Imagination: The ingenuity for putting ideas into action. Ideas with real-world impact.

A commitment to ideas that can enrich lives and communities
Turning ideas into action requires a blueprint to help guide and focus resources and talent. During this past year, the university updated its primary blueprints: the strategic and master plans. These key documents outline our focus on producing well-rounded undergraduates and improving graduate life on campus, solving today’s challenges, and transforming the Blacksburg campus into a pedestrian-friendly village of tomorrow.

To embark on a process of transformation requires considerable persistence and determination. In the spring of 2005, we began gathering input from the university community to shape a strategic plan update that identifies three strategic scholarship domains — learning, discovery, and engagement — and several foundation strategies.

In the learning domain, we are particularly excited about the new core curriculum, called Pathways for Learning. This approach emphasizes advising and having students think about their education, participate in service learning, and engage in research.

In graduate education, Graduate School Dean Karen DePauw has worked with the college deans to improve their offerings and to create a sense of identity for graduate education. The new Graduate Life Center at Donaldson Brown, which combines graduate residences, offices, study areas, and presentation areas in one complex, reflects this vision.

In the discovery domain, the strategic plan identifies four broad areas of research for emphasis — energy, materials, and environment; health, food, and nutrition; social and individual transformation; and innovative technologies and complex systems. The first two will receive immediate resources because they are national issues that we can help resolve. In all, annual research expenditures will reach $540 million by 2012.

A major focus of the engagement domain is pre-kindergarten through 12th-grade education. Our national leadership in science, technology, engineering, and mathematics positions us to shape programs to enhance early education.

The second part of the strategic plan focuses on foundation strategies. In this area, we will use various approaches to enhance organizational development to attain a high-quality, diverse, and inclusive academic environment; we will invest in campus infrastructure; and we will use a variety of methods to develop, allocate, and manage effective resources.

The university’s campus master plan complements and is integral to the strategic plan. The master plan recognizes our need to increase new space by 30 percent in the next 10 to 15 years, proposes to organize existing and future facilities into “districts,” and envisions an overhaul of campus transportation.

To help express the reality that is Virginia Tech today, we introduced a branding campaign designed to give voice to the university’s forward-looking strategic directions. As part of the campaign, we unveiled our new tagline, Invent the Future, which captures the spirit of the university. Using our blueprint plans as our guides, we strive each day to portray the world-class excellence of Virginia Tech’s faculty, who stimulate the minds of students and are scholars and researchers on a quest of discovery. This report highlights some of those efforts during 2005-06. Among them, the university hired an internationally known researcher as the new director of the Institute for Critical Technology and Applied Science; five professors won NSF CAREER grants; and students who designed a unique solar house saw one of their innovations used in ABC’s “Extreme Makeover: Home Edition.” Additionally, facilities and collaborations needed to turn imagination into realization got a boost. We announced the Myers-Lawson School of Construction, a joint undergraduate/law degree program with the University of Richmond, and the Army Research Laboratory Materials Center of Excellence.

People who focus on putting ideas into action also tend to be engaged with society. Rarely was that more clear than in the aftermath of Hurricane Katrina, when the university opened its doors to victims of the disaster, and Tech students and professionals worked to aid the recovery process.

I am convinced that Virginia Tech is embarking on one of the more profound transformations in its history as we learn to operate in a dynamic global environment. But the changes we face will not alter who we are. The land-grant mission of learning, discovery, and engagement still underscores all that we do. As you will read in this report, we remain as committed as always to ideas in action.
By virtue of a faculty research program ranked among the top 13, an undergraduate program ranked among the top 14, one of the first engineering education programs in the country, and an advanced undergraduate research program, Virginia Tech’s College of Engineering engages its students in learning to design a future that will set the highest standards.

Fostering a “hands-on, minds-on” approach to research and learning for the next generation of innovators.
Any institution of higher learning is only as good as the scholars who provide the foundation for the learning experience. Like the faculty at Virginia Tech, they must be committed to the creation, transmission, and use of knowledge in order to turn what they imagine into action.

Virginia Tech was able to attract another such person this past year in Roop L. Mahajan, an internationally known researcher with expertise ranging from nanotechnology to bio-micro-electro-mechanical systems (Bio-MEMS), to guide the Institute for Critical Technology and Applied Science (ICTAS). The institute was founded specifically to emphasize Tech’s existing research strengths and to coordinate the university’s talented faculty to pursue multidisciplinary research. Entrepreneurial in nature, it represents a strong link between ideas and economic development.

“Dr. Mahajan’s efforts in these interdisciplinary fields, as well as his cellular engineering microsystems (CEMS), artificial neural networks, humanistic engineering, thermal sciences, and solar energy, make him a true Renaissance man for the ICTAS directorship,” said Richard C. Benson, dean of Virginia Tech’s College of Engineering and director of the ICTAS Stakeholder Committee.

Mahajan came to Tech from the University of Colorado at Boulder, where he founded and directed the Center for Advanced Manufacturing and Packaging for Microwave, Optical, and Digital Electronics, a National Science Foundation Industry/University Cooperative Research Center focused on nanotechnology and MEMS. Mahajan is also the founder and co-director of MicroElectronic Devices in Cardiovascular Applications, an interdisciplinary center drawing on faculty at Colorado University’s Health Sciences Center and its College of Engineering and Applied Sciences.

Mahajan, who held the Roubos Chaired Professorship of Mechanical Engineering at Colorado, has received numerous awards, including the American Society of Mechanical Engineers (ASME) 2003 Charles Russ Richards Memorial Award for outstanding achievement in mechanical engineering. He also received the 2002 ASME Heat Transfer Memorial Award and the 2002 Subaru Educator of the Year Award. He is an ASME Fellow, holds three patents, and has five invention disclosures.

Mahajan arrived just as construction started on the first two ICTAS buildings, including one that will house the Advanced Materials Characterization Facility.

Tech’s other innovative researchers and teachers also reaped an impressive number of awards and accolades in 2005-06, including five National Science Foundation (NSF) Faculty Early Career Development Program (CAREER) awards — each worth more than $400,000 — to advance their research and education efforts. CAREER grants are the NSF’s most prestigious awards for creative junior faculty who are considered likely to (continued on page 4)
become academic and innovation leaders of the future.

The CAREER grant recipients were Linsey Marr, civil and environmental engineering; Scott Huxtable and Pavlos Vlahos, mechanical engineering; Ignacio Moore, biology; and Diego Troya, chemistry.

A sampling of other honors earned by Tech’s top-notch faculty and examples of their valued expertise include the following:

Richard E. Sorensen, dean of the Pamplin College of Business, served in 2005-06 as chair of the board of directors of the Association to Advance Collegiate Schools of Business International. Sorensen has a long record of service to the association, beginning in 1982 as a member of its government relations committee.

John G. Casali, the Grado Chaired Professor of Industrial and Systems Engineering in the College of Engineering, received the Alexander G. Holtzman Distinguished Educator Award from the Institute of Industrial Engineers and was named to the Scientific Advisory Board of the Oxford Research Institute. The Holtzman is the highest honor presented to an educator in the field of industrial engineering.

Bill Hopkins, associate professor of fisheries and wildlife science, provided expert testimony at a briefing on Capitol Hill about the effects of coal combustion wastes on fish and wildlife and the viability of filling mines with the residues of coal combustion.

Rosa, the highly acclaimed book by University Distinguished Professor of English Nikki Giovanni, climbed to number three on The New York Times Children’s Book List. Rosa tells the story of Rosa Parks, a seamstress from Montgomery, Ala., who refused to give up her seat on a bus to a white man. Her action sparked protests and ignited the civil rights movement.

University Distinguished Professor Robert Bodnar and Michael Hochella, both professors of geosciences, were elected Fellows of the American Geophysical Union.

Thomas M. Murray, the Montague-Betts Professor of Structural Steel Design in the Via Department of Civil and Environmental Engineering, and Paul M. Sorrentino, a professor in the Department of English, were among 15 college and university faculty selected to receive the Outstanding Faculty Award, the commonwealth’s highest honor for faculty.

Myra Bianco, a research scientist at the Virginia Tech Transportation Institute, was inducted into the Hispanic Scholarship Fund (HSF) Hall of Fame. HSF is the nation’s leading organization supporting Hispanic higher education.

Virginia-Maryland Regional College of Veterinary Medicine (VMRCVM) faculty members Dr. Marion Ehrich and Dr. Kevin Pelzer received the top two national teaching awards in veterinary medicine from the American Veterinary Medical Association.

Dr. Scott Pleasant received the award last year, which means that VMRCVM professors earned three of the four honors awarded over the past two years.

The Science Museum of Virginia selected Duncan M. Porter, professor of botany in the College of Science, for a Lifetime Achievement in Science Award. He is the third Tech professor picked for the honor since 1989. One of Porter’s most notable contributions to science has been his lead role in the Darwin Correspondence Project, which is administered jointly by the American Council of Learned Societies and Cambridge University Library.

Marie Suthers-McCabe, VMRCVM associate professor of small animal clinical sciences, was awarded the 2005 Bustad Companion Animal Veterinarian of the Year Award, the highest honor in the nation for work in the area of the human/animal bond.

Geography instructor John Boyer earned back-to-back Student’s Choice Award for Faculty Member of the Year in 2005 and 2006.

The deck and balcony research and subsequent safety recommendations of wood science and forest products faculty members Joe Loferski and Frank Woeste led directly to changes in the Virginia Uniform Statewide Building Code.

James K. Mitchell, University Distinguished Professor Emeritus and Emeritus Via Professor of Civil and Environmental Engineering, was selected by the American Society of Civil Engineers to receive the Outstanding Projects and Leaders Lifetime Achievement Award in Education for 2006.

The university garnered 2,122 awards to conduct research in 2005-06.
A national leader in the areas of forestry, wood science and forest products, fisheries and wildlife sciences, and geography, Virginia Tech’s College of Natural Resources prepares students to take an active and environmentally responsible role in finding new and better ways to conserve, use, and sustain the world’s vital natural resources.

Our faculty members are dedicated to turning what they imagine into action.

Virginia Tech prepares students for the future by offering more degree choices than any other university in the state.
Generating ideas to enhance the future

That focus on generating ideas to build a better future could help keep our soldiers alive. The Army Research Laboratory awarded the university $500,000 per year, potentially renewable for nine years, to establish a Multilayered Technologies for Armored Structures and Composites (MultiTASC) Materials Center of Excellence. The center will develop polymer-based materials to protect personnel and equipment against weapons attack. **Timothy Long**, professor of chemistry in the College of Science, and **Romesh Batra**, professor of engineering science and mechanics in the College of Engineering, are the co-technical directors. The effort will involve eight interdisciplinary research groups, two colleges, and six academic departments.

The first year’s research and development will focus on transparent thermoplastics that are durable. “Our primary goal is to prevent catastrophic failure of personnel body armor and vehicles by accurately characterizing the mechanical properties of protective thermoplastics for new and improved multilayered composites,” said Batra.

Elsewhere on campus, researchers in the Virginia-Maryland Regional College of Veterinary Medicine’s Center for Molecular Medicine and Infectious Diseases achieved a breakthrough with worldwide implications by developing a vaccine to protect against post-weaning multisystemic wasting syndrome (PMWS) in pigs, which could save the global swine industry millions of dollars.

The vaccine, which has been patented by Virginia Tech Intellectual Properties and licensed by Fort Dodge Animal Health Inc., was developed by **Dr. X.J. Meng**, a physician and virologist who is an associate professor in VMRCVM’s Department of Biomedical Sciences and Pathology, and his former graduate student, **Dr. Martijn Fenaux**, now a postdoctoral associate at Stanford Medical School.

PMWS disrupts an animal’s immune system, rendering the pig susceptible to a range of clinical disorders and severely constraining weight gain and development. Mortality rates can run as high as 30 percent.

“The invention of this vaccine is an excellent example of how our rapidly developing translational research programs can create rapid solutions for ‘real-world’ animal health problems,” said **Dr. Gerhardt Schurig**, dean of the college.

In another project with international implications, the Foundation for the National Institutes of Health awarded **Jeffrey Bloomquist**, professor of toxicology and pharmacology in the entomology department in the College of Agriculture and Life Sciences, $2.7 million over three years to reduce the danger of malaria. Bloomquist’s project aims to develop an insecticide to use on nets suspended over beds. The insecticide will be targeted specifically to the mosquito species that transmits malaria and will not be toxic to humans or other animals. Collaborating researchers are **Paul Carlier**, associate professor of chemistry; **Sally Paulson**, associate professor of entomology; and **Eric Wong**, professor of animal and poultry sciences at Virginia Tech; and scientists at the Mayo Clinic and the International Center for Insect Physiology and Ecology.

Closer to home, **John Burton**, associate director of the office of research and outreach in the College of Liberal Arts and Human Sciences’
School of Education, was awarded $3.9 million by the Virginia Department of Education to continue the Training and Technical Assistance Center. The center works to improve educational opportunities and the success of children and youth with disabilities.

Another award went to the Institute for Cultural Policy and Practice (ICPP) to continue the ongoing work of the Orchestra Forum. The Andrew W. Mellon Foundation awarded ICPP $1.75 million to support organizational change efforts of 13 of the nation’s most artistically vital and forward-thinking symphony orchestras. ICPP convenes musicians, trustees, and executives of these organizations to strengthen the work of artistic leadership, develop the artistic and institutional roles of musicians, build collaborative cultures, and expand the relationship of orchestras to their communities.

Another strong indicator of ideas being turned into action is the patents won by Tech faculty members, staff members, and students. Last year, inventions included seven technologies that use energy more efficiently and safeguard the electric grid and oil resources, including two that received R&D 100 awards. There were also three developments to improve human health, including potential treatments for cancer and depression and an advancement to make patients more comfortable.

“We know these patents will enhance Virginia Tech’s reputation as a place that contributes to the creation of new knowledge and entrepreneurship, and provide recognition of Virginia Tech’s significant role in economic development,” said Mark Coburn, the new executive vice president of Virginia Tech Intellectual Properties. “University patents also benefit scholarship by setting the stage for new innovations to follow.”

Patents were also awarded for three inventions that advance telecommunication, a new high-protein wheat variety and a delicious red raspberry, a means to control noise in many settings, and a highly controllable semiconductor lithography process.

Virginia-Maryland Regional College of Veterinary Medicine

The Virginia-Maryland Regional College of Veterinary Medicine treats tens of thousands of animals a year and discovers groundbreaking vaccines that save the lives of many more. But research doesn’t benefit just four-legged animals — much of what is discovered is also applicable to humans.

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Employing new ideas in technology

For years, Virginia Tech has been known as an innovator in technology, using new ideas to build a better future.

The Virginia Bioinformatics Institute (VBI) is a major locus of technological innovation at Tech and was at the center of some major news in 2005-06.

In December, Congress approved a Department of Defense budget that included $2.5 million for researchers at VBI to continue the planned expansion and deployment of PathPort, an Internet portal that allows scientists around the globe to access the very latest research tools as well as use vital information on key pathogens and infectious diseases.

PathPort, which is short for pathogen portal, combines information from around the world about pathogens with powerful computer analysis and visualization tools to aid in the rapid detection, identification, and forensic attribution of high-priority pathogens. The pathogens included in PathPort cause infectious diseases or have the potential to be used as biological weapons. To provide this platform, VBI acquires, vets, consolidates, and annotates genomic data; creates data models, the graphical user interface, bioinformatics tools for analysis, and the portal itself; develops methods to validate candidate target sequences; and researches host responses to infection.

“PathPort has already proven itself to be an invaluable research tool to detect, identify, and devise treatment strategies for pathogens that cause a significant burden to public health,” said Dave Sebring, associate director of corporate and government relations at VBI. “Worldwide, it remains a top priority to put in place a comprehensive infrastructure to deal with the intentional and non-intentional spread of infectious diseases.”

Later in the year, VBI signed an agreement with Affymetrix Inc. for the not-for-profit use of Affymetrix’ GeneChip technology. Under the terms of the non-exclusive agreement, the institute’s Core Laboratory Facility was granted the status of National Custom Array Center for custom microarray design, sample processing, and analytical services.

Affymetrix custom microarrays offer researchers the flexibility to design arrays that can analyze the genome sequence of any organism.

“Our status as a National Custom Array Center means that we can expand our offerings of Affymetrix technologies and services to include new custom Affymetrix microarrays, integrating further breakthrough genomics tools with experimental and bioinformatics expertise,” said Bruno Sobral, VBI’s executive and scientific director. “This is a win-win situation for Affymetrix, the Virginia Bioinformatics Institute, and our growing customer base.”

The Institute of Critical Technology and Applied Science (ICTAS) was named a member of the Alion Science and Technology team that was recently awarded a contract with a potential value of up to $99 million to operate Alion’s Advanced Materials, Manufacturing, and Testing Information Analysis Center.

“We were selected to assist with this research because Virginia Tech has one of the premier composite materials groups in the world,” said Rodd Hall, who was the interim director of ICTAS. “We are renowned for our leadership in advanced materials and processes technology, including metals and metal matrix composites, ceramics and ceramic matrix composites, organic materials, and organic matrix composites, and environmental protection/special function materials, including those developed with new nanotechnologies.”

Tech is also putting ideas into action by teaming with the National Science Foundation (NSF) and two other universities on two separate projects to develop a digital library curriculum and to
develop technology that will allow college students and professors to conduct flexible and customized information searches directly from course websites.

NSF awarded a three-year grant of more than $500,000 to Tech and the University of North Carolina at Chapel Hill for the curriculum project. Virginia Tech’s effort will be led by Edward A. Fox, principal investigator and professor of computer science in the College of Engineering.

Programs in computer science and in information and library science at any institution can draw on the project to enhance existing courses, add digital library (or related) courses, or deploy digital library curricula, Fox said.

NSF also turned to Tech and Villanova University researchers to extend the benefits of NSF’s free online library, the National Science Digital Library (NSDL). The NSDL has a vast collection of resources for education and research in science, technology, engineering, and mathematics. The technology that the researchers will develop will allow a course website to be the entry point into the NSDL’s collections.

Research led to 87 disclosures, 17 patents, and 20 licenses in calendar year 2005.
From diagnosing and treating brain tumors with nanotechnology to helping young victims of trauma, the College of Science achieves complex breakthroughs by drawing on the expertise of a world-class faculty using the latest technologies.

Enhancing programs and academic facilities is another way Virginia Tech is inventing the future.
Learning ideas that prepare students for the future

Everything a university does, even down to the types of facilities it provides, has the ultimate aim of producing adults who can synthesize learning into action that will improve a community.

Virginia Tech does not want students to sit passively in lecture halls or labs, consequently, the university gives them ample opportunity and support for undergraduate research, which provides them with the means to set themselves apart as experienced and competitive scholars.

For example, Angela Barker spent two semesters examining the effects of the mercury-based compound, thimerosal, on developmental signaling in human cells. Jessica Kross dedicated two years to studying the development of brain tumors in canines as a possible model for human cancer. And Kristin McCants volunteered as a research assistant her freshman year and then completed two field studies and a literature review exploring the reasons behind marijuana use. She is now a research assistant for the Department of Psychology’s Addictions Research Lab.

College of Engineering undergraduate design-and-build teams won highly competitive national or international competitions in 2005-06, giving students invaluable experience for the real world. For the third year in a row, the Autonomous Vehicle Team swept the international Intelligent Ground Vehicle Competition. With the Chevrolet Equinox SUV they had re-engineered into an ethanol-powered hybrid, the Hybrid Electric Vehicle Team placed best overall and first in three events during the 2006 competition of the national Challenge X. And the International Aircraft Design Team, a group of 15 engineering students at Tech working with 11 engineering students at Loughborough University in England, won first prize in the 2006 NASA University Design Competition’s Noise Reduction Challenge.

A house designed and built by a team of students from the College of Architecture and Urban Studies and the College of Engineering attracted a lot of attention and placed fourth overall at the Solar Decathlon 2005, an international competition sponsored by the Department of Energy and held on the Mall in Washington, D.C. The team also won first place category awards for “Best Architecture,” “Best Dwelling,” and “Best Daylight Lighting,” as well as tying with

Focused classroom work and research led to other top awards and recognition for students. Among them are the following:

- University Honors Program student Brian Skinner won a Barry M. Goldwater Scholarship. Congress established the scholarship in 1986 to encourage outstanding students to pursue careers in mathematics, the natural sciences, or engineering. Skinner is double majoring in physics and mechanical engineering.

- Two third-year architecture students from the School of Architecture + Design — Jonathan Hanahan of Gibsonia, Pa., and Chelsea Greemore of Alexandria, Va. — won international awards from the Chicago Chapter of Architecture for Humanity. Hanahan and Greemore vied with undergraduate students, graduate students, and professionals to win two of the four prizes awarded.

- Michael Willemann of Manassas, Va., who received a bachelor’s degree in materials science and engineering in May, was awarded a Fulbright grant for graduate studies and research. Willemann will attend courses in electronic and optical physics at one of Germany’s top science and engineering schools and conduct research on electronic materials at a major German research center.

- Communication/business dual major Tim Leaton earned the top prize, an eight-week paid internship at Disney Studios, in the widely acclaimed
**College of Agriculture and Life Sciences**

Work at the College of Agriculture and Life Sciences adds value to commodity crops, develops new products from “waste,” and integrates ecologically sound agricultural practices into crop-production systems. All of these innovations help producers gain market share and remain competitive in a global marketplace.

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**Student recognition (cont).**

Film Your Issue competition. Leaton’s one-minute film was “Orphans in Africa.”

**Sherri M. Cook** of Winchester, Va., a sophomore in the Via Department of Civil and Environmental Engineering and a University Honors Program student, was one of 80 students across the U.S. to receive a Morris K. Udall Undergraduate Scholarship for the 2006-07 academic year. She is the ninth Tech student to be named a Udall Scholar.

**Greg Sagstetter**, a junior University Honors student pursuing dual degrees in philosophy and political science with a minor in Africana studies, was named to USA Today’s All-USA College Academic Second Team, the fourth Tech student to be named to either the first or second team.

**The 2005-06 national AARP Scholars Program** selected **Libbey Bowen**, **Nancy Brossoie**, and **Erica Husser** to receive scholarships and to participate in a leadership seminar and recognition event at AARP in Washington, D.C. Thirty graduate students from across the nation were selected based on academic excellence, faculty recommendations, and a commitment to the field of aging. Virginia Tech received more awards than any other university.
Another school for first place in “Best Electric Lighting.”

New and forward-looking programs and facilities also help students and the university keep up with the demands of the day. In 2005-06, two particularly significant academic innovations were announced.

Virginia Tech is already recognized for its national leadership in construction education and research, and that position will be enhanced by the new Myers-Lawson School of Construction, underwritten by a $10 million pledge from A. Ross Myers ’72 and John R. Lawson II ’75. Myers is CEO of American Infrastructure, headquartered in Worcester, Pa., and Lawson is president and CEO of W.M. Jordan Co., with offices in Newport News, Va., and Richmond, Va.

With the new school of construction, “our primary focus will be on values-based leadership in the construction industry. We want to build upon an ethical community of construction personnel,” said new director Yvan Beliveau, the Georgia Anne Snyder-Falkinham Professor and head of the Department of Building Construction.

Virginia Tech and the University of Richmond also announced a partnership between the College of Science and the T.C. Williams School of Law to establish a six-year, joint degree program. With planning and careful selection of courses, students can earn a bachelor of science degree in three years and a law degree with a specialization in intellectual property law in three years.

“These students will be specially trained in both their undergraduate and law school years to address the rapidly evolving challenges facing law, science, and public policy in the arena of intellectual property,” said Virginia Tech President Charles W. Steger. “This is just another way Virginia Tech is inventing the future.”

Learning and the beauty of the campus were both enhanced when Tech dedicated and named its new garden pavilion in honor of Peggy Lee Hahn, wife of T. Marshall Hahn, president emeritus of Virginia Tech. The 2,500-square-foot pavilion, located at the south end of the Hahn Horticulture Garden, will serve as a multipurpose special events and educational center.

Other important construction underway included the first Institute for Critical Technology and Applied Science (ICTAS) facility and the first Life Sciences building. Also, renovation of the Graduate Life Center at Donaldson Brown was essentially completed.
Developing ways to protect kids' online privacy might seem an odd endeavor for researchers at a business school, but Pamplin College of Business faculty members are doing just that. The college’s undergraduate program is ranked 37th nationally and its M.B.A. program is 43rd among U.S. universities.
National and international rankings — a testament to Tech’s success in preparing students

Undergraduate rankings

U.S. News & World Report issued these rankings:

- Virginia Tech ranked 33rd among national public universities. Among national universities, including such private institutions as Harvard and Yale, Virginia Tech ranked 78th.

- The College of Engineering undergraduate program jumped from 19th to 14th in the nation among all accredited engineering schools that offer doctorates. It was eighth among engineering schools at public universities.

- Eight different undergraduate programs in the College of Engineering ranked in the top 25 among peer programs nationally — the industrial engineering program ranked sixth; civil engineering, 11th; environmental engineering, 11th; materials engineering, 14th; mechanical engineering, 15th; aerospace engineering, 16th; electrical engineering, 19th; and chemical engineering, 25th.

- The Pamplin College of Business undergraduate program ranked 40th 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.

- Virginia Tech ranks in the top 20 nationally of public colleges and universities that offer a first-class educational experience at a bargain price, according to Kiplinger’s Personal Finance magazine.

- The architecture, interior design, and landscape architecture programs in Virginia Tech’s College of Architecture and Urban Studies are ranked among the very best in America. In its 2006 report, DesignIntelligence, the only national college ranking survey focused exclusively on design, ranked the undergraduate architecture program seventh nationally and fourth in the East. DesignIntelligence also ranked the university’s undergraduate landscape architecture program eighth in the nation and second in the East.

Graduate rankings

U.S. News & World Report issued these rankings:

- Overall, the College of Engineering’s graduate program rose from 31st to 30th in the current survey. Once again, engineering was 18th among public universities.

- The industrial engineering graduate program in the Grado Department of Industrial and Systems Engineering ranked eighth among peer programs nationally. The civil engineering program in the Via Department of Civil and Environmental Engineering ranked 10th. Environmental engineering, also a Via department program, ranked 11th in its field; aerospace engineering was ranked 17th; computer was 30th; electrical, 25th; materials, 28th; and mechanical, 16th.

- The career and technical education graduate program in the College of Liberal Arts and Human Sciences’ School of Education ranked sixth among vocational and technical specialties in this year’s survey. The program has placed among the top five programs a number of times and has been a top-10 selection for the past 12 years.

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 landscape architecture program 14th in the nation and its graduate interior design program ninth.
Reaching out: No matter what the cause or need, the Virginia Tech community is ready to help.

At the College of Architecture and Urban Studies, students work directly with communities to find solutions to design, planning, and policy needs. And because the college has nationally ranked programs and faculty members across the spectrum, those students are highly qualified to help where needed.
"Extreme Makeover: Home Edition"

Architecture Assistant Professor Joseph Wheeler, T.A. Carter Professor of Architecture and Industrial Design Program Chair Robert Dunay, other faculty members, and students had just returned from Solar Decathlon 2005 in November when Bob Fetzer, president of Building Specialists Inc. of Roanoke, Va., called asking for assistance on an amazing service project: help him design a house in four days.

Fetzer’s company had been tapped by the popular ABC television show “Extreme Makeover: Home Edition” to build a new house for Blacksburg resident (and former Black Cultural Center director) Carol Crawford Smith and her two sons, Hunter and Garland. Smith has multiple sclerosis (MS) and her old house had become unmanageable. Fetzer’s designer, Amanda McCreary (architecture ’04), would contribute to the plan, along with a group of outstanding students. Fetzer also contacted Georgia-Anne Snyder-Falkinham Professor Yvan Beliveau, department head of building construction, to collaborate with Jonathan Hirst (building construction ’92), vice president of operations at Building Specialists.

Hundreds of students, faculty, and staff responded, making up a large percentage of the more than 4,000 people who volunteered for the project. Truman Capone, department head of art and art history; Steve Bickley, art professor and local sculptor; Ben Johnson, landscape architecture professor; and Holly Scoggins, associate professor of horticulture and Hahn Horticulture Garden director, helped with art or plantings. A large number of alumni pitched in to volunteer labor, expertise, or materials.

The design team also had to create an additional space where Smith could meditate and practice the yoga that helps her manage her MS. Integral to the design were technologies adapted from the Solar Decathlon project — two layers of aerogel-filled polycarbonate panels that transmit diffused light and deliver great insulation. Within the highly insulated translucent wall assembly are banks of LED lights that allow Smith to change the walls to any color she desires.

“Extreme Makeover” producers said that the Smith family episode had more volunteers than any other build they’ve done. In addition, the volunteers endured ice, snow, and frigid temperatures that made the seemingly impossible schedule even more challenging.

President Charles Steger commended volunteers for their outstanding example of commitment to the university’s motto, Ut Prosim (That I May Serve).

Hurricane Katrina

The Virginia Tech community went into action for society in less visible ways when Hurricane Katrina devastated the Louisiana and Mississippi coasts.

Hokies United, a student-driven volunteer group that formed following the September 11 terrorist attacks, spearheaded efforts to

(continued on page 18)
coordinate fundraising and other activities. “Our effort will support members of the Hokie community who have been devastated by this disaster,” said Sumeet Bagai, Student Government Association president.

Relief events included a kickoff concert and pep rally, collection of money at football games, and a fall festival run. In addition, Virginia Tech men’s basketball coach Seth Greenberg organized a national committee that auctioned sports memorabilia online to raise money.

Tech joined numerous universities across the country by welcoming college students displaced by the hurricane. Administrators, faculty, and staff worked through the Labor Day weekend to help more than 30 students, most from Tulane University in New Orleans. The colleges of Agriculture and Life Sciences, Architecture and Urban Studies, Pamplin Business, Engineering, Liberal Arts and Human Sciences, and Science accepted displaced students.

Virginia Tech experts and alumni also put their talents to use:

During Hurricane Katrina, the media reported on abandoned nursing home residents, older adults who refused to leave their own homes, and the needs of grandparent-led families. Funded by a grant from the National Science Foundation, researchers Karen Roberto and Tammy Henderson, both faculty members at the Center for Gerontology, teamed with Louisiana State University to identify factors that influence how aging families function as they struggle to regain a sense of normalcy.

Russell T. Jones, professor of psychology in the College of Science and a consultant with the Disaster Technical Assistance Center, made numerous trips to the Gulf Coast to assist in disaster relief efforts. As a nationally recognized expert in disaster-related trauma, he participated in trauma-related workshops and spoke at a Congressional hearing on disaster relief. He helped prepare first lady Laura Bush before she visited children displaced by Katrina, and he met with members of her Office of Special Projects to discuss observations, lessons learned, and future efforts. In addition, Jones became a member of the Hurricane Katrina Community Advisory Group administered by the Department of Health Care Policy at Harvard Medical School.

Virginia Tech’s Center for Geospatial Information Technology assisted the American Association for State and Local History (AASLH) in developing maps and a GIS database of historical organizations present in the areas affected by Hurricane Katrina. The AASLH used the maps to prioritize assistance to those organizations.

On the front lines of the disaster were about 100 veterinarians from the American Veterinary Medical Association’s Veterinary Medical Assistance Teams (VMAT), including Jennifer Brown, clinical assistant professor in equine surgery and emergency care at Tech’s Marion duPont Scott Equine Medical Center in Leesburg. Vet med alumni also traveled on their own to rescue animals, including one group that set up camp and collected dogs in New Orleans.

**Other service and service recognitions**

Tech also installed a system of warning sirens to alert the campus community to emergency events. The Virginia Tech Police Department will activate the system in the event of tornados, large chemical spills, terrorist activities, or any other emergency situation that calls for immediate action.

The university and the Alumni Association also recognized alumni who have served both Virginia Tech and society:

The 2006 William H. Ruffner Medal went to Floyd W. “Sonny” Merryman Jr. (animal science ’46) of Rustburg, Va. Merryman’s contributions include the Merryman Center athletic facility, the Sonny Merryman Inc. Endowed Professorship in the Scott Equine Medical Center, and the Sonny Merryman Inc. Endowed Scholarship. Merryman, whose father was a member of the Class of 1924, and whose son, Floyd Merryman III, graduated in 1981, is chair of the board of Sonny Merryman Inc., one of the state’s largest transportation distributors.

Evaleen Jones (human nutrition and foods ’83) received the University Distinguished Achievement Award. A family practitioner and clinical assistant professor at Stanford University School of Medicine, Jones is nationally recognized for her work with underserved populations and international health issues, volunteering significant time and leadership to the International Health Medical Education Consortium. As a medical student, Jones helped establish a free mobile surgical facility in Ecuador. She also founded Child Family Health International, which sends medical students abroad and donates medical supplies and grants for health projects.

The 2006 Alumni Distinguished Service Awards went to two grads:

Senior vice president and chief administrative officer of Hampton University Calvin Jamison (health and physical education ’77; M.A. student personnel services ’81; Ed.D. ’88) previously served as city manager of Richmond, Va., and held faculty and administrative posts at Virginia Commonwealth University and Virginia Tech. Jamison has served on the board of directors of the Alumni Association and the Pamplin College of Business Advisory Council.

A leading authority on boxwoods, Paul M. Saunders (agricultural engineering ’54) of Piney River, Va., owns Saunders Brothers Nurseries Inc. A past president of the Alumni Association, Saunders has served on the agriculture alumni board of directors, the College of Agriculture and Life Science’s Leadership Council, the Regional Campaign Committee, the Virginia Tech Foundation Board, and the Class of 1954 Reunion Committee. A member of the Ut Prosim Society, Saunders has seven sons, all of whom graduated from Virginia Tech.
Supporting innovation through philanthropy

For several years, Virginia Tech’s friends and alumni have been supporting the university at an extraordinary level. This year was no different. In fiscal year 2005-06, Virginia Tech raised $75.3 million. Though that is a slight drop from the previous year’s record $76.5 million, it is enough to be ranked as the second highest private giving total ever at the university.

Perhaps the most impressive thing about the year is the devotion that Virginia Tech alumni showed — donating nearly $33 million. That is an increase of more than $7 million over the previous year. In 2005-06, alumni accounted for 43 percent of all giving to the university. Add giving from parents, friends, and university employees and the total increases to 66 percent. Unrestricted giving also saw an impressive increase of 37 percent. Such generous support is critical to Virginia Tech’s continued success in generating ideas and turning them into action to build a better future.

One of the most significant gifts this year was a joint venture by two fraternity brothers — John Lawson and Ross Myers (see page 13). The two men, both successful businessmen, gave $10 million to create the Myers-Lawson School of Construction. The school will enhance Virginia Tech’s position of national leadership in construction education and research. The teaching and learning that takes place at the new school of construction will also be heavily focused on values-based leadership and the development of an ethical community of construction personnel.

In addition to the Myers-Lawson gift, another alumnus made a gift of $5 million to the College of Agriculture and Life Sciences. The generosity of William Latham and his wife, Betty, led the university to name the new agriculture and life sciences building the William C. and Elizabeth H. Latham Agriculture and Life Sciences Building. The Lathams hope to see their generosity pay dividends in allowing further opportunities for Virginia Tech students to engage in hands-on research. As such, the Lathams’ gift will provide funding for purchasing lab equipment and providing financial aid.

Private giving provides funding for scholarships, professorships, fellowships, research facilities, and lab equipment. And that is just the beginning. Everything that happens at Virginia Tech — from innovative research to inspired teaching to engagement with the larger community — is made possible by investments in the institution by the university’s dedicated circle of supporters. That level of commitment reflects the pride and confidence that Virginia Tech’s family and friends have in the university today and in all the promise that the future holds.
July
CALS part of effort to fight malaria
The Foundation for the National Institutes of Health (FNIH) awards the College of Agriculture and Life Sciences $2.7 million to help reduce the danger of malaria. The Virginia Tech effort is one of 43 groundbreaking research projects to improve health in developing countries. The projects are supported by the Grand Challenges in Global Health initiative launched by the Bill & Melinda Gates Foundation.

Agreement to benefit Southside
The Institute for Advanced Learning and Research in Danville, Virginia Tech, and Old Dominion University announce a collaborative agreement to expand services offered by the Virginia Institute for Performance Engineering and Research (VIPER) to the automotive and motor sports industries. VIPER provides complete testing, simulation, and research capabilities, which in turn help the economy of Southside Virginia.

Play debuts in Scotland
Faculty members in English, music, and theatre arts collaborate on “Euridice,” a play written by Thomas Gardner, performed by Patty Raun, and accompanied by cellist Allen Weinstein. The play makes its international debut in Scotland.

August
Steger announces poetry prize
President Charles W. Steger establishes “The Steger,” a new award for poetry written by Tech undergraduate students. The $1,000 prize for the winner ranks among the most generous for undergraduate poetry students in the nation.

Online privacy target of research
Interdisciplinary research teams, including Pamplin College of Business faculty members, win separate $450,000 National Science Foundation (NSF) grants to develop better technology to protect children’s online privacy and to extend benefits of the NSF’s free online library by allowing college students and professors to conduct customized information searches directly from course websites.

September
New aid program to help families of modest means
President Charles W. Steger announces creation of the Funds for the Future financial aid program to help maintain the affordability of a Tech education to Virginia students from low- and moderate-income families. Under the program, in-state students with family incomes below $30,000 will not see their tuition and mandatory fees increase during their four years at the university. Students from families earning between $30,000 and $75,000 will receive varying levels of financial support.

Institute’s innovations bring recognition
The Institute for Advanced Learning and Research (IALR) in Danville, Va., is a finalist for the U.S. Economic Development Administration Excellence in Economic Development Awards for 2005. IALR is one of three finalists in the Excellence in Innovation category, an award that recognizes initiatives that incorporate innovative strategies for maximum results.

Newman turns 50
University Libraries begins a year-long celebration in honor of the 50th anniversary of Newman Library, the first building on Tech’s campus to be designed specifically for housing books and manuscripts.

October
School of Construction going up
Virginia Tech announces plans for the Myers-Lawson School of Construction. The Vcellio Construction Engineering and Management Program in the Via Department of Civil and Environmental Engineering and the Department of Building Construction in the College of Architecture and Urban Studies will be the primary beneficiaries.

Solar Decathlon house wins awards
A house designed and built by a team of students from the College of Architecture and Urban Studies and the College of Engineering places fourth overall at the Solar Decathlon 2005, an international competition sponsored by the U.S. Department of Energy and held on the Mall in Washington, D.C. The team also won first-place awards for Best Architecture, Best Dwelling, and Best Daylight Lighting and tied with another school for first place in Best Electric Lighting.

November
Knox returns to teaching, research
Paul L. Knox, dean of the College of Architecture and Urban Studies, announces his plans to step down effective July 1, 2006, after leading the college for eight years. During his tenure the college more than quadrupled research spending and quadrupled annual giving. He established the School of Architecture + Design and the School of Public and International Affairs, among other accomplishments. Knox will return to teaching and research.

America’s Anniversary Garden project launched
Virginia Cooperative Extension and faculty in the Department of Horticulture in the College of Agriculture and Life Sciences develop the America’s Anniversary Garden project to help garden enthusiasts, communities, and groups mark America’s 400th anniversary with signature red, white, and blue garden plantings.

Scientists search for avian flu vaccination
Virginia-Maryland Regional College of Veterinary Medicine researchers at College Park in Maryland brief international media at the National Press Club on the progress they have made on an avian influenza H5N1 vaccine and emergency preparations. The researchers have a $5 million grant for the work.

December
Canines to be honored at Tech
The Virginia-Maryland Regional College of Veterinary Medicine begins planning with the Virginia Police Work Dog Association and the United States Police Canine Association to create a law enforcement dog memorial at Virginia Tech.

January
Orchestra Forum funding continues
The Andrew W. Mellon Foundation awards $1.75 million to the Institute for Cultural Policy and Practice to fund the ongoing work of the Orchestra Forum. The forum, established in 1999, supports the organizational change efforts of 13 of the nation’s most artistically vital and forward-thinking symphony orchestras.

Pathogen research gets a boost
The U.S. Congress approves $2.5 million for the Virginia Bioinformatics Institute’s (VBI) pathogen portal project (PathPort). The new funding enables researchers at VBI to continue the expansion and deployment of PathPort, an Internet portal that allows scientists around the globe to access the latest research tools for and information on key pathogens and infectious diseases.

New degree prepares students for agricultural disciplines
The College of Agriculture and Life Sciences starts offering an under-
Invent the Future” debuts
“green” commuting

Applications set new mark

In a move to bring a consistent look and clarity to its wide range of academic, research, and educational offerings, Tech President Charles W. Steger unveils an updated university logo and new brand campaign with the trademarked tagline “Invent the Future.”

Tech to help extend NSF online library
Virginia Tech and Villanova University researchers receive a grant from the National Science Foundation to extend the benefits of its free online library by developing technology that will allow college students and professors to conduct flexible and customized information searches directly from course websites.

EPA recognizes Tech for “green” commuting
The U.S. Environmental Protection Agency (EPA) names Tech one of the “Best Workplaces for Commuters” among colleges and universities. Tech is recognized for offering such benefits as the Commuter Alternatives Program’s Carpool and Bike, Bus, and Walk programs. The programs reduce CO2 by approximately 2,531 metric tons per year and save employees about $839,777 annually in gasoline costs.

ICTAS part of new team
Virginia Tech’s Institute for Critical Technology and Applied Science (ICTAS) is named a member of the Alion Science and Technology team that was recently awarded a contract with a potential value of up to $99 million to operate Alion’s Advanced Materials, Manufacturing, and Testing Information Analysis Center. The contract is sponsored by the Defense Technical Information Center of the Department of Defense.

Student investments net big returns
The Student-managed Endowment for Educational Development (SEED), a group of Pamplin College of Business student investors who manage more than $4 million of the university’s endowment, finish an outstanding fiscal year with a return of 19.32 percent. Also, another group of Pamplin student wins approval from the Virginia Tech Foundation to establish a separate student-managed fixed-income investment fund of more than $4 million.

Chang stays as science dean
Following an international search, Lay Nam Chang is reappointed as dean of the College of Science.

BOV recognizes Latham’s contributions
The Virginia Tech Board of Visitors names the agriculture and natural resources research building the William C. and Elizabeth H. Latham Agriculture and Natural Resources Building in recognition of the couple’s lifelong commitment to the university and of their $5 million gift to establish an endowed fund to support academic research in the College of Agriculture and Life Sciences.

Students in India receive Virginia Tech degrees
The interdisciplinary master of information technology program, which the Pamplin College of Business manages for the university, awards degrees to its inaugural class in India. In addition to the master’s degree from Virginia Tech, the class of 26 students receives a postgraduate diploma in systems management from the S.P. Jain Institute of Management and Research in Mumbai.

Housing center gets contract extension
The Center for Housing Research in the College of Architecture and Urban Studies is awarded a two-year extension on its second indefinite quantity contract (IQC) with the U.S. Department of Housing and Urban Development (HUD). The IQC has an umbrella value of up to $50 million. The center is one of a select few contractors nationwide that perform research for HUD on residential building technology and affordable housing.

College of Science, UR team up on joint degree
The College of Science announces a joint B.S./J.D. degree program with the T.C. Williams School of Law at the University of Richmond. The six-year program gives students the opportunity to complete course work for a bachelor of science in any major in the College of Science in three years and move directly into law school at the University of Richmond.

Lutz moves into rector’s chair
The Virginia Tech Board of Visitors elects Jacob A. Lutz III of Richmond as its new rector and John Lawson of Newport News as its vice rector. Lutz succeeds Ben J. Davenport Jr. as rector.

State waterways to benefit from grant
Researchers in the College of Agriculture and Life Sciences and its partners are awarded more than $3.3 million to help improve the quality of local waterways and the Chesapeake Bay. Projects include new technologies and processes for feed management, ways to manage manure and poultry litter, and the development of market-based incentives to improve water quality.

Science research funding soars
College of Science research funding increases significantly during the 2005-06 fiscal year. Awards of outside agencies increase 36 percent, and the average award amount increases 21 percent. Two departments, geosciences and chemistry, each almost double their research funding.

New Hahn Horticulture Pavilion opens
## Student admissions

**TOTAL APPLICATIONS RECEIVED (INCLUDES TRANSFERS)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduate</th>
<th>Graduate and first professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>21,588</td>
<td>7,512</td>
</tr>
<tr>
<td>2002-03</td>
<td>20,593</td>
<td>9,062</td>
</tr>
<tr>
<td>2003-04</td>
<td>21,026</td>
<td>8,591</td>
</tr>
<tr>
<td>2004-05</td>
<td>20,453</td>
<td>6,953</td>
</tr>
<tr>
<td>2005-06</td>
<td>20,281</td>
<td>6,503</td>
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</table>

**OFFERS AS A PERCENTAGE OF APPLICATIONS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>66.1</td>
<td>42.7</td>
</tr>
<tr>
<td>2002-03</td>
<td>63.8</td>
<td>36.4</td>
</tr>
<tr>
<td>2003-04</td>
<td>66.4</td>
<td>33.6</td>
</tr>
<tr>
<td>2004-05</td>
<td>67.4</td>
<td>35.9</td>
</tr>
<tr>
<td>2005-06</td>
<td>68.2</td>
<td>37.8</td>
</tr>
</tbody>
</table>

**NEW ENROLLMENT AS A PERCENTAGE OF OFFERS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduate</th>
<th>Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>40.2</td>
<td>58.5</td>
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<tr>
<td>2002-03</td>
<td>40.7</td>
<td>55.1</td>
</tr>
<tr>
<td>2003-04</td>
<td>40.3</td>
<td>58.3</td>
</tr>
<tr>
<td>2004-05</td>
<td>40.7</td>
<td>64.7</td>
</tr>
<tr>
<td>2005-06</td>
<td>41.7</td>
<td>65.3</td>
</tr>
</tbody>
</table>

## Total student enrollment (head count)

**ENROLLMENT BY CLASSIFICATION**

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduate</th>
<th>Graduate and first professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>21,593</td>
<td>6,610</td>
</tr>
<tr>
<td>2002-03</td>
<td>21,473</td>
<td>6,554</td>
</tr>
<tr>
<td>2003-04</td>
<td>21,348</td>
<td>6,407</td>
</tr>
<tr>
<td>2004-05</td>
<td>21,330</td>
<td>6,289</td>
</tr>
<tr>
<td>2005-06</td>
<td>21,627</td>
<td>6,352</td>
</tr>
</tbody>
</table>

**ENROLLMENT BY CAMPUS**

<table>
<thead>
<tr>
<th>Year</th>
<th>Blacksburg campus</th>
<th>Northern Virginia Center</th>
<th>Other off-campus locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>25,912</td>
<td>1,346</td>
<td>945</td>
</tr>
<tr>
<td>2002-03</td>
<td>25,819</td>
<td>1,204</td>
<td>1,004</td>
</tr>
<tr>
<td>2003-04</td>
<td>25,737</td>
<td>1,114</td>
<td>904</td>
</tr>
<tr>
<td>2004-05</td>
<td>25,629</td>
<td>1,041</td>
<td>949</td>
</tr>
<tr>
<td>2005-06</td>
<td>25,915</td>
<td>1,030</td>
<td>1,034</td>
</tr>
</tbody>
</table>

**ENROLLMENT BY RESIDENCE**

<table>
<thead>
<tr>
<th>Year</th>
<th>Virginia</th>
<th>Other states</th>
<th>Other countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>19,812</td>
<td>6,331</td>
<td>2,060</td>
</tr>
<tr>
<td>2002-03</td>
<td>19,388</td>
<td>6,487</td>
<td>2,202</td>
</tr>
<tr>
<td>2003-04</td>
<td>18,970</td>
<td>6,541</td>
<td>2,244</td>
</tr>
<tr>
<td>2004-05</td>
<td>18,839</td>
<td>6,639</td>
<td>2,141</td>
</tr>
<tr>
<td>2005-06</td>
<td>19,246</td>
<td>6,707</td>
<td>2,026</td>
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</tbody>
</table>

**DEGREES CONFERRED**

<table>
<thead>
<tr>
<th>Year</th>
<th>Undergraduate</th>
<th>Graduate and first professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001-02</td>
<td>4,652</td>
<td>1,747</td>
</tr>
<tr>
<td>2002-03</td>
<td>4,742</td>
<td>1,831</td>
</tr>
<tr>
<td>2003-04</td>
<td>4,876</td>
<td>1,827</td>
</tr>
<tr>
<td>2004-05</td>
<td>4,835</td>
<td>1,869</td>
</tr>
<tr>
<td>2005-06</td>
<td>4,913</td>
<td>1,908</td>
</tr>
</tbody>
</table>

## Faculty and staff

<table>
<thead>
<tr>
<th>Faculty and staff</th>
<th>2001-02</th>
<th>2002-03</th>
<th>2003-04</th>
<th>2004-05</th>
<th>2005-06</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time instructional faculty</td>
<td>1,295</td>
<td>1,301</td>
<td>1,251</td>
<td>1,265</td>
<td>1,304</td>
</tr>
<tr>
<td>Other faculty and research associates</td>
<td>1,646</td>
<td>1,451</td>
<td>1,375</td>
<td>1,463</td>
<td>1,568</td>
</tr>
<tr>
<td>Temporary faculty</td>
<td>203</td>
<td>215</td>
<td>235</td>
<td>224</td>
<td>211</td>
</tr>
<tr>
<td>Support staff</td>
<td>3,484</td>
<td>3,561</td>
<td>3,418</td>
<td>3,515</td>
<td>3,606</td>
</tr>
<tr>
<td>Total faculty and support staff</td>
<td>6,628</td>
<td>6,528</td>
<td>6,279</td>
<td>6,467</td>
<td>6,689</td>
</tr>
<tr>
<td>Percent of instructional faculty tenured</td>
<td>65.6%</td>
<td>66.9%</td>
<td>67.0%</td>
<td>67.0%</td>
<td>66.0%</td>
</tr>
</tbody>
</table>
For the years ended
June 30, 2002 - 2006
(all dollars are in millions; square feet in thousands)

REVENUES, EXPENSES, AND CHANGES IN NET ASSETS (1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating revenues</td>
<td>$393.5</td>
<td>$442.1</td>
<td>$459.0</td>
<td>$500.9</td>
<td>$543.8</td>
</tr>
<tr>
<td>Operating expenses (2)</td>
<td>$696.5</td>
<td>$685.2</td>
<td>$697.5</td>
<td>$741.9</td>
<td>$815.3</td>
</tr>
<tr>
<td>Operating loss (2)</td>
<td>$(303.0)</td>
<td>$(243.1)</td>
<td>$(238.5)</td>
<td>$(241.0)</td>
<td>$(271.4)</td>
</tr>
<tr>
<td>Non-operating revenues and expenses (2)</td>
<td>$286.1</td>
<td>$243.5</td>
<td>$239.4</td>
<td>$264.4</td>
<td>$284.7</td>
</tr>
<tr>
<td>Other revenues, expenses, gains, or losses</td>
<td>$24.3</td>
<td>$56.8</td>
<td>$60.3</td>
<td>$35.5</td>
<td>$57.9</td>
</tr>
<tr>
<td>Net increase in net assets</td>
<td>$7.4</td>
<td>$57.2</td>
<td>$61.2</td>
<td>$58.8</td>
<td>$71.1</td>
</tr>
</tbody>
</table>

UNIVERSITY NET ASSETS (1)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Invested in capital assets, net of related debt (3)</td>
<td>$344.0</td>
<td>$388.1</td>
<td>$418.7</td>
<td>$465.1</td>
<td>$496.8</td>
</tr>
<tr>
<td>Restricted</td>
<td>$73.6</td>
<td>$80.2</td>
<td>$100.6</td>
<td>$106.4</td>
<td>$131.7</td>
</tr>
<tr>
<td>Unrestricted</td>
<td>$30.8</td>
<td>$39.2</td>
<td>$49.4</td>
<td>$58.2</td>
<td>$72.3</td>
</tr>
</tbody>
</table>

ASSETS AND FACILITIES

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total university assets (1, 3)</td>
<td>$769.7</td>
<td>$863.0</td>
<td>$982.6</td>
<td>$1,046.9</td>
<td>$1,109.9</td>
</tr>
<tr>
<td>Capital assets, net of accumulated depreciation (1, 3)</td>
<td>$498.9</td>
<td>$559.6</td>
<td>$624.6</td>
<td>$698.9</td>
<td>$733.2</td>
</tr>
<tr>
<td>Facilities-owned gross square feet</td>
<td>7,779</td>
<td>7,940</td>
<td>8,001</td>
<td>8,147</td>
<td>8,454</td>
</tr>
<tr>
<td>Facilities-leased square feet</td>
<td>551</td>
<td>551</td>
<td>609</td>
<td>599</td>
<td>604</td>
</tr>
</tbody>
</table>

SPONSORED PROGRAMS

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of awards received</td>
<td>2,330</td>
<td>2,111</td>
<td>2,148</td>
<td>2,086</td>
<td>2,122</td>
</tr>
<tr>
<td>Value of awards received</td>
<td>$157.2</td>
<td>$159.1</td>
<td>$147.8</td>
<td>$189.5</td>
<td>$195.9</td>
</tr>
<tr>
<td>Research expenditures reported to NSF (4)</td>
<td>$232.6</td>
<td>$247.8</td>
<td>$268.8</td>
<td>$290.0</td>
<td>N/A</td>
</tr>
</tbody>
</table>

VIRGINIA TECH FOUNDATION

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Gifts and bequests received</td>
<td>$49.1</td>
<td>$47.3</td>
<td>$53.9</td>
<td>$71.6</td>
<td>$81.8</td>
</tr>
<tr>
<td>Expended in support of the university</td>
<td>$88.0</td>
<td>$95.1</td>
<td>$86.6</td>
<td>$97.8</td>
<td>$102.4</td>
</tr>
<tr>
<td>Total assets and managed funds</td>
<td>$601.3</td>
<td>$613.5</td>
<td>$670.4</td>
<td>$728.0</td>
<td>$808.9</td>
</tr>
</tbody>
</table>

ENDOWMENTS (AT MARKET VALUE)

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Owned by Virginia Tech Foundation (VTF)</td>
<td>$285.8</td>
<td>$289.8</td>
<td>$325.5</td>
<td>$361.7</td>
<td>$398.3</td>
</tr>
<tr>
<td>Owned by Virginia Tech</td>
<td>$37.6</td>
<td>$36.3</td>
<td>$39.5</td>
<td>$40.8</td>
<td>$42.6</td>
</tr>
<tr>
<td>Managed by VTF under agency agreements</td>
<td>$5.6</td>
<td>$5.6</td>
<td>$6.2</td>
<td>$6.4</td>
<td>$6.9</td>
</tr>
<tr>
<td>Total endowments supporting the university</td>
<td>$329.0</td>
<td>$331.7</td>
<td>$371.2</td>
<td>$408.9</td>
<td>$447.8</td>
</tr>
</tbody>
</table>

STUDENT FINANCIAL AID

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of students receiving selected types of financial aid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loans</td>
<td>11,065</td>
<td>10,945</td>
<td>11,055</td>
<td>10,962</td>
<td>11,140</td>
</tr>
<tr>
<td>Grants and scholarships</td>
<td>13,808</td>
<td>14,291</td>
<td>14,140</td>
<td>14,088</td>
<td>14,481</td>
</tr>
<tr>
<td>Employment opportunities</td>
<td>8,136</td>
<td>8,005</td>
<td>7,792</td>
<td>7,923</td>
<td>8,067</td>
</tr>
<tr>
<td>Total amounts by major category (5)</td>
<td>$172.2</td>
<td>$183.1</td>
<td>$201.1</td>
<td>$213.2</td>
<td>$229.5</td>
</tr>
</tbody>
</table>

(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 instruction, research, and outreach missions of the university.

(3) Totals for 2005 have been restated to reflect the capitalization of capital assets that were acquired in prior fiscal years.

(4) Total research expenditures for NSF report were not available at publication date.

Virginia Tech: Dedicated to producing the men and women who will lead us into the future.