



TOGETHER
Ahead



In memoriam

Zenobia Lawrence Hikes, vice president for student affairs, died on Oct. 27, 2008. President Charles W. Steger called her “a deeply dedicated, charismatic, and inspirational leader who brought successful new ideas and leadership to the Division of Student Affairs. Her passing is a terrible loss to our community.”



Virginia Tech suffered a tragedy of immense proportions on April 16, 2007, a day that cost the lives of 32 bright and beloved students and professors. Buoyed by an international outpouring of support and our Hokie Spirit, the university community came together to mourn — and to begin the arduous process of moving ahead despite our sorrow. This annual report summarizes the results of that process.

Research and discovery: Creating excitement

In the area of discovery, which furnishes the university with the ability to change the future, the most recent figures released by the National Science Foundation show that research expenditures here skyrocketed by 14 percent, moving the university to 42nd among colleges and universities nationwide.

The excitement about research led us to join forces with agencies in Northern Virginia to announce a major research center in the Ballston area and to begin collaborating with Georgetown University to discover and develop new drugs. We also broke ground on the already-announced Virginia Tech Carilion School of Medicine in Roanoke and named its founding dean, Dr. Cynda Ann Johnson.

Other research developments discussed in this publication include saving lives on our roadways and in swift-water rescues and helping the world discover alternative fuels for the future.

Enhancing teaching and learning

While research is important to everyone’s future, our teaching and learning must be top-notch to help students — some of whom will make their own discoveries — move ahead and realize their full potential. At Virginia Tech, we recognize departments that do extraordinary jobs in working with students, and you can read about them in this report.

Readers can also learn how the university is creating new academic relationships to make better use of expertise and resources, and we highlight a number of award-winning students, including one who traveled to Mali as part of an entomology project and then returned to Blacksburg to develop a plan to save natives of that country from mosquito-borne viruses.

We take pride in our world-class educators, and you can read about a number of their achievements in this report. Among them, an astounding seven won National Science Foundation Faculty Early Career Development Program Awards, one became the first poet to win the Carl Sandburg Award, and another had a tree named after him for his work with cancer drugs.

Technology: New opportunities to move ahead

Although the very word sounds as if it would insulate its users, technology is another area that brings the Virginia Tech community together, a community that sometimes includes private industry. For instance, educators, researchers, and students joined forces to produce one of the top autonomous vehicles in the world. Private industry also plays a role in technological advancements. As an example, General Motors is working with us on neuroinformatics, and our discoveries could vastly improve the way humans and machines — such as prosthetics — interact.

Our researchers received notable awards for their technological achievements, including one in which *Computerworld* named a professor one of 40 under the age of 40 to watch. The National Academy of Sciences recognized another professor for his stellar work on embedded computers, which are the “brains” behind many everyday mechanisms. *Computerworld* also presented the College of Engineering with a medal for its tablet PC program, which is helping transform the classroom.

Improving society through engagement

Engaging with others to improve their lives is never far from our hearts at Virginia Tech, and 2007-08 was a particularly poignant time to focus on our motto, *Ut Prosim* (That I May Serve). Our students, faculty members, and staffers developed unique and visible ways to remind people to help others through VT-ENGAGE, and an individual student found a way to aid both the environment and the community by having the food at campus eateries that was left over each day delivered to area food pantries.

The Virginia Tech community does not come together in service to win awards or recognition, but that is sometimes the result. The Corporation for National and Community Service added the university to its honor roll, and the Community Design Assistance Center was honored for its 20 years of helping localities move ahead.

Campaign leads to another fundraising record

Whether through teaching, discovery, or engagement, our collective efforts to advance society would be impossible without the finances to carry it off. We have known for many years that the state should be funding us at a higher level than it is willing or able to provide. In fact, as this report is being produced, we face yet another large cut in public funding. Because of this, the value of private giving to the university cannot be emphasized enough. Our supporters set a giving record by donating \$91.1 million, an increase of 8.7 percent over fiscal year 2007-08. And The Campaign for Virginia Tech: Invent the Future, which we announced in 2007, has now raised more than \$683 million toward our \$1 billion goal. You can read about the results of this fundraising in the philanthropy section.

As you will note in this report, Virginia Tech has accomplished much during some of the most challenging times it has ever faced. Our many successes speak volumes about the resiliency of our university community and its capacity to work together to move ahead. And they offer encouragement for the future and confidence in our ability to improve it — for all of society.

TOGETHER - AHEAD

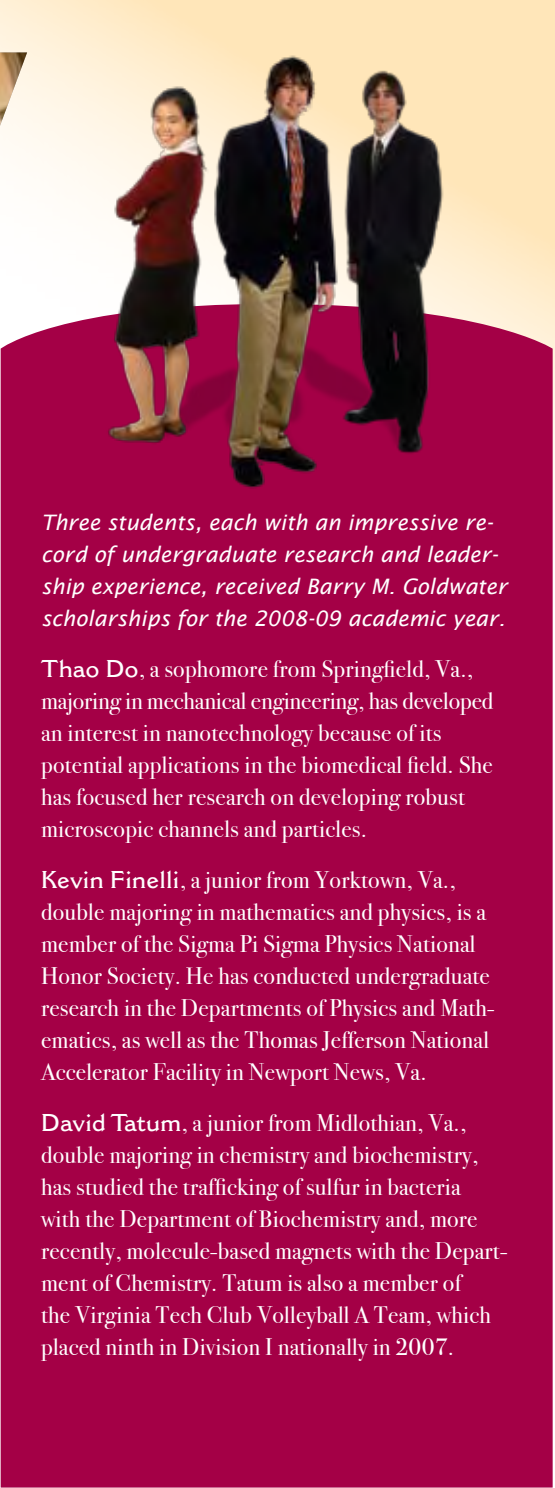
A message from the president



Cristine George, a University Honors program student and biological sciences major, conducts research on mosquitos.



Patty Raun, department head of theatre arts, and Truman Capone, head of the School of Visual Arts, will lead the new School of Performing Arts and Cinema.



Three students, each with an impressive record of undergraduate research and leadership experience, received Barry M. Goldwater scholarships for the 2008-09 academic year.

The entire university community focuses on or is linked to student learning, and this support helps both the faculty and students to move forward.

Virginia Tech formally recognizes departments that stand out in their efforts to provide students with the resources to reach their potential. In 2007-08, the top departments exhibiting superior student advising programs received University Exemplary Department Awards, including the Grado Department of Industrial and Systems Engineering in the College of Engineering; the Department of Apparel, Housing, and Resource Management in the College of Liberal Arts and Human Sciences; and the University Academic Advising Center.

A student helping save lives

Strong academics and good guidance can help an exceptional young person like **Christine George** of Manassas, Va., a University Honors program student and biological sciences major, really shine. George was named by *USA Today* as one of the 20 high-achieving students on its 2008 All-USA College Academic First Team.

More important was what George did in January 2007 when she visited the country of Mali as part of her entomology class, where she worked with researchers and physicians from the Malaria Research and Training Center at the Medical University in Bamako. Immediately, George said, she felt an attachment to the country — its culture and its people.

During her visit, she witnessed villagers suffering from fevers, and she discovered that Mali did not have any research or work being done on mosquito-borne viruses.

George, who had served as an undergraduate research assistant in entomology Assistant Professor **Zach Adelman's** lab, decided to take action. She presented the Vector-Borne Disease Research Group with ideas for providing Mali with the preliminary data and education to set up a sustainable mosquito-borne virus surveillance center. Then, to conduct the necessary research and pay for the trip, George raised \$15,000, which was matched by \$10,000 from Adelman. She returned to Mali in July 2007 to determine the high-risk areas of mosquito-borne infections and provide enough data and information for the people of Mali to apply for additional funding and support.

George has helped establish collaborative Virginia Tech-Mali working relations, provided undergraduate and graduate students with valuable training, and determined field infection levels of dengue and yellow fever. As research continues, the second portion of George's plan involves training Malian scientists in molecular arbovirology. This training is being planned for and provided by Virginia Tech faculty members in the Vector-Borne Infectious Disease Research Group.

In addition to her interest in mosquito research, George is also heavily involved in raising funds for the Kona BikeTown Africa Campaign, which provides bikes to disease-ravaged African countries for delivery of much-needed medical treatment and supplies.

George said her goal is to pursue a career in medicine with a dual emphasis in global health and infectious disease.

School of Arts reorganized to enhance offerings

Virginia Tech is always looking for ways to advance its academic offerings, and as a part of its expanded vision for the arts, which includes a planned performance hall and theater, a visual arts gallery, and a creative technologies lab, the School of the Arts was reorganized into the School of the Performing Arts and Cinema in the College of Liberal Arts and Human Sciences and the School of Visual Arts in the College of Architecture and Urban Studies.

The School of the Performing Arts and Cinema draws on the faculty and programs in theater, music, and film studies. Its mission is to utilize the performing arts and cinema to generate and disseminate knowledge and artistic expression with performances, educational outreach, and active involvement with citizens, arts organizations, governmental entities, and businesses.

"This academic structure allows for new opportunities," said **Sue Ott Rowlands**, dean of the College of Liberal Arts and Human Sciences. "We will continue to provide visibility and prominence to the performing arts and also validate programs in film and film studies."

The mission of the School of Visual Arts is to offer an expansive undergraduate and graduate education in fine art, art history, and visual and digital design embracing contemporary and traditional techniques. The school will also specialize in new creative technologies as a vehicle for voice and vision. In addition to existing and proposed academic programs, the school includes VDS4, The Visual Design Studio; the Collaboration for Creative Technologies in the Arts and Design (CCTAD); the Art Museum of Western Virginia Curatorial Partnership and Visiting Artist Program; The Art Armory Gallery and the university's art collection; and XYZ Gallery, a student-run art gallery.

"The new School of Visual Arts will round out the academic structure of the College of Architecture and Urban Studies and will advance the university's commitment to innovation in the arts through learning, discovery, and engagement," said **Jack Davis**, dean of the College of Architecture and Urban Studies.

Student achievers

Phillip Chong, of Fairfax, Va., a senior double majoring in agricultural and applied economics in the College of Agriculture and Life Sciences and political science in the College of Liberal Arts and Human Sciences, was awarded a Fulbright English Teaching Assistantship. The Fulbright Scholar conversational English to middle and high school students in South Korea for one year. He also planned to volunteer at a tutoring center for underprivileged and low-income families.

Estee G. Rios, an accounting and information systems junior in the Pamplin College of Business, was selected to participate in KPMG's Future Diversity Leaders program. The audit, tax, and advisory firm chose 50 students from across the nation to participate in the program, designed to provide leadership training and financial support for outstanding minority undergraduate business students. Rios was nominated as a result of her academic achievement, community and campus involvement, and participation in diversity organizations.

Benjamin Tew of Baltimore, Md., a graduate student in the industrial design program in the College of Architecture and Urban Studies, won the grand prize at the 2007 Juvenile Products Manufacturers Association International Show in Orlando, Fla. Tew received \$2,500 for his product, NIPA, or Nested Interactive Play Area.

Laura Valentine of Nashville, Tenn., and Colorado Springs, Colo., a fourth-year interior design student in the College of Architecture and Urban Studies, won the gold prize in the Odegard Award for Excellence in Rug Design competition. Valentine's design was selected from more than 900 entries from schools across the U.S. and five foreign countries.

ACADEMICS

Working together to broaden learning



From left: Karin Pedemonte, Justin McNatt, and Gerald Millner
Not pictured: Michael Diaz, Portia Galloway, Kimberly Haynie, and Jessica Marshall

They are

Michael Diaz of Sterling, Va., a fifth-year computer engineering student in the College of Engineering;

Portia Galloway of Poughkeepsie, N.Y., a senior industrial systems engineering student in the College of Engineering;

Kimberly Haynie of Heathsville, Va., a first-year master's degree candidate in human nutrition, foods, and exercise in the College of Agriculture and Life Sciences;

Jessica Marshall of Virginia Beach, Va., a sophomore member of the corps of cadets and

an international studies student in the College of Liberal Arts and Human Sciences;

Justin McNatt of Tulsa, Okla., a sophomore mechanical engineering student in the College of Engineering;

Gerald Millner of Martinsville, Va., a doctoral candidate in career and technical education in the College of Liberal Arts and Human Sciences; and

Karin Pedemonte of Fairfax, Va., a sophomore math major in the College of Science.

Seven Virginia Tech students were named Gates Millennium Scholars, a program that promotes academic excellence and provides an opportunity for outstanding minority students with significant financial need to reach their highest potential.

Exemplary departments abound

Department of Apparel, Housing, and Resource Management faculty advisors recognize the importance of networking, and they succeed in connecting students with professionals. Perhaps most importantly, they challenge students to take control of their lives, to think more broadly, and to explore possibilities. Advisors maintain an open-door policy and invite e-mail conversations throughout the year. Students are also encouraged to join campus clubs and organizations to help build a sense of university community. "The individual needs of students are not an after-thought in the department but are viewed as an essential, core faculty responsibility," said Department Head **LuAnn Gaskill**. "A strong focus on student mentoring and development is, and continues to be, an intrinsic departmental value."

The Grado Department of Industrial and Systems Engineering, according to one senior, is "almost like a family, where everyone tries their hardest to help everyone else succeed." **Eileen Van Aken**, associate department head and undergraduate program director, and **Joyce Vest**, academic and career advisor, re-designed the department's graduation check sheet to more clearly define prerequisites. The department provides several methods to obtain student feedback and in 2007 held its first town hall meeting to improve two-way communication. The department also recently launched an ambassador program that sends out students to represent the department at open houses and recruiting events. Rounding out the undergraduate experience is the role faculty members play in leading students in hands-on learning, including opportunities for research. In recent years, the number of students participating in research has doubled.

The University Academic Advising Center has the challenging task of assisting freshmen as they adapt to college life. Its primary mission is to guide and support exploratory students — those who have not decided on an academic major to pursue, have not been accepted into their major of first choice, or have decided to change majors. For so many of these students, guidance, information, and support are vital. The center established Hokie Horizons, a first-year experience program for University Studies students. The center also developed an academic planning tool for University Studies to encourage undecided students to develop a "big picture" plan of their academic career. Finally, the center has developed a listserve for parents that allows them to become partners in the process of educating their student.



Top: LuAnn Gaskill

Below: Eileen Van Aken and Joyce Vest



Denny Cochrane is the university's energy and sustainability coordinator

Together, the campus community goes green

Virginia Tech has made advances in sustainability research for years, and the university itself has engaged in various efforts to make the campus "greener" and more energy efficient — but the university's efforts have not followed a specific plan.

That will change during 2008-09. President Charles W. Steger decided in 2007-08 that it was time to go about these efforts in a more systematic way by developing a campus sustainability plan aimed at reducing global warming emissions in everyday campus operations.

To reach this goal, Steger directed the recently formed Committee on Energy and Sustainability to develop the "Virginia Tech Climate Action Commitment."

"Virginia Tech will be better served by developing a sustainability plan that is specific to our university community. This plan will have a significant impact on our policies, operations, and the budget of the university. In order for this initiative to be successful, I believe we need to secure the support of the entire university community," Steger said.

"Campus sustainability has strong support among university leadership, and I believe Virginia Tech will become a leader in campus sustainability issues," he added.

The development of the Virginia Tech Climate Action Commitment, which will be pursued in lieu of signing the generic President's Climate Commitment, will be submitted to Steger and the Commission on University Support by the end of the fall 2008 semester. Once approved by

the commission, the draft plan will be submitted to University Council and to Steger for formal adoption.

Meanwhile, the university has not been idle in this area. In fact, it received a bronze 2008 Governor's Environmental Excellence Award for its commitment to the stewardship of Virginia's natural resources through the Sustainability Week 2007 Program.

The Governor's Environmental Excellence Awards recognize the commonwealth's environmental and conservation leaders. Sponsors of the awards include Virginia's governor, the secretary of natural resources, the Department of Environmental Quality, the Department of Conservation and Recreation, and other partner organizations.

Sustainability Week 2007 was a green partnership between Virginia Tech, the Town of Blacksburg, the local citizens group Sustainable Blacksburg, and the Environmental Coalition. The week-long program was the first of its kind in the area and featured more than 40 environmentally focused events, including speakers, presentations, education sessions, tours, fairs, exhibitions, activities, and films aimed at entertaining while educating and highlighting sustainability programs and practices.

For instance, a Campus Sustainability Fair featured exhibitors and educational sessions with firms engaged in providing new construction, renovation projects, and maintenance support to existing facilities on campus. A Sustainability Home and Transportation Fair featured sustainable exhibitors, alternate transportation, and

educational sessions for the Blacksburg community. Other activities during the week included tree plantings on the Drillfield; a campus alternate transportation program; and tours of the recycling center, Blacksburg water resources, and a local organic farm.

The event was so successful that planning began immediately for Sustainability Week 2008.

The university has also joined a number of schools across the country that are saving food and energy costs by eliminating trays at its all-you-can-eat dining centers. When Tech dropped tray use during summer 2008 at D2 and Shultz Dining Hall, food waste declined 38 percent, according to **Denny Cochrane**, Tech's energy and sustainability coordinator. The change also saved water and electricity used to wash the trays.

As a result, the two dining centers will go trayless for the 2008-09 school year with the expectation of cutting food waste by 30 percent.

When students use trays, they tend to fill their trays with food until space runs out. When trays are removed and they cannot carry as much, they tend to make more careful selections and to be satisfied with less food overall.

To aid all these efforts, Tech joined the Association for the Advancement of Sustainability in Higher Education (AASHE). Membership covers everyone on campus (faculty, staff, and students). Members have access to an array of online resources and numerous opportunities for networking, information sharing, collaboration, and professional development.

SUSTAINABILITY

Virginia Tech promotes environmentally responsible initiatives

From top: Masoud Agah, Ali R. Butt, and Serkan Gugercin

Higher education is a crucial component in society's drive to advance and improve. And while it takes collaboration among all segments of the campus community, it is the world-class teachers who provide the intellectual fire and creativity. Awards and recognition are not the full measure of a superior teacher or researcher, but they do provide one yardstick.

In an extraordinary year, seven faculty members received a National Science Foundation (NSF) Faculty Early Career Development Program (CAREER) Award to support their research. The five-year grants are worth at least \$400,000 each and are the NSF's most prestigious award for those creative junior faculty members who are considered to be future leaders in their academic fields. The CAREER recipients are as follows:

Masoud Agah, assistant professor in the Bradley Department of Electrical and Computer Engineering and an affiliate member of the Department of Mechanical Engineering, wants to develop a credit card-sized gas chromatography platform. Gas chromatography is the primary technique used in a number of scientific, medical, and industrial settings to separate and analyze volatile compounds. Conventional systems, however, tend to be large, fragile, and relatively expensive tabletop instruments. Agah's system would improve speed, portability, and performance and would consume far less power.

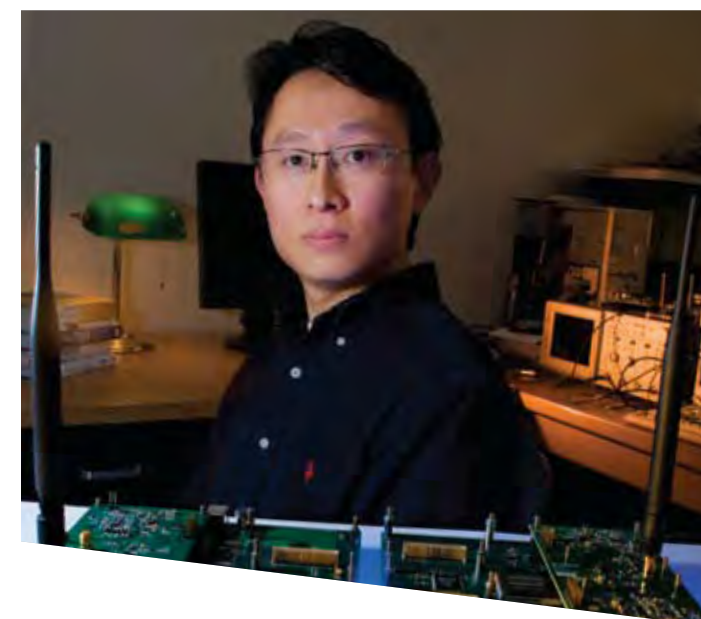
Computing systems will soon have the capability of processing a petabyte — or 1,000 terabytes — per second, but without significant improvement, input/output systems that enable the processors to interact with external devices, such as disks and networks, will not be able to keep up. **Ali R. Butt**, an assistant professor of computer science in the College of Engineering, is addressing the increasing performance gap between computing power and storage technology, especially for high-performance computing environments.

College of Science researcher **Serkan Gugercin** focuses on the timely, accurate prediction or control of complex phenomena, such as predicting the path of a hurricane or controlling a jet. An assistant professor of mathematics, Gugercin is affiliated with the Interdisciplinary Center of Applied Mathematics.



Leigh McCue, an assistant professor in the Department of Aerospace and Ocean Engineering, wants to save lives and ships by improving the stability and safety of sea-going vessels. McCue, who won a \$300,000 Young Investigator Program Award from the Office of Naval Research in addition to her CAREER award, is developing tools to help ship designers better understand ship motions and, thus, diminish capsizing and other dangers resulting from vessel instabilities.

Improving the security of cognitive radio technology is the goal of Virginia Tech College of Engineering researcher **Jung-Min Park**. Park, an assistant professor in the Bradley Department of Electrical and Computer Engineering, said that cognitive radio technology will be used for two-way communications in a wide range of applications, such as communication systems for tactical military forces and emergency responders. It also might be used in the development of wireless access networks that can provide Internet services to rural areas.



Nonequilibrium systems — including weather and climate, the efficiency of combustion and chemical reactions, the convection of biological organisms in the oceans, heart dynamics, and crystal growth from a melt — are extremely important but remain difficult to analyze, control, design, and predict. College of Engineering researcher **Mark Paul**, an assistant professor in the Department of Mechanical Engineering, is working to understand the dynamics of large, chaotic systems, such as weather and climate.

Boris Vinatzer, assistant professor of plant pathology, physiology, and weed science in the College of Agriculture and Life Sciences, is using new genome sequencing technology to test a hypothesis about how agriculture's early beginnings may have impacted the evolution of plant pathogens. He is investigating whether plant pathogenic bacteria evolved from relatively weak pathogens that caused disease in many plants to highly virulent pathogens of single crops.



WORLD-CLASS FACULTY

Educators help push society to new heights



From left: Marc Edwards, Patrick Miller, Nikki Giovanni, Fred P. Piercy, Ron Kemnitzner, James E. McGrath, David G.I. Kingston, and Michael F. Hochella Jr.

Numerous other professors also received recognition for their work. Among them are the following:

Marc Edwards, the Charles P. Lunsford Professor of Civil and Environmental Engineering, was named a MacArthur Fellow for 2007 by the John D. and Catherine T. MacArthur Foundation. He received a five-year grant of \$500,000 to use in any way he chooses. Edwards played a vital role in ensuring the safety of drinking water and in exposing deteriorating water-delivery infrastructure in America’s largest cities. While investigating the Washington, D.C., area water supply in 2003, Edwards and his graduate students discovered that the addition of chloramine disinfectant in tap water increased the incidence of lead leaching in residential and commercial aqueducts.

The Council of Educators in Landscape Architecture named **Patrick Miller**, associate dean for graduate studies and outreach in the College of Architecture and Urban Studies, a CELA Fellow. The title is bestowed to “honor a faculty member’s lifetime accomplishments in teaching, scholarship/creative activity, and service.”

James E. McGrath, University Distinguished Professor of Chemistry, received the American Chemical Society Award in Polymer Chemistry for his synthesis and characterization of high-performance matrix polymers and structural adhesives, fire-resistant polymers and composites, and high-temperature polymers for computers.

A new yew species that grows in India, China, and Taiwan was named for **David G.I. Kingston**, University Distinguished Professor of Chemistry. *Taxus kingstonii*, also called the Kingston yew, was described by Richard Spjut in the *Journal of the Botanical Research Institute of Texas*. Kingston has done extensive work on yew taxanes, which include the important cancer chemotherapeutic agent paclitaxel (Taxol).

Michael F. Hochella Jr., University Distinguished Professor of Geosciences, was named a Fellow in the American Association for the Advancement of Science (AAAS).

Fred P. Piercy, professor and head of the Department of Human Development in the College of Liberal Arts and Human Sciences, was honored with the Outstanding Contribution to Marriage and Family Therapy Award from the American Association for Marriage and Family Therapy.

University Distinguished Professor of English **Nikki Giovanni** received the 2007 Carl Sandburg Literary Award from the Chicago Public Library Foundation. Giovanni was the first poet to win the award.

Two School of Architecture + Design faculty members were named by the Design and Futures Council and the journal *DesignIntelligence* as educators most admired and respected in the fields of interior design, interior architecture, architecture, design, architectural engineering, industrial design, and landscape architecture. **Ron Kemnitzner**, an industrial design professor, won the designation for the first time. **Gene Egger**, who is the Nancy and Patrick Lathrop Professor of Architecture and director of special programs for the college, won for the second consecutive time.



Kevin Davy, associate professor of human nutrition, foods, and exercise in the College of Agriculture and Life Sciences and director of the Human Integrative Physiological Laboratory, was elected Fellow of the American Heart Association and the Council of Nutrition, Physical Activity, and Metabolism. Davy has made contributions to understanding sympathetic nervous system behavior in human obesity.

Roe-Hoan Yoon, who holds the Virginia Tech Nicholas T. Camicia Professorship, was elected a member of the National Academy of Engineering, the highest honor in the engineering profession. Yoon is known internationally for his significant contributions to the technology and science of mineral processing.

Ed Falco, professor of English and director of creative writing and the master of fine arts program, was awarded a Literature Fellowship in Prose from the National Endowment for the Arts. The fellowship encourages the production of new work by affording its recipients the time and means to write.

Engineering professors **James Thorp** and **Arun Phadke** received the 2008 Benjamin Franklin Medal in Electrical Engineering for their combined contributions of more than 60 years to the power industry. For this collaborative work, the Franklin Institute has now included Thorp and Phadke in its list of the greatest men and women of science, engineering, and technology.

Patricia Dove, professor of geosciences in the College of Science, was named a Fellow in the American Geophysical Union. Dove was recognized for her outstanding contributions to the advancement of the geophysical sciences. She and her research group study the biogeochemistry of earth processes.

Sandeep Shukla, associate professor of electrical and computer engineering, has received a Friedrich Wilhelm Bessel Research Award from the Alexander Humboldt Foundation of Germany. The Bessel award is available annually to no more than 25 scientists and scholars, internationally renowned in their field, who completed their doctorates fewer than 12 years earlier.

Bob Hicok and **Paul Sorrentino**, faculty members in the Department of English in the College of Liberal Arts and Human Sciences, both received Guggenheim Fellowships. Hicok also garnered the 2008 Rebekah Johnson Bobbitt National Prize for Poetry for his most recent collection of poems, *This Clumsy Living*.

From left: Ed Falco, James Thorp, Arun Phadke, Patricia Dove, Roe-Hoan Yoon, Kevin Davy, and Paul Sorrentino

Not pictured: Gene Egger, Sandeep Shukla, and Bob Hicok

Virginia Tech researchers and educators have joined together over the years to improve or make use of improvements to technology to help students and the community alike. In 2007-08, they continued those advancements and also received accolades for past accomplishments.



Students help push technology envelope

VictorTango, a team of Virginia Tech geography and engineering students, won third place and a \$500,000 cash prize in the Urban Challenge autonomous vehicle competition.

During the competition, held on a former U.S. Air Force base in Victorville, Calif., the Tech autonomous vehicle, Odin, completed a 60-mile course – with no human intervention allowed past the starting line – in less than six hours. Odin obeyed California traffic laws and performed such maneuvers as merging into moving traffic, navigating traffic circles, and avoiding obstacles before crossing the finish line just behind entries from Carnegie Mellon University and Stanford University.

Only six of 11 finalists finished the course. The other three were teams from Cornell University, Massachusetts Institute of Technology, and a collaborative team from the University of Pennsylvania and Lehigh University.

VictorTango converted an Escape hybrid SUV donated by Ford Motor Co. into an autonomous vehicle by outfitting it with a drive-by-wire system, powerful computers, laser scanners, cameras, and a global positioning system. The team included 10 graduate students and as many as 50 undergraduates.

University, private industry partner to move technology forward

General Motors (GM) and Virginia Tech launched a new joint laboratory to study neuroinformatics, a field that studies and measures brain activity and could ultimately translate into improvements in how humans interact with machines.

“General Motors has a rich history of supporting scientific advancements. The advances in sensing and measurement technologies in the neuroscience community are making it possible to collect vast amounts of data. We view this as an opportunity to develop data-mining methods that will benefit this community as well as have practical applications within General Motors,” said **Susan Smyth**, director of GM’s Manufacturing Systems Research Lab.

The work done at the new Laboratory for Neuroinformatics will be co-directed by **K.P. Unnikrishnan**, research scientist at GM Research and Development in Warren, Mich., and **Naren Ramakrishnan**, associate professor of computer science at the university.

Unnikrishnan, a GM physicist who has conducted neuroscience-related research at GM for 20 years, foresees new automotive applications for the work. “Creating brain-machine interfaces is the next frontier. In the near-term, we will develop advanced algorithms that could analyze data from cars – from mechanical and electrical systems – to maintain vehicle health. It’s interesting that solutions we’re looking for in the research field of neuroscience might end up serving us well on an assembly line,” he said.

GM and Virginia Tech scientists expect that brain-machine interfaces could potentially improve prosthetics devices, possibly even helping restore such senses as vision, touch, hearing, and motor skills.

Technology research continues to help hurting communities move ahead

The Virginia Tobacco Indemnification and Community Revitalization Commission awarded a \$1.2 million grant to Outreach and International Affairs to fund creation of a new regional program, the Modeling and Simulation Center, at Riverstone Technology Park, a 60,000-square-foot facility in Halifax County, Va.

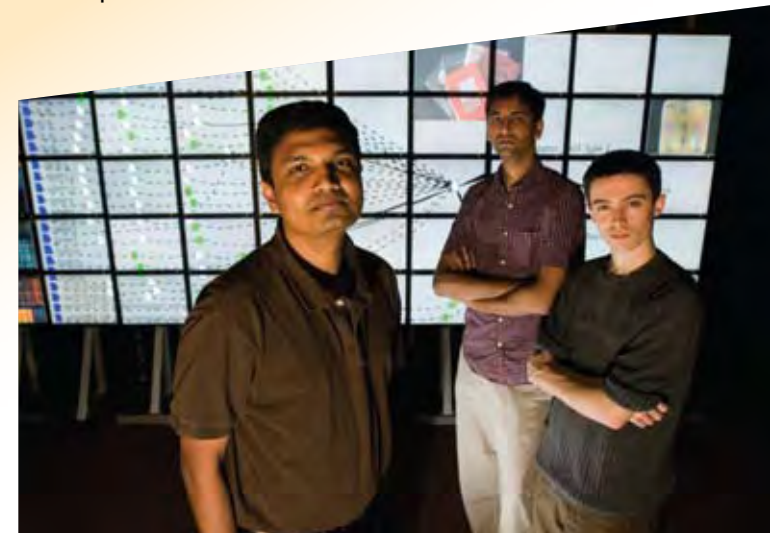
The center will target projects that use data collected in the energy and environmental fields that are then exported over the broadband network for computational processing. The resulting product will be used for later visualization at Riverstone or wherever stakeholders are located.

The effort will complement Old Dominion University’s Virginia Modeling, Analysis, and Simulation Center, which focuses on homeland security, medicine, and transportation. Six months ago, Virginia Tech and Virginia Modeling, Analysis, and Simulation Center leaders signed a cooperative agreement to enable the two organizations to collaborate. The two organizations provide a holistic approach to one of the fastest growing areas in technology, modeling, and simulation.

The new center can serve and support numerous private engineering firms within a 150-mile radius of Riverstone, in addition to state and federal agencies, such as the Department of Environmental Quality, U.S. Department of the Interior, Environmental Protection Agency, and Department of Energy.

The Ward Burton Wildlife Foundation and the Conservation Management Institute, an institute within the College of Natural Resources at Virginia Tech, were two of the early program partners.

Naren Ramakrishnan with graduate students
Deept Kumar and Joe Gresock



Computerworld tabs Tech professor as one of 40 to watch

Naren Ramakrishnan, associate professor of computer science, was named one of *Computerworld*’s “40 innovative IT people to watch under the age of 40.”

The award recognizes the contributions of Ramakrishnan to the areas of data mining, personalization, and problem-solving environments. In particular, he is being recognized for the data-mining paradigm called “storytelling.”

“Naren’s ingeniously innovative concept of storytelling is an excellent example of an algorithm that reveals and exploits the interconnectedness of information,” said **Dennis Kafura**, computer science professor and department head. “By finding a sequence of documents that connect the concepts in two starting documents, Naren was able to help life scientists discover new biological insights. Because the storytelling approach mimics the way people make and follow information connections, Naren’s work can also be used to help people with everyday exploration of the Web or other repositories.”

Storytelling, developed in collaboration with graduate students **Deept Kumar** and **Joe Gresock** and biochemistry professors **Richard Helm** and **Malcolm Potts**, discovers connections between information that at first appear dissimilar. The original application context was in bioinformatics, where the algorithm was used to connect research results published in disparate papers by drawing together intermediate papers into a story.

For instance, a connection can be made between metabolic arrest in primitive organisms, like cyanobacteria, and the same phenomenon in complex organisms, such as mice. While such a connection might appear tenuous, the storytelling algorithm provides a carefully argued chain of links that remove and add participants (genes, proteins, processes), yielding a continuous line of reasoning.

This novel technique also has applications in homeland security by linking events across databases and also in a general Web search.

The project and its findings were profiled in the winter 2007 issue of *Biomedical Computation Review*, a publication sponsored by the National Institutes of Health, and was featured twice in ACM Technews, a digest of computing trends.

“Storytelling is an example of Naren’s ability to think broadly about problems and how computer science can be brought to bear,” said Kafura.

Joe Tront with one of the tablet PCs used by
students and faculty in the College of Engineering.



Tablet PC program recognized

The College of Engineering won a 2007 Laureate Medal at *Computerworld*’s Honors Program for the development of its tablet PC-based learning environment.

In 2006, the college became the first public college of engineering to require all of its incoming freshmen to purchase tablet PCs. The American Society of Engineering Education said of the college’s decision, “tablet computers have the potential to redefine the way engineering is taught.”

The tablet PCs have helped the engineering faculty introduce students to the countless diagrams, drawings, and equations that are integral to the discipline’s study. Students are also using the PCs for collaboration, including working on group sketches and sharing diagrams and notes with individual markups.

“Tablet PCs have transformed classrooms into active learning environments with student/instructor interaction, student participation, and student creativity all improving since its introduction. Students are also getting industry-leading technology experience,” said **Joe Tront**, professor of electrical and computer engineering.

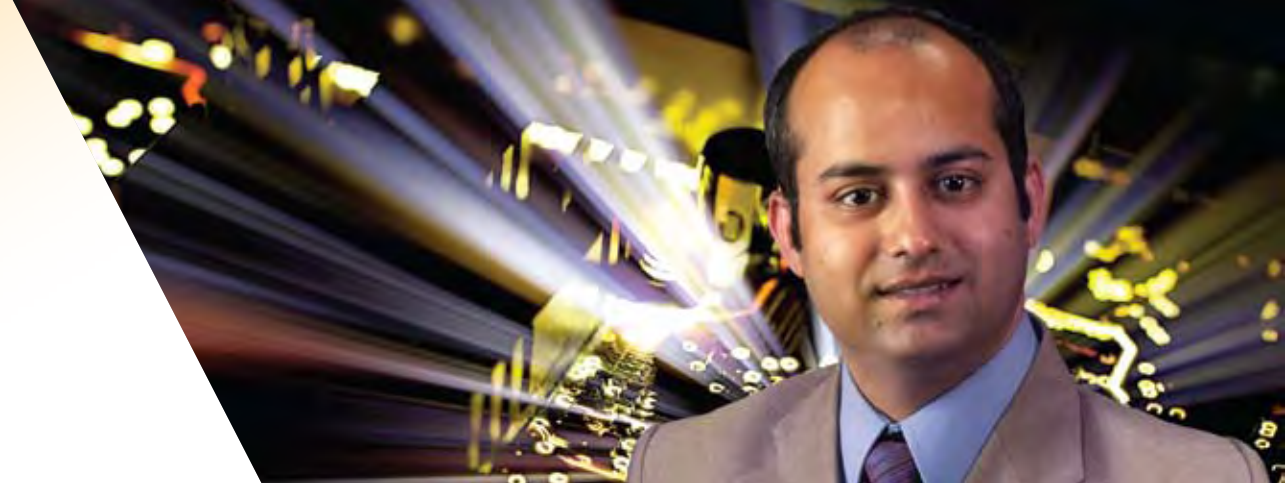
A considerable networking challenge arose with the need to accommodate the university’s large freshman-level engineering classes, due in no small part to the limited available radio spectrum. Typical wireless networks are generally capable of supporting client demands in small classrooms. However, there are no published case studies or industry-accepted guidelines that describe a system to effectively connect 300 clients in a comparatively constrained space.

The “live” test bed of 250-300 clients provided a unique opportunity for research and development of the network. University Information Technology engineers designed and implemented a robust wireless network infrastructure that accommodates the high-density requirement for bandwidth within a lecture facility. The resulting specifications are a valuable resource for advancement of a standard architecture for wireless networks.

TECHNOLOGY

Technology teamwork broadens boundaries

Sandeep Shukla, associate professor of electrical engineering, has recieved numerous accolades in his field.



Embedded computer work wins awards

Sandeep Shukla’s work in designing, analyzing, and predicting the performance of electronic systems, particularly embedded computers, has drawn acclaim from the National Academics, the National Science Foundation, and the White House.

The most recent honor for Shukla, an associate professor in the College of Engineering, was an invitation from the National Academy of Sciences (NAS) to participate in the 19th annual Kavli Frontiers of Science Symposium. Shukla is among a group of about 100 scientists under the age of 45 selected by the NAS in recognition of their research achievements. Since the symposium began in 1989, more than 100 former participants have been elected to the academy and eight have received Nobel Prizes.

In 2005 Shukla was invited by the National Academy of Engineering to attend the Frontiers of Engineering Symposium, an honor that parallels the NAS

event. In 2004 he was invited to the White House to receive a Presidential Early Career Award for Scientists and Engineers, and in 2003 he received an NSF Faculty Early Career Development Program Award.

Embedded computers are the “brains” behind many everyday mechanisms, such as wireless devices, cars, climate control systems, traffic signals, and washing machines. Among Shukla’s current research focuses is the development of embedded software code generation for space and aviation mission applications.

As a result of his research, Shukla has published more than 100 journal and conference papers and book chapters and has co-authored or co-edited three books. He is an associate editor of two Institute of Electrical and Electronics Engineers journals and has founded a new international journal on embedded software.

Spirit Memorial Fund. By late summer, almost 21,000 groups, companies, or individuals had contributed \$8.5 million. In October, most of those donations were distributed to victims or families of victims. Said Steger of Feinberg, “Ken willing gave of many, many hours of his own time and shared his special insight and judgment in developing the protocols. ... He literally appeared from nowhere during a time of need for all of us, and we thank him.”

- In September 2007, the university launched VT-ENGAGE to get the whole community more involved in service activities and to honor the April 16 victims.
- In December 2007, Steger announced that Norris Hall, where 30 students and faculty members died, would continue to serve as a research facility for engineering students and would also house the new Center for Peace Studies and Violence Prevention in the second-floor classroom where the shootings occurred.
- University Libraries worked throughout the year to organize and archive tens of thousands of items of condolence sent to Virginia Tech from around the world.
- Hokie Spirit was buoyed when the university community gathered on Sept. 6, 2007, for the Concert for Virginia Tech, organized by the Dave Matthews Band, and a March 18, 2008, exhibition game between the New York Yankees and the Tech baseball team.

April 16, 2007, changed Virginia Tech. While the university will never forget the people who died that day, its determination to move ahead is testament to a shared belief in what the university stands for and what it can accomplish.



NATIONAL RANKINGS

Graduate

U.S. News & World Report graduate rankings included the following:

The College of Engineering’s overall graduate program moved up a few notches, from 33rd to 28th among all schools of engineering and from 18th to 17th among engineering colleges at public institutions.

The industrial engineering graduate program in the Grado Department of Industrial and Systems Engineering ranked seventh among peer programs nationally. Both the civil engineering and environmental engineering programs in the Via Department of Civil and Environmental Engineering were ranked 10th.

The Career and Technical Education graduate program in the College of Liberal Arts and Human Sciences’ School of Education ranked fifth among vocational and technical specialties. The program has placed among the top five a number of times and has been a top-10 selection for the past 14 years.

The public affairs program in the School of Public and International Affairs, College of Architecture and Urban Studies, was ranked 27th in the nation.

Other rankings:

In the *Financial Times*’ rankings of the world’s top 100 graduate business schools, Pamplin’s M.B.A. program was 63rd overall and 43rd among U.S.

universities. The program ranked second among U.S. schools in the “aims achieved by M.B.A. alumni” category and sixth in “value for money.”

DesignIntelligence ranked Tech’s graduate architecture program 10th in the nation and its graduate interior design program fifth.

Undergraduate

U.S. News & World Report undergraduate rankings included the following:

Virginia Tech ranked 29th among national public universities. Among national universities, including such private institutions as Harvard and Yale, Virginia Tech ranked 71st.

The College of Engineering undergraduate program was ranked 14th in the nation (tied with Johns Hopkins and Northwestern) among all accredited engineering schools that offer doctorates. It was eighth among engineering schools at public universities.

The Pamplin College of Business undergraduate program ranked 41st among the nation’s undergraduate business programs and 24th among public institutions. Pamplin’s overall ranking places it in the top 10 percent of the approximately 460 U.S. undergraduate programs accredited by the Association to Advance Collegiate Schools of Business International.

Six undergraduate engineering specialties ranked among the top 20 of their respective peer programs: aerospace engineering, 14th; civil engineering, 11th; electrical engineering, 17th; engineering science and mechanics, eighth; environmental engineering, 14th; industrial engineering, ninth; and mechanical engineering, 14th.

Virginia Tech was also recognized as having one of the top 14 cooperative education and internship programs in the nation.

Other rankings:

The National Science Foundation ranked Virginia Tech 42nd out of 662 universities nationwide for 2007 research expenditures. Tech’s growth in research expenditures to \$366.9 million moved it up 12 places in the rankings from the 2006 fiscal year, when it stood at 54th.

In its 2007 report, *DesignIntelligence*, the only national college ranking survey focused exclusively on design, ranked the undergraduate architecture program fourth nationally and first among public universities. *DesignIntelligence* also ranked the university’s undergraduate interior design program seventh in the nation.

Kiplinger’s Personal Finance magazine ranked Virginia Tech 17th among the magazine’s 2008 list of the top 100 public colleges and universities that offer “academic excellence at an affordable price.” Tech was ranked 20th in 2006 and 18th in 2007.

Virginia Tech’s funding for research and development in the agricultural and natural sciences jumped from 10th in 2006 to 6th in 2007 nationwide, according to the most recent figures from the National Science Foundation.



Universty Senior Vice President and Provost Mark G. McNamee believes in the power of the Hokie community.

Virginia Tech’s Latin motto, Ut Prosim, translates to “That I May Serve,” but among Hokies, service is more than just a motto, it is a passion.

Given that passion, it is no surprise that the university community, in an attempt to move ahead while still honoring the victims of April 16, 2007, embraced an idea called VT-ENGAGE in fall 2007.

The original goal of VT-ENGAGE was 300,000 hours of community service by students, faculty, and staff by April 16, 2008. The Virginia Tech Alumni Association executive committee then voted to challenge alumni around the world to donate an additional 300,000 hours of community service, for a total of 600,000 hours.

“Imagine the power of 600,000 hours of community service,” university Senior Vice President and Provost **Mark G. McNamee** said in announcing the initiative. “We can truly make a significant difference in communities around the world. We also hope other colleges and universities in the United States and abroad will join us by volunteering to honor the exemplary individuals we lost.”

The volunteer service campaign kicked off on the Drillfield on Oct. 16, 2007, with nonprofit, community, and other service organizations setting up booths at which students and university personnel learned about volunteer opportunities. Similar events eventually were held at Tech’s centers throughout the commonwealth and in Switzerland.

But VT-ENGAGE, which lists volunteer opportunities on its website, became more than just a several-month effort to help others. It evolved into a continuing enterprise to encourage all students to fulfill the promise of the university’s motto by volunteering for at least 10 hours of service per academic year.

Dedication to service recognized

The university community has long been committed to service. The Corporation for National and Community Service recognized that fact in 2007-08 by naming Virginia Tech to the President’s Higher Education Community Service Honor Roll with Distinction for exemplary service efforts and service to disadvantaged youth.

“Our undergraduate and graduate students devoted more than 142,000 hours – an impressive effort – to serving the community and helping others during the 2006-07 academic year,” Virginia Tech President **Charles W. Steger** said. “This award gives them national recognition for their hard work, their compassion, and their selflessness.”

Launched in 2006, the community service honor roll is the highest federal recognition a college or university can achieve for its commitment to service-learning and civic engagement.

More than 11,000 Virginia Tech students – approximately 40 percent of the student body – engaged in some form of community service during the 2006-07 academic year. This calculation was derived from data received from the Student Government Association, 28 student organizations with a service mission, the corps of cadets, athletics, Citizen Scholars Engagement, the Women’s Center, the Service-Learning Center, and the Community Literacy Corps Federal Work Study Program.



Student Jacob Moyer and Associate Director for Dining Ted Faulkner devised a system to donate unused food from university dining halls.

Volunteerism personified in program

Freshman **Jacob Moyer** of Chesapeake, Va., does not just volunteer for a program, he came up with a program himself.

This past winter, Moyer was walking on the cold and windy campus when he started thinking about what he could do to take care of Blacksburg’s less fortunate. “I play cello with the New River Valley Symphony Orchestra, and in the middle of rehearsal we always got a break to get a snack before [Au Bon Pain] closed up for the night. That is when I noticed that the bakery items that [they] didn’t sell every day were thrown away,” said Moyer.

Moyer contacted **Ted Faulkner**, associate director for dining, about delivering excess food from the dining centers to a soup kitchen in the Blacksburg area. “We’ve always had a few groups a year ask about donating food, and we were always willing, but we never found anyone who could actually put a program together that would meet the needs of all parties involved,” said Faulkner.

Because the dining program is supported by student fees and dining plan purchases, it cannot incur any extra cost in collecting and delivering the food, and pickups need to be scheduled on a daily basis. Also, organizations that receive donations must secure a state health permit to be responsible for proper transfer of the food. These obstacles had prevented past groups from getting a project off of the ground.

Moyer, however, was not deterred. He garnered support from the Student Government Association and worked with Diana and John Blevins of the Salvation Army’s Christiansburg food pantry – God’s Lunchbox – to obtain a health permit. He also negotiated with Kroger and Wal-Mart to organize a donation of food-grade bags for delivery.

The program started in February 2008 with leftover bagels, pastries, and pre-packaged cold foods from Au Bon Pain. Then, foods from Deet’s Place and DXpress were added, and another outlet, Vet Med Café in the Virginia-Maryland Regional College of Veterinary Medicine, was also slated to join.

Donations are picked up by a Salvation Army volunteer every Monday through Friday, while Tech’s dining employees collect food from the participating locations and package it according to Food and Drug Administration safety standards. The Student Government Association advises the program, and, of course, Moyer volunteers.

Dining Services is exploring possibilities for expanding the program to include other food items.

Wood program envisioned as tool to help competitiveness
The Department of Wood Science and Forest Products in the College of Natural Resources has developed yet another way for the university to enhance its important work with Virginia’s K-12 schools, a community service that benefits the entire state.

Led by department head **Paul Winistorfer**, a partnership with the Halifax County Schools, Southern Virginia Higher Education Center, Pittsylvania County Schools, Danville Public Schools, Danville Community College, The Crossroads Institute, Wytheville Community College, Galax City Schools, Carroll County Schools, and Grayson County Schools aims to raise awareness of the importance of wood science, advanced wood manufacturing, wood design, and the human capital needed to lead these industries into the future.

“Essentially, we aspire to create the future wood products workforce at all levels – from the skilled workers needed in advanced manufacturing to the research scientists working on cellulose nanocomposites and new materials – by creating educational pathways that start in [the schools] and lead to our program at Virginia Tech,” said Winistorfer. “There is something for everyone in this unique partnership, and we are on a path to create a globally recognized center of excellence in the entire state of Virginia. We must link our efforts to develop human capital at all levels of our educational systems.”

The forest industries are \$27 billion economic contributors to the commonwealth, according to Winistorfer, but the state, industry, and consumers face



Wood science and forest products department head Paul Winistorfer wants to get more young people excited about careers in his industry.

SERVICE
Building community through service

huge global challenges in overall competitiveness. As a result, the U.S. is now a net importer of wood, fiber, and finished products.

CDAC's long service has helped in hundreds of ways

The Community Design Assistance Center (CDAC) has been helping local communities for 20 years, and it had extra reason to celebrate that anniversary when it was recognized for its outstanding service with the 2008 Alumni Award for Outreach Excellence for team achievement. This award recognizes the contributions of university employees who are engaged in strategic partnerships that enhance the economic and social well being of individuals, families, businesses, and communities across the commonwealth, the nation, and the world.

CDAC was selected for its sustained, outstanding engagement with communities. Over the years, the center has worked with almost 200 communities, provided more than 370 student jobs, and involved more than 60 faculty members. This work has leveraged millions of dollars in funding; improved the lives of hundreds of thousands of people; and fostered economic, social, environmental, and health-related improvements to communities through work on master plans for various public spaces, landscaping, corridor studies, streetscapes, interior design, and more.

Through its work on the Lost Communities of Virginia Project, the center has also focused attention on documenting Virginia's fading rural communities. The center has surveyed 2,600 of these communities and photographed 548.

Strong private support reaches another fundraising record

For the second year in a row, Virginia Tech has broken its own fundraising record. Private giving to the university in fiscal year 2007-08 reached \$91.1 million. That represents an increase of 8.7 percent over 2006-07.

Once again, individual donors came through for the university, contributing \$61.4 million, or 67 percent of total giving. Friends of the university, or those who are not alumni, parents, or employees, accounted for more than 20 percent of total giving, showing once again that Virginia Tech touches the lives of many people — not just those who went to school here.

Three-quarters of our fundraising units saw an increase in dollars raised over last year. In particular, the Virginia-Maryland Regional College of Veterinary Medicine nearly tripled last year's total, raising \$5,452,074 this year. Several other units also deserve recognition for their fundraising efforts, including Fine and Performing Arts, which saw a 313 percent increase; the Graduate School, which saw a 283 percent increase; the Honors Program, which had an increase of 674 percent; and the W.E. Skelton 4-H Center at Smith Mountain Lake, with an increase of 566 percent.

FY 2007-08 was exciting, not just for the money raised, but also because it was the first year of the public phase of The Campaign for Virginia Tech: Invent the Future. At the end of the first year of the public phase of the campaign, the university had raised \$683,490,574, or 68.35 percent of the \$1 billion goal. Alumni continue to be critical to our fundraising success, accounting for more than 46 percent of total giving to the campaign.

The university is already seeing dramatic and tangible evidence of the effect that private philanthropy is having on campus as a number of new facilities are coming online like Bishop-Favrao Hall and the Institute for Critical Technologies and Advanced Sciences (ICTAS) I. Bishop-Favrao Hall, which opened in spring 2008, houses the Department of Building Construction and the new Myers-Lawson School of Construction. ICTAS I is almost ready for occupancy and will provide space for offices, a research area, and, most importantly, a permanent home for the institute, which supports and promotes cutting edge research at the intersection of engineering, science, and medicine. Support for new facilities like these is important as Virginia Tech continues to strive to create learning and research opportunities for faculty and students alike.



Hokies console NIU Huskies

A group of students representing Fraternity and Sorority Life at Virginia Tech and Hokies United reached out to fellow students at Northern Illinois University following a shooting rampage there that left five students dead.

The Tech students stopped in while on their way to the Mid-American Greek Council Association conference in Chicago. They presented signature boards and special gifts to the Inter-fraternity Council at Northern Illinois.

"I am delighted that our group of students has chosen to spend part of their time at Northern Illinois University," said **Edward Spencer**, associate vice president of Virginia Tech's Division of Student Affairs. "Certainly there is no better group who can appreciate, understand, and comfort our Northern Illinois colleagues than these students from Virginia Tech."

Hokies United also sent care packages, including letters of condolence, notes of encouragement, candy, and pre-packaged snacks and drinks, to Northern Illinois students.

Another facility, the experimental theatre currently under construction on College Avenue, reflects the university's focus on providing enriched cultural prospects for students, faculty, and members of the community. Soon, with the help of private philanthropy, the campus will be home to a new arts complex, of which the new theatre is but a part. The complex will also include a state-of-the-art performance hall and a visual arts gallery that promotes partnerships with arts organizations. Additionally, a renovated Shultz Hall will be part of the complex.

Also for the second year in a row, scholarship giving nearly doubled, proving once again that our friends and alumni know the value of a Virginia Tech education. Clearly, a strong scholarship program is an important component of our mission to educate, and it is our desire to remove financial barriers to all students who meet the university's admission requirements. The university's corporate and foundation partners have also stepped up this year, increasing their support for the institution. Several of these gifts are noteworthy and worth mentioning here.

- Fujitsu Computer Products of America gave a gift of equipment valued at more than \$800,000 to the College of Engineering's Office of Distance Learning and Computing.
- GE FANUC Automation North America gave \$325,000 in support of the Electrical and Computer Engineering Department and several university-wide faculty fellowships.
- The Sigrid Rupp Trust donated \$340,240 to support the International Archive of Women in Architecture.
- The Invitrogen Corporation donated equipment valued at \$215,000 to the College of Science.

Private philanthropy continues to make a difference at Virginia Tech — whether that support comes from alumni, friends of the university, or corporate partners. It allows the university to provide an exceptional education to its students, to support the extraordinary research of its faculty, and to offer its knowledge to the world.



Robert Walters, vice president for research, has been successful in attracting new research funding to Virginia Tech.

Now more than ever, modern research requires that scientists, often from different disciplines, work together if they want to make discoveries that move society ahead. At Virginia Tech, research is a big component of who we are, and it makes its own statement about our ability to change the future, not just of the commonwealth, but also of this nation and other nations.

Research expenditures rising rapidly

Research expenditures at Virginia Tech took a huge jump for fiscal year 2007 (the most recent figures available) to \$366.9 million, according to the National Science Foundation (NSF). The increase of \$45.2 million — or 14 percent — over the 2006 figures vaulted the university from 54th to 42nd in the national rankings — ninth among universities without a medical school — our highest ranking since 1990.

"I am incredibly proud of our faculty and their commitment to discovery and scholarship," said President **Charles W. Steger**, who set high research goals for the university during his administration.

"The rise in the rankings is exciting," said **Robert Walters**, vice president for research. "More importantly, we are about \$35 million ahead of our strategic plan goal to achieve \$540 million in research expenditures by 2012. This is partly the result of the investments that have been made in research over the past several years by the university and the commonwealth and partly due to the increased competitiveness of our faculty."

Rodd Hall, associate vice president for research, said that 2007 marked 10 straight years of growth in NSF-reported research expenditures at Virginia Tech. "The statistics released . . . by NSF show that we've grown by over twice the national average in the past three years [11 percent versus 5 percent] and just under twice the national average over the past five years [10 percent versus 6 percent]," he said.

Hall said that Virginia Tech is well positioned to continue to move forward as predicted by the increase in research proposals. In 2008, for example, the amount of funds researchers requested from funding agencies reflected a 24 percent increase over funds requested the previous year. The number of proposals submitted remained constant, but the average amount of each proposal grew from \$300,000 to \$400,000. "There is a high correlation between proposals and expenditure growth," Hall said.

The Commonwealth Research Initiative, a state program that provided seed investments for burgeoning research programs at several universities, provided major funding during 2007, including \$11.5 million for equipment and additional support for start-up packages for new faculty and for graduate student support.

Walters pointed out that 2007 saw several multimillion dollar, multidiscipline proposals and collaborations with other universities and that new proposals are continuing that trend, all in keeping with the university's strategic plan to conduct interdisciplinary research in target areas of critical interest — energy, health, and security, for example — to the state and the nation.

RESEARCH

Researchers changing the future

Mehdi Ahmadian with the intelligent brake light system his team is developing.



New research facilities in planning, building stages

Looking ahead to infrastructure needs to keep the research program moving forward, the university started planning for or building important new research structures during fiscal year 2007-08.

Steger announced a major initiative when he revealed that the Virginia Tech Foundation will build a major research center in the Ballston area of Arlington, Va. The highly visible modern facility will expand the university’s portfolio in a region that offers great opportunity for partnerships with corporate research entities and close proximity to government agencies and other public and private organizations.

The facility will be a seven-floor, 144,000-square-foot building and is part of a larger project in Ballston. The university already has established research centers throughout the Northern Virginia area, and a number of them will move to Ballston.

“This new research center plays a significant role in our continuing efforts to establish a major presence in the region for Virginia Tech,” said Steger. “While a broad range of research programs will be housed in the facility, our primary focus is on technology, particularly computational technologies and network systems.”

Construction on another important link in the university’s research future started with groundbreaking for the Virginia Tech Carilion School of Medicine, a jointly operated private school that will emphasize training research doctors. The partnership will provide opportunities to expand important university research programs, such as bioinformatics, computer science, and engineering, along with epidemiology, health services, basic sciences, and clinical research.

Georgetown, Virginia Tech join forces to fight disease

In further Northern Virginia-related research news, Virginia Tech and Georgetown University Medical Center formed a complementary partnership to establish a program for drug discovery and development, bringing together experts from both universities in disciplines ranging from medicine to chemistry to technology.

“Biomedical research relies on integrating biomedical science with basic science, computer science, and engineering,” said **Dr. Howard Federoff**, executive vice president for health sciences and executive dean at George-

Chemistry professor Karen Brewer is finding new ways to produce hydrogen.



town University Medical Center. “While Georgetown’s medical expertise is undisputed, effective solutions require the knowledge we can gain from Virginia Tech’s widely recognized proficiency in technology.”

The first three drug discovery projects that Virginia Tech and Georgetown will undertake are

- examining the effectiveness of naturally occurring products – such as those derived from plants – against malaria;
- investigating the use of fatty acids to fight various microorganisms that cause disease; and
- attempting to create drugs that inhibit production of an enzyme that is integral for the development of the plaques that form in the brains of Alzheimer’s patients.

Researchers address traffic safety issues

With the support of Manassas, Va., businessman **Meade Gwinn**, **John Hennage**, a Ph.D. mechanical engineering student, and mechanical engineering Professor **Mehdi Ahmadian** have invented an intelligent brake light system that will help drivers tell how hard a vehicle in front of them is braking.

Gwinn came up with the idea for communicating braking speed after being rear-ended in Northern Virginia. Years later, his youngest daughter, a student at Virginia Tech, suggested that Gwinn get in touch with one of the engineering departments at the university, and he eventually met Ahmadian, who was able to develop this project into a teaching/research curriculum.

Students developed a horizontal light bar that flashed in different ways depending on how quickly the vehicle is decelerating. Hennage developed a gravity or deceleration sensor control. Under normal braking – stopping slowly – the taillights work normally. But under heavy braking, extra lights flash.

The bar is not yet ready for private cars, but commercial vehicles typically have redundant lights and could already use it.

“The real reward to all of us ... is to know that if this venture works out, millions of drivers will find the roads a much safer place to drive,” Gwinn said. “In the end, we are all winners.”

The Virginia Tech Transportation Institute (VTTI) received \$3 million from the National Academy of Sciences’ (NAS) Strategic Highway Research Program 2 (SHRP 2) for the Design of the In-Vehicle Driving Behavior and Crash Risk Study, the first stage of a multiphase project that will ultimately become the largest naturalistic driving study ever conducted.

The research team was chosen largely due to its experience with the 100-Car Naturalistic Driving Study, completed in 2006 and widely recognized for its advanced technology and comprehensive database. Other key members of the research team include the University of Michigan Transportation Research Institute and the Batelle Memorial Institute.

For this phase, the team will develop a research plan and technologies to be used in the full-scale data collection and analysis effort and will also conduct a small pilot study. Similar to the 100-Car Study, this study will collect naturalistic (real-world) driving data from drivers in their own vehicles.

After the planning phase, the institute will submit a proposal to conduct the data collection and reduction effort and then to complete a variety of analysis projects. The final study will look at a minimum of 2,500 cars nationwide, with the possibility of up to 10,000 vehicles instrumented in different stages.

“This project is an enormous enterprise as well as a unique opportunity to collect data at a level of detail, accuracy, and scope that was not possible before,” said **Allen Biehler**, Pennsylvania Secretary of Transportation and chair of the SHRP 2 Oversight Committee.

Better hydrogen through chemistry

Chemistry Professor **Karen Brewer** received a \$2 million grant from Prosper-Financial Inc. to develop the catalyst that will convert water to hydrogen gas for tomorrow’s hydrogen-powered cars. Supramolecular complexes created by Brewer’s group, which includes students as well as faculty colleagues in chemistry and biological sciences, convert solar energy into a fuel that can be transported, stored, and dispensed, such as hydrogen gas. But one major challenge is to use light to bring together the multiple electrons needed for fuel production reactions.

Earlier research focused on collecting electrons using light energy, but the Brewer group has taken the research to the next level. In 2004, they announced the creation of molecular machines that use light to bring electrons together and then deliver it to water to produce hydrogen. And in summer 2005, they announced additional molecular assemblies that absorb light more efficiently and activate conversion more efficiently. Now they are concentrating on using this activated catalyst to actually convert the water to hydrogen.

The National Science Foundation and the American Chemical Society Petroleum Research Fund supported the basic research. The group has now received one of eight solar-to-hydrogen grants awarded nationwide by the U.S. Department of Energy under the hydrogen initiative, and Phoenix Canada Oil Company is financially collaborating on the commercial development of the solar hydrogen production research project.

Student researchers build a better rescue harness

Liz Varnerin of Mechanicsville, Va.; **Kyle Schumaker** of Greenville, S.C.; **Brian Sandifer** of Waynesboro, Pa.; and **Matt Zacherle** of Culpeper, Va., all seniors and industrial design majors, turned a class assignment to develop a useful product into something more.

The four students developed a swift-water rescue harness that provides proper spine immobilization, self-righting to face-up flotation, and protection from water hazards. Team members named their product HydroSpine.

The project started with a class discussion of disaster solutions. The team began to look at products needed for flood rescue and eventually narrowed its focus to getting people in and out of the rescue boat. When Varnerin visited George Lewis, a swift-water rescue instructor and owner of Rescue3 Virginia in Front Royal, Va., the students settled on looking into inventing a harness that has sufficient flotation, floats in the proper position, and self-rights unconscious victims so they will be face up. They also reduced the number of steps needed to secure the victim, making it easier and quicker for rescuers to use.

In November 2007, the entire team took the prototype to Lewis. “We gave it to his class – which consisted of firefighters – and before we could provide instruction, they were able to figure it out,” said Schumaker. Rescuers suggested some changes, and the second prototype was shown at the National Association for Search and Rescue conference in Colorado Springs, Colo. A patent is pending.

From top:
An architect’s rendering of the planned research facility in Ballston, Va.

Cynda Ann Johnson, dean for the new Virginia Tech Carilion School of Medicine.

Rescuers demonstrate the Hydrospine system designed by Virginia Tech industrial design students.





Micha Kowaleski is part of a team shedding new light on marine biology.

Roe-Hoan Yoon is trying to help eliminate air pollution caused by burning coal.

Learning from history

Virginia Tech research looks ahead to the future, but sometimes that requires peering back into the past—way into the past.

Tech geoscientists reported in the online proceedings of the National Academy of Science that the fossil record seems to indicate that the diversity of marine creatures increased and decreased over hundreds of millions of years in step with predator-prey encounters. For decades, paleontologists, biologists, and ecologists have debated the role of ecological interactions, such as predation, in the long-term patterns of animal evolution.

John Warren Huntley, a postdoctoral scientist in the Department of Geosciences, and geosciences Professor Micha Kowalewski looked at the importance of ecology by surveying the literature for incidents of predation in marine invertebrates, such as clams and their relatives. “Today, certain predators leave easy-to-identify marks on the shells of their prey, such as clean, round holes,” said Huntley. “Such holes drilled by predators can also be found in fossil shells.” The researchers also looked for repair scars on the shells of creatures that survived an attack.

Huntley and Kowalewski found that predation increased notably about 480 million years ago, some 50 million years earlier than previous studies had found. But the most notable discovery is the observation that the incidence of drill holes and repair scars are strikingly parallel to Sepkoski’s diversity curve for marine invertebrates. This diversity curve, compiled by the late Jack Sepkoski of the University of Chicago, records the origination and extinction of marine animal genera through the past 540 million years. The researchers then offered three rival hypotheses to explain the correlation.

Kowalewski also worked with Shuhai Xiao, associate professor of geobiology, and graduate students Bing Shen and Lin Dong on a project that identified a previously unknown evolutionary event that occurred about 33 million years earlier than the known Cambrian Explosion, a seemingly rapid evolutionary event that happened 542 million years ago. They dubbed this earlier event the “Avalon Explosion.”

The discovery, reported in the Jan. 4, 2008, issue of *Science*, suggests that more than one explosive evolutionary event may have taken place during the early evolution of animals. Charles Darwin had reckoned that there should be long and hidden periods of animal evolution before the Cambrian Explosion, but paleontologists had not found such evidence.

The research was supported by the NSF Sedimentary Geology and Paleobiology program.

Helping the world with energy needs

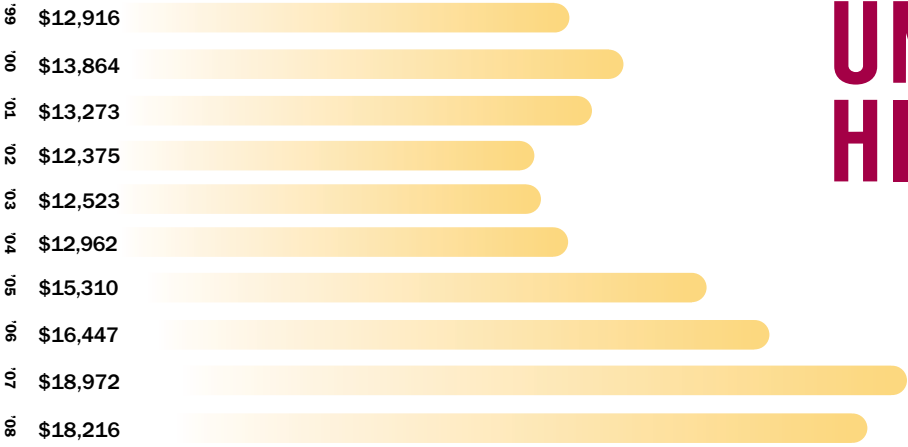
In the international arena, the Asia-Pacific Partnership on Clean Development and Climate of the U.S. Department of State awarded more than \$1 million to a university-industry team led by Virginia Tech’s Center for Advanced Separation Technologies to help India increase energy production and reduce carbon dioxide emissions by developing and testing advanced technologies for cleaning coal.

“It has been shown that use of beneficiated [cleaned] coals can increase thermal efficiencies and can thereby reduce CO2 emissions by up to 15 percent,” said Roe-Hoan Yoon, director of the center and the Nicholas T. Camicia Professor of Mining and Minerals Engineering.

In 2005-06, India produced 380 million tons of coal, but only 17 million tons were cleaned. Ash-forming minerals, finely disseminated in Indian coals, are difficult to remove using conventional physical separation methods. Because water is a scarce resource in India, the researchers will develop low-cost dry beneficiation technologies.

The project team consists of researchers from Virginia Tech, the Indian School of Mines, the University of Kentucky, and several private companies.

ENDOWMENT PER FULL-TIME STUDENT



UNIVERSITY HIGHLIGHTS

Virginia Tech is the commonwealth’s leading research institution. Research expenditures were \$367 million in 2007.

STUDENT ADMISSIONS

	2003-04	2004-05	2005-06	2006-07	2007-08
TOTAL APPLICATIONS RECEIVED (includes transfers)					
Undergraduate	21,026	20,453	20,281	21,570	22,126
Graduate	8,591	6,938	6,503	6,878	7,462
OFFERS AS A PERCENTAGE OF APPLICATIONS					
Undergraduate	66.4	67.4	68.2	65.6	65.4
Graduate	33.6	35.9	37.8	40.6	38.0
NEW ENROLLMENT AS A PERCENTAGE OF OFFERS					
Undergraduate	40.3	40.7	41.7	41.8	42.0
Graduate	58.3	64.7	65.3	65.2	67.7

TOTAL STUDENT ENROLLMENT (head count)

ENROLLMENT BY CLASSIFICATION

Undergraduate	21,348	21,330	21,627	21,997	23,041
Graduate and first professional	6,407	6,289	6,352	6,473	6,857

ENROLLMENT BY CAMPUS

Blacksburg campus	25,737	25,629	25,915	26,371	27,572
Northern Virginia Center	1,114	1,041	1,030	1,013	1,073
Other off-campus locations	904	949	1,034	1,086	1,253

ENROLLMENT BY RESIDENCE

Virginia	18,970	18,839	19,246	19,817	20,917
Other states	6,541	6,639	6,707	6,654	6,811
Other countries	2,244	2,141	2,026	1,999	2,170

DEGREES CONFERRED

Undergraduate	4,876	4,837	4,913	4,887	5,050
Graduate and first professional	1,827	1,869	1,908	1,807	1,954

FACULTY AND STAFF

Full-time instructional faculty	1,251	1,265	1,304	1,340	1,371
Other faculty and research associates	1,375	1,463	1,568	1,649	1,690
P14 faculty	235	224	211	233	217
Support staff	3,418	3,515	3,606	3,698	3,774
Total faculty and support staff	6,279	6,467	6,689	6,920	7,052
Percent of instructional faculty tenured	67.0	67.0	66	65.3	63.4

UNIVERSITY FINANCIAL HIGHLIGHTS

For the years ended June 30, 2004—2008
(all dollars are in millions; square feet in thousands)

	2003-04	2004-05	2005-06	2006-07	2007-08
REVENUES, EXPENSES, AND CHANGES IN NET ASSETS (1)					
Operating revenues	\$ 459.0	\$ 500.9	\$ 543.8	\$ 592.7	\$ 633.7
Operating expenses	<u>97.5</u>	<u>741.9</u>	<u>815.3</u>	<u>883.8</u>	<u>945.6</u>
Operating loss (2)	\$ (238.5)	\$ (241.0)	\$ (271.4)	\$ (291.1)	\$ (311.9)
Non-operating revenues and expenses (2)	239.4	264.4	284.7	317.1	326.7
Other revenues, expenses, gains, or losses	<u>60.3</u>	<u>35.5</u>	<u>26.1</u>	<u>122.3</u>	<u>25.2</u>
Net increase (decrease) in net assets	\$ 61.2	\$ 58.8	\$ 39.4	\$ 148.3	\$ 40.0

UNIVERSITY NET ASSETS (1)

Invested in capital assets, net of related debt	\$ 418.7	\$ 465.1	\$ 496.8	\$ 568.9	\$ 622.9
Restricted (3)	\$ 100.6	\$ 106.4	\$ 100.0	\$ 159.4	\$ 118.9
Unrestricted	\$ 49.4	\$ 58.2	\$ 72.3	\$ 91.7	\$ 117.7

ASSETS AND FACILITIES

Total university assets (1)	\$ 982.6	\$ 1,046.9	\$ 1,078.1	\$ 1,298.8	\$ 1,339.3
Capital assets, net of accumulated depreciation (1)	\$ 624.6	\$ 698.9	\$ 733.2	\$ 814.5	\$ 871.5
Facilities-owned gross square feet	8,001	8,147	8,454	8,498	8,551
Facilities-leased square feet	609	599	604	682	684

SPONSORED PROGRAMS

Number of awards received	2,148	2,086	2,122	2,131	2,263
Value of awards received	\$ 147.8	\$ 189.5	\$ 195.9	\$ 203.1	\$ 227.6
Research expenditures reported to NSF (3)	\$ 268.8	\$ 290.0	\$ 321.7	\$ 367.0	N/A

VIRGINIA TECH FOUNDATION

Gifts and bequests received	\$ 53.9	\$ 71.6	\$ 81.8	\$ 78.5	\$ 91.6
Expended in support of the university	\$ 86.6	\$ 97.8	\$ 102.4	\$ 107.3	\$ 127.1
Total assets and managed funds	\$ 613.5	\$ 670.4	\$ 728.0	\$ 940.9	\$ 925.6

ENDOWMENTS (AT MARKET VALUE)

Owned by Virginia Tech Foundation (VTF)	\$ 325.5	\$ 361.7	\$ 398.3	\$ 469.4	\$ 475.5
Owned by Virginia Tech	39.5	40.8	42.6	47.8	45.1
Managed by VTF under agency agreements	<u>6.2</u>	<u>6.4</u>	<u>6.9</u>	<u>7.9</u>	<u>7.4</u>
Total endowments supporting the university	\$ 371.2	\$ 408.9	\$ 447.8	\$ 525.1	\$ 528.0

STUDENT FINANCIAL AID

Number of students receiving selected types of financial aid

Loans	11,055	10,962	11,140	11,067	11,376
Grants, scholarships, and waivers	14,140	14,088	14,481	15,600	16,221
Employment opportunities	7,792	7,923	8,067	8,101	8,699

Total amounts by major category

Loans	\$ 90.7	\$ 93.6	\$ 101.0	\$ 102.2	\$ 105.9
Grants, scholarships, and waivers (4)	85.4	94.8	104.1	119.8	139.2
Employment opportunities	<u>45.7</u>	<u>48.7</u>	<u>50.5</u>	<u>53.4</u>	<u>58.4</u>
Total financial aid	\$ 221.8	\$ 237.1	\$ 255.6	\$ 275.4	\$ 303.5

(1) The university adopted the new Governmental Accounting Standard 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 for NSF report were not available at publication date.

(4) Amounts for fiscal year 2003, 2004, 2005, 2006, and 2007 reflect any applicable restatements.

TIMELINE

JULY

Steger appoints recovery director

To enhance support of the families of April 16 victims, President Charles W. Steger appoints Jay Poole ’78 director of the newly created Office of Recovery and Support. In addition, Steger asks Kenneth R. Feinberg, who served as special master of the federal September 11th Victim Compensation Fund, to administer distribution of the Hokie Spirit Memorial Fund. Feinberg agrees to work pro bono for Virginia Tech.

University makes it easier for community college students

Virginia Tech and the Virginia Community College System adopt a guaranteed admission agreement that will smooth the transfer of students graduating from in-state community colleges to the university. To qualify for guaranteed admission, students must begin at and graduate from a Virginia community college and complete a transfer-oriented degree program with a grade point average of 3.4 or higher.

Fenwick leaves for Tennessee

Brad Fenwick, vice president for research at Virginia Tech for three years, is named vice chancellor for research at the University of Tennessee, Knoxville. Since arriving at Tech in 2004, Fenwick saw the university’s research program move to more than \$300 million in expenditures.

AUGUST

Pamplin starts new professional group

Pamplin College of Business students and faculty member Lynette Wood establish the Virginia Tech student chapter of the National Association of Black Accountants (NABA). The purpose of the organization is to help provide a vision of professional success for African-American students.

Service economy focus of new center

A new Pamplin College of Business research center focuses on the study of services and, in particular, designing and improving service systems. The multidisciplinary Center for Services Science, Quality, and Innovation will address issues resulting from the switch of the U.S. economy from manufacturing to services.

SEPTEMBER

Software helps make waters cleaner

A novel software application will help engineers and planners select the most efficient and site-specific methods of controlling pollutants entering waterways. The application is the product of a collaboration between the Virginia Water Resources Research Center, the Center for Geospatial Information Technology, and the Via Department of Civil and Environmental Engineering.

One hundred years of teaching geosciences

The Department of Geosciences celebrates the 100th anniversary of its first graduate. That first graduate of what was then the geology program was Joel Hill Watkins 1907 from Charlotte Court House, Va. In 1911, Watkins publishes a book called *Cotillion Figures* and during the 1920s he becomes perhaps the first kyanite entrepreneur in the United States.

Fisheries and wildlife sciences brings together adversaries

The Department of Fisheries and Wildlife Sciences initiates and takes the lead in organizing a landmark symposium on coal mining and the aquatic environment. The symposium offers a unique opportunity to bring adversarial parties together to look for common solutions to often-conflicting goals of energy generation and environmental preservation.

OCTOBER

Commission picks Tech to produce Civil War documentary

The Virginia Sesquicentennial of the American Civil War Commission picks Virginia Tech’s Virginia Center for Civil War Studies to produce a three-hour documentary on the Civil War that will be distributed free to every school, library, and museum in the commonwealth. The center will work with Blue Ridge Public Television to create the documentary.

New program to explore foundations of capitalism

The Pamplin College of Business receives \$1 million from the BB&T Charitable Foundation to establish a teaching program in the finance department to explore the foundations of capitalism and freedom. The program comprises new undergraduate and graduate courses as well as the BB&T Distinguished Lecture Series on Capitalism.

Career center name honors benefactors

The Garnett E. and Patsy T. Smith Career Center is named for two benefactors and is dedicated during ceremonies on Oct. 20. Garnett Smith is a Southwest Virginia native who retired as CEO of Advance Auto Parts. Neither he nor his wife, Patsy, attended Virginia Tech, but both recognize its importance to the region. They support numerous university initiatives with endowments.

Shelley Duke receives honor for service and support

Shelley Duke, owner and manager of Rallywood Farm in Middleburg, Va., is named the first recipient of the Marion duPont Scott Equine Medical Center’s Distinguished Service Award. The accolade recognizes individuals who provide leadership and expertise to help the equine medical center. Duke, a member of the Virginia Tech Board of Visitors and an honorary alumna, also pledges a gift of more than \$10 million through her estate to the center. The gift will eventually establish a major emergency and critical care program.

Virginia Tech distributes April 16 funds

Moving to the next stage of a long and difficult healing process, the university distributes more than \$8.5 million from the Hokie Spirit Memorial Fund to those most profoundly affected by the tragedy of April 16. Later, the state agrees to further compensate families of the shooting victims.

NOVEMBER

Carilion, Tech name founding dean for medical school

Carilion Health System and Virginia Tech announce that Dr. Cynda Ann Johnson will be the founding dean of the

Virginia Tech Carilion School of Medicine. Johnson comes to Roanoke from East Carolina University (ECU), where she most recently served as ECU’s senior associate vice chancellor for clinical and translational research. She was also formerly dean and professor of family medicine.

Highty-Tighties march at Macy’s

The Virginia Tech Corps of Cadets’ Highty-Tighties marching band participates in the 80th Annual Macy’s Thanksgiving Day Parade in New York City. The 2.5-mile-long parade is seen by 2.5 million people on the streets and by 44 million on television. This is the sixth appearance of the Highty-Tighties in the parade.

Hokies form human “thank you”

The “Hokies Thank the World” event brings together thousands of students, faculty and staff members, and friends of the university on the Virginia Tech Drillfield to spell out “VT Thanks You” in recognition of the global outpouring of support and love for the university community following April 16. The message is recorded by ground, aerial, and satellite imagery (*www.HokiesThankTheWorld.org*).

DECEMBER

Norris Hall to house department, new center

President Charles W. Steger accepts the recommendations of a university task force to use approximately 4,300 square feet of space on the second floor classroom wing of Norris Hall to house the Department of Engineering Science and Mechanics and the newly created Center for Peace Studies and Violence Prevention.

Rolls-Royce brings benefits to Tech

The College of Engineering receives three endowed chairs, \$2 million in support from the Commonwealth of Virginia for laboratory renovations, some graduate fellowships, and resources for specific international programs as a result of plans by British-based Rolls-Royce to build a new jet engine manufacturing plant in Prince George County. Rolls-Royce will initially invest \$100 million. The project will create 500 new jobs, and Virginia Tech and the University of Virginia will join with the Virginia Community College System in a partnership with Rolls-Royce.

CAUS doctoral faculty most productive in nation

Faculty members of the College of Architecture and Urban Studies who teach doctoral-level classes are ranked the fifth most productive faculty of architecture, design, and planning in the nation. They also rank first in productivity among doctoral programs at Virginia Tech.

Tech joins forestry center consortium

Virginia Tech, North Carolina State University, Oregon State University, and Purdue University receive a National Science Foundation Industry/University Cooperative Research Center (I/UCRC) grant to establish the Center for Advanced Forestry Systems. The center will emphasize environmentally sound, scientifically based management approaches that will permit large areas of forest to be preserved for such uses as wilderness preservation, wildlife habitat, and recreation.

TIMELINE

JANUARY

MLK holiday gets full recognition

President Charles W. Steger decides to close the entire university this year and into the future to observe the Martin Luther King holiday. In the past, classes were cancelled but administrative offices remained open. The primary guest speaker for the 2008 celebration is Maya Angelou, a poet, educator, historian, best-selling author, and actress hailed as one of the greatest voices of contemporary literature.

Hyatt takes retirement

Executive Vice President and Chief Operating Officer Jim Hyatt, who has been in his role since July 2004, retires from the university. With no immediate plans to fill the executive vice president slot, Hyatt’s duties are split among other vice presidents.

International team improves rice production

An international team of scientists produces a new type of rice that grows better and uses water more efficiently than other rice crops. Professor Andy Pereira at the Virginia Bio-informatics Institute has been working with colleagues in India, Indonesia, Israel, Italy, Mexico, and The Netherlands to make use of a gene known as HARDY that improves key features of this important grain crop.

FEBRUARY

Service efforts take top award

The Corporation for National and Community Service names Virginia Tech to the President’s Higher Education Community Service Honor Roll with Distinction for exemplary service efforts. Launched in 2006, the community service honor roll is the highest federal recognition a college or university can achieve for its commitment to service-learning and civic engagement.

Hokies offer condolences to Northern Illinois students

A group of students representing Fraternity and Sorority Life visit Northern Illinois University to deliver gifts and condolences to students in the wake of a shooting there that left five students dead. Hokies United also sends care packages.

Tech alumni move back into Peace Corps rankings

Virginia Tech ranks 25th in the nation among large schools for Peace Corps participation. At the time, 43 alumni are serving as Peace Corps volunteers. Since inception of the Peace Corps, 511 Tech alumni have served as volunteers.

Research makes big jump

Research expenditures for fiscal year 2007 (ending June 30, 2007) rise to \$366.9 million, an increase of \$45.2 million — or 14 percent — over 2006. Major funding during 2007 is provided by the Commonwealth Research Initiative, a state program that provides seed investments for burgeoning research at several universities.

Solar homebuilders return to competition

The U.S. Department of Energy (DOE) announces that Virginia Tech will be one of 20 university teams competing in the next Solar Decathlon, which will be held on the

National Mall in Washington, D.C., in fall 2009. The teams will receive \$100,000 each from DOE to design, build, and operate an energy-efficient, fully solar-powered home. In 2005, the Virginia Tech team won first place for best daylighting, electric lighting, architecture, and livability and was fourth overall.

MARCH

Pettys donate racecars

Virginia Tech receives a donation of two retired No. 43 Nextel Cup racecars from Petty Enterprises to use as research tools at the Virginia Institute for Performance Engineering and Research. Richard Petty and son Kyle donate the cars for use by mechanical engineering graduate students pursuing degrees at the facility near Danville, Va.

Hokie Nation takes citizen honor

The Virginia Press Association (VPA) honors the Hokie Nation with its 2008 Virginian of the Year Award. The award is the association’s highest citizen-honor and celebrates the triumphs and successes of a native Virginian. The Hokie Nation receives the award, according to Ginger Stanley of the VPA, because it “conducted itself with dignity, compassion, and grace” following April 16.

Arts programs gain higher profile

The School of the Arts is reorganized into the School of the Performing Arts and Cinema in the College of Liberal Arts and Human Sciences and the School of Visual Arts in the College of Architecture and Urban Studies. This reorganization dovetails with an expanded vision for the arts, which includes a planned performance hall and theater, a visual arts gallery, and a creative technologies lab.

APRIL

One-year anniversary is day of remembrance

The Virginia Tech community reflects on the vibrant lives of the 32 people killed on April 16, 2007. The one-year anniversary includes a university commemoration and candlelight vigil. Other events throughout the day offer expressions of remembrance.

Governor recognizes “green” efforts

Virginia Tech receives the 2008 Governor’s Environmental Excellence Award for its commitment to the stewardship of Virginia’s natural resources through the Sustainability Week 2007 Program. The award recognizes the commonwealth’s environmental and conservation leaders. Sustainability Week 2007 was a green partnership between Virginia Tech, the Town of Blacksburg, the local citizens group Sustainable Blacksburg, and the Environmental Coalition.

Student Affairs gets its largest gift ever

The Division of Student Affairs receives a \$1 million gift to advance health education. The Dolores S. Schiffert Health Education Endowment is established by Dr. Charles W. Schiffert, director of the Virginia Tech student health center from 1970 to 1986, in memory of his wife. It is the largest gift ever donated to the Division of Student Affairs. Schiffert’s contributions as director of student health

services were recognized in 1998 when the campus health center was named in his honor.

Corps adds names to Ut Prosim Pylon

The Virginia Tech Corps of Cadets conducts a Pylon Dedication Ceremony to recognize the engravings of two additional veterans’ names on the Ut Prosim Pylon. Navy Lt. Nick Brantley ’01 was killed on Sept. 25, 2005, when his helicopter went down in the Atlantic during night operations. Army Staff Sgt. Jesse Clowers ’03 was killed by an improvised explosive device on Aug. 12, 2007, in Afghanistan.

Georgetown, Virginia Tech collaborate on new degree

Classes begin in fall 2008 for a master of science in biomedical technology development and management, a joint degree created by Virginia Tech and Georgetown University. The program is created in response to future directions in medical product discovery and development and the emerging needs of industry and regulatory agencies.

Corps is largest non-corporate sponsor of memorial

Members of the Virginia Tech Corps of Cadets participate in a ceremony at the National D-Day Memorial in Bedford, Va., honoring the service and sacrifice of the VPI Corps of Cadets and all Virginia Tech alumni who died during World War II. The corps is also recognized as the largest non-corporate sponsor of the memorial, having raised \$167,000 over seven years.

MAY

Bishop-Favrao officially opens

The university holds a grand opening of Bishop-Favrao Hall, which houses the Department of Building Construction and the Myers-Lawson School of Construction. Key funding for the building came from Richard Bishop, who requested that the hall include the name of William A. Favrao, who founded the building construction program in 1947.

Steger calls for campus sustainability plan

President Charles W. Steger announces that the university will develop a campus sustainability plan aimed at reducing global warming emissions in everyday campus operations by the end of the 2009 spring semester. Development of the plan is the latest step in ongoing sustainability efforts by the university.

Tech welcomes large freshman class

Virginia Tech receives deposits from 5,601 freshmen for fall 2008, up from 5,215 a year earlier. The university processes 20,756 applications, the third straight record-setting year of applications for freshman admission. Freshmen who accept the offer of admission have an average high school grade point average of 3.80 and combined math and critical reading SAT score of 1208.

Pamplin offers undergraduate courses in Northern Virginia

Virginia Tech undergraduates can take classes at the Northern Virginia Center for the first time ever in summer 2008. Two courses are offered by the Pamplin College of

Business: Management Theory and Leadership Practice, and Business Policy and Strategy.

Tincher earns unprecedented honors

Softball pitcher Angela Tincher finishes a stellar career by leading her Hokie team to its first-ever appearance in the College World Series. She ends with the third-most strikeouts in college softball history and wins numerous awards, including USA Softball Player of the Year.

April 16 widower becomes director of center for peace

Professor and Department of Horticulture head Jerzy Nowak is named the founding director of the new Center for Peace Studies and Violence Prevention, which will be housed in the renovated second floor of Norris Hall. Nowak, whose wife Jocelyne Couture-Nowak, a charismatic French instructor, was one of the 32 killed on April 16, is also one of the creators of the center. He credits his middle daughter, Francine, with the initial idea.

JUNE

Instructor career ladder receives nod from BOV

The Virginia Tech Board of Visitors approves promotions of 45 instructors to advanced or senior instructor. These are the first promotions approved under the newly created career ladder for teachers dedicated to undergraduate education. Instructors with more than 10 years of exceptional performance are eligible.

University to help low-income students attend college

To further support a diverse and inclusive campus community, the university establishes the Virginia Tech Presidential Scholarship Initiative to reward and assist academically talented, low-income Virginia high school students. The initiative will provide up to 50 low-income students with a renewable scholarship that includes tuition, mandatory fees, and on-campus room and board.

Research facility to rise in Northern Virginia

Virginia Tech announces that the Virginia Tech Foundation will build a seven-story, 144,000-square-foot research center in the Ballston area of Arlington, Va., with planned occupancy by late 2010. President Charles W. Steger explains that the highly visible facility will further the university’s mission to expand its research portfolio in the region.

Hurdler qualifies for Olympics

Queen Harrison makes Virginia Tech sports history by finishing second in the 400-meter hurdles to become the first female in any sport to earn a spot on the United States Olympic Team while still a Virginia Tech student-athlete. Her 54.60-second finish is both a personal best and a school record. At the Olympics, Harrison qualifies for the semi-finals but is unable to reach the finals.

Senior administrative personnel

President

Charles W. Steger

Senior Vice President and Provost

Mark G. McNamee

Vice President for Alumni Relations

Thomas C. Tillar

Vice President for Finance and Chief Financial Officer

M. Dwight Shelton Jr.

Vice President for Administrative Services

Sherwood G. Wilson

Vice President for Development and University Relations

Elizabeth A. Flanagan

Vice President for Information Technology

Earving L. Blythe

Vice President for Equity and Inclusion

Kevin G. McDonald

Vice President for Research

Robert Walters

Vice President for Student Affairs

Zenobia L. Hikes

Vice President and Executive Director,

National Capital Region

James Bohland

Vice President and Dean for Undergraduate Education

David R. Ford

Vice President for Outreach and International Affairs

John E. Dooley

Vice President and Dean for Graduate Education

Karen P. DePauw

University Treasurer and Chief Operating Officer,

Virginia Tech Foundation

Raymond D. Smoot Jr.

Dean, College of Agriculture and Life Sciences

Sharron S. Quisenberry

Dean, College of Architecture and Urban Studies

A. Jack Davis

Dean, College of Engineering

Richard Benson

Dean, College of Liberal Arts and Human Sciences

Sue Ott Rowlands

Dean, College of Natural Resources

J. Michael Kelly

Dean, Pamplin College of Business

Richard E. Sorensen

Dean, College of Science

Lay Nam Chang

Dean, Virginia-Maryland Regional College of

Veterinary Medicine

Gerhardt Schurig

Dean, University Libraries

Eileen E. Hitchingham

Dean, Virginia Tech Carilion School of Medicine

Cynda A. Johnson

University Legal Counsel

Kay Heidbreder

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July 1, 2007 – June 30, 2008

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