically and agriculturally self-sufficient community. … We teach [people] technical skills for agricultural production, so they can eat what they grow or sell it to make money. We also work with the individuals on leadership development, basic economics, and fostering a sense of hope for the future,” Larrowe said.

“Most of the research I’ve found in doing my Presidential Fellows Program paper is, if across the globe, women had the same access to resources in agriculture education and extension research as men do — which is not the case now in many countries — global food production could grow by 40 percent,” Larrowe said. “It doesn’t only make sense from a production standpoint, but from anti-trafficking, food security, family, and community standpoints as well. Investing in women can cause a very significant power shift.”

**VT Engage — leading communities**

Other Virginia Tech students find themselves equally motivated to help communities in need, except their focus is a little closer to home, giving to the communities that give to them.

“We want to get our students really thinking about leadership in their communities,” said Gary Kirk, director of VT Engage: The Community Learning Collaborative at Tech. “We want them to realize that they have a role and responsibility in whatever community they are in.”

For example, Get on the Bus, launched in fall 2012, is one of dozens of VT Engage projects. It introduces faculty, staff, and students to volunteerism through flash service projects — up to 30 individuals hop on a bus to participate in an endeavor in the New River and Roanoke valleys. For instance, participants might find themselves working alongside community volunteers at a regional Feeding America warehouse, where large quantities of donated food are collected and distributed to food banks throughout Southwest Virginia. On the way home, they are encouraged to share in reflective conversations about the experience.

“The concept is that our volunteers are getting something from the community and the community is getting something from our volunteers,” Kirk says. “We’re not coming in to take over a community project. We need to work alongside members of the community so that it’s a win-win for everyone.”

Through the generosity of donors, VT Engage also established a new grant program, the John E. Dooley Student Engagement Grant, to fund highly motivated students or student teams interested in implementing community-based civic engagement projects. In its first year, the program, named for former Vice President of Outreach and Interna-
Josh Enokida, a junior majoring in materials science and engineering in the College of Engineering and also co-president of the group. “For me, the experience is all about getting away from everyday life to a place you never thought you would go. It extends Ut Prosim beyond our local community.”

### Reaching across oceans

In many instances when Virginia Tech takes steps to expand its international influence, the university also ends up expanding its service to others. Such is the case in India.

Whether India can spring millions of people from poverty rests in part on its capacity to produce enough electricity for everyone, and a new Virginia Tech research center in the state of Tamil Nadu will mobilize an engineering team to refine and adapt windmills and solar panels for use in households in rural India.

“The goal is to improve life for 400 million Indians not connected to the grid,” said Guru Ghosh, vice president for Outreach and International Affairs. “There are still some refinements to be made. … We’re aiming for the point where the solar panels and small windmills can be mass produced, tested in India’s rural communities, and then be deployed to create low-cost, renewable energy worldwide.”

Two years ago Tech announced an agreement with private-sector partner MARG Swarnabhoomi to establish a Virginia Tech campus in India. MARG Swarnabhoomi has committed $1.8 million for laboratory build-out, while Virginia Tech is underwriting staff and operations with an initial outlay of $350,000, Ghosh said. The new endeavor will be called the VT, India Institute for Critical Technology and Applied Science Innovation Center.

“Thirty-five of the top 200 U.S. universities in research and development expenditures are located within a four-hour drive of this I-Corps partnership,” said John “Jack” Lesko, associate dean for research and graduate studies in the College of Engineering at Virginia Tech. “Those universities collectively conducted $14.3 billion in research in 2010. We will attract and train teams from these top regional academic institutions, as well as from the many federal and state research labs unique to the region.”
When scientists, engineers, and other researchers at Virginia Tech need a glass component for lab work, they have two options. If it exists, they can try to order it. Or, they can call Tom Wertalik, the university’s only scientific glassblower.

In his Hahn Hall South lab in the Department of Chemistry, Wertalik puts nearly three decades of glassmaking experience to use helping researchers forge the future with the help of one very unscientific, primary tool — a flame.

“What I do is technically called lamp working, or flame working, which is a discipline of glassblowing,” Wertalik said. “The kind you see with the really long pipe, that isn’t what I do.” Wertalik’s work, in fact, is far more complex.

“People will come in and ask for all kinds of things — many of which don’t exist,” he said. “They’ll bring sketches on pieces of paper or we’ll talk about what they’re trying to achieve and usually we can work something out, but not every idea can be made of glass.”

Many items can, however, like a feeding tube for bed-bug research that Wertalik completed for researchers in the Department of Entomology in the College of Agriculture and Life Sciences. “They brought a couple older versions of some glassware and we made some modifications,” Wertalik said.

In addition to “regular” scientific glass, Wertalik also works with quartz, which doesn’t heat to a flaming orange like most glass; it turns bright white. And a solid bar of quartz, when heated, will distribute light out the non-heated end like a flashlight.

“This is the basis for fiber-optics,” he said. “Quartz isn’t used too much in chemistry, but it’s very popular for electrical engineering purposes.”

“We are the envy of many universities, having a master glassblower like Tom here,” said James Tanko, chemistry department chair. “From the standpoint of the fabrication of scientific glassware, having Tom here means the practical limitation is our imagination. If we can think of it, chances are he can make it.”

All that science and knowledge realized because of one man — and a flame.
Pathway blazers

Every year the university recognizes alumni or friends who have given their time and resources to pave a better path for those to come.

Michele “Shelley” Duke may not be a Virginia Tech alumna, but she grew to love the university after taking her horses to the Marion DuPont Scott Equine Medical Center for care. She received the 2013 William H. Ruffner Medal, the university’s highest honor, for the substantial difference she has made through her volunteer service and support.

Duke, who owns and operates Rallywood Farm in Middleburg, Va., was the first female vice rector on the Virginia Tech Board of Visitors. Her relationship with Tech spans more than 20 years. She has been director of the equine center’s volunteer program and chair of the Equine Medical Center Council. The Virginia Tech-related boards or committees on which Duke has served include the Virginia Tech Foundation Board of Directors, the National Campaign Steering Committee for the university’s past fundraising campaign, the Women in Leadership and Philanthropy Council, and others.

Duke was named an honorary alumna by the Virginia Tech Alumni Association in 2005 — a distinction fewer than 15 people have received.

Ben J. Davenport Jr., of Chatham, Va., and David E. Lowe, of Blacksburg, received 2013 Alumni Distinguished Service Awards for their contributions to the university.

Davenport is chairman of First Piedmont Corp., a regional waste-management company, as well as Davenport Energy, a supplier of petroleum products. He was a founding member of the Mid-Atlantic Broadband Corp., which has built a fiber network connecting 26 counties and cities.

After earning his bachelor’s of business administration in 1964 from what is now Virginia Tech’s Pamplin College of Business, Davenport joined the U.S. Coast Guard Reserves, then returned to the family business, which was then known as Chatham Oil Company.

Davenport’s record of service to the university community includes membership on the Virginia Tech Board of Visitors, where he was rector for two years; the Virginia Tech Foundation Board; and the Virginia Tech Carilion School of Medicine Board of Directors.

Lowe’s service to the university began while he was working toward the bachelor’s of business administration degree he earned in 1963. He was president of his class and regimental commander of the Corps of Cadets.

Lowe spent five years in the U.S. Air Force after graduation. His business career spanned 35 years in the telecommunications industry with Bell-Atlantic (now Verizon), including president and CEO in West Virginia. At Tech, Lowe serves as chairman of the operating board for the Pete Dye River Course of Virginia Tech. He coordinated reconstruction of the entire golf course and the driving range, as well as construction of the Turf Care Center, Golf Team Center, and a $5.5 million clubhouse. Virginia Tech’s Class of 2013 honored Lowe as its class-ring namesake.

Tracy D. Wilkins, an emeritus member of Tech’s faculty, received the 2013 University Distinguished Achievement Award, which recognizes achievements of enduring significance in any field.

Wilkins joined Virginia Tech’s Department of Anaerobic Microbiology in 1972, ultimately achieving the distinction of J.B. Stroobants Professor of Biotechnology. In his campus leadership roles, he was charged with developing and implementing a strategy for Virginia Tech’s original thrust into biotechnology research. As a result, he played a leading role in establishing two of Virginia Tech’s premier life-science facilities: the Fralin Biotechnology Center, now the Fralin Life Science Institute, and the Virginia Bioinformatics Institute.

Wilkins made numerous contributions in the area of infectious disease research, including developing effective methods for the sampling, diagnosis, and timely treatment of the leading hospital-acquired microbial infection, commonly called C. diff. As a research scientist, he holds eight patents and has started two successful companies, TechLab and TransPharm.

Wilkins also conceived of and, through his company, provided resources for Virginia Tech’s biotechnology outreach program. One highlight of this program is the Biotech in a Box initiative, which provides supplies and equipment for hands-on experiments to high school students throughout the commonwealth.
University Development at Virginia Tech excelled again in 2012-13 at raising the resources needed to help usher the university into the future, garnering more than $90 million, the third-highest yearly total in Tech history and the most money ever raised in a non-campaign year. It was an 18 percent improvement on fiscal 2011-12.

“Year after year, our supporters provide millions of dollars that fuel important programs across the university and help thousands of students through scholarships,” said Elizabeth “Betsy” Flanagan, the university’s vice president for development and university relations. “Last year’s generosity was particularly noteworthy. I, my colleagues, and our institution at large are extremely grateful.”

A majority of college or program fundraising units increased the amount they raised compared to the year before, many by large margins. Combined, the Virginia Tech Carilion School of Medicine and Research Institute raised nearly five times more. The College of Natural Resources and Environment and the Virginia-Maryland Regional College of Veterinary Medicine more than doubled their amounts raised, while the W.E. Skelton 4-H Educational Conference Center at Smith Mountain Lake raised nearly 89 percent more.

The College of Engineering raised nearly $9.7 million more than in fiscal year 2011-12 — the largest dollar increase of any unit — and its $25 million total was also the most donated to any college or program. Athletics raised nearly $22.9 million, topping $20 million for the ninth consecutive year.

Annual giving increased by 7.7 percent to nearly $4.91 million, the most ever.

Over the course of the fiscal year, more than $15.8 million in estate distributions were received, the second-most in university history. Alumni donated nearly $38.2 million, while friends of the university gave nearly $22.1 million. Corporations gave $16.6 million; foundations donated more than $5.9 million; current or former faculty and staff, more than $2.7 million; parents of current or former students, nearly $2.2 million; and other organizations gave nearly $2.3 million.
Highlights of Charles W. Steger’s years at Tech

1970  ■ Earned bachelor of architecture

1971  ■ Earned master of architecture, urban design

1971-74  ■ Worked at Wiley & Wilson Inc., Lynchburg, Va., eventually becoming manager of the urban planning department

1973-76  ■ Named visiting lecturer, then instructor, then assistant professor at Virginia Tech

1976-81  ■ Named chairman, graduate program, urban design

1978  ■ Earned Ph.D., environmental sciences and engineering

1980  ■ The Washington-Alexandria Architecture Center is established

1981  ■ Named interim dean of the College of Architecture & Urban Studies (CAUS)
  ■ Promoted to associate professor
  ■ Appointed dean of CAUS. At 33, he’s the youngest dean of a school of architecture in the U.S. Served in that position until 1993

1990  ■ Named a Fellow in the American Institute of Architects
  ■ Became acting vice president for public service, serving concurrently as CAUS dean

1991  ■ Under his leadership, the university establishes the Center for European Studies and Architecture (CESA)

1993  ■ Promoted to full professor of architecture
  ■ Appointed vice president for development and university relations

1998  ■ Finished directing the successful Making A World of Difference fundraising campaign

2000  ■ Inaugurated as president

2003  ■ The Virginia Tech-Wake Forest University School of Biomedical Engineering and Sciences is formed
  ■ System X, at the time the most powerful supercomputer in academia, is launched

2004  ■ University opened the building for the Institute for Advanced Learning and Research in Danville, Va., which was founded in 2000
  ■ University joined the Atlantic Coast Conference

2005  ■ Worked with colleagues to achieve the General Assembly’s passage of the Virginia Restructured Higher Education Financial and Administrative Operations Act of 2005, providing greater autonomy to universities
  ■ University adopted the Virginia Tech Principles of Community. The principles reflect the university’s “ongoing efforts to increase access and inclusion and to create a community that nurtures learning and growth for all of its members.”

2006  ■ University established the Steger Poetry Prize. The purse ranks among the most generous for undergraduate poetry competitions in the nation.

2007  ■ Led the university during the difficult days following the April 16 tragedy

2009  ■ University adopted the Virginia Tech Climate Action Commitment and the accompanying Sustainability Plan

2010  ■ The Virginia Tech Carilion School of Medicine in Roanoke, Va., welcomed its first class of students, as the Virginia Tech Carilion Research Institute is established

2011  ■ University opened the Virginia Tech Research Center — Arlington
  ■ On Nov. 12, Steger announced that The Campaign for Virginia Tech: Invent the Future raised $1.11 billion between 2003 and 2011

2012  ■ Infrastructure and the first building in Phase II of the Corporate Research Center’s expansion is completed

2013  ■ Announced his intention to step down as the university’s 15th president
  ■ Virginia Supreme Court entered final judgment in favor of the commonwealth in two civil lawsuits arising from the 2007 tragedy
  ■ Center for the Arts opened its doors
Thanks to the efforts of forestry professors, Virginia Tech has preserved a well-known piece of its past by using modern scientific techniques. The stately sycamore that graced Henderson Lawn from about 1870 until 2010 has returned — this time by way of its progeny with the same DNA.

On April 22, 2013, President Charles W. Steger presided over a town-gown tree-planting. The 10-foot tree they planted, in a spot near where the original sycamore once stood, was rooted from a cutting taken from the dying historic tree shortly before it was removed nearly three years earlier.

The sycamore clone is one of only two that survived from 300 small cuttings taken from the mother tree. “Unfortunately, we just were not very good at getting the cuttings to root,” explained John Seiler, Alumni Distinguished Professor in the College of Natural Resources and Environment. The only other cutting that survived was planted outside Cheatham Hall.

“Over time this identical twin will look just like its mother tree, which succumbed to what became a poor growing environment, root damage from underground utility work in the 1980s, fungal disease, and old age,” said Eric Wiseman, associate professor of urban forestry and arboriculture.

The tree presides over the new College Avenue area, which has been converted to be a more pedestrian-friendly promenade, where no doubt new memories will be made.

“Trees hold enormous emotional attachments for people of all ages,” said Paul Winistorfer, dean of the College of Natural Resources and Environment. “This event marks a significant occasion to perpetuate the memory of a tree that was very special to many people over the ages.”
Timeline

**JULY**

**University to help cultivate science students**

Virginia Tech and the Virginia Science Technology Engineering and Applied Mathematics (STEAM) Academy form a strategic partnership to attract more students to STEAM-related disciplines early in their school careers. The Virginia STEAM Academy will be a public, residential school for approximately 1,000 students in grades nine through 12.

**Upward Bound draws continued funding**

The Upward Bound program is awarded a five-year, $1.85 million grant by the U.S. Department of Education’s Office of Post-secondary Education, TRIO Programs. The first-year allocation of the grant — $462,993 — will be supplemented by an in-kind contribution from Tech.

**Governor’s award goes to Mouras**

Tech’s director of transportation and campus services, Steve Mouras, wins the Governor’s Award for Innovation. Mouras is credited with increasing efficiency and productivity in Tech’s parking, fleet, and alternative transportation services as well as in the print shop, centralized mailing, and records management.

**Board of Visitors gains new members**

Dr. Nancy V. Dye, of Roanoke; William Day Fairchild III, of Gainesville; B. Keith Fulton, of Glen Allen; and Dennis H. Treacy, of Hanover, are appointed by Virginia Gov. Bob McDonnell to join the Virginia Tech Board of Visitors.

**AUGUST**

**Turner Place ups the ante on campus dining**

The new Turner Place dining center at La-very Hall opens, adding to the university’s reputation as one of the best college dining programs in the U.S. Diners will also be able to have a Japanese steakhouse-style lunch or dinner, order from a full-service sushi counter, snack on fresh crêpes and gelato made on site, or sit down to meats and vegetables cooked on a grill fueled entirely by wood.

**First-ever quadruplets settle in**

The first quadruplets ever to attend the university arrive for move-in day. The three brothers and one sister, of Richmond, Va., each will pursue very different academic and career paths. Greg Lomaka will major in statistics, Steve Lomaka will major in information systems, Chris Lomaka will major in building construction, and Kate Lomaka, will major in human nutrition, foods, and exercise.

**Vet Med opens much-needed addition**

The Virginia-Maryland Regional College of Veterinary Medicine opens its $14.1 million, 30,000-square-foot Veterinary Medicine Instruction Addition. It includes a clinical techniques laboratory for second- and third-year veterinary students as well as new faculty offices, student seminar space, and small conference areas. The college also welcomes its largest entering class ever of 126 students.

**SEPTEMBER**

**University is recognized for support of military**

Virginia Tech is named to the 2013 Military Friendly Schools list, compiled by Victory Media, a group that focuses on transitioning military personnel into civilian life. Schools were ranked in nine categories, including military support on campus, academic credibility, and veteran graduation rates.

**Alumni recommend Tech**

In a new college ranking system put out by The Alumni Factor, which rates institutions based on graduate success, Virginia Tech was eighth among national universities and 24th among all colleges in alumni loyalty, financial success, and various satisfaction measures. Tech was first in the number of alumni who said they would choose the school again.

**Hokie offerings in Tidewater increase**

The university expands its presence in the eastern part of the state by opening a new facility in Newport News. The center — called the Virginia Tech Hampton Roads Center, Newport News — is a joint effort with the University of Virginia. It mirrors the universities’ partnership in Richmond, where office, classroom, and operations spaces are shared.

**Propulsion lab gets the go-ahead**

The Virginia Tech Board of Visitors approves development of a $3.5 million propulsion laboratory in Phase 2 of the Corporate Research Center. The 8,100-square-foot facility, operated by the College of Engineering, will support propulsion research, including next-generation fighter and commercial aircraft engine technology.
**OCTOBER**

**University provides greater confidence of online security**

Virginia Tech becomes the first university in the country to qualify for Internet2’s InCommon Bronze and Silver Identity Assurance program, which provides greater assurance to federal agencies, universities, nonprofit organizations, and private companies of the identity of those seeking access to financial and other sensitive information.

**University Libraries helps preserve published records**

University Libraries joins the HathiTrust, a partnership of major academic and research libraries collaborating to build a digital library initiative. As members, Tech students, faculty, and staff will have access to more than 3 million public domain books. Special access is available for users who are blind or visually impaired.

**Former commandant Musser dies**

U.S. Air Force retired Maj. Gen. Stanton R. Musser, who served as commandant of the Virginia Tech Corps of Cadets (VTCC) from 1989 to 1999, died. Musser served two tours in Vietnam, flying a total of 263 combat missions. He was also assigned to the U.S. Air Force Aerial Demonstration Squadron, the Thunderbirds. Upon retiring from the Air Force, Musser took over VTCC, retiring as what was then the longest-serving commandant in the university’s history. Under his leadership, the corps, which was near extinction, experienced its first period of sustained growth in several decades.

**Class rings get an extended life**

For the first time ever, Virginia Tech class rings in the 2014 series contain recycled gold from earlier class rings that were donated by Tech alumni. The “Hokie Gold” legacy program is spearheaded by Class of 1964 alumni, and the gold is melted at the university’s Kroehling Advanced Materials Foundry.

**NOVEMBER**

**Tech hosts its own TEDx event**

Faculty, students, and alumni present ideas for inventing the future at the university’s first TEDxVirginiaTech event. Twenty-one speakers, each a thought-leader in his or her own right, share ideas, insights, and inspiration centered on the theme “knowing.” The speakers come from more than 200 people nominated to present.

**Exemplary departments win recognition**

The College of Liberal Arts and Human Sciences sweeps the 2012 University Exemplary Department or Program Awards. Two programs within the School of Education are chosen — the Arts and Humanities Programs and the Higher Education Program — and the Department of English is selected for the second year in a row.

**DECEMBER**

**Research ranking rises**

The university’s $450 million in research expenditures for fiscal year 2011 moves it up three places to No. 41 in the nation, according to the National Science Foundation. Tech remains the top research university in Virginia and the only Virginia institution in the top 50.

**Swiss villa gets facelift, expansion**

Villa Maderni, which houses the university’s Center for European Studies and Architecture in Riva San Vitale, Switzerland, undergoes a construction and renovation project to improve the facilities and expand the residential and academic space. The plans include the construction of 6,200 square feet of new space and the renovation of 5,200 square feet of existing space.

**Cusimano takes over treasurer duties**

John Cusimano, associate treasurer at Virginia Tech, is named university treasurer. Cusimano succeeds Ray Smoot, who retired in July after serving as university treasurer and chief executive officer of the Virginia Tech Foundation.

**Lavery Hall is officially dedicated**

The university dedicates Lavery Hall, named in honor of former Virginia Tech president William E. Lavery, who died in 2009. During Lavery’s tenure from 1975 to 1987, two of the university’s signature facilities were developed: the Virginia-Maryland Regional College of Veterinary Medicine and the Virginia Tech Corporate Research Center.

**Autism center gets underway**

The Virginia Tech Center for Autism Research is established in the College of Science with Angela Scarpa, an associate professor of psychology, as its first director. Scarpa says there are about 10 centers of excellence for autism research in the country, and “we believe we can take a place among them.”
Got milk? Hokie cows do

Virginia Tech Dining Services partners with the Department of Dairy Science to offer “Virginia Tech Milk” in D2 at Dietrick Hall. Students harvest the milk on campus from the herd of dairy cows at Virginia Tech’s Dairy Center and it is then pasteurized at the James River Department of Agribusiness. Dining centers have been using meats purchased from the College of Agriculture and Life Sciences’ Meat Science Center for more than two years, and the university’s Kentland Farm provides local produce.

Schurig announces retirement

Dr. Gerhardt G. Schurig, dean of the Virginia-Maryland Regional College of Veterinary Medicine since 2004, announces he will step down from his position during the summer of 2013. Schurig first joined the veterinary college faculty in 1978. A professor and veterinary immunologist, he is one of the world’s leading experts on brucellosis. Before serving as dean, he was the college’s associate dean for research and graduate studies, director of the Institute for Biomedical and Public Health Sciences, and a senior researcher and former director of the Center for Molecular Medicine and Infectious Diseases.

University maintains best values rankings

Virginia Tech once again earns a place on Kiplinger’s Personal Finance list of the 100 best values in public education. The ranking cites four-year colleges and universities that combine outstanding education with economic value. Since the ranking began in 2006, Kiplinger’s has included Virginia Tech each year. In February, Tech also makes it into similar rankings released by the Princeton Review.

Business college gets a new leader

The university announces that Robert T. Sumichrast, dean of the Terry College of Business at the University of Georgia, will take over as dean of the Pamplin College of Business on July 1, 2013, succeeding Richard E. Sorensen, who will retire after 31 years on the job. Sumichrast began his faculty career at Tech in 1984, where he taught for almost 20 years, including four years as Pamplin’s associate dean for graduate and international programs. He left in 2003 to become dean of the E.J. Ourso College of Business at Louisiana State University.

North End Center tenants move in

Nine Virginia Tech administrative departments relocate to the new North End Center. Located adjacent to campus between Turner Street and North Main Street, the facility increases efficiencies through space and funding consolidations and by providing better services for students, staff, faculty, and university customers.

Former commandant Acuff dies

Earl C. Acuff, commandant of the Virginia Tech Corps of Cadets from 1973 to 1980, dies. He was 94. In 1969, Acuff served as deputy post commander at the U.S. Army Infantry School in Ft. Benning, Ga., and in 1970 he was asked to teach military science at Tech. In 1974, he was promoted to brigadier general and became commandant of the corps.

ICTAS building gains new moniker

Virginia Tech renames the headquarters building of its Institute for Critical Technology and Applied Science in honor of Hugh and Ethel Kelly in recognition of his pioneering work in telecommunications and her extraordinary philanthropic support. Hugh Kelly, who died in 1989, worked at AT&T’s Bell Laboratories, and played important roles in groundbreaking projects. Ethel Kelly, who died in 2012, generously supported the College of Engineering as a way of honoring her husband’s legacy.

Practice fields are named for supporter

The Virginia Tech football practice fields located between Lane Stadium and Cassell Coliseum are renamed the Steve Johnson Practice Fields in recognition of the accomplishments and philanthropy of alumnus Steve Johnson, of Bristol, Va. A standout tight end for the Hokies in the mid- and late 1980s, Johnson played for the Dallas Cowboys and New England Patriots, and he currently serves as president and owner of Bristol, Va.-based Johnson Commercial Development.

Tech athlete wins third national title

Alexander Ziegler, a senior business administration major from Germany who already holds back-to-back NCAA titles in the hammer throw, captures yet another national championship, this time in the weight throw.
APRIL

**Doctoral student takes engineering abilities to TV**
A mechanical engineering doctoral student appears on the Discovery Channel reality television competition show “Big Brain Theory: Pure Genius,” which focuses on using logic and design to crack different engineering-related problems. Amy Elliott, of Fayetteville, Tenn., finishes second out 10 contestants on the eight-week show.

**Conservation leadership earns recognition**
The Office of Energy and Sustainability is honored with a 2013 Gold Governor’s Environmental Excellence Award, recognizing environmental and conservation leadership in two categories: sustainability and land conservation. This is the fourth such award in the past six years for the university.

**University names performance hall for two couples**
The Center for the Arts’ performing hall will be known as the Street and Davis Performance Hall in honor of two couples — Nicholas and Fay Street of Bristol, Va., and William C. “Jack” and Sandra Davis of Blacksburg, Va. — in recognition of their philanthropic support of the center’s construction. The Davises served on the National Campaign Steering Committee for the university’s past fundraising campaign. Jack Davis is executive director of the university’s Virginia Center for Civil War Studies. The Streets also served on the campaign’s National Campaign Steering Committee, and have served on many other boards and committees.

**University’s efforts to reduce drinking earn recognition**
Virginia Tech’s Party Positive campaign aimed at reducing high-risk drinking wins top honors from the National Association of Student Personnel Administrators, a lead organization for the student affairs profession worldwide. Party Positive emphasizes knowledge, planning, accountability, practicality, and moderation.

**Ghosh takes over outreach and international affairs post**
Guru Ghosh, Virginia Tech’s associate vice president for international affairs since 2011, becomes its new vice president for outreach and international affairs, replacing John E. Dooley, who became chief executive officer of the Virginia Tech Foundation. Ghosh has nearly 20 years of experience in higher education administration across units with various responsibilities, and he takes over a unit that will play a critical role in the university’s emphasis on global interdependence as part of its strategic plan.

MAY

**Steger announces retirement; search committee forms**
Virginia Tech President Charles W. Steger announces his intention to step down as university president. In response, Board of Visitors Rector Mike Quillen appoints a search committee to assist in finding the university’s 16th president. Steger, who has been president for 14 years, will remain until the search concludes and his replacement begins work. (See other sections of this report for more on Steger’s accomplishments at Tech.)

**New general education curriculum gains BOV approval**
A draft of a plan to revise the university’s general education curriculum for undergraduate students is made available for the community to review and provide feedback. Following calls for change to the current Curriculum for Liberal Education, the “Proposal for an Integrated General Education Curriculum at Virginia Tech” emerges from a series of discussions held by faculty, students, and staff over the past three years. The proposal recommends that students take at least 33 credit hours toward their general education requirements, including 12 credit hours in the area of discourse, nine credit hours in quantitative and computational thinking, and 12 credit hours in integrated studies.

JUNE

**Tech helps veterans find work**
Virginia Tech becomes certified by the Virginia Values Veterans program, a Virginia Department of Veterans Services program designed to help companies hire and retain military veterans. As the number of veterans returning home from Iraq and Afghanistan and to the workforce has increased in recent years, Tech has expanded its efforts to help veterans find employment at the university.

**Translational medicine program gains BOV approval**
The Board of Visitors approves creation of a new doctorate in translational biology, medicine, and health, the first major life science program emanating from the university’s new strategic plan. The interdisciplinary program will emphasize the concept of translational medicine — the transformation of scientific discoveries into diagnostics, therapeutics, and health-promoting behaviors and policies.

**Med school draws national conference to Roanoke**
The Virginia Tech Carilion School of Medicine and Research Institute, in collaboration with the Jefferson College of Health Sciences, wins a bid to host the fifth Collaborating Across Borders (CAB V) conference in Roanoke in September 2015. The event is the premier North American conference on educating and implementing effective health-care teams. CAB V is expected to draw 1,200 participants for the three-day event.
### University Financial Highlights

#### 2008-09 2009-10 2010-11 2011-12 2012-13

<table>
<thead>
<tr>
<th>Category</th>
<th>2008-09</th>
<th>2009-10</th>
<th>2010-11</th>
<th>2011-12</th>
<th>2012-13</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Revenues, Expenses, and Changes in Net Assets (1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating revenues (2)</td>
<td>$684.5M</td>
<td>$715.1M</td>
<td>$780.7M</td>
<td>$832.4M</td>
<td>$900.0M</td>
</tr>
<tr>
<td>Operating expenses</td>
<td>$970.1M</td>
<td>$967.3M</td>
<td>$1,025.5M</td>
<td>$1,076.3M</td>
<td>$1,155.5M</td>
</tr>
<tr>
<td>Operating loss (2)</td>
<td>$(285.6M)</td>
<td>$(252.2M)</td>
<td>$(244.8M)</td>
<td>$(243.9M)</td>
<td>$(255.5M)</td>
</tr>
<tr>
<td>Non-operating revenues and expenses (2)</td>
<td>$299.0M</td>
<td>$291.8M</td>
<td>$324.2M</td>
<td>$279.3M</td>
<td>$296.0M</td>
</tr>
<tr>
<td>Other revenues, expenses, gains or losses</td>
<td>$46.1M</td>
<td>$90.1M</td>
<td>$48.8M</td>
<td>$76.6M</td>
<td>$105.8M</td>
</tr>
<tr>
<td>Net increase (decrease) in net assets (2)</td>
<td>$59.5M</td>
<td>$129.7M</td>
<td>$128.2M</td>
<td>$112.0M</td>
<td>$146.3M</td>
</tr>
<tr>
<td><strong>University Net Assets (1)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Invested in capital assets, net of related debt</td>
<td>$669.7M</td>
<td>$734.9M</td>
<td>$794.6M</td>
<td>$867.3M</td>
<td>$994.3M</td>
</tr>
<tr>
<td>Restricted</td>
<td>$113.1M</td>
<td>$153.5M</td>
<td>$137.0M</td>
<td>$156.0M</td>
<td>$158.2M</td>
</tr>
<tr>
<td>Unrestricted</td>
<td>$136.2M</td>
<td>$178.5M</td>
<td>$245.3M</td>
<td>$265.6M</td>
<td>$282.6M</td>
</tr>
<tr>
<td><strong>Assets and Facilities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total university assets (3)</td>
<td>$1,429.5M</td>
<td>$1,654.0M</td>
<td>$1,844.3M</td>
<td>$2,046.0M</td>
<td>$2,211.1M</td>
</tr>
<tr>
<td>Capital assets, net of accumulated depreciation (3)</td>
<td>$972.2M</td>
<td>$1,095.5M</td>
<td>$1,196.6M</td>
<td>$1,339.5M</td>
<td>$1,519.0M</td>
</tr>
<tr>
<td>Facilities-owned gross square feet</td>
<td>$8,946M</td>
<td>$9,011M</td>
<td>$9,166M</td>
<td>$9,276M</td>
<td>$10,078M</td>
</tr>
<tr>
<td>Facilities-leased square feet</td>
<td>$858M</td>
<td>$863M</td>
<td>$913M</td>
<td>$976M</td>
<td>$1,183M</td>
</tr>
<tr>
<td><strong>Sponsored Programs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of awards received</td>
<td>2,384</td>
<td>2,526</td>
<td>2,400</td>
<td>2,589</td>
<td>2,272</td>
</tr>
<tr>
<td>Value of awards received</td>
<td>$232.3M</td>
<td>$312.4M</td>
<td>$274.0M</td>
<td>$294.1M</td>
<td>$271.1M</td>
</tr>
<tr>
<td>Research expenditures reported to NSF (3)</td>
<td>$396.7M</td>
<td>$398.2M</td>
<td>$450.1M</td>
<td>$454.4M</td>
<td>N/A</td>
</tr>
<tr>
<td><strong>Virginia Tech Foundation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gifts and bequests received</td>
<td>$65.1M</td>
<td>$86.9M</td>
<td>$98.5M</td>
<td>$67.9M</td>
<td>$77.0M</td>
</tr>
<tr>
<td>Expended in support of the university</td>
<td>$124.8M</td>
<td>$126.5M</td>
<td>$124.4M</td>
<td>$135.5M</td>
<td>$146.0M</td>
</tr>
<tr>
<td>Total assets and managed funds</td>
<td>$942.1M</td>
<td>$1,025.6M</td>
<td>$1,155.1M</td>
<td>$1,210.7M</td>
<td>$1,302.7M</td>
</tr>
<tr>
<td><strong>Endowments (At Market Value)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Owned by Virginia Tech Foundation (VTF)</td>
<td>$410.7M</td>
<td>$452.7M</td>
<td>$541.0M</td>
<td>$536.7M</td>
<td>$594.1M</td>
</tr>
<tr>
<td>Owned by Virginia Tech</td>
<td>$35.6M</td>
<td>$44.4M</td>
<td>$52.7M</td>
<td>$51.6M</td>
<td>$59.6M</td>
</tr>
<tr>
<td>Managed by VTF under agency agreements</td>
<td>5.8M</td>
<td>6.0M</td>
<td>7.0M</td>
<td>6.5M</td>
<td>7.0M</td>
</tr>
<tr>
<td><strong>Total endowments supporting the university</strong></td>
<td>$452.1M</td>
<td>$503.1M</td>
<td>$600.7M</td>
<td>$594.8M</td>
<td>$660.7M</td>
</tr>
<tr>
<td><strong>Student Financial Aid (4)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of students receiving selected types of financial aid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>12,085M</td>
<td>12,896M</td>
<td>13,135M</td>
<td>13,081M</td>
<td>12,506M</td>
</tr>
<tr>
<td>Grants, scholarships, and waivers (5)</td>
<td>18,406M</td>
<td>27,134M</td>
<td>27,469M</td>
<td>19,535M</td>
<td>19,762M</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>8,734M</td>
<td>8,514M</td>
<td>9,007M</td>
<td>9,331M</td>
<td>9,935M</td>
</tr>
<tr>
<td><strong>Total financial aid</strong></td>
<td>$324.2M</td>
<td>$359.0M</td>
<td>$390.7M</td>
<td>$413.8M</td>
<td>$425.2M</td>
</tr>
</tbody>
</table>

---

(1) The university adopted the new Governmental Accounting Standards Board (GASB) reporting model in fiscal year 2002 as required by GASB Statement Number 35, Basic Financial Statement — and Management's Discussion and Analysis — for Public Colleges and Universities.

(2) The university will always be expected to show an operating loss since significant recurring revenues are shown as non-operating. Major revenue sources reported as non-operating include state appropriations, gifts, and investment income. These revenue sources are used for general operations in support of the learning, discovery, and engagement missions of the university.

(3) Total research expenditures reported to the National Science Foundation were not available at publication date.

(4) Amounts for fiscal years 2008 and 2009 reflect any applicable restatements.

(5) Grants, scholarships, and waivers for FY2010 and FY2011 include undergraduate Virginia residents who received ARRA tuition mitigation grants.
Virginia Tech Board of Visitors

Michael Quillen, Rector
George Nolen, Vice Rector
Michele L. Duke
Nancy V. Dye
William D. Fairchild III
Cordel L. Faulk
B. Keith Fulton
William B. Holtzman
John C. Lee IV
Suzanne S. Obenshain
Deborah Petrine
John G. Rocovich Jr.
Dennis H. Treacy
Paul W. Rogers

Sarah Karpanty
Sue Teel
Nicholas Onopa
Robyn Jones
Kim O’Rourke
Faculty Representative
Staff Representative
Undergraduate Student Representative
Graduate Student Representative
Secretary to the Board

Senior Administrative Personnel

Charles W. Steger
Mark G. McNamee
Sherwood G. Wilson
Thomas C. Tillar
Elizabeth A. Flanagan
William T. Lewis
M. Dwight Shelton Jr.
Karen P. DePauw
Scott F. Midkiff
James R. Bohland
Guru Ghosh
Robert Walters
Patricia A. Perillo
President
Senior Vice President and Provost
Vice President for Administration
Vice President for Alumni Relations
Vice President for Development and University Relations
Vice President for Diversity and Inclusion
Vice President for Finance and Chief Financial Officer
Vice President and Dean for Graduate Education
Vice President for Information Technology
Interim Vice President and Executive Director, National Capital Region
Vice President for Outreach and International Affairs
Vice President for Research
Vice President for Student Affairs

Virginia Tech Foundation

John E. Dooley
Chief Executive Officer

Deans

Alan Grant
A. Jack Davis
Richard Benson
Sue Ott Rowlands
Paul Winistorfer
Richard E. Sorensen
Lay Nam Chang
Gerhardt Schurig
Tyler Walters
College of Agriculture and Life Sciences
College of Architecture and Urban Studies
College of Engineering
College of Liberal Arts and Human Sciences
College of Natural Resources and Environment
Pamplin College of Business
College of Science
Virginia-Maryland Regional College of Veterinary Medicine
University Libraries

Virginia Tech does not discriminate against employees, students, or applicants on the basis of age, color, disability, gender, national origin, political affiliation, race, religion, sexual orientation, genetic information, veteran status, or any other basis protected by law. Anyone having questions concerning discrimination or accessibility should contact the Office of Equity and Access.