



2010  
annual  
report

**VCU** Medical Center  
Every Day, A New Discovery.®

V i r g i n i a   C o m m o n w e a l t h   U n i v e r s i t y

# Transforming *lives*



*every day* of the year

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Above: A nationwide study – led by Vigneshwar Kasirajan, M.D., (left) chair of cardiothoracic surgery and director of the Pauley Heart Center's heart transplantation program – advances patient care with a clinical trial of the first U.S. portable driver for powering the Total Artificial Heart.

## **2010 represented another outstanding year for the VCU Medical Center.**

It is my pleasure to share with you a few of the highlights through stories of patients, faculty, staff and students.

Our medical center encompasses five health sciences schools – Allied Health Professions, Dentistry, Medicine, Nursing and Pharmacy – along with the clinical care delivered by the VCU Health System, which comprises MCV Hospitals, MCV Physicians and the Virginia Premier Medicaid managed care plan. As you read amazing stories of discovery, hope, advancement and innovation within these pages, you'll discover why we are one of the leading and most comprehensive academic health centers in the country.

We had numerous celebrations throughout the year, marking significant achievements and momentous accomplishments. One of those occurred in the summer when the VCU Health System joined with Children's Hospital to form Children's Hospital of Richmond (CHoR). This full-service children's hospital offers a robust continuum of pediatric services, research and education. The creation of CHoR was a milestone event and an important step forward in providing state-of-the-art, coordinated and compassionate children's health care.

We gathered to celebrate again when it was announced that we were selected as one of only nine institutions nationwide in 2010 to receive a Clinical and Translational Science Award (CTSA). As the only CTSA recipient in the commonwealth, this \$20 million grant places us among the research elite and represents a major research landmark for our medical center and university.

We were honored with many accolades in 2010, ranging from our national rankings in *U.S. News & World Report*; Beacon Awards for nursing and clinical care in four of our ICUs; our sixth time as a *Working Mother* magazine "100 Best Companies"; and local and national recognition as "top doctors" for many of our faculty.

These are just a few examples of our accomplishments that you'll read about in the following pages. I am so very proud to be a part of this organization and this community of professionals.

Sincerely,

Sheldon M. Retchin, M.D., M.S.P.H.  
CEO, VCU Health System  
Vice President, VCU Health Sciences





1) Jerome F. Strauss III, M.D., Ph.D., dean, VCU School of Medicine 2) John F. Duval, CEO, MCV Hospitals, VCU Health System 3) John D. Ward, M.D., president, MCV Physicians, VCU Health System 4) Sheldon M. Retchin, M.D., M.S.P.H., CEO, VCU Health System and vice president, VCU Health Sciences

5) Michael Rao, Ph.D., president, VCU and VCU Health System 6) Cecil B. Drain, Ph.D., CRNA, FAAN, dean, VCU School of Allied Health Professions 7) Victor A. Yanchick, Ph.D., dean, VCU School of Pharmacy 8) David C. Sarrett, D.M.D., M.S., dean, VCU School of Dentistry and associate vice president, academic affairs, VCU Health Sciences 9) Nancy F. Langston, Ph.D., R.N., FAAN, dean, VCU School of Nursing



Amelia Grover, M.D., Division of Surgical Oncology

**Breaking new ground in thyroid surgery** / Amelia Grover, M.D., made history when she performed Virginia's first da Vinci robotic-assisted surgery to treat thyroid nodules. The minimally invasive technique removes these lumps – that arise within an otherwise-normal thyroid gland – through a single incision under the arm. The traditional procedure leaves a 3- to 5-inch scar on the patient's neck.

"If someone is apprehensive about having a scar on their neck, this is a big advantage to them," said Grover, assistant professor in the Division of Surgical Oncology. "It gives patients an alternative to keep it personal and private."

Thyroid nodules affect about 20 percent of the adult population. While only about 5 percent of cases prove to be cancerous, Grover said removing the nodules early is key to successful treatment.

When Richmond, Va., resident Kathryn Barley approached the VCU Medical Center, she had grown so accustomed to the lump on the side of her neck – and the migraines and neck and face pain it triggered – that she nicknamed it "Ralph."

"When you have something wrong with you, it's always on your mind," said Barley, vice president of technology for a local staffing firm. "You can't completely engage. Walking around in pain impacted my quality of life."

Barley became Grover's second patient – and one of the first in the country – to undergo the pioneering surgery. The results were immediate.

"Right after the surgery, the pain was gone," Barley said. She returned home after an overnight hospital stay, and a week later learned that the nodule was benign.

"The sign of a good surgery is that you forget you had it," she said. "I referred to the surgery as my 'Ralpsectomy.' He was gone. I went back to my life."



Thyroid surgery patient Kathryn Barley enjoys work and daily activities, such as walking her dogs, Daisy and Katie, without pain or noticeable scars.



Photo courtesy of Kevin Schindler Art and Design

### Study looks to daily life for managing disease

A research team from the School of Medicine and RTI International was selected as one of five nationwide to participate in a Robert Wood Johnson Foundation project to explore how patient-recorded observations of daily living can be captured, interpreted and integrated into clinical care.

The VCU-RTI team received a \$480,000 grant for a two-year project called BreathEasy, a personal health record for asthmatics. Through a pilot program, the team will evaluate a patient cell phone platform for usefulness and usability.

"As physicians, we see patients with asthma and we ask how they are doing, but we have little information about how they are really doing between office visits," said Stephen Rothemich, M.D., co-director of the Ambulatory Care Outcomes Research Network in the Department of Family Medicine, who is leading the efforts at VCU. "This technology is one that empowers the patient and helps them get more involved with their health care by reporting between visits on their asthma symptoms, triggers and use of maintenance and rescue medications."

Along with the other four teams selected, the VCU-RTI team will first participate in a refine-and-design phase to share ideas, establish goals and adjust initial approaches. Project teams will then work with patients with complex chronic conditions to capture and interpret observations of daily living (ODL) while establishing a relationship with a physician practice to share information. Over a 12-month period, clinicians will care for the participating patients and assess the value of including the ODLs in their real-world care processes.

### Cold weather affects sickle cell-related pain

For years, clinicians have routinely advised patients with sickle cell disease to dress warmly and avoid temperature extremes, especially in cold weather. A multicenter study, led by a School of Medicine researcher and supported by a grant from the National Heart, Lung, and Blood Institute, backs this suggestion.

The study included 229 participants, from 21 clinical sites in eastern North America, who recorded their daily pain intensity and frequency in a diary for four years. According to lead author Wally R. Smith, M.D., of the Center on Health Disparities at VCU, the team analyzed the data from these diaries, as well as monthly climatologic data, to reveal for the first time that pain in adults with sickle cell disease is impacted by climate and geographic location. Results, reported in the journal *Pain*, included a cyclic pattern of intensity and frequency with peaks in late fall and early winter.

"The fact that cold weather does affect these patients' health should be disseminated to employees, employers and schools, and could potentially be used in disability determinations for these patients," said Smith, who also is a professor in the Department of Internal Medicine.

### Wireless armband detects low blood volume

Researchers from the VCU Reanimation Engineering Shock Center (VCURES) have developed a new technique for rapidly determining the severity of hypovolemia – the decrease in blood volume caused by trauma. The approach uses a wireless, electronically enabled elastic armband to capture and analyze low-level electrocardiogram signals, including invisible variations that are not detectable by the human eye.

## Orthopaedic surgery earns prestigious Blue Distinction designation



Robert S. Adelaar, M.D., (left) Department of Orthopaedic Surgery

Anthem Blue Cross and Blue Shield designated the VCU Medical Center as a Blue Distinction Center for Spine Surgery and a Blue Distinction Center for Knee and Hip Replacement. This designation is based on rigorous, evidence-based selection criteria established in collaboration with leading clinicians, medical societies and professional organizations, and identifies medical facilities that have demonstrated expertise in delivering quality health care.

In a joint study with the U.S. Army Institute of Surgical Research and BodyMedia Advanced Development, which produces the armbands, Kayvan Najarian, Ph.D., associate director of VCURES and associate professor in the Department of Computer Science, Soo-Yeon Ji, Ph.D., a postdoctoral student in the computer science department, and Kevin Ward, M.D., associate professor in the Department of Emergency Medicine, simulated moderate-to-severe hemorrhage in 22 volunteers outfitted with the armbands. The technique demonstrated an accuracy between 80 and 90 percent in predicting the severity of blood loss. An abstract of the study was presented at the 2009 American Heart Association Resuscitation Science Symposium, where it won Best Trauma Abstract.

Researchers envision the device will be useful for paramedics, combat medical personnel, emergency departments, operating rooms and intensive care units.

### Breast health program receives recognition

Providing high-quality, multidisciplinary care for women with diseases of the breast, the breast health program at the Massey Cancer Center received accreditation by the National Accreditation Program for Breast Centers. Administered through the American College of Surgeons, the accreditation recognizes centers committed to improving the quality of care for women through various breast health-related programs. Massey's team of national leaders in breast health

provide comprehensive diagnosis and treatment, as well as genetic evaluation, education, support and survivorship programs, plastic surgery, outreach and research.

### Nicotine studies feature cessation therapies

Sold in shopping malls and online, electronic cigarettes promise to deliver nicotine without harmful tobacco toxins despite a lack of published data concerning their safety or efficacy. However, one VCU study supported by the National Cancer Institute (NCI) found that two brands of electronic cigarettes fail to deliver any measurable nicotine at all and do little to reduce nicotine cravings.

According to principal investigator Thomas Eissenberg, Ph.D., professor in the Department of Psychology, the study's findings make a strong case for why it's essential

to regulate these products. "In terms of nicotine delivery, these products were as effective as puffing from an unlit cigarette," said Eissenberg, director of the Clinical Behavioral Pharmacology Laboratory and a researcher with the Institute for Drug and Alcohol Studies.

While electronic cigarettes may not help habitual smokers end their dependency, a study conducted by the School of Medicine suggests that a better solution might be found in snails.

Together with colleagues from VCU and the University of Utah, Darlene Brunzell, Ph.D., assistant professor in the Department of Pharmacology and Toxicology, discovered that a peptide known as alpha conotoxin MII may reduce motivation to use nicotine by blocking the action of nicotine receptors. MII is found in nature as part of the cocktail of toxins that the sea-dwelling magician cone snail uses to paralyze its prey.

"Most tobacco cessation therapies hit a wide array of nicotinic receptors that regulate cognition and emotion in addition to their control of tobacco use," Brunzell explained. "MII-sensitive receptors represent a much smaller pool. If our studies in the lab hold true in humans, blocking these receptors may be sufficient to curb tobacco use without producing undesirable side effects."

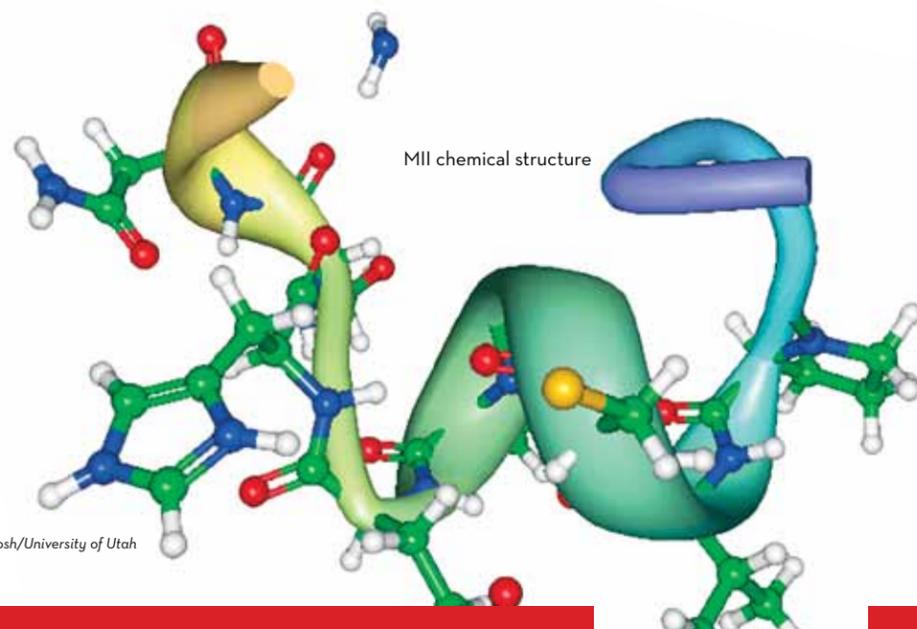


Image courtesy of J. Michael McIntosh/University of Utah



Greg Jones

## Trauma survivorship shines at gala

When MedFlight delivered then-19-year-old Greg Jones to VCU Medical Center in April 2006, doctors didn't expect him to make it through the night. Rescuers had pulled him from his friend's car after it rolled several times and wrapped itself around a tree, leaving Jones with a punctured lung, lacerated liver, fractured spine, broken leg, massive hemorrhaging and life-threateningly low blood pressure. He could barely breathe.

Jones survived, however, and with vigilant care from his medical team, endured numerous close calls, ultimately undergoing 30 procedures and 10 surgeries, including a leg amputation above the knee. He spent a total of 82 days at VCU Medical Center, 76 of them in the Surgical Trauma Intensive Care Unit.

Four years later, at the Shining Knight Gala, the VCU Division of Trauma, Critical Care and Emergency Surgery recognized the 24 Richmond-area first-responders and VCU Medical Center caregivers who played a major role in Jones' survival. Jones, who now works for the prosthetics company that made his artificial leg, stood on stage with those who saved his life, and thanked them.

"I just want to thank y'all for getting me back on my feet – or my foot," he said with a wry smile. "I went to Hawaii last year and got on a zip line and swam with manta rays. You did a great job."

The VCU Medical Center, which provided trauma care to nearly 4,000 patients in 2010, is one of only two nationally recognized Level I trauma centers in the state and is the only one in Central Virginia.

### Designation honors nursing education model

The School of Nursing joined an elite group of institutions when it earned the prestigious Center of Educational Excellence designation from Laerdal Medical. The award recognizes educational centers that consistently demonstrate excellence in educational philosophy and programs. The school is one of only 21 in the nation to receive the award.

The school's Clinical Learning Center employs Laerdal SimMan 3G patient simulators to provide an interactive learning environment for students.



Michael Rao, Ph.D., (left) VCU and VCU Health System president, and Joseph Ornato, M.D., Department of Emergency Medicine

### Top safety-net hospital serves the uninsured

While emergency departments across the country burst at the seams due to increased demand amid hospital closures, the Department of Emergency Medicine maintains its position as a gateway point to care for underserved populations.

"Unfortunately, with economic turmoil and unemployment soaring, already overcrowded and overburdened emergency departments have been challenged like never before," said Joseph Ornato, M.D., chair of the Department of Emergency Medicine.

Recognized in the 2009 Commonwealth Fund report as one of five top safety-net hospitals in the U.S., the VCU Medical Center has employed a combination of changes to curb common strains faced by these hospitals that provide a significant level of care to low-income, uninsured and vulnerable populations. Interventions include reconfiguring for maximum efficiency; devising a pre-diversion system to alert staff of crowding; installing an electronic tracking system; designating staff members to be responsible for tracking patients; and developing meaningful performance metrics. The Department of Emergency Medicine provides treatment for approximately 85,000 patients annually and is nationally recognized for innovative management of chest pain, innovations in resuscitation of cardiac arrest patients and medical direction leadership of the Richmond Ambulance Authority, an award-winning EMS system.

### Alumnus' 1\$ million gift establishes legacy

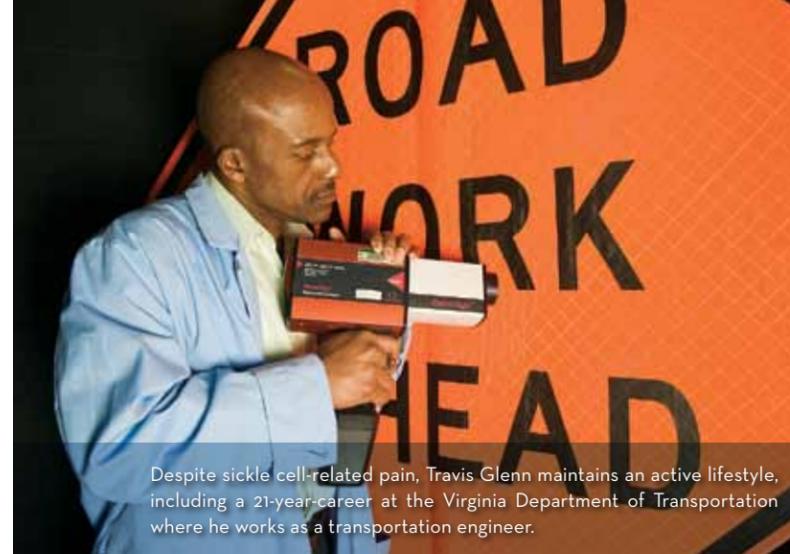
The School of Allied Health Professions received a \$1 million endowment from the late Rev. Robert B. Lantz. The donation funded the Robert B. Lantz Chair in Patient Counseling and the Katherine I. Lantz Professorship in Patient Counseling within the Department of Patient Counseling, awarded respectively to current department chair D. Mark Cooper, D. Min., and Alexander F. Tartaglia, D. Min, professor and associate dean of the school. The Rev. Lantz received his certificate in clinical pastoral education in 1964 from the then-Program in Patient Counseling. In 1973, he founded the Maryland Institute of Pastoral Counseling Inc., an educational and counseling program.

### Protein plays a role in bladder inflammation

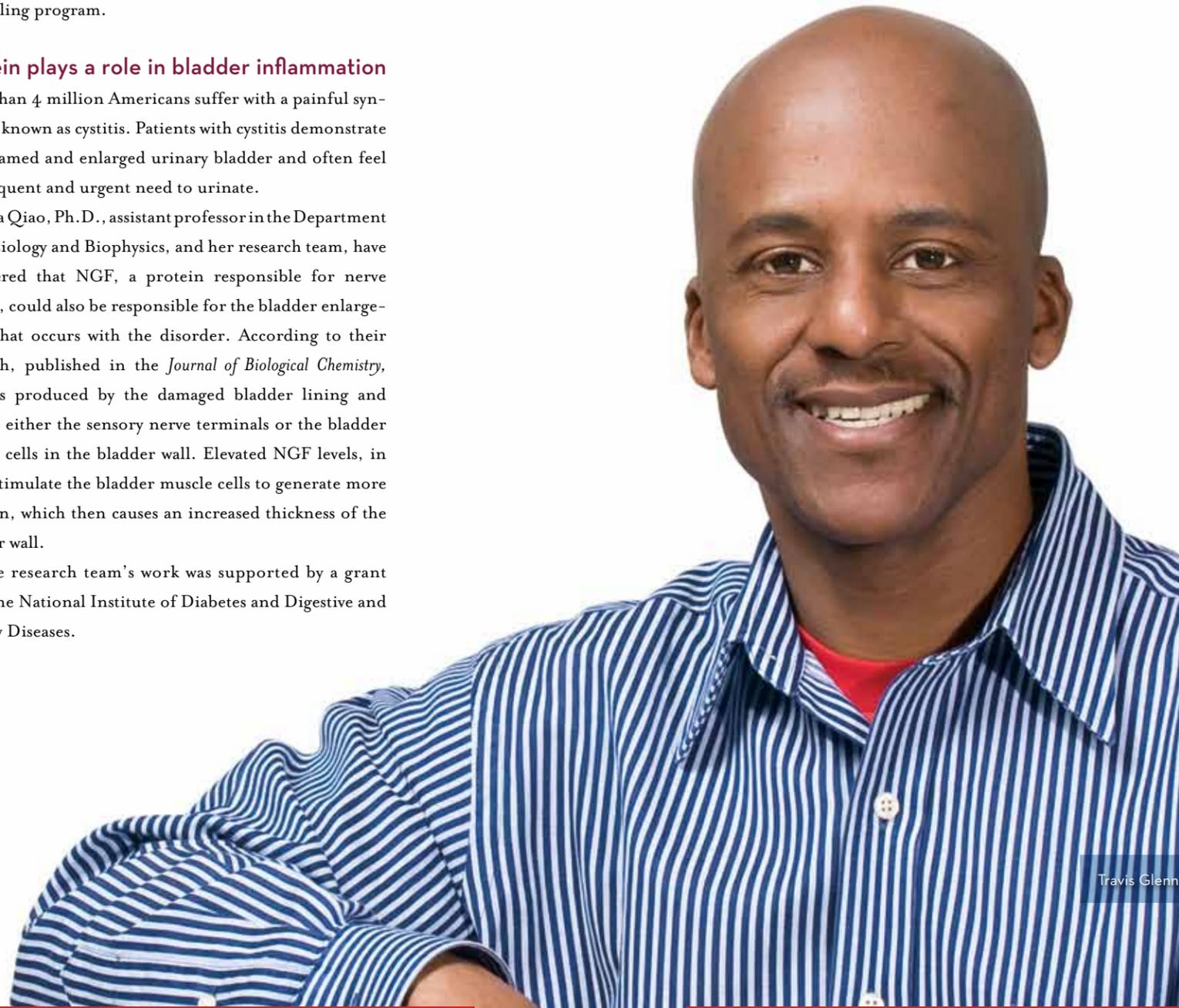
More than 4 million Americans suffer with a painful syndrome known as cystitis. Patients with cystitis demonstrate an inflamed and enlarged urinary bladder and often feel the frequent and urgent need to urinate.

Liya Qiao, Ph.D., assistant professor in the Department of Physiology and Biophysics, and her research team, have discovered that NGF, a protein responsible for nerve growth, could also be responsible for the bladder enlargement that occurs with the disorder. According to their research, published in the *Journal of Biological Chemistry*, NGF is produced by the damaged bladder lining and acts on either the sensory nerve terminals or the bladder muscle cells in the bladder wall. Elevated NGF levels, in turn, stimulate the bladder muscle cells to generate more collagen, which then causes an increased thickness of the bladder wall.

The research team's work was supported by a grant from the National Institute of Diabetes and Digestive and Kidney Diseases.



Despite sickle cell-related pain, Travis Glenn maintains an active lifestyle, including a 21-year-career at the Virginia Department of Transportation where he works as a transportation engineer.



Travis Glenn

**Coping with chronic pain** / On the outside, Travis Glenn looks healthy. But inside, the chronic pain he endures from sickle cell disease ravages his body.

Normal red blood cells – typically smooth and round – travel easily throughout blood vessels. In sickle cell patients, these cells form a stiff, crescent shape. Pain results when the irregular cells clot together, causing blockages that can ultimately compromise a patient's organs.

The 46-year-old transportation engineer for the Virginia Department of Transportation describes his everyday pain as mild to moderate. But when an extremely excruciating episode occurs, Glenn describes it as an electric shock that "pulls you to the ground."

Over the years, Glenn has suffered a heart attack, a ruptured gallbladder, starbursts in his eyes and loss of hearing in his left ear – all due to the disease. He manages his most severe pain with medication and counseling from his physician. More often, he resorts to other means: walking, taking hot showers and reading the Bible. "There are a lot of things you can do, and I try to utilize all of them," Glenn said.

Despite sickle cell, Glenn is seeking his second master's degree, along with raising a 15-year-old daughter and volunteering in the community. He credits his VDOT co-workers and VCU Medical Center staff, including Wally Smith, M.D., for helping him maintain his quality of life. With the average life expectancy for sickle cell patients now in the mid-40s, Glenn feels fortunate for all he's accomplished.

"I think I've done well," he said. "If this is the worst thing that's going to happen to me, then I'm going to have a great day."



### K99 supports budding research career

Less than a year after arriving at the School of Nursing to complete a postdoctoral fellowship, Allison Montpetit, Ph.D., R.N., has received a K99 grant. The K99 grant, awarded through the National Institute of Nursing Research, supports younger investigators by offering up to five years of funding.

Montpetit will work alongside professors Mary Jo Grap, Ph.D., R.N., ACNP, FAAN, and Cindy Munro, Ph.D., R.N., ANP-C, FAAN, to examine noninvasive methods of identifying biomarkers that would indicate the onset of pneumonia in mechanically ventilated patients.

“By using exhaled breath, we may be able to diagnose and treat pneumonia earlier, and possibly can improve outcomes for patients and decrease hospital stays,” Montpetit said.

Cindy Munro, Ph.D., R.N., ANP-C, FAAN, (left) Mary Jo Grap, Ph.D., R.N., ACNP, FAAN, and Allison Montpetit, Ph.D., R.N., School of Nursing

In fact, this approach could be a new therapeutic strategy to control not only acute life-threatening exacerbations of anaphylactic shock, but also other inflammatory diseases where mast cell activation has been identified as a critical trigger and promoter, such as rheumatoid arthritis and atherosclerosis.

### Findings may prevent fatal allergic reactions

When the body’s mast cells come in contact with allergy-causing agents, the cells release substances that trigger the body’s allergic response, leading to conditions like asthma and hives. Those substances include sphingosine-1-phosphate (S1P).

In a study funded by the National Institutes of Health (NIH), Carole A. Oskeritzian, Ph.D., assistant professor in the Department of Biochemistry and Molecular Biology, discovered that S1P further stimulates mast cells and exacerbates severe allergic reactions in mice. But blocking S1P’s access to its S1P2 receptor stifled the mast cells’ potential to become hyperactive. “Because there is no cure for allergies, we need to think about new targets, new ideas and new strategies. Interfering with the interaction of S1P with its S1P2 receptor might be a way to achieve this goal,” Oskeritzian said.

### Massey creates tool to assess health literacy

“Recent research shows that individuals with low health literacy are more likely to have limited knowledge about cancer screening, and it is a contributing factor to insufficient utilization of preventive health services,” said Levent Dumenci, Ph.D., associate professor in the Department of Social and Behavioral Health and founding director of the Behavioral Measurement Core Shared Resource Facility at the Massey Cancer Center. In response, he will develop the first health literacy measure designed specifically for cancer patients.

The project, supported by a nearly \$3 million NCI grant, will identify cancer patients who need help and extra support to handle the complexities of their medical care at the time of diagnosis and better assist them as they go through treatment.

## Health system ranks as a top place for female executives

The VCU Health System made the Top 50 Companies for Executive Women list of the National Association for Female Executives (NAFE), marking the fourth time the health system earned this honor. The ranking also placed the VCU Health System among the top 10 nonprofits.

NAFE’s annual initiative names those organizations at the forefront of diversifying the gender of boardrooms across the country and honors nonprofits who offer excellent work environments for women.



Sheryl Garland, vice president of health policy and community relations, VCU Health System

### Socioeconomic stresses lower life expectancy

People who live in areas with lower household incomes are much more likely to die because of their personal and household characteristics and their community surroundings, according to a VCU study published in the *American Journal of Public Health*.

“These findings are especially timely during the current recession. Policymakers typically think of the economy, jobs and education as separate issues from health care reform, but they’re deeply connected,” said Steven H. Woolf, M.D., M.P.H., director of the Center on Human Needs and professor in the Department of Family Medicine.

Funded by the Robert Wood Johnson Foundation, Woolf and his colleagues analyzed census data and vital statistics from Virginia counties and cities between 1990 and 2006. They demonstrated that one out of four deaths would have been averted if the mortality rates of Virginia’s five most affluent counties and cities had existed state-wide. In some of the most disadvantaged areas of the state, nearly half of the deaths would have been averted.

### Team IDs new targets for solid-tumor cancers

In the process known as angiogenesis, tumor cells recruit new blood vessels that both feed the tumor with nutrients and provide a conduit for the cancer cells to spread throughout the body. Researchers have traditionally

looked to the proteins involved in angiogenesis as attractive therapeutic targets, but a new discovery instead points to a receptor long known to be involved in the process but that, until now, was overlooked.

“Our study suggests that an alternate therapeutic target may be more viable than those tested in the past,” said William A. Barton, Ph.D., of the Molecular Cancer Therapeutics Program at the Massey Cancer Center and assistant professor in the Department of Biochemistry and Molecular Biology. The findings could lead to improved drug treatments for solid-tumor cancers. Together with colleagues from VCU and Memorial Sloan-Kettering Cancer Center, Barton reported a new role for the Tie1 receptor. It interacts with and inhibits Tie2, another essential protein involved in angiogenesis.

The study was supported by grants from the NCI, the National Heart, Lung, and Blood Institute, and the Massey Cancer Center.

### Dental school’s student chapter earns honors

The VCU chapter of the American Student Dental Association (ASDA) garnered two awards in March 2010 during the 40th Annual Session of ASDA: Best Newsletter in Competition for the Chapter Newsletter Award and the Most Improved Chapter for the 2010 Ideal ASDA Award. Both the chapter and its newsletter have been recognized by the ASDA for several consecutive years.



John F. Duval, MCV Hospitals

**Beginning a new day for pediatric care** / June 30, 2010, marked a new day for children and families in Central Virginia. That's the day when the VCU Medical Center and Children's Hospital officially joined to form Children's Hospital of Richmond, or CHoR.

This union improves the coordination of care for our young patients and provides an unparalleled level of comprehensive, coordinated specialty pediatric care.

CHoR enhances access to all levels of health care for children – from well-child checkups to advanced medical and surgical services for serious conditions to long-term care and therapy. It encompasses specialized inpatient units, including acute care, pediatric intensive care, neonatal intensive care and transitional care. The broad array of medical-surgical services such as cardiology, developmental pediatrics, orthopaedic surgery and therapy services are all elements of CHoR.

CHoR fills a significant need not only in the Richmond area, but also throughout the Commonwealth of Virginia and beyond.

Moreover, this union facilitates the recruitment of top pediatric specialists. Our physicians and researchers will enable us to enhance and expand specialty services and research programs as well as strengthen our residency and fellowship training programs. We're off to a fast start, as recruitment began almost immediately with several new faculty physicians on staff by fall 2010.

In the end, our goal is nothing less than to be a nationally recognized children's medical center. – *John F. Duval, CEO, MCV Hospitals, VCU Health System*



(Left) At an event celebrating the Children's Hospital of Richmond, Dawn (left) and Kelsie Tyler thank the health care teams at the medical center and CHoR who saved Kelsie's life and enabled her recovery from a brain injury. (Right) Leslie G. Wyatt, R.N., vice president of Children's Services and executive director of CHoR, Michael Rao, Ph.D., president of VCU and VCU Health System, and Bruce Rubin, M.D., CHoR's physician-in-chief and chair of the Department of Pediatrics, talk with community pediatrician Joseph Boatwright, M.D.

### Two-prong approach boosts cessation success

When it comes to helping smokers kick the habit, primary care practices that employ a telephone quitline are better able to help their patients, according to a study conducted by VCU and the Ambulatory Care Outcomes Research Network (ACORN).

In a study supported through a grant from the Agency for Healthcare Research and Quality and published in the *American Journal of Preventive Medicine*, the VCU group found that practices with a quitline provided help to 41 percent of smokers who came to the office, compared to only 28 percent of smokers in practices that did not have a referral system in place. The team surveyed 1,817 adult smokers from 16 participating practices.

"Practices that used a systematic process to ask about smoking, advise tobacco cessation and assess interest in quitting, along with a fax mechanism to refer interested patients to a quitline, were more likely to provide support to help smokers quit, compared to practices that did not have such a system for assessment and referral," said corresponding author of the study, Stephen Rothemich, M.D., co-director of ACORN and associate professor in the Department of Family Medicine.

### Measures assess risk for alcohol dependence

VCU researchers identified four relatively simple measures of drinking behavior to assess genetic risk for alcohol dependence, creating a more efficient process of risk identification.

The team, led by Kenneth S. Kendler, M.D., director of the Virginia Institute for Psychiatric and Behavioral Genetics and the Rachel Brown Banks Distinguished Professor in Psychiatry in the School of Medicine, assessed the lifetime history of alcohol dependence in 5,073 same-sex adult twins from the Mid-Atlantic Twin Registry. Histories were compared against four measures of alcohol consumption at the time of heaviest drinking: drinking frequency, regular quantity, maximum quantity and drunk frequency. By identifying these measures, they were able to accurately assess genetic risk for alcohol dependence.

The study was published in the online journal *Alcoholism: Clinical & Experimental Research*.

### Two VCU buildings receive local accolades

Recognized as exemplary projects in downtown Richmond, the Molecular Medicine Research Building and the W. Baxter Perkinson, Jr. Building – both constructed in 2009 – received Project of the Year awards in the public and private sectors from the Richmond Real Estate Group.

Towering eight stories above East Broad Street, the Molecular Medicine Research Building is the newest addition to the School of Medicine, housing 48 principal investigators and their staffs.

The LEED Silver-certified Perkinson Building, an expansion of the School of Dentistry, allows for increased student enrollment and further development in research and patient access to oral health care.

## Vitamin E reduces severe hepatitis symptoms

A VCU-led study published in the *New England Journal of Medicine* shows a daily dose of a form of vitamin E significantly improved nonalcoholic steatohepatitis (NASH), a chronic liver disease. Researchers believe that an abnormal metabolism of fats causes increased levels of oxidants in the liver, thereby linking NASH to weight gain and obesity and leading to cirrhosis, liver cancer and, frequently, death. Currently, no approved treatment exists, but the NASH Clinical Research Network (CRN) of the National Institute of Diabetes, Digestive and Kidney Diseases reported that 800 IU of RRR- $\alpha$ -tocopherol, a form of vitamin E, significantly improved NASH conditions when taken daily. The Pioglitazone or Vitamin E for NASH Study (PIVENS) also found that pioglitazone given at a dose of 30 milligrams per day improved many features of NASH, but was associated with weight gain.

"While PIVENS provides evidence for a benefit from vitamin E for NASH, it should not be considered a panacea," said Arun J. Sanyal, M.D., NASH CRN co-chair and PIVENS principal investigator, the Charles M. Caravati Professor in Gastroenterology and chair of the Division of Gastroenterology, Hepatology and Nutrition.

The benefits of either drug in patients with NASH who also have diabetes remains unknown. The study also reported that, while vitamin E and pioglitazone were both better than placebo for improvement of several features of NASH, many individuals receiving these treatments did not improve.

## Hospital participates in U.S. brain injury trial

In the U.S., approximately 2 million Americans sustain a traumatic brain injury (TBI), leading to 50,000 deaths and 235,000 hospitalizations annually. No therapy has been found to be effective for reducing mortality and improving functional outcomes.

A new study involving 17 institutions across the U.S. — including the VCU Medical Center — hopes to change that. VCU is the only Virginia medical center participating in the NIH Phase III clinical trial, called ProTECT III, to examine if using progesterone within the first four days following a TBI improves patients' outcomes. Previous studies suggest that administering progesterone, a hormone that occurs naturally in the body, immediately after a TBI may help reduce brain swelling and damage.

Sharon Whitlock, Cellular Therapeutics Lab, and John M. McCarty, M.D., Massey Cancer Center



## Lab space allows for tailored cancer therapy

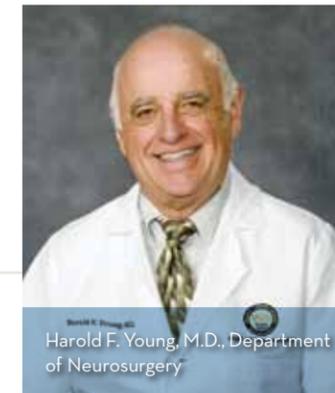
A new Cellular Therapeutics Lab for the Massey Cancer Center's Bone Marrow Transplant Program provides opportunities to develop procedures specifically tailored to individual cancer patients' needs. Cellular therapeutics includes isolating specific cellular elements of a patient's or donor's immune system, or adapting them to work as a focused therapy for cancer and immune-mediated disorders.

Located in the Virginia BioTechnology Research Park adjacent to the VCU Medical Center, the \$1.8 million, 5,000-square-foot laboratory includes labs for advanced cell therapy preparation and a new Food and Drug Administration (FDA)-compliant area. The new space allows transplant physicians to accelerate their stem cell collection processes and enables them to work with twice as many cell samples at one time.

The work performed in the labs will also involve investigators from other disciplines to collaborate and explore non-cancer diseases that could benefit from using cellular therapeutics.

## Physicians make Top Docs list

VCU Medical Center physicians topped a survey asking Richmond-area physicians whom they would recommend in a range of specialties. In the April 2010 edition of *Richmond* magazine, 92 VCU Medical Center physicians appeared on its Top Docs survey list. Harold F. Young, M.D., professor and the James and Frances McGlothlin Chair of the Department of Neurosurgery, was recognized for his lifetime achievement and contributions to neurosurgery.



Harold F. Young, M.D., Department of Neurosurgery

## Student's determination leads to scholarship

While most graduate students would take a medical leave of absence in the event that their spouse faced terminal illness, Kelly Elmhurst-Lanning chose to balance long nights of study with time spent supporting her spouse. Her husband, Robert Lanning, who received experimental treatments for a rare cancer affecting the bile duct, gall bladder and liver, was also determined to see her graduate from the Department of Nurse Anesthesia.

Lanning lost his battle with cancer in September 2009, a year after Elmhurst-Lanning, a former operating room nurse, received her master's degree. She remembers her husband's unwavering support of her professional advancement and credits the department for her ability to achieve it. In honor of her husband, and in appreciation of the department's support, she created the Robert "Bob" Lanning Nurse Anesthesia Scholarship — the department's first scholarship — to assist students faced with significant personal challenges.

## Study links cholesterol to insulin sensitivity

"Although diabetes and heart disease often coexist, current management of diabetes does not necessarily include cholesterol control," said Shobha Ghosh, Ph.D., professor of internal medicine. Her latest study provides the first evidence that eliminating cholesterol from the body reduces systemic as well as fat-tissue inflammation and represents a new strategy for preventing inflammation-linked diseases, such as diabetes.

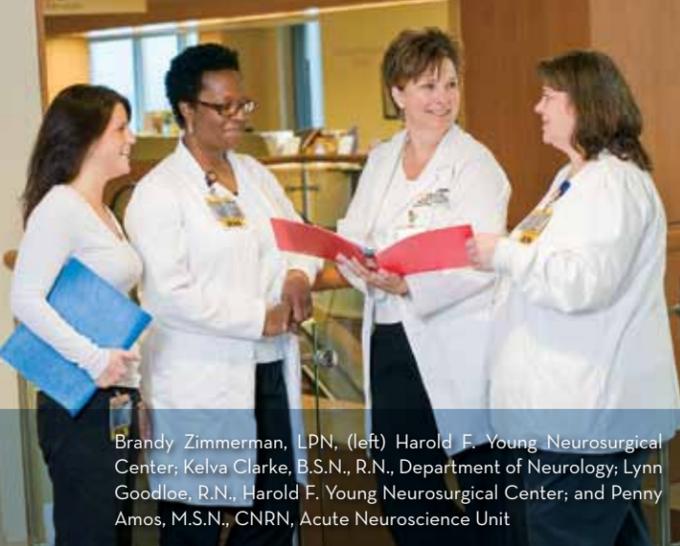
The key enzyme CEH increases the removal of cholesterol from the body and, as a result, reduces inflammation of fat tissue. In studies with mice, when CEH levels were increased by introduction of a human gene, the animals had improved insulin sensitivity that corresponds with a decrease in the development of diet-induced diabetes. This improvement was observed despite a comparable high-fat, high-cholesterol or Western diet-induced weight gain, indicating that enhancing cholesterol removal from the body can prevent diabetes, irrespective of diet-induced obesity.

Findings from the study, which was supported by grants from the National Heart, Lung, and Blood Institute and the American Diabetes Association, were reported in the *Journal of Biological Chemistry*.

## VCU Health System wins work force honors

The Richmond Chapter of the Society for Human Resource Management presented the VCU Health System with the Workforce Development Award for its programs that support employees' training needs and contribute to improved performance. The health system also received the Alfred P. Sloan Award for Business Excellence in Workplace Flexibility, sponsored by the U.S. Chamber of Commerce, for its creativity in addressing employee needs for workweek flexibility.





Brandy Zimmerman, LPN, (left) Harold F. Young Neurosurgical Center; Kelva Clarke, B.S.N., R.N., Department of Neurology; Lynn Goodloe, R.N., Harold F. Young Neurosurgical Center; and Penny Amos, M.S.N., CNRN, Acute Neuroscience Unit

### Award honors nursing team as tops

The Acute Neuroscience Unit nurses at the VCU Medical Center were recognized as one of the Best Nursing Teams by *Advance for Nurses*.

“Neuroscience nursing is an art that requires dedication and passion,” said Lynn Goodloe, nurse manager for the 34-bed progressive care neuroscience unit. “What you will find on our unit is a group of hand-selected nurses who absolutely love what they do.”

Nurses in this specialty offer immediate, post-operative care for patients following neurosurgery, care of acute moderate and severe head trauma, acute brain hemorrhages and other conditions.

### Project imparts lessons about clinical trials

Lisa M. Abrams, Ph.D., associate professor in the School of Education, and Patricia W. Slattum, Pharm.D., Ph.D., associate professor in the School of Pharmacy, are leading a five-year interdisciplinary project aimed at increasing awareness of clinical trials among science teachers and students in Central Virginia. Project CRESST: Enhancing Clinical Research Education for Science Students and Teachers — a \$1.3 million project funded by the National Center for Research Resources Science Education Partnership Awards program at the NIH — will operate as a partnership between clinical and translational scientists and middle and high school teachers and students.

The Center for Clinical and Translational Research and the schools of Medicine and Pharmacy will work with the Center for Integrative Life Sciences Education and the education school to develop an inquiry-based curriculum for students in local school districts.

### NCI grant supports multiple myeloma study

Massey Cancer Center researcher Steven Grant, M.D., a professor of medicine and Massey’s associate director for translational research, and his team, received funding from the NCI as part of a five-year Specialized Program of Research Excellence (SPORE) project. One of four researchers funded, Grant, the Shirley Carter Olsson and Sture Gordon Olsson Endowed Chair in Oncology, received more than \$1.5 million to support the development of a new approach to the treatment of multiple myeloma, an incurable, malignant disorder of the bone marrow involving plasma cells.

SPOREs are specialized center grants that support a group of interdisciplinary projects. The multiple myeloma SPORE emanates from the MD Anderson Cancer Center, and also involves researchers at the Abramson Cancer Center of the University of Pennsylvania.

The award builds upon recent work from Grant’s laboratory, demonstrating that exposure of human multiple myeloma and leukemia cells to agents known as CDK inhibitors not only disrupts the ability of these cells to progress through the cell cycle, but also inhibits transcription of certain pro-survival proteins.

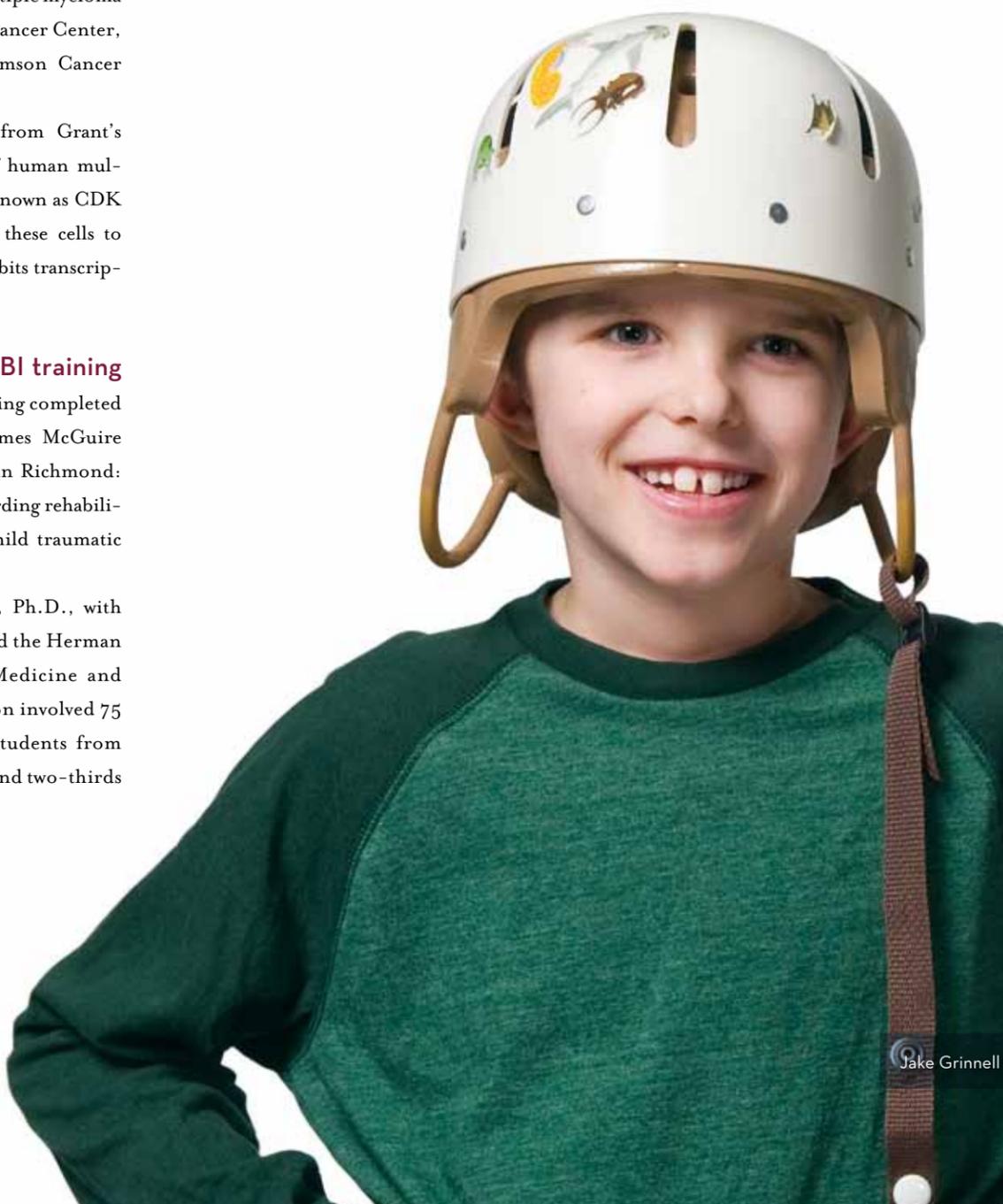
### Web-based pilot course offers TBI training

The Department of Rehabilitation Counseling completed a cooperative endeavor with Hunter Holmes McGuire Veterans Affairs Medical Center (VAMC) in Richmond: the development of a Web-based course regarding rehabilitation for active military personnel with mild traumatic brain injury (TBI).

Led by professor Brian T. McMahon, Ph.D., with David X. Cifu, M.D., department chair and the Herman Jacob Flax, MD Professor in Physical Medicine and Rehabilitation, the first pilot demonstration involved 75 participants — one-third were graduate students from the rehabilitation counseling department and two-thirds were VAMC professional employees.



Second-grader Jake Grinnell plays with pal Ruby at his Midlothian, Va., home.



Jake Grinnell

**Standing strong** / When any child faces a medical emergency, for parents, the silence of the unknown is deafening. When Dan and Donna Grinnell’s 8-year-old son, Jake, suffered from the rupture of an arteriovenous malformation (AVM), they received a full diagnosis and surgical treatment — all within 24 hours.

An abnormal collection of blood vessels, the AVM in Jake’s brain ruptured, causing uncontrolled bleeding. At first, the rupture produced what appeared to be nothing more than a severe headache; but when Jake became extremely nauseous and began losing consciousness, his parents dialed 911. Paramedics rushed him to a local community hospital.

“The doctor said, ‘Jake has something that needs to be taken care of tonight, by a team of neurosurgeons. He needs to be at the VCU Medical Center and he needs to go there right now,’” Donna said. The same ambulance that rushed Jake to the community hospital immediately transported him to the Children’s Hospital of Richmond’s pediatric emergency room at the VCU Medical Center where doctors awaited his arrival. They removed the AVM the very next day. After two weeks of care and treatment in CHoR’s Pediatric Intensive Care Unit, Jake returned home. He’s happy to be back hanging out with his big sister, Rachael, and playing with the family dog, Ruby.

“He’s going to do great,” said Gary W. Tye, M.D., a pediatric neurosurgeon at VCU Medical Center. “He’s got a great attitude.”

Jake undergoes various therapies at a CHoR center near his home to ensure a smooth transition back to normal daily activities. As for his all time favorite — trampolining — “Yeah, maybe,” Jake said. “But that will probably be a couple of years!”

## Service empowers nursing students

As a dual-degree student in the VCU School of Nursing, Jennifer Peyton experienced her “aha” moment while on a service trip to San Ignacio, Belize, in early 2010.

Peyton, president of Nursing Students Without Borders (NSWB) of VCU, organized the trip with eight members of the group. For one week, the NSWB volunteers performed health screenings on nearly 400 preschool to sixth-grade students, and worked at a local clinic. NSWB volunteers examined children for height, weight, respiratory and heart rate, conducted a basic dental exam, checked hearing, vision and blood pressure, and evaluated for umbilical hernias.

The trip proved life-changing for Peyton. “I learned new practical skills and acquired insight to different cultures,” she said. When she returned home, Peyton felt energized to recruit new members. “I was really motivated for someone else to have the opportunity for their own self-discovery,” she said.



Nursing students Kristin Schwind (top, left), Meredith Black, Amanda Slater, Hadja Diallo (center), Jennifer Peyton (bottom, left), and Kate Bower with children in Belize.

## Study links gene to liver cancer progression

“Researchers have been studying the role of the transcription factor Late SV40 Factor, or LSF, for more than 25 years in fields outside of cancer, but our work is the first demonstration that it plays an important role in liver cancer,” said Devanand Sarkar, Ph.D., MBBS, assistant professor in the Department of Human and Molecular Genetics, the Harrison Endowed Scholar in Cancer Research at the Massey Cancer Center and a member of the Institute of Molecular Medicine.

Levels of the tumor-promoting gene’s expression are significantly higher in more than 90 percent of patients with liver cancer, compared to their healthy counterparts. Sarkar’s team found that LSF plays an important role in both the development and progression of liver cancer and that inhibiting LSF can reverse the aggressive properties of human liver cancer cells.

The study was supported by grants from the Goldhirsh Foundation, the Dana Foundation, the NIH, the Samuel Waxman Cancer Research Foundation, the National Institute of Environmental Health and the Liver Tissue Cell Distribution System. It was published in *Proceedings of the National Academy of Sciences*.

## Study injects safety into Pharm.D. programs

Following an examination of how the “science of safety” is taught in pharmacy schools — including a literature review, 30 individual interviews, in-depth case studies at five pharmacy schools and a nationwide survey of U.S. pharmacy schools — a research team led by pharmacy professor David A. Holdford, Ph.D., developed recommendations for improving the teaching of safety and helping pharmacy school graduates be more effective in protecting patients from drug-related problems.

The report, *A Baseline Evaluation of the Integration of the “Science of Safety” Into the Curriculum of the Doctor of Pharmacy Degree in U.S. Colleges and Schools of Pharmacy*, identified several areas for improvement including educating pharmacy students about the FDA’s role in product safety, how to work with the FDA in post-marketing surveillance, teaching students methods to improve safety and educating students to practice in interprofessional teams.

## New program preps students for grad school

Students looking to enhance their qualifications for admission into professional schools, including medical, dental and veterinary school, can now enroll in a graduate-level program designed to give them a competitive edge. The Pre-medical Graduate Health Sciences Certificate, established by the School of Medicine, offers a one-year curriculum that enhances students’ qualifications and prepares them for taking or retaking standardized exams. Students who complete the program also have an opportunity to continue to an M.S. or Ph.D. degree program within the School of Medicine.

## Cancer cells go on the offense to kill tumors

Melanoma, the most serious type of skin cancer, is highly resistant to current therapeutic strategies. But new research at VCU, reported online in the *Proceedings of the National Academy of Sciences*, suggests that an enzyme discovered by Paul B. Fisher, M.Ph., Ph.D., and a Columbia University team, might be used to target a specific genetic component that helps to regulate gene expression and defends melanoma cells against treatment.

More recently, Fisher — professor and chair of the Department of Human and Molecular Genetics and director of the Institute of Molecular Medicine — and colleagues reported that human polynucleotide phosphorylase, or hPNPaseold-35, selectively targets and degrades a short genetic component known as microRNA-221, which regulates the production of defined proteins in cells and regulates the expression of human genes. MicroRNAs have been recognized as causing over- or under-expression of genes linked to the majority of cancers and other diseases.

“The present study provides the first observation that microRNAs may be regulated by selective degradation, providing an entry point for developing novel approaches for the therapy of melanoma and other cancers,” said Fisher, the Thelma Newmeyer Corman Endowed Chair in Oncology Research at the Massey Cancer Center.

Grants from the NIH and the Samuel Waxman Cancer Research Foundation supported the work conducted by Fisher’s group.



## Award validates VCU’s patient safety efforts

For the fourth time in six years, the VCU Health System received the Excellence in Patient Safety Award from Virginians Improving Patient Care and Safety, a statewide not-for-profit coalition of health care partners. The award recognizes programs that best exemplify the effective application of patient safety principles in a clinical care environment.

“This award is special because it is a validation of the collective efforts we put into Safety First Every Day,” said Dale Harvey, director of performance improvement at the VCU Health System. “Safety First Every Day is bringing the science of safety and error prevention to health care.”



Supporting the health system’s goal to be the safest hospital in America, the Safety First Every Day initiative focuses on efforts to solidify safety as a core value and includes the Behavior Expectations for Error Prevention concepts and training program, which has reached more than 8,700 professionals and students in the health system.

## National committee taps medical student

“I love the energy that surrounds the faculty and students involved in medical education,” said MaryEllen Cleary, a third-year student at the School of Medicine.

Cleary is one of only two students named to the 2010-11 Liaison Committee on Medical Education, an organization whose seal of approval is required by most state licensing boards. Nominated by the American Medical Association and the first VCU student to ever hold the position, Cleary will review schools’ accreditation surveys and progress reports as well as have a say on national accreditation standards and policies.

The Ledyard, Conn., native, who graduated magna cum laude from the University of Connecticut with a degree in molecular and cellular biology, hopes to pursue a career in academic medicine.

“I’m hoping this experience will continue to foster my interest,” she said.



John Clore, M.D., Center for Clinical and Translational Research

**Moving discoveries from labs to patients** / In July 2010, VCU received a \$20 million Clinical and Translational Science Award (CTSA) grant, the largest federal award in its history, from the NIH to become part of a nationwide consortium of research institutions working to turn laboratory discoveries into treatments for patients.

The announcement placed VCU among only a handful of institutions selected so far that year, bringing the total membership of the consortium to 55 CTSA in 28 states and the District of Columbia.

VCU joins the consortium through its Center for Clinical and Translational Research, or CCTR, a comprehensive matrix center that supports VCU's efforts to strengthen ties with affiliates and community partners to better share resources and respond to community health needs.

John Clore, M.D., associate vice president for clinical research and principal investigator for the CTSA, said the CCTR "will train the next generation of clinical investigators to pool medical informatics, genetics, basic science and clinical research together – and work with the community – to develop a whole new way to do research with a whole new group of investigators that are trained differently, and uniquely, to answer the needs of the 21st century."

Through the CCTR, researchers will benefit from Web-based data sharing, training and access to a rich array of resources, including biostatistics, ethics, research study and regulatory support.

"With its outstanding health system and distinguished health and biomedical science-related schools, VCU is uniquely positioned to make significant contributions to the health of all Americans," said Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine.



(Left) John Clore, M.D., associate vice president for clinical research, speaks with patient Colleen A. Thoma, as she undergoes a test to monitor brain wave activity. (Right) Clore, Sheldon M. Retchin, M.D., M.S.P.H., CEO of the VCU Health System and vice president of VCU Health Sciences, and Ann S. Fulcher, M.D., chair of the Department of Radiology, celebrate the announcement of the CTSA grant.

**UVA and VCU expand congenital cardiac care**

The University of Virginia (UVA) Health System and VCU Medical Center have teamed up to provide cardiac surgical care for children and adults in Charlottesville and Richmond. The Pediatric Surgery Congenital Heart Collaborative ultimately will result in a regional and national model for treatment, training and research.

VCU and UVA will work collaboratively to manage and provide overall medical direction for the joint program. James Gangemi, M.D., a pediatric thoracic and cardiothoracic surgeon at VCU and UVA, will serve as surgical medical director for the program. Surgical care will be provided at both hospitals depending on patient needs.

**VCU Medical Center ranks as a top hospital**

*U.S. News & World Report* ranked the VCU Medical Center as one of the nation's Best Hospitals in 2010-11, marking the medical center's fourth time on the list. The center was among 152 nationwide selected from nearly 2,000 eligible institutions. Specifically, the VCU Medical Center – the only hospital in Central Virginia to rank in the top 50 – was noted for excellence in cancer, heart and heart surgery, kidney disease, and rehabilitation. Massey Cancer Center ranked 38th; the heart and heart surgery programs at the VCU Pauley Heart Center, 41st; kidney disease, 36th; and physical rehabilitation, 20th.



**VCU-led center advances geriatric education**

VCU's Virginia Center on Aging received a \$2.2 million grant from the U.S. Health Resources and Services Administration for the development of the Virginia Geriatric Education Center.

"This award comes after an intense national competition, so it is confirmation of the strength of our consortium, with VCU as the leading institution," said Edward Ansello, Ph.D., director of the Virginia Center on Aging and professor in the Department of Gerontology.

The Virginia Center on Aging will lead the project and partner with VCU's health science schools and with consortium member institutions, the University of Virginia and Eastern Virginia Medical School, to provide professional student education in geriatrics, faculty development and in-service training of health care providers.

**Investigators aim to clarify penicillin allergy**

"When allergists are faced with a patient requiring penicillin who has an allergy to that drug, they can desensitize the patient by giving a low dose of penicillin and then steadily increasing the dose," said Lawrence B. Schwartz,

M.D., Ph.D., the Charles W. and Evelyn F. Thomas Chair of Rheumatology, Allergy and Immunology. While researchers know this approach works clinically, they don't know why or how. Individuals with allergies have the antibody IgE that arms two types of cells: mast cells and basophils. Penicillin binds to IgE, signaling these cells to release chemicals, such as histamine, which can cause a life-threatening allergic reaction.

Working to unlock mysteries about allergies, especially penicillin allergies, researchers at the School of Medicine received a \$7 million grant from the NIH and began enrolling subjects in a clinical trial.

"Knowing how this process works holds implications for expanding it to other allergies, for example, food allergies," said Schwartz, who is leading the study.

### Award honors family medicine programs

"At a time when our health care system is struggling with a shortage of primary care physicians, it's imperative that medical students discover the joys — and challenges — of family medicine," said Perry Pugno, M.D., director of the American Academy of Family Physicians' Division of Education.

The School of Medicine offers a variety of programs promoting the value of primary care that do just that, earning the school one of 10 Program of Excellence Awards from the academy. The annual award recognizes medical school-sponsored organizations that excel in providing students with programs in community service, professional development opportunities and exposure to family medicine.



Michelle Whitehurst-Cook, M.D.,  
Department of Family Medicine



Unsong Oh, M.D., VCU Department  
of Neurology

### Researcher arrives at the university just in time

The Clinical and Translational Science Award announced in July 2010 set up an infrastructure to recruit researchers such as Unsong Oh, M.D., who joined the Department of Neurology as an assistant professor in August 2010. Just two months later, he received a three-year CTSA K12 grant, providing 75 percent salary support and \$25,000 a year for research expenses.

Oh's research focuses on multiple sclerosis, specifically regulatory T cells, a special subset of white blood cells that might be impaired in MS patients.

Receiving the grant marks a major milestone in Oh's career as a physician-scientist. "For a new investigator, the first obstacle is getting a grant," he said. "In this business, success begets success. So making that first big step is really critical."

### Allergies, cancer share link to key enzyme

David Gibb's research began as an attempt to understand allergies and ended up explaining a key element of cancer. Gibb, an M.D./Ph.D. candidate in the School of Medicine, focused on the enzyme ADAM10, which has several different roles, including regulating the formation of antibodies that promote allergic reactions. His research showed that ADAM10 also controlled the differentiation of hematopoietic stem cells — the precursor to white and red blood cells.

Gibb's research concluded that too little ADAM10 meant that stem cells would not develop into important antibody-producing cells, resulting in a highly weakened immune system. Too much of the enzyme and the cells would develop into myeloid cells, influential in the development of cancer. His findings were published in the *Journal of Experimental Medicine*, and Gibb has presented his findings at two conferences in Japan.

## Dentistry faculty, alumni make strong showing in top dentists list

*Virginia Living* magazine partnered with topDentists to find the best dentists in Virginia. In a survey of all Virginia dentists registered with the American Dental Association, dentists were asked to name a colleague to whom they would refer a patient. More than half of the commonwealth's highest rated dentists got their start at the School of Dentistry.



Omar Abubaker, D.M.D., Ph.D., Department of Oral  
and Maxillofacial Surgery, with a patient

### Drug improves menopause-related depression

In the U.S., 20 percent of women will experience depression over the course of their lifetime — many in the years surrounding menopause. According to a recent study, led by Susan G. Kornstein, M.D., professor in the School of Medicine, the antidepressant Pristiq, generically known as desvenlafaxine, can help alleviate symptoms during these key times. "This is the first large study testing the effectiveness of an antidepressant specifically in peri- and post-menopausal women with depression," said Kornstein, co-founder and executive director of the Mood Disorders Institute and the Institute for Women's Health.

Her research, published in the *Journal of Clinical Psychiatry*, compared the effectiveness and safety of Pristiq to a placebo in a double-blind trial at 37 outpatient sites across the country. Results showed that women who took desvenlafaxine exhibited significant improvement.

### Study uncovers leukemia defense mechanism

Massey Cancer Center researcher Steven Grant, M.D., the Shirley Carter Olsson and Sture Gordon Olsson Endowed Chair in Oncology, and a team of Massey researchers uncovered the mechanism by which leukemia cells trigger a protective response when exposed to a class of cancer-killing agents. The findings, published in the *Journal of Biological Chemistry*, could lead to more effective treatments in patients with leukemia and other cancers of the blood.

"Our findings provide new insights into the ways cancer cells develop resistance to and survive treatment," said Grant, associate director for translational research at Massey and professor of medicine. "This knowledge will

now allow us to focus our efforts on strategies designed to prevent these self-protective responses, potentially rendering the cancer cell incapable of defense and increasing the effectiveness of therapy."

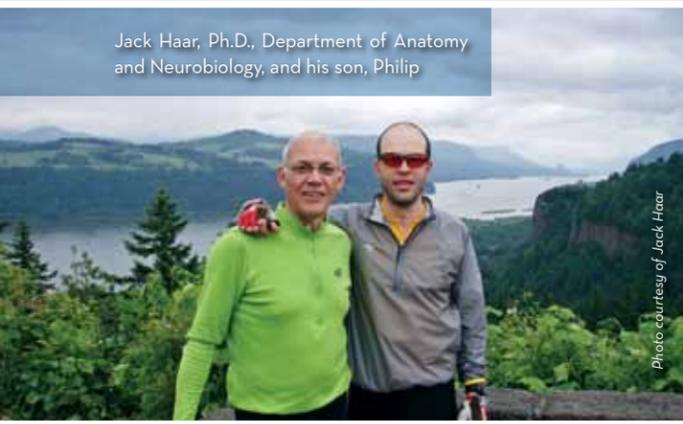
### Sildenafil enhances cancer drug's efficiency

School of Medicine, Pauley Heart Center and Massey Cancer Center researchers have shown that Viagra, generically known as sildenafil — when used in combination with doxorubicin, a powerful anti-cancer drug — enhances its anti-tumor efficacy in prostate cancer while alleviating damage to the heart at the same time.

For more than four decades, the chemotherapeutic agent doxorubicin has been used to treat a number of human cancers, including that of the prostate; but its use also is associated with irreversible heart damage. In a study published online in the early edition of the journal *Proceedings of the National Academy of Sciences*, researchers used in vitro and in vivo approaches to show that a combination of Viagra and doxorubicin significantly enhances the generation of reactive oxygen species that trigger cell death in prostate cancer cells. The team — led by Rakesh C. Kukreja, Ph.D., scientific director of the Pauley Heart Center and the Jeanette and Eric Lipman Chair in Cardiology, and Anindita Das, Ph.D., assistant professor in the Department of Internal Medicine — also observed that the combination did not harm the normal, healthy prostate epithelial cells.

The work was supported in part by a MERIT Award to Kukreja from the National Heart, Lung, and Blood Institute of the NIH.

Jack Haar, Ph.D., Department of Anatomy and Neurobiology, and his son, Philip



### Cyclists brave cross-country trip for cancer

A farmer, a recent high school graduate, a physician, a cancer survivor and a teacher braved rain storms and flat tires to cycle cross country from Astoria, Ore., to Yorktown, Va. — to raise money for a cancer research fellowship at the Massey Cancer Center.

The "Ride for Jim" was created in the summer of 2008 by Jack Haar, Ph.D., professor in the Department of Anatomy and Neurobiology, and his son, Philip, as a way to support cancer research in memory of their good friend and colleague, Jim Popp, who died of cancer in the summer of 2007. Created to "inspire a bright mind," the fund offers a fellowship to a medical student conducting cancer research at Massey during the summer following their first year at VCU. Because of the sustained efforts of these dedicated friends, the James D. Popp Student Research Fund offered its first fellowship in 2010.

### Protocol helps treatment of infantile spasms

Infantile spasms, a rare epileptic disorder, typically occur in an infant's first year of life. Prognosis for these children depends on early recognition and a careful diagnostic evaluation to include a complete patient history and physical examination. Thanks to a team of U.S. neurologists, led by a VCU researcher, this process has been standardized.

The team is part of the Infantile Spasms Working Group led by John Pellock, M.D., professor and chair of the Division of Child Neurology. The group examined studies and reviewed current clinical practice to establish criteria that target early diagnosis, timely treatment options and support for patients and their families. The resulting set of protocols will aid pediatricians and neurologists in diagnosis and treatment.

### Human microbiome study expands in scope

Comprising all of the microorganisms that reside in or on the human body, the human microbiome consists of beneficial and harmful bacteria, viruses and fungi. The Human Microbiome Project, a \$157 million, five-year effort, will produce a resource for researchers seeking to understand the function of the human microbiome and provide strategies for developing new therapies that manipulate the human microbiome to improve health. The project was launched in 2008 as part of the NIH Common Fund's Roadmap for Medical Research. The NIH awarded VCU \$8 million to expand the scope of an ongoing four-year study of how microorganisms found in the vagina influence health and disease in women. The project is one of eight across the country that competed for and won an additional three years of increased funding.

The project brings together researchers from across VCU to examine how changes in the vaginal microbiome are associated with resistance or susceptibility to infectious disease and how it impacts altered physiological states.

### Program earns gold plus rating for stroke care

VCU Medical Center received the American Heart Association and American Stroke Association's (AHA/ASA) Get with the Guidelines Gold and Gold Plus Performance Achievement awards. The Gold Award signifies compliance for key AHA/ASA-designated Joint Commission stroke performance measures. The Gold Plus Award signifies an even higher level of performance for stroke care.

VCU Medical Center is the only hospital in Central Virginia to earn the Gold and Gold Plus Awards and the only university-based medical center statewide to have achieved these awards.



Michael Cieslinski plans to return to his native Brunswick County, Va., home to practice emergency medicine after he graduates from VCU.



Michael Cieslinski

**Finding the road back home** / After four years of active duty in the U.S. Marine Corps, Michael Cieslinski began pursuing an economics degree at VCU. He elected to take course work revolving around the sciences, however, and countless hours studying in the Hunton Student Center on the MCV Campus seemed to nudge Cieslinski toward his true calling.

The real push came when a friend who worked at a local hospital emergency department suggested that Cieslinski get a job there as a medical scribe, shadowing doctors and nurses and updating patient charts.

"It sounded really exciting," he said.

After two months, Cieslinski's new career path emerged. "I had been working there enough to get a good amount of experience and I enjoyed the clinical aspects of the job," he said. "I realized that I could see myself doing this for the rest of my life."

Three years later, Cieslinski stands as a proud member of the VCU School of Medicine Class of 2014.

Ultimately, Cieslinski hopes to move back to his home in rural Brunswick County, Va., to practice medicine. Right now, he's split 70/30 between emergency medicine and family medicine, although "in a rural setting," he said, "if you're in emergency medicine, you're a family medicine doctor because you're it."

Bringing his medical education and training to a rural area appeals to Cieslinski, who believes that he'll need a wider scope of knowledge because specialists are not as readily available in such a remote location. But the idea of treating members of the community, of which he'll be a part, really draws him.

"You actually know your patients because you see them every day," he said. "You go to church with these people or you see them at football games. I like that."



Linsey Kornblau

Photo courtesy of Christian Melgard

### 17-year-old pilot flies high for cancer research

When a 17-year-old pilot completes a cross-country flight, the event is considered out of the ordinary. When the same 17-year-old commits to the act – all in the name of supporting cancer research – the event, and individual, become absolutely extraordinary.

When Linsey Kornblau, a rising high school senior from Richmond, Va., returned from her round-trip trek from Richmond to Los Angeles, she had exceeded her goal of securing \$100,000 in donations to support the Massey Cancer Center through “Linsey’s Flight for Massey.”

### Study links cofactor in inflammation, cancer

In an article published in *Nature*, Massey Cancer Center scientists Sarah Spiegel, Ph.D., and Tomasz Kordula, Ph.D., and their co-authors, examined how a lipid mediator in the blood that influences immune cell circulation also regulates inflammation and cancer. Although cancers do not always cause inflammation, chronic inflammation is known to help tumor cells grow. The report shows that sphingosine-1-phosphate (S1P) is a missing cofactor among processes required for controlling these issues.

Spiegel discovered almost two decades ago that S1P is a potent lipid mediator that stimulates cell growth. Recent findings provide an explanation for the importance of the enzyme that produces S1P, SphK1, in protection of cancer cells against chemotherapeutic drugs, and the correlation of its levels with poor prognosis of many types of cancers, including breast, colorectal and brain. Spiegel, co-leader of Massey’s Cancer Cell Biology Program, the Mann T. and Sara D. Lowry Distinguished Professor in Oncology and chair of Department of Biochemistry and Molecular Biology, hopes that the development of specific SphK1 inhibitors may help identify potent and specific drugs that target SphK1 for treating cancer.

### Fat-secreted hormone could combat obesity

Prior to 1995, it was believed that fat tissue was for storage, but researchers now know that it is an active endocrine organ, secreting many different hormones and substances into the blood, some of which can contribute to the development of health problems. Through an NIH Career Development Award, researcher and clinician Edmond P. Wickham III, M.D., examined how one of the hormones secreted by fat tissue can have positive effects.

Wickham, assistant professor in the Division of Endocrinology and Metabolism, focused on adiponectin, a hormone secreted by fat cells that has anti-diabetic and anti-inflammatory properties. Although adiponectin is made and released into the blood by the fat cells, levels of this beneficial hormone are often low in patients who are overweight or obese.

Wickham and his team hope to learn more about specific ways that raising adiponectin levels may prevent or reverse vascular damage early in life.

James P. Bennett Jr., M.D., Ph.D., Parkinson’s Disease Center, with a patient



### Collaboration invests in Parkinson’s research

The tipping point for James P. Bennett Jr., M.D., Ph.D., came as he listened to an after-dinner address to 70-80 fellow Parkinson’s disease experts from all over the country and only six actually knew someone who had the disease, or had taken care of someone with Parkinson’s.

“I was not surprised, but I was bothered by it,” said Bennett, the Bemiss Endowed Chair in the Department of Neurology. “And, I said, ‘this has to change.’”

That was the beginning of a journey that led Bennett to establish the VCU Parkinson’s Disease Center in coordination with The Movers and the Shakers, a local advocacy group whose generosity and advocacy made the center a reality.

“The main goal of the center is to provide a mechanism to alter the trajectory of Parkinson’s disease,” said Bennett, the center’s director.

Combining research, education and outreach, the highly integrated, multidisciplinary center provides a coordinated approach for developing new strategies that combat neurodegenerative diseases and movement disorders.

### Simulation center teaches patient safety care

The Center for Human Simulation and Patient Safety, a collaboration between the School of Medicine and the VCU Health System, opened in September, enhancing patient safety and quality of care through education and research in clinical simulation. The 5,000-square-foot space provides simulation-based training for faculty and medical students, as well as for health system staff. The center includes two simulation labs that can transform into operating rooms, intensive care units or multi-bed acute care environments; task trainer rooms; and inpatient rooms – all wired with video cameras and microphones for recording simulation scenarios.

Simulation demonstration, Center for Human Simulation and Patient Safety



Photo courtesy of Melissa Gordon

### Working Mother magazine recognizes VCU Health System for a sixth time

*Working Mother* magazine named the VCU Health System as one of the nation’s 100 Best Companies of 2010 for working mothers, marking the sixth time the health system has received the honor. The magazine recognized the VCU Health System for several initiatives, including its dedication to the advancement of women and education assistance to employees and dependents.





Evelyn Owen

**Paying it forward** / Evelyn Owen, who was diagnosed with one of the most aggressive forms of breast cancer, said her clinical trial participation at the Massey Cancer Center gave and continues to give her peace of mind.

Owen was enrolled in one of the 20 clinical trials that Massey currently conducts for breast cancer, after deciding that the opportunity to give back was a worthwhile cause.

“I believe there have been tremendous advances in what we know and what we can do for breast cancer, and it’s because of the people who came before me who were willing to try new treatments in clinical trials,” said Owen, a minister and high school English, theater arts and music teacher.

Owen drove 90 minutes each way from her Lawrenceville, Va., home to undergo treatment, all the while continuing to teach. In the process, she discovered that the gift of clinical trial participation goes both ways. She appreciated the careful monitoring and close attention that comes with clinical trials and said her four-member multidisciplinary team, as well as nurses and care partners at both Massey’s Stony Point and MCV Campus locations, all were “very tender.”

The ultimate gift of Owen’s clinical trial is life and health. Cancer-free for two years, today the 58-year-old mother of three and grandmother of three enjoys composing gospel music with her son and writing books.

Her contributions to the clinical trial program continue in the form of study data collected through follow-up visits. “The continued tracking is a good thing for me,” she said. “It strengthens my belief in my healing and keeps me positive.”

And her participation leaves behind the possibility of new treatments for those who follow.



Breast cancer survivor – and clinical trial participant – Evelyn Owen composes gospel music with her son, KR, and teaches at Brunswick High School in Lawrenceville, Va.

### Study seeks relief for breast cancer patients

Women with breast cancer experience a variety of psychoneurological symptoms during treatment that can continue into survivorship, such as cognitive dysfunction, depression, anxiety, fatigue, sleep disturbances and pain. Thanks to a \$3.6 million grant from the National Institute of Nursing Research (NINR), a multidisciplinary team from the schools of Nursing and Medicine have joined forces to find ways to improve the quality of life for women with breast cancer, both during and after treatment.

The grant, awarded to Debra Lyon, Ph.D., R.N., chair of the Department of Family and Community Health Nursing, and Colleen Jackson-Cook, Ph.D., professor in the Department of Pathology, allows researchers to uncover the link between epigenetics (the study of heritable changes in gene function that occur without a change in the sequence of the DNA) and reported symptoms.

### Massey expands care in rural communities

Work conducted by the Massey Cancer Center and funded by a two-year, \$2.4 million grant from the Virginia Tobacco Indemnification and Community Revitalization Commission aims to increase cancer prevention and early detection and decrease cancer mortality rates throughout Virginia.

The award builds upon a \$1 million grant that the Tobacco Commission awarded to Massey in 2008 to expand its nationally recognized cancer clinical trials and prevention and control research to Southside and Southwest Virginia through a new cancer research community outreach program.

The latest grant provides funding for the extension of Massey’s cancer prevention and control and epidemiologic research initiatives into Virginia’s Southside and Southwest tobacco counties. It also helps fund the expansion of a health information literacy program in those communities and the implementation of a comprehensive cancer needs assessment to identify and reduce gaps in cancer services.

### New gene therapy targets aggressive cancers

The fight against cancer continues as VCU researchers from the Massey Cancer Center, the Institute of Molecular Medicine and the Department of Human and Molecular Genetics, collaborated on a study examining a new approach for treating aggressive cancers’ inhibition of a well-known gene.

Astrocyte elevated gene-1 (AEG-1) directly contributes to cancer cell survival, chemotherapeutic drug resistance and tumor cell progression.

The study, led by Paul B. Fisher, M.Ph., Ph.D., reveals for the first time a previously unknown aspect of AEG-1 function by identifying the gene as a potential regulator of protective autophagy, which shields cancer cells from destructive agents and environmental insults. Research further shows that inhibition of AEG-1 enhances tumor cells’ response to chemotherapy.

The study, supported by grants from the NIH, the Samuel Waxman Cancer Research Foundation and the National Foundation for Cancer Research, was reported in *Proceedings of the National Academy of Sciences Early Edition*.

## Cochlear implants add quality to couple's life

For the greater part of their lives, Centreville, Va., couple Joe and Meg Duarte have had severe to profound hearing loss.

Thanks to a small device and a multidisciplinary team at the VCU Cochlear Implant Center, the Duartes now experience sound in color and more fully explore the world around them.

"It was an awakening of the senses," said Meg, describing her first impressions after activating her cochlear implant.

The device allows individuals with severe hearing loss to convert received sounds into a series of electrical impulses, helping them hear.

During the surgery, an electrode array is inserted in the cochlea through a minimally invasive incision made just behind the ear. Most patients return to their daily activities within one week and the device is usually activated three to four weeks post-surgery. The Duartes' new sense of hearing will only improve as they get more acquainted with the technology.

"Hearing through a cochlear implant is different from normal hearing and it takes the brain time to learn or re-learn," said Daniel Coelho, M.D., director of the Division of Otolaryngology and Neurotology and medial director of the Cochlear Implant Center.



Cochlear implant recipients Joe and Meg Duarte

## Study equates health care delivery strategies

Under the American Recovery and Reinvestment Act of 2009, the School of Medicine received a \$1.2 million grant to compare the effectiveness of the Virginia Coordinated Care (VCC) for the Uninsured Program with the traditional safety-net delivery system. A VCU Medical Center



Pharmacy student laboratory in the R. Blackwell Smith Building

program, VCC coordinates access to health care for uninsured patients living in Central Virginia. The study's findings, based on data collected between January 2003 and December 2009, may help reduce the frequency of emergency department utilization, hospital admissions and adverse health outcomes among uninsured patients.

"The passage of health care finance reform transformed the uninsured into potential Medicaid and commercial pay patients," said Wally R. Smith, M.D., who served as principal investigator on the project. "Our Virginia Coordinated Care program, which began in 2000, is a forerunner of these programs. This important work will determine whether and how the program was effective."

The U.S. Department of Health and Human Services' Agency for Healthcare Research and Quality awarded funding for the study from the Comparative Effectiveness Delivery System Evaluation grants.

## Pharmacy program excels with renovations

When the School of Pharmacy's R. Blackwell Smith Building was planned in the late 1970s, there were no iPhones, no e-mail and no Google. "Students actually had to go to the library," joked School of Pharmacy Dean

tool is especially valuable, Smith said, in sharing patient-case analyses and conclusions with students on site or at the school's Inova Campus in Fairfax.

Virginia Dels. S. Chris Jones (R-76th District) and Harvey B. Morgan (R-98th District) — both pharmacy alumni — were instrumental in securing funding from the Virginia General Assembly for the renovations.

## Multicenter study supports cardiac pacing

Suboptimal atrioventricular interval delay occurs when the timing between the constrictions of the heart's upper and lower chambers is askew by milliseconds. Physicians treat the condition using standard cardiac resynchronization therapy (CRT), which calls for implanting a device that tunes the heart's rhythm.

The method only works in approximately 70 percent of patients, but according to Pauley Heart Center's Kenneth A. Ellenbogen, M.D., chair of the Division of Cardiology and the Hermes A. Kontos, MD Professor in Cardiology, the standard CRT methods work as well as those that are more costly and time-consuming.

The SMART AV trial included 1,014 patients with sub-optimal atrioventricular interval delay from 100 sites in the U.S. and Europe. Researchers randomized 980 patients to one of three therapies to test the effects of optimizing the timing of the pacing delivered from the device. Ellenbogen, who served as lead author for the study, said the team observed no significant difference in the primary or secondary endpoints among the three patient groups.

Research was supported by Boston Scientific and results were presented at the American Heart Association's Scientific Sessions 2010.



Kenneth A. Ellenbogen, M.D.,  
Division of Cardiology

Victor A. Yanchick, Ph.D., the Archie Owens McCalley Chair. Today, students enjoy new hi-tech teaching labs, a support services system called KBOX — which provides help desk functions, software distribution and other support — and a portable patient simulator.

These new technologies, designed to complement and enhance a curriculum implemented two years ago, accompany a \$5 million renovation of the Smith Building that includes a student commons, expanded patient-interaction areas and new administrative suites.

Sheldon M. Retchin, M.D., M.S.P.H., CEO of the VCU Health System and vice president for VCU Health Sciences, said that recent jumps in sponsored program funding have propelled the school into a top echelon school. "Vic [Yanchick] has brought the school into national focus," he said.

*360 Magazine* featured one of the building's second-floor lab spaces in an article offering design principles for the 21st-century classroom and examples of universities putting those principles into action. In the story, professor William E. Smith, Pharm.D., M.P.H., Ph.D., discussed the advantages of media:scape, a technology that allows students to share what's on their computers through monitors located at six pods. This collaborative

## Neuroscience, Pediatric intensive care units receive Beacon award

The VCU Medical Center's Neuroscience Intensive Care Unit and the Children's Hospital of Richmond's Pediatric Intensive Care Unit received the Beacon Award for Critical Care Excellence from the American Association of Critical-Care Nurses. The two units join the Surgical Trauma ICU and the Medical Respiratory ICU, which also received this prestigious award in 2008 and early 2010, respectively. The award recognizes adult critical care, adult progressive care and pediatric critical care units that demonstrate strong patient outcomes and exemplify excellence and innovation.



### Sense of sight compensates for hearing loss

In 2009, a VCU team discovered that the sense of touch in adult animals with hearing loss is re-routed into other parts of the brain associated with hearing, known as cross-modality plasticity. A more recent study aimed at explaining this phenomenon may guide the development of next-generation cochlear implants, a technology that can restore hearing in people who become deaf.

Alex Meredith, Ph.D., professor in the Department of Anatomy and Neurobiology, together with colleagues at the University of Western Ontario in Canada and the Medical University Hannover in Germany, examined the brain regions in congenitally deaf cats responsible for this compensatory effect.

"These results showed, for the first time, that cross-modal plasticity does not randomly distribute across the areas of the brain vacated by the damaged sensory modality, but instead takes up residence in areas that would normally perform a similar function," Meredith said. "For deaf humans, this explains why some visual skills get better while others do not change at all."

The study was funded by the Canadian Institutes of Health Research and appeared online in *Nature Neuroscience*.

### U.S. study advances artificial heart technology

VCU Medical Center is the lead institution in a national clinical trial of technology that will allow artificial heart patients to recuperate, rehabilitate and wait in the comfort of their own homes until a donor heart becomes available for transplant.

Vigneshwar Kasirajan, M.D., chair of cardiothoracic surgery and director of heart transplantation, heart-lung transplantation and mechanical circulatory support, is the principal investigator of a multicenter nationwide study of the Freedom Driver, a portable mechanical driver that can power patients' artificial hearts and enable them to recover outside the hospital environment.

"Prior to this, everyone who was placed on a Total Artificial Heart had to remain in the hospital until they underwent transplantation," said Michael Hess, M.D., director of the Pauley Heart Center advanced heart failure program. "The reason for this is that the only FDA-approved driver system for powering the Total Artificial Heart is a 418-pound console. Now this driver is 14 pounds and can be worn in a backpack, and we will be able to discharge stable patients away from the hospital to await their transplant."



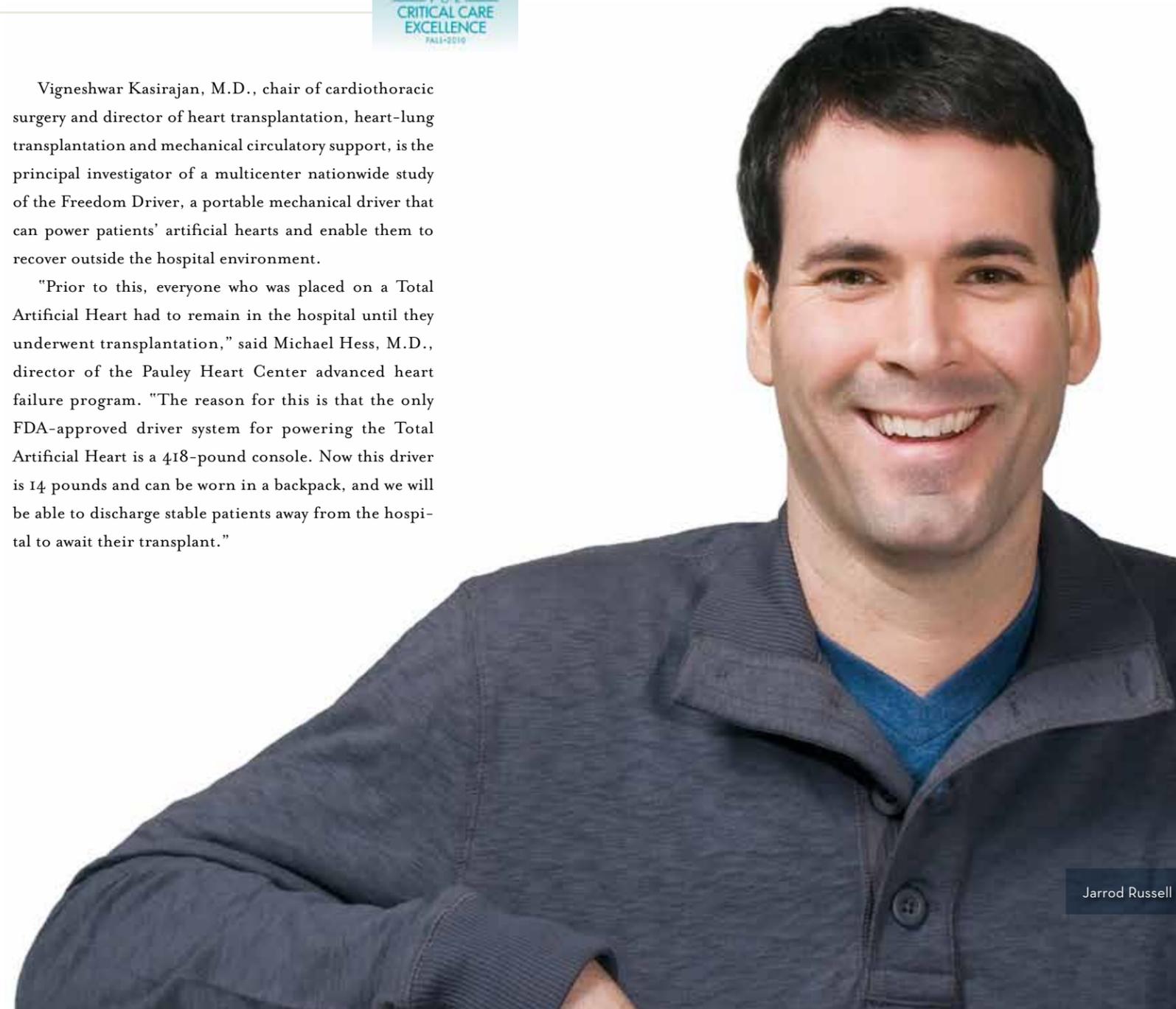
**Finding freedom** / Jarrod Russell wears a blue Superman T-shirt as he lifts weights in the physical therapy lab at the VCU Pauley Heart Center. He wouldn't call himself a superhero, but his surgeons and nurses just might.

Three months earlier, the 32-year-old caught what he thought was a cold he couldn't shake. His doctors diagnosed him with pneumonia. After mentioning his family history of heart disease, an echocardiogram revealed his enlarged, poorly functioning heart. Russell was instructed to go immediately to the VCU Medical Center. On Dec. 9, 2010, Russell received a SynCardia temporary Total Artificial Heart powered by "Big Blue," a 418-pound console linked to the patient and always within a 6-foot radius. Russell is extremely grateful for his plastic heart. "I felt worse than I've ever felt in my life," Russell said of the day before his surgery, "and when I came out, even with having my chest cut open, I still felt better."

Six weeks later, Russell became the second VCU Medical Center patient to receive the Freedom Driver, a 14-pound portable console and battery pack. Although he felt apprehensive about transferring to the portable unit, Russell knew he would have regretted not trying it. The result has been tremendous. "I feel completely normal," he said.

A multi-hospital clinical trial studying the Freedom Driver looks at whether patients can safely leave the hospital and return home to await a transplant. Russell and wife McKinley, a nurse, together with friends and family members, took an extensive competency test to ensure they can handle any emergency.

For now, Russell looks forward to the day a donor heart becomes available. Then, he can return the portable console to his surgeons and allow another patient a chance at freedom.



Jarrod Russell

## Refined molecular imaging spots metastases

Researchers may be a step closer to improving the detection of metastatic tumors using a noninvasive approach that pairs an imaging agent with a genetic element that only expresses itself when it is in cancer cells.

In the study, published online in the journal *Nature Medicine*, VCU researchers, together with researchers from Johns Hopkins, have shown how the genetic element, known as progression elevated gene-3 promoter, or PEG-Prom, can be used to image metastases. The approach measures gene expression, protein interaction or tracks gene-tagged cells in vivo, offering significant advantages in sensitivity and accuracy over currently used imaging strategies.

PEG-Prom was originally cloned in the laboratory managed by Paul B. Fisher, M.Ph., Ph.D., VCU's principal investigator on the study.

This new approach could lead to improved and earlier detection of tumors and metastases in patients and allow clinicians to more accurately monitor the cancer's response to therapy, Fisher said.

Specific aspects of this technology are patented or in the process of being patented, he added.

This work represents a long-term collaboration between research programs directed by the paper's senior author, Martin G. Pomper, M.D., Ph.D., professor at Johns Hopkins, and Fisher, and was supported by grants from the Society of Nuclear Medicine and the Korea Science and Engineering Foundation Fellowship Program, the NIH, and the National Foundation for Cancer Research.

## Kidney cancer responds to dual-drug therapy

Renal cell carcinoma is the most common form of kidney cancer in adults and currently there is no effective treatment for the disease once it has spread outside of the kidney. However, researchers at the Massey Cancer Center and the Institute of Molecular Medicine have developed a novel virus-based gene therapy for renal cell carcinoma. The approach has been shown to kill cancer cells not only at the primary tumor site but also in distant tumors not directly infected by the virus.

The study, published in *Cancer Biology & Therapy*, tested sorafenib (Nexavar), a drug approved by the FDA to treat kidney cancer, in conjunction with a novel adenovirus

(Ad.5/3-mda-7). Adenoviruses are viruses known to infect the upper respiratory tract. But when used for therapeutic purposes, the viruses' harmful genetic material is replaced with genetic code that activates biological processes within infected cells. The Ad.5/3-mda-7 adenovirus used in this study was engineered to cause kidney cancer cells and normal cells protecting the kidneys to express the cancer-killing protein MDA-7/IL-24. The therapy was developed by Paul Dent, Ph.D., who holds the Universal Corporation Professorship in Cancer Cell Signaling and is vice chair of the Department of Neurosurgery, and Paul B. Fisher, M.Ph., Ph.D., in collaboration with a researcher from the University of Alabama.

"This is the first study to clearly define that gene therapeutic delivery of MDA-7/IL-24 in kidney cancer should be explored in the clinic, especially since we've demonstrated an established FDA-approved drug enhances its toxicity to cancer cells," Dent said.

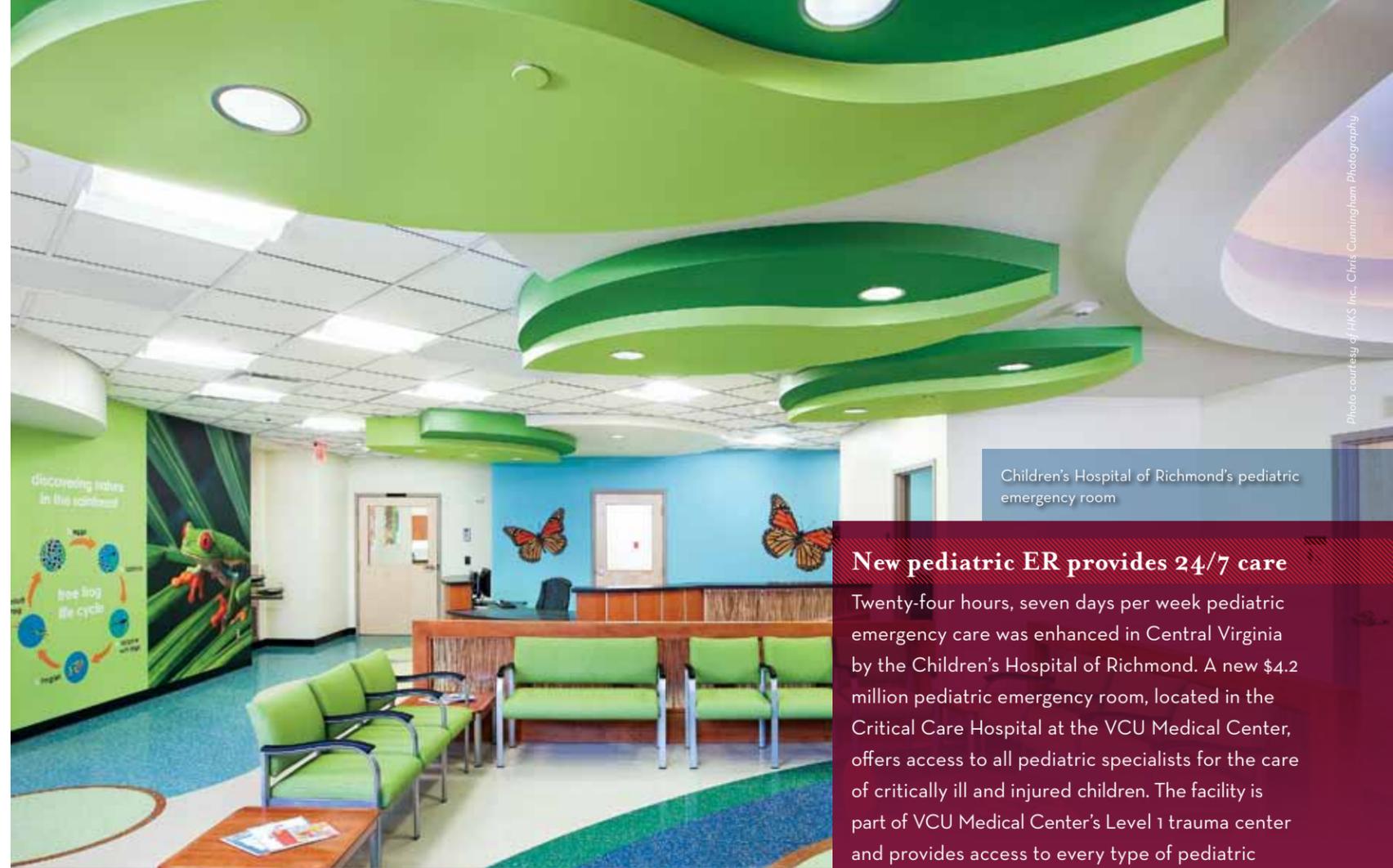
The investigators hope to advance the research to a Phase I clinical trial on patients with metastatic kidney cancer.

## Programs address needs of geriatric patients

VCU won one of only 10 Next Steps in Physicians' Training in Geriatrics grants from the Donald W. Reynolds Foundation. The four-year grant supports programs that train medical students, residents and physicians to address the special needs of geriatric patients.

The School of Medicine furthered its effort by matching this latest \$1 million grant by half, while the schools of Nursing, Social Work, Pharmacy and Allied Health Professions have committed to student and faculty participation, technical support and continuation of the educational program after the grant ends. The resulting program includes online-based training and longitudinal, in-person learning experiences with older persons with chronic health conditions in community settings.

"We hope that once our design has been developed and tested, the online-based platform will be widely available for learners across the U.S. at universities and health systems," said principal investigator Peter A. Boling, M.D., professor and interim chair of the Division of General Internal Medicine and director of long-term care and geriatrics in the Department of Internal Medicine.



Children's Hospital of Richmond's pediatric emergency room

## New pediatric ER provides 24/7 care

Twenty-four hours, seven days per week pediatric emergency care was enhanced in Central Virginia by the Children's Hospital of Richmond. A new \$4.2 million pediatric emergency room, located in the Critical Care Hospital at the VCU Medical Center, offers access to all pediatric specialists for the care of critically ill and injured children. The facility is part of VCU Medical Center's Level 1 trauma center and provides access to every type of pediatric subspecialty from neurosurgery and cardiology to dentistry and oncology.

"This pediatric emergency room provides our patients and their families a spacious treatment area that allows them privacy and comfort in the most stressful of times," said Robin Foster, M.D., associate professor of emergency medicine and director of pediatric emergency services, Children's Hospital of Richmond.

The 11,500-square-foot rainforest-themed emergency room has its own entrance, waiting room, treatment rooms and a dedicated pediatric radiology suite, as well as a literacy center. Twelve large exam rooms have recliners to accommodate family members and two negative pressure rooms also are available for infectious disease cases. All rooms are monitored from a central nursing station. The waiting and registration areas are named in recognition of Food Lion which, through the Children's Miracle Network, pledged a total gift of \$1 million over the next four years in support.

## Researchers employ viruses to battle cancer

Researchers at the Massey Cancer Center, led by Charles E. Chalfant, Ph.D., associate professor of biochemistry and molecular biology, recently made discoveries that could result in more effective therapies for non-small cell lung cancer (NSCLC) and other cancers.

In mouse models, the researchers used a virus-based-targeted gene therapy to reduce the amount of a protein known as hnRNP L in NSCLC cells. The findings, published in the *Journal of Clinical Investigation*, provide the first example of a protein factor regulating the expression of the protein caspase-9, a main player in programmed cell death, or apoptosis. The result completely stopped the growth of the tumors and had no negative effects on healthy cells. This decrease in cell capacity could make them more susceptible to chemotherapy drugs that typically have little effect on NSCLC.

The study was supported by grants from Veterans Affairs, NIH, NCI, NASA and the International Association for the Study of Lung Cancer as a Young Investigator Award.

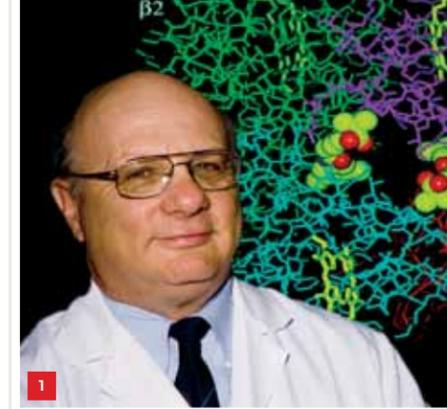
Reaching *new levels* of



Medical Respiratory Intensive Care Unit Beacon Award

*excellence*

appointments  
and awards



National and international appointments and awards underscore the expertise and dedication of our faculty members.

**Michel B. Aboutanos, M.D., M.P.H.**, Department of Surgery, awarded first prize at International Surgical Week, 43rd World Congress of Surgery of International Surgical Society; appointed to the International Relations Committee, American Association for the Surgery of Trauma.

**Donald J. Abraham, Ph.D.**, Department of Medicinal Chemistry, inducted into the American Chemical Society Division, Medicinal Chemistry Hall of Fame. **1**

**Robert S. Adelaar, M.D.**, Department of Orthopaedic Surgery, received the 2010 Virginia Lifetime Career Award, Virginia Orthopaedic Society.

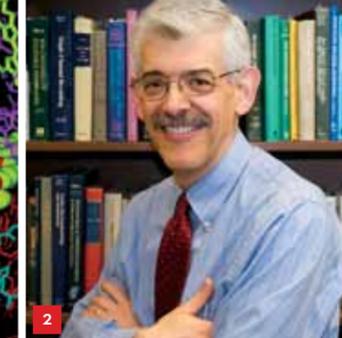
**Lorin M. Bachmann, Ph.D.**, Department of Pathology, appointed chair-elect, Capital Section, American Association of Clinical Chemistry.

**Clive M. Baumgarten, Ph.D.**, Department of Physiology and Biophysics, named Richmond Heart Hero, American Heart Association. **2**

**James Burns, D.D.S., Ph.D., M.S.Ed.**, Department of Oral Pathology, appointed to the board of directors, VMI Research Laboratories.

**David P. Chelmow, M.D.**, Department of Obstetrics and Gynecology, appointed professor and department chair.

**PonJola Coney, M.D.**, School of Medicine, appointed to the Advisory Council, Eunice Kennedy Shriver National Institute of Child Health and Human Development. **3**



**Linda S. Costanzo, Ph.D.**, School of Medicine, commended for outstanding dedication to teaching medical students, Virginia General Assembly. **4**

**Michael S. Czepak, M.D.**, Department of Anesthesiology, received the J. William Fulbright Professorship 2010-2011, Fulbright Foreign Scholarship Board.

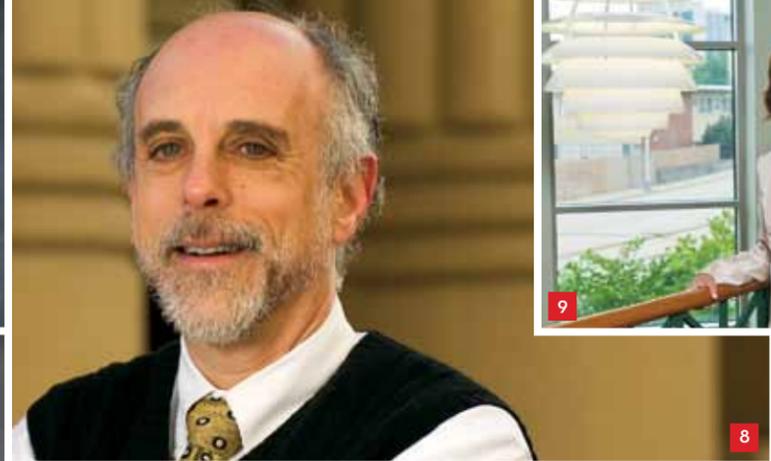
**Robert F. Diegelmann, Ph.D.**, Department of Biochemistry and Molecular Biology, elected vice president, Wound Healing Society.

**Alan W. Dow, M.D.**, Department of Internal Medicine, elected to Governor's Council, Virginia Chapter of the American College of Physicians. **5**

**Therèse M. Duane, M.D.**, Department of Surgery, appointed secretary/treasurer, Virginia Surgical Society; appointed to the Acute Care Surgery Committee, American Association for the Surgery of Trauma; selected to be associate examiner, certifying examination, American Board of Surgery.

**Lisa Ellis, M.S., M.D.**, CCC, Women's Health, elected to the Governor's Council, Virginia Chapter of the American College of Physicians.





**Stephanie L. Ferguson, Ph.D., R.N., FAAN**, School of Nursing, appointed to serve on a national expert panel focusing on use of health information technology in underserved communities, National Opinion Research Center, University of Chicago.

**Sharon S. Gatewood, Pharm.D.**, Department of Pharmacotherapy and Outcomes Science, elected an Executive Committee member-at-large, American Pharmacists Association's Academy of Pharmacy Practice and Management.

**Chris Gennings, Ph.D.**, Department of Biostatistics, selected to serve on the Chronic Hazard Advisory Panel, U.S. Consumer Product Safety Commission.

**Ranjodh S. Gill, M.D.**, Department of Internal Medicine, elected to Governor's Council, Virginia Chapter of the American College of Physicians.

**Jean-Venable R. Goode, Pharm.D., BCPS, FAPhA, FCCP**, Department of Pharmacotherapy and Outcomes Science, inducted as a 2010 Distinguished Practitioner and Scholar, National Academies of Practice.

**D. Patricia Gray, Ph.D., R.N.**, School of Nursing, received the 2010 Leadership in Research Award, Southern Nursing Research Society.

**Allison Gregory, R.N., FNP-BC**, School of Nursing, appointed to serve on the Board of Nursing, Gov. Robert McDonnell.

**Margaret M. Grimes, M.D.**, Department of Pathology, elected trustee to the American Board of Pathology, Association of Directors of Anatomic and Surgical Pathology.

**Linda G. Haddad, Ph.D., R.N.**, School of Nursing, selected as fellow, American Academy of Nursing.

**Debra Haselton, D.D.S.**, School of Dentistry, achieved Active Fellow, Academy of Prosthodontics.

**Rao R. Ivatury, M.D.**, Department of Surgery, elected vice-president, American Association of Surgery for Trauma; president-elect, World Society of Abdominal Compartment Syndrome; appointed to the editorial board, *Journal of Trauma Injury, Infection and Critical Care*; selected to be associate examiner, certifying examination, American Board of Surgery; selected to be moderator and speaker at the Annual Congress of the American College of Surgeons.

**Jeffrey S. Kreutzer, Ph.D., ABPP, FACRM**, Department of Physical Medicine and Rehabilitation, received the Distinguished Lifetime Contribution to Neuropsychology Award, National Academy of Neuropsychology.

**Debra E. Lyon, Ph.D., R.N., FNP-BC, FNAP**, School of Nursing, received the 2010 Jean Wood Nursing Scholarship Award, Southern Nursing Research Society.

**Ajai K. Malhotra, M.D.**, Department of Surgery, named chair of the Trauma Oversight and Management Committee, Virginia Department of Health EMS Advisory Board; appointed to the Injury Assessment and Outcome Committee, American Association of Surgery for Trauma.

**Gary R. Matzke, Pharm.D., FCCP, FCP**, Department of Pharmacotherapy and Outcomes Science, inducted as part of the inaugural class of fellows, National Academies of Practice.

**Nancy L. McCain, D.S.N., R.N., FAAN**, School of Nursing, selected a Visionary Leader, University of Alabama at Birmingham School of Nursing.

**W. Greg Miller, Ph.D.**, Department of Pathology, elected chair of the Nominating Committee, Capital Section, American Association of Clinical Chemistry.

**William B. Moskowitz, M.D.**, Children's Hospital of Richmond, elected president of Virginia Chapter, American Academy of Pediatrics.

**Alphonse Poklis, Ph.D.**, Department of Pathology, appointed to the Scientific Advisory Committee of the Commonwealth of Virginia's Department of Forensic Science, Gov. Robert McDonnell.

**Sheldon M. Retchin, M.D., M.S.P.H.**, VCU Health System and VCU Health Sciences, appointed vice chair of the National Health Care Workforce Commission.

**Fadi N. Salloum, Ph.D.**, School of Medicine, received the Scientist Development Grant, American Heart Association.

**Karen Sanders, M.D.**, Department of Internal Medicine, received the Certificate of Public Leadership, The Brookings Institution.

**Curtis N. Sessler, M.D.**, Department of Internal Medicine, delivered the CHEST 2010 Roger C. Bone Memorial Lecture, American College of Chest Physicians.

**Jerome F. Strauss, M.D., Ph.D.**, School of Medicine, appointed to the Board of Scientific Counselors, Eunice Kennedy Shriver National Institute of Child Health and Human Development; appointed to the Discovery Expert Group, Bill and Melinda Gates Foundation's Global Health Discovery Team.

**Robert A. Strauss, D.D.S.**, Department of Oral and Maxillofacial Surgery, appointed chairman, Major Surgery Section of the American Board of Oral and Maxillofacial Surgery; scientific chair, American College of Oral and Maxillofacial Surgeons 2010 annual meeting; elected secretary, ACOMS.

**Paul H. Wehman, Ph.D.**, Department of Physical Medicine and Rehabilitation, received the Kenneth L. Estabrooke Distinguished Research Scientist Award, Kessler Rehabilitation Foundation.

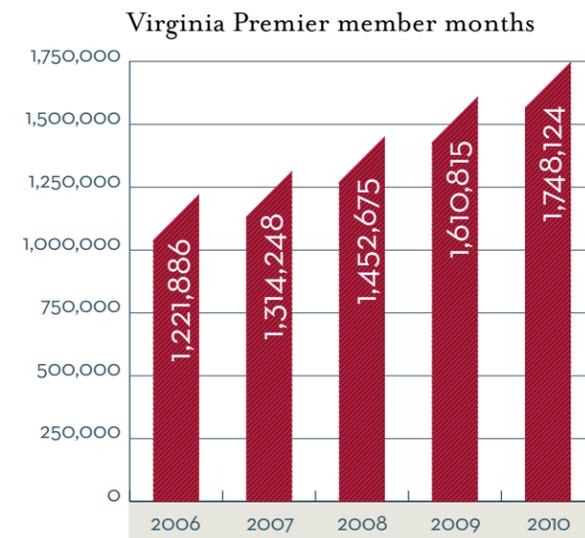
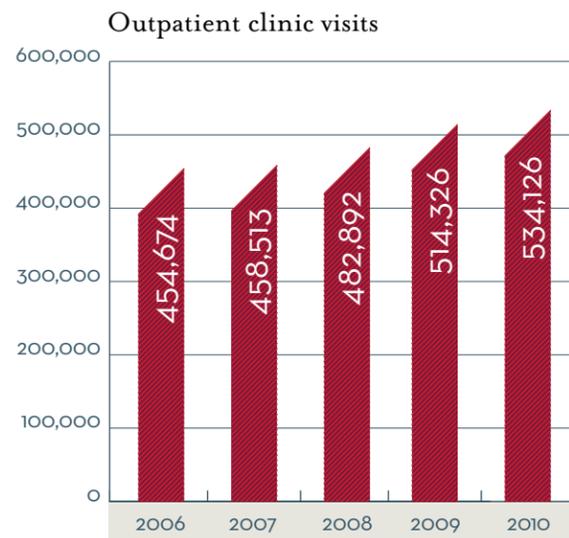
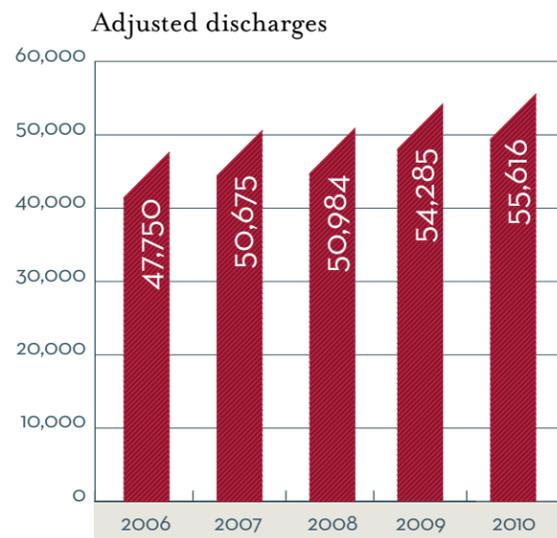
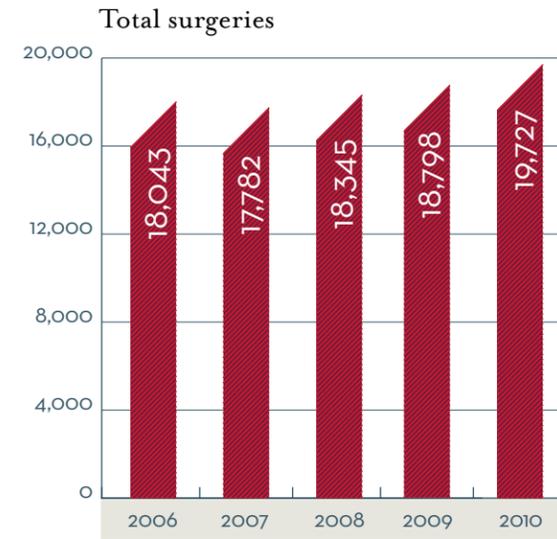
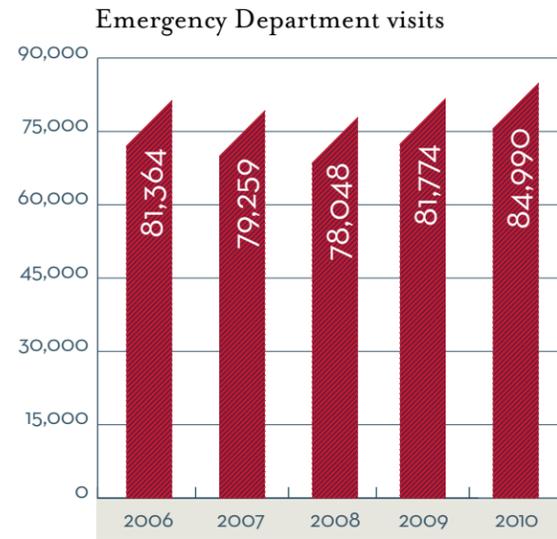
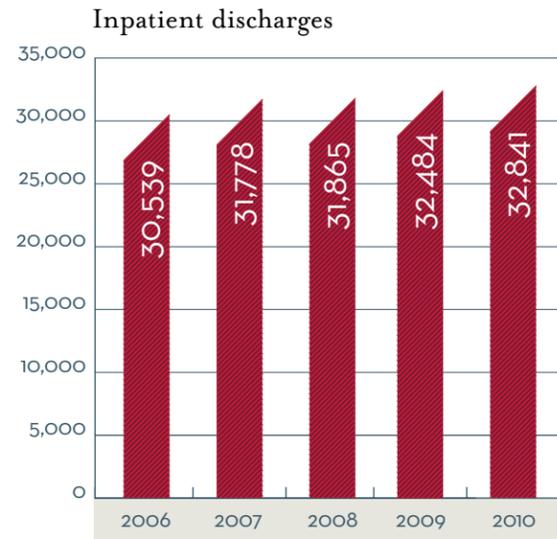
**Michelle Y. Whitehurst-Cook, M.D.**, Department of Family Medicine, received the 2010 Rural Healthcare Workforce Individual Award for Distinguished Service, Virginia's State Rural Health Plan.

**Steven H. Woolf, M.D., M.P.H.**, VCU Center on Human Needs and Department of Family Medicine, received the Katharine Boucot Sturgis Award, American College of Preventive Medicine.

**Susanna Wu-Pong, Ph.D.**, School of Pharmacy, named a 2010-2011 Academic Leadership Fellow, American Association of Colleges of Pharmacy.

**Norbert F. Voelkel, M.D.**, Department of Internal Medicine, received the 2009 Congress Chair Award, European Respiratory Society.

**Victor A. Yanchick, Ph.D.**, School of Pharmacy, invited to speak at the Eighth Saudi International Pharmaceutical Conference and Exhibition.



VCU MEDICAL CENTER STUDENT ENROLLMENT*					
Fiscal year	2006	2007	2008	2009	2010
School of Allied Health Professions	964	990	1,036	1,096	1,100
School of Dentistry	454	452	465	489	509
School of Medicine	1,180	1,239	1,262	1,318	1,290
School of Nursing	922	1,005	967	968	975
School of Pharmacy	569	572	617	603	609

\* includes on-campus and off-campus enrollments

VCU HEALTH SYSTEM FINANCIAL STATEMENT*	
(in thousands for fiscal year ending June 30, 2010)	
Total operating revenue	\$1,745,067
Nonoperating revenues and expenses	\$30,610
Salaries, wages and benefits	\$653,179
Supplies	\$218,851
Purchased services and other expenses	\$154,824
Depreciation and amortization	\$58,487
Medical claims expense	\$571,449

\* includes VCU Health System components: MCV Hospitals, MCV Physicians, Virginia Premier Health Plan, Carolina Crescent Health Plan, University Health Services (UHS) and UHS Professional Education Programs (UHS PEP)

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