

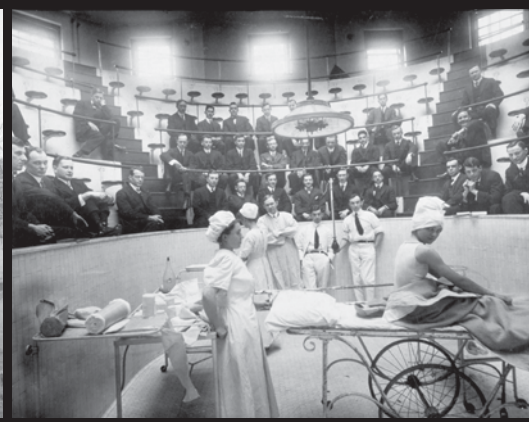


VCU
Medical Center
MCV Campus

Every day, a new discovery

VCU Medical Center :: Annual Report 2007

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Egyptian Building, 1860 :: Memorial Hospital Surgical Amphitheater, 1920 :: First MCV Hospital, 1861 :: Pharmacy class, 1933

From our beginnings in 1838 to today,

as one of the nation's leading academic health centers, we've given patients the best chance for health, recovery and life through our groundbreaking medical discoveries across the health care spectrum. Our tradition of excellence provides a foundation for today's innovations and tomorrow's breakthroughs.

Our health sciences faculty of nearly 1,000 continues to build on the advancements in education, technology, research and patient care set forth by the pioneering men and women who first established our tradition of excellence. From cancer vaccines to unprecedented heart-saving procedures, we're continually finding ways to bring our community, and the world, powerful and effective treatment and care in more than 200 specialties.







Every day, we're detecting how diseases develop

It's not just about treating diseases but understanding what causes them. Uncovering the clues that lead to new treatments for combating sickle cell anemia, substance abuse disorders and cancer exemplifies our drive toward groundbreaking discoveries. ❖❖

Scientists decode the genome of an oral pathogen that can cause heart infections

VCU researchers, with support from the National Institute of Dental and Craniofacial Research and the National Institute of Allergy and Infectious Diseases, have decoded the genome of a bacteria normally present in the healthy human mouth that can cause a deadly heart infection if it enters the bloodstream.

The finding enables scientists to better understand the organism, *Streptococcus sanguinis*, and develop new strategies for treatment and prevention of infection.

S. sanguinis, a type of bacteria that is naturally present in the mouth, is among a variety of microorganisms responsible for the formation of dental plaque. In general, *S. sanguinis* is harmless. However, if it enters the bloodstream, possibly through a minor cut or wound in the mouth, it can cause bacterial endocarditis — a serious and often lethal infection of the heart.

Decoding *S. sanguinis* will provide researchers with unique insight into its complex life cycle and metabolism, and its ability to invade the host and cause bacterial endocarditis.

"Analysis of the genome revealed a surprising number of proteins on the *S. sanguinis* cell surface that may be new targets for drugs or vaccines. We are already at work pursuing some of these leads," said principal investigator Francis Macrina, Ph.D., VCU's vice president for research.

Macrina and Gregory A. Buck, Ph.D., director of the VCU Center for the Study of Biological Complexity,

who directed the sequencing and analysis, collaborated with other VCU researchers from the Philips Institute of Oral and Craniofacial Molecular Biology, the Center for the Study of Biological Complexity, the Department of Microbiology and Immunology and the Department of Biochemistry and Molecular Biology. ❖❖

Study uncovers correlation between bile duct obstruction and ductal cancer

While investigating the cellular and molecular mechanisms of various liver diseases and liver cancers, Alphonse E. Sirica, Ph.D., M.S., and his research team discovered a correlation between bile duct obstruction and ductal cancer, or cholangiocarcinoma.

Bile duct obstruction has long been known to be present in both malignant and nonmalignant liver disease; however, before this study, the direct effect of such obstruction on bile duct cancer cell growth and aggressiveness had not been investigated.

Sirica, chairman of the VCU School of Medicine's Division of Cellular and Molecular Pathogenesis in the Department of Pathology, and his colleagues found that when bile duct cancer cells were placed in the liver of animals with bile duct obstruction, they grew more rapidly than identical cells placed in animals without an obstruction.

Perhaps even more important, the cancers metastasized outside the liver only in the animals with bile duct obstruction, a process that also frequently occurs in patients with advanced bile duct cancer.



Kenneth S. Kendler, M.D.
VCU Department of Psychiatry

Supported by funding from the National Cancer Institute of the National Institutes of Health, these new findings are leading toward the development of methods to treat the 3,500 cases of cholangiocarcinoma diagnosed annually in the U.S. Historically, survival rates remain low because most patients have advanced disease at the time of diagnosis. According to Sirica, these new findings establish a unique preclinical model of how bile duct cancer progresses that can be used to rapidly test and evaluate novel molecular treatment strategies. ❖❖

Genes play important role in risk for dependence on illicit and licit drugs

The genes that play a role in illegal drug abuse are not entirely the same as those involved in dependence on legal substances like alcohol and nicotine, and caffeine addiction appears to be genetically independent of all the others, according to a study led by VCU researchers. The findings may guide efforts by researchers to use molecular genetic tools to localize genes that influence risk for psychoactive drug abuse or dependence.

In the November 2007 issue of the *Archives of General Psychiatry*, a journal of the American Medical Association, researchers examined the degree to which genetic and environmental risk factors for dependence were shared between illicit and the more commonly used licit psychoactive drugs among men and women.

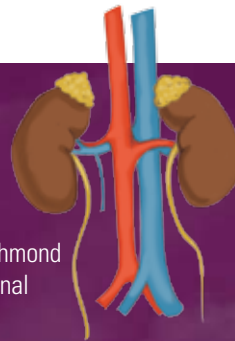
“We wanted to know whether there was a single set of genes that influence risk for abuse or dependence on all substances,” said Kenneth S. Kendler, M.D., a professor of psychiatry and human genetics in VCU’s School of Medicine and lead author on the study.

Kendler and his colleagues examined lifetime symptoms of abuse of and dependence on marijuana, cocaine, alcohol, caffeine and nicotine among 4,865 male-male and female-female twin pairs through a series of personal interviews.

“This study also confirmed the strong role that genetic factors play in influencing our vulnerability to drug abuse and dependence,” Kendler said. Heritability — the proportion of individual differences at risk due to genetic differences — was estimated in this study to be more than 70 percent for cocaine, cannabis and nicotine abuse or dependence, nearly 60 percent for alcohol abuse or dependence and, interestingly, quite a bit lower — around 35 percent — for caffeine abuse or dependence.

Supported by grants from the National Institutes of Health, this was the first study of its kind to examine the degree to which risk factors for dependence in men and women were shared between illicit and the more commonly used licit psychoactive drugs.

Kendler and team also have found that genes likely influence how people make friends. This finding offers insight into which individuals may be at risk for future



1.1.07

Cecelia Boardman, M.D., gynecologic oncologist at the VCU Massey Cancer Center, joins Lt. Gov. Bill Bolling in a public education campaign sponsored by the National Lieutenant Governor’s Association to raise awareness of cervical cancer.

1.17.07

VCU teams up with the National Kidney Foundation to educate Richmond city high school students about renal health.

2.1.07

Laura Siminoff, professor and chairwoman of the VCU Department of Social and Behavioral Health, develops two tools to improve health communications and research on cancer care outcomes: the Siminoff Communication Content and Affect Program and the Cancer Communication Assessment Tool for Patients and Families.

substance use or other externalizing behaviors such as conduct and antisocial personality disorder, based on the peer groups they choose. ❖

Declining U.S. household income could impact health, VCU researcher reports

A decline in U.S. household income, increasing poverty and a widening gap between wealthy Americans and the poor will release a tidal wave of disease in years to come, according to Steven H. Woolf, M.D., M.P.H., professor in VCU's Department of Family Medicine.

In the Oct. 24, 2007, issue of *The Journal of the American Medical Association*, Woolf noted that although poverty in the U.S. declined in the 1990s, it resurged after 2000, increasing from 11.7 percent to 12.6 percent between 2000 and 2005.

"An expansion in the prevalence of poverty, especially severe poverty, is likely to produce severe health consequences and to stress clinical facilities serving the poor," Woolf wrote.

Woolf said because most social classes are experiencing some income loss, the health status of all but the very rich could be affected. But he said pursuing policies that promote education and increase incomes could positively impact health and the economy.

"Efforts to improve education and income, seemingly unrelated to medicine, have the potential to accomplish

more to reduce the severity and costs of major diseases than traditional medical advances," Woolf projected. ❖

Team identifies key proteins involved in red blood cell growth and regulation

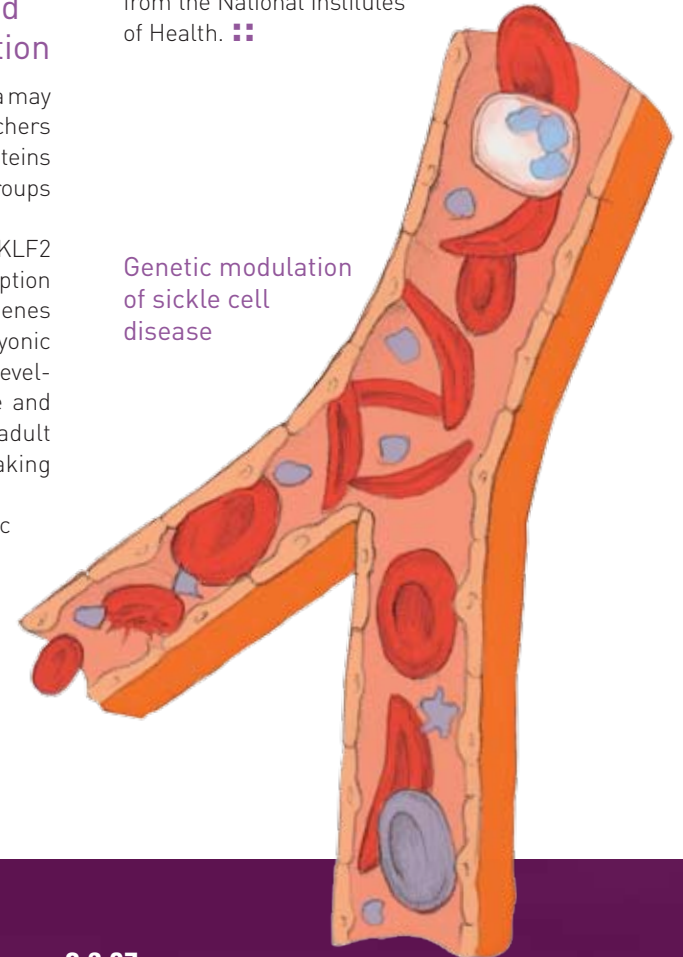
Treating sickle cell anemia and beta-thalassemia may one day be as easy as flipping a switch. VCU researchers studying hemoglobin genes have identified two proteins that are responsible for regulating overlapping groups of genes during the development of red blood cells.

Researchers reported that a protein called KLF2 coordinates with a related and well-studied transcription factor, EKLF, in the regulation of embryonic globin genes responsible for the development of mouse embryonic red blood cells. EKLF plays a central role in the developmental regulation of the adult beta-globin gene and is essential for the maturation and stability of adult red blood cells. KLF2 is a protein crucial for making embryonic red blood cells.

"If EKLF and KLF2 can turn on the embryonic globin genes in adult cells — we don't know if this is true yet — then these findings may provide a gene therapy approach for treating sickle cell anemia and beta-thalassemia. It is well-established that the expression of embryonic globin genes can help ameliorate these diseases," said Joyce A. Lloyd, Ph.D., associate

professor of human genetics at the VCU Massey Cancer Center and corresponding author for this study, which was supported by a grant from the National Institutes of Health. ❖

Genetic modulation of sickle cell disease



2.2.07

The VCU School of Dentistry partners with the Virginia Dental Association to assist with Give Kids a Smile Day as part of the American Dental Association's nationwide effort to raise awareness of oral disease among disadvantaged children.

2.6.07

"Dateline NBC" correspondent Sara James speaks at VCU Massey Cancer Center's 12th annual Women & Wellness Breakfast and Luncheon.



Pam Naulty, today cured of hepatitis C

Every day, we're developing new treatment options

From bench-side to bedside, we turn discoveries into practical applications aimed at improving patient health outcomes and saving lives. ::

Hepatitis C treatment offers a 'cure' for millions of infected Americans

VCU researchers say that the use of hepatitis C treatment drugs now point to a cure for millions of Americans infected with the blood-borne infectious disease — the leading cause of cirrhosis, liver cancer and the need for liver transplants.

Hopewell, Va., resident Pam Naulty is walking proof. "The virus has been killed. I am cured," she says.

After being diagnosed with the hepatitis C virus (HCV), Naulty was referred to Mitchell Shiffman, M.D., professor in the VCU School of Medicine, chief of hepatology and medical director of the Liver Transplant Program at the VCU Medical Center.

Naulty, who was diagnosed with stage 2 of the virus, took part in a six-month clinical trial under Shiffman's care. As part of the blinded clinical study, Naulty was given a combination of three drugs: peginterferon alfa-2a, also referred to as Pegasys, ribavirin and another experimental anti-viral drug called telapovir. Telapovir is part of a new category of medications — potent anti-viral agents called protease or polymerase inhibitors, which can lead to a dramatic decline in the HCV when utilized along with peginterferon and ribavirin.

Preliminary data from a study, conducted at the VCU Medical Center by Shiffman and sponsored by Vertex Pharmaceuticals, indicates that the addition of telapovir to peginterferon and ribavirin will increase the cure rate of patients with chronic HCV from about 45 percent to 65 percent.

"What the medical profession says now [is that] when you're three months past treatment and still undetectable, you're cured," Naulty says. "Now I'm 11 months past treatment and all my tests are still coming back zero."

In fact, up to seven years following treatment, 99 percent of patients with HCV who were treated successfully with peginterferon alone, or in combination with ribavirin, had no detectable virus. The remaining eight patients had no consistent traits and it was not determined if they experienced a relapse or were reinfected. These results validate the use of the word "cure," which is defined as having undetectable HCV in the blood six months after treatment.

The results are based on a long-term follow-up study designed to determine if the virus re-emerges in patients who have achieved treatment success. The study reviewed 997 patients — either mono-infected with chronic HCV or co-infected with HCV and HIV — who achieved a sustained viral response following treatment with either Pegasys monotherapy or combination therapy with Pegasys and ribavirin. "We are encouraged by these data because it is rare in the treatment of life-threatening viral diseases that we can tell patients they may be cured," said Shiffman, one of the lead investigators in the study. ::

Massey researchers identify several potential treatments to fight leukemia

In the past year, research teams at VCU Massey Cancer Center, led by Steven Grant, M.D., associate director for translational research and co-leader of



Steven Grant, M.D.
VCU Massey Cancer Center

Massey's Cancer Cell Biology Program, have identified several possible treatments for fighting leukemia and other malignancies.

One study identified an approach to enhance the activity of a new anti-cancer agent, dasatinib, that has already shown impressive efficacy in the treatment of chronic myelogenous leukemia (CML), a form of bone marrow cancer. The team found that combining extremely low concentrations of dasatinib with PD184352 — another clinically relevant small-molecule inhibitor of a critical cellular survival pathway — resulted in a dramatic increase in programmed cell death. Notably, enhanced lethality occurred in CML cells displaying various forms of resistance to the anti-cancer agent imatinib mesylate, an effective course of therapy for CML but one that many patients develop a resistance to. This novel combination offers a potential new course of therapy for these patients.

Massey researchers presented preclinical research at the American Association of Cancer Research's annual meeting suggesting the potential of a new combination treatment for chronic lymphocytic leukemia. They also conducted a study to improve the anti-leukemic activity of an agent that triggers programmed cell death.

These research efforts were supported by grants from the National Institutes of Health, the Leukemia and Lymphoma Society of America and the U.S. Department of Defense. ❖❖

New therapeutic molecular target may improve the efficacy of chemotherapy

In the Nov. 1, 2007, issue of the journal *Cancer Research*, VCU researchers examined human colon and breast cancer cells and established a role of sphingosine kinase 2 (SphK2) in the death of cancer cells mediated by the chemotherapeutic drug doxorubicin.

Doxorubicin kills cancer cells by working with p53, one of the most protective anti-cancer proteins in the human body. However, doxorubicin also relies on p53-independent mechanisms to induce death in colon and breast cancer cells.

"Understanding how doxorubicin kills in a p53-independent manner is a major goal of cancer researchers because most cancer cells have mutated p53," said lead author Sarah Spiegel, Ph.D., chairwoman and professor in the VCU Department of Biochemistry and Molecular Biology and co-leader of Massey's Cancer Cell Biology Program.

This work, supported by a grant from the National Institutes of Health, identifies SphK2 as a new therapeutic target to improve the efficacy of chemotherapy. The study demonstrated that SphK2 helps induce the expression of p21, which regulates the cell cycle, and apoptosis or programmed cell suicide, mediated by doxorubicin. Human colon and breast cancer cells were killed more efficiently by doxorubicin when SphK2 was removed from the cells. ❖❖

2.16.07

Staff and patients from the Bone Marrow Transplant Unit at VCU Massey Cancer Center unveil original "Mosaic of Hope" that narrates their emotional journey of treatment and recovery.

2.21.07

Angela Starnes, a licensed practical nurse in the mother-infant unit, receives the first Virginia nursing scholarship from the Virginia Hospital & Healthcare Association and the Virginia Foundation for Community College Education.





Wally R. Smith, M.D.
VCU Department of Internal Medicine

Sickle cell pain occurs more often, and more severely, than previously thought

Pain in adults with sickle cell disease is far more prevalent and severe than previous studies have shown, and yet, most patients manage even severe sickle cell pain at home rather than go to an emergency room or hospital, according to the Pain in Sickle Cell Epidemiology Study (PiSCES), led by Wally R. Smith, M.D., professor of medicine and medical director of the VCU Center on Health Disparities.

Outpatient, emergency department and hospital visits have been used as indicators of sickle cell disease severity, with the belief that severe sickle cell pain “crises” were mostly experienced in medical facilities.

Using pain diaries, which patients kept, PiSCES showed convincingly for the first time that patients with sickle cell disease very frequently have intense pain but usually manage it without an outpatient, emergency department or hospital visit.

Their discoveries have been published in prestigious journals such as *Pain* and *Annals of Internal Medicine* and are expected to have a profound impact on severity measurement, treatment and future research in sickle cell disease.

The project was supported by a grant from the National Institutes of Health’s National Heart, Lung and Blood Institute. ❖❖

“Understanding how doxorubicin kills in a p53-independent manner is a major goal of cancer researchers because most cancer cells have mutated p53.”

Sarah Spiegel, Ph.D.

Tumor relapse findings show promise for tailored breast cancer vaccines

With support from the National Cancer Institute and Susan G. Komen for the Cure, researchers at VCU’s Massey Cancer Center studying the interaction between the immune system and cancer cells have identified interferon gamma as one of the signaling proteins involved with tumor relapse.

Using a transgenic mouse model of breast cancer, researchers found that interferon gamma, a cytokine or chemical messenger that is produced by cells of the immune system upon activation, plays a role in tumor relapse. In humans, interferon gamma is also produced by white blood cells of the immune system in response to invasion by pathogens or tumors in order to protect the host against infection or cancers.

The findings may help researchers develop tailored vaccines and other immunotherapeutic strategies to fight



2.28.07

A team of VCU health administration students takes first place in the national Health Administration Case Competition.

3.12.07

The VCU Health Sciences schools host more than 50 pre-health science advisers at a conference held on campus.

3.30.07

U.S. News and World Report ranks several VCU programs among the best in the nation: nurse anesthesia, 1st; health care management, 4th; rehabilitation counseling, 13th; and women’s health, 18th.



Shobha Ghosh, Ph.D.
VCU Department of Internal Medicine

a number of cancers, including breast cancer. Immunotherapy involves the manipulation of the immune system — by introducing an antibody or lymphocytes, or immunization with a tumor vaccine — to recognize and eradicate tumor cells.

“By understanding the molecular mechanisms involved with tumor relapse, we can create tailored vaccines that can induce specific types of immune responses in patients, rather than inducing a broad range of immune responses — some of which may be detrimental or may induce tumor relapse,” said lead investigator Masoud H. Manjili, D.V.M., Ph.D., assistant professor in the VCU Department of Microbiology and Immunology. ❖❖

Increases in key enzyme may pave the way for novel heart disease therapies

VCU researchers have identified the role of a key enzyme called CEH, or cholesteryl ester hydrolase, in reducing heart disease — paving the way for new target therapies to reduce plaques in the arteries and perhaps in the future, help predict a patient’s susceptibility to heart disease. And, unlike currently available therapies, which prevent or reduce the formation of new plaques, increasing CEH may also reduce existing plaques.

Heart disease results from the formation of plaques in the coronary artery, which supplies blood to the heart. Plaques form when monocytes, which are cells from the blood, enter the wall of the artery and consume large

amounts of “bad” cholesterol, or LDL. The monocytes then become artery-clogging foam cells. The only way for foam cells to get rid of their cholesterol is to make it available to HDL, or “good” cholesterol. CEH, a key enzyme present in the foam cells, regulates the amount of cholesterol that can be removed by HDL.

In this study, supported by grants from the National Heart, Lung and Blood Institute and led by Shobha Ghosh, Ph.D., an associate professor in internal medicine’s pulmonary division in the VCU School of Medicine, the team examined, for the first time, how cells in the artery wall make cholesterol available for removal by HDL. Using transgenic mice, which were fed a high-fat and cholesterol-rich diet, the team was able to show that by increasing the removal of cholesterol from the artery-clogging foam cells, the mice with the human gene for CEH developed significantly less heart disease.

“Currently the emphasis for managing heart disease is on reducing the ‘bad’ cholesterol, or LDL, in the circulation. Our study demonstrates that if you can increase the removal of cholesterol from the plaques, even without changing the LDL levels, there is still a significant reduction in the plaques,” said Ghosh. “These findings not only change the current thinking of managing heart disease but also clearly open avenues for the development of new therapies. In addition, by determining the levels of CEH in human blood cells, we hope to be able to predict susceptibility to heart disease in the future.” ❖❖

4.2.07

Irwin Redlener, M.D., director of the National Center for Disaster Preparedness, kicks off a National Public Health Week seminar series at VCU.



4.6.07

U.S. News and World Report ranks the Department of Occupational Therapy 15th among other U.S. occupational therapy schools.

Third mode of DNA binding drives the design of new cancer-fighting drugs

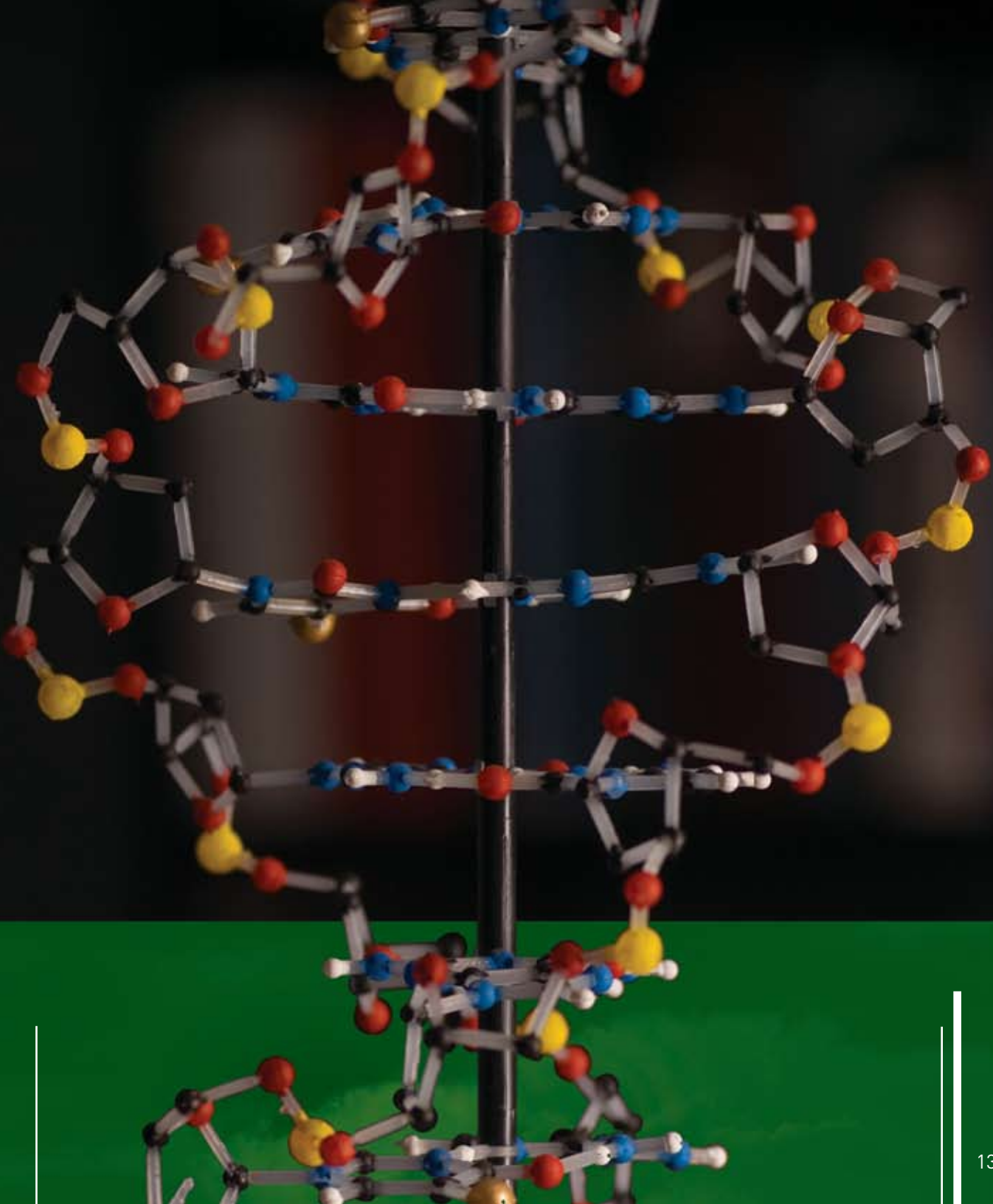
Nicholas P. Farrell, Ph.D., professor and chairman in VCU's Department of Chemistry, has led a VCU research team that has uncovered a distinct third mode of DNA binding that may help researchers design new drugs to fight cancer.

Farrell's group made the finding while working to improve the action of cisplatin, one of the most effective anti-cancer drugs in the clinic. Discovery of the new mode of DNA binding is the first since two scientists examining drug interactions with DNA made separate discoveries in the 1960s and 1970s that set the standard for drug design efforts.

This new mode of DNA binding may help researchers design a new generation of platinum-based, anti-cancer drugs that are less toxic, reduce resistance and side effects and expand the range of tumors that can be treated by platinum. The team included researchers from the VCU Department of Chemistry and VCU Massey Cancer Center, working with support from the National Institutes of Health and the Japan Society for the Promotion of Science.

"Our findings elicit a new way of thinking when it comes to designing DNA-binding anti-cancer drugs. We have shown a third mode of binding discrete from those previously proposed. This is the first genuinely new mode of DNA binding to be described using a technique known as X-ray crystallography," said Farrell.

However, according to Farrell, these current agents have limited activity against many common human cancers, and they are susceptible to acquired drug resistance. He added that resistance to cisplatin has become a clinically relevant issue — especially for patients battling ovarian cancer because they develop resistance to cisplatin at a rapid rate. ❧



4.11.07

The VCU Institute for Women's Health holds the Third Annual Women's Health Research Day, a networking opportunity celebrating and promoting excellence in interdisciplinary women's health research.

Researchers shed light on mechanism of action used by anti-cancer drug sorafenib

New findings could stimulate the development of novel regimens for patients with blood cancers and solid tumors.

VCU Massey Cancer Center researchers have uncovered a new mechanism of action of the anti-cancer drug sorafenib. Sorafenib inhibits the oncogene Raf-1, but also induces a process known as ER stress in leukemia cells that leads to inhibition of protein translation. This results in the reduced expression of pro-survival factors. When combined with other molecularly targeted agents, sorafenib could lead to potential new therapies.

The team, led by Steven Grant, M.D., Massey's associate director for translational research and co-leader of the cancer center's Cancer Cell Biology Program, observed that exposure of cells to sorafenib resulted in a process that serves as a critical brake on protein translation in cells subjected to ER stress. They also found that sorafenib prevented an increase in expression of a chaperone protein which is classically induced in the ER stress response, and which helps to resolve stresses associated with increased protein loads. The net effect of these actions was to induce a shutdown of protein synthesis accompanied by a dramatic increase in cell death.

"The notion that sorafenib acts by inhibiting protein synthesis suggests that combining it with other targeted

agents might prove beneficial," Grant said. Several such targeted agents are currently undergoing clinical evaluation in patients with various malignancies.

Mohamed Rahmani, Ph.D., from the Department of Internal Medicine at VCU, served as lead author of the paper. The study was supported by awards from the National Cancer Institute, the Leukemia and Lymphoma Society of America, the Department of Defense and the V Foundation. ❖❖

Imaging tool pinpoints prostate tumors, improving localized treatment options

Clinical assessment of the extent of prostate cancer is often difficult because of the relatively small size and complex anatomy of the prostate and its inaccessible location deep within the pelvis. A new way of evaluating prostate tumors may help physicians determine the best treatment strategy.

Here at VCU, Panos Fatouros, Ph.D., a professor in the Department of Radiology, and his team have integrated magnetic resonance spectroscopic imaging into the standard MRI staging exam for prostate cancer. This approach, which provides combined metabolic and anatomic data, has proven more accurate than MRI alone in identifying the location and extent of cancer within the prostate and determining whether it has spread outside the gland.



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



4.19.07

Gov. Timothy Kaine appoints Aradhana Bela Sood, M.D., MSHA, chairwoman of child and adolescent psychiatry and medical director of the VCU Virginia Treatment Center for Children, to the Virginia Tech Review Panel.

4.25.07

VCU Virginia Treatment Center for Children co-sponsors a collaborative conference to address access to pediatric mental health services nationwide.

This advancement enables Michael Hagan, M.D., Ph.D., a professor in the VCU Department of Radiation Oncology, and other referring oncologists to localize treatment of focal prostate cancer, thereby improving treatment options and clinical outcomes. By treating the cancer locally, patients are often spared surgical removal of the entire gland and therefore preserve some function.

In a related study, researchers working with a man-made, metal-filled nanoparticle are developing the material for use as a diagnostic and therapeutic agent that may boost the sensitivity of MRI techniques and improve the diagnosis and treatment of brain tumors. Led by Fatouros, the multi-institution collaborative research team is developing, producing and testing the nanoparticles, called metallofullerenes, which are expected to greatly improve the quality of MRI images of brain tumors and allow doctors to selectively target them for radiation therapy. The project is supported by a grant from the National Institutes of Health's National Cancer Institute. ■■

Collaborative center accelerates the delivery of new therapies to patients

VCU has established the Center for Clinical and Translational Research to enhance the ability of researchers in science and medicine to work across campuses to create new therapies for fighting disease and get them to patients quickly.

Researchers from the VCU schools of Allied Health Professions, Dentistry, Education, Engineering, Medicine, Nursing, Pharmacy and Social Work, as well as VCU Life Sciences and the College of Humanities and Sciences will have the opportunity to collaborate across disciplines and strengthen VCU's research infrastructure through the center.

"The goal is to be a catalyst for change," said John Clore, M.D., a professor in the VCU School of Medicine and director of the center. "We plan to bridge research universitywide, bring many of the resources needed for translational research under one umbrella and promote a multidisciplinary approach.

"Ultimately, this strategy will enable our researchers to take ideas from the laboratory bench, move it to patient bedside and then into the community more quickly," he said.

The center will be supported in part by a National Institutes of Health initiative to transform the way clinical and translational science research is conducted.

The NIH last year began to expand its currently funded infrastructure to build a national consortium of academic health centers to more broadly support clinical and translational science research. By 2012, the NIH's goal is to have 60 institutions — and VCU aims to be one of the funded centers.

"The goal is to be a catalyst for change. We plan to bridge research universitywide, bring many of the resources needed for translational research under one umbrella and promote a multidisciplinary approach."

John Clore, M.D.

According to Clore, the center will provide an academic home for clinical and translational research conducted at VCU. It will establish a research incubator — a physical space that includes the biostatistical, writing and research resources necessary for discovery and collaboration. In addition, Clore and his colleagues will be implementing a curriculum for clinical research postdoctoral programs.

Another goal of the center is public education about research and clinical trials through community outreach.

"It is essential that we enable the communities surrounding VCU to connect with the research taking place here and become a part of the process," Clore said. "It is our hope that we can convey how such research impacts us all.

"Greater appreciation of what we all have to offer each other is a crucial step to develop future collaborations and treatment opportunities." ■■

4.28.07

VCU students and faculty provide free health screenings and distribute housing and safety information to neighboring residents at the annual Carver Health and Housing Fair.



4.28.07

VCU celebrates the grand opening of its new state-of-the-science nursing education building.



Vigneshwar Kasirajan, M.D., Division of Cardiothoracic Surgery

Every day, we're enhancing patient care and safety

Leveraging the latest innovations in technology and research developments, we work actively to create a health care environment where risk is reduced and quality care is delivered. ❖❖

Guidelines help physicians conserve blood during cardiac procedures

A team of medical experts led by a VCU anesthesiologist and a thoracic surgeon from the University of Kentucky has established a set of clinical guidelines to help physicians decrease the need for blood transfusions in high-risk patients during cardiac operations.

The team, led by Bruce Spiess, M.D., professor in the Department of Anesthesiology at the VCU School of Medicine and director of the VCU Reanimation Engineering Shock Center, and Victor A. Ferraris, M.D., chief of the Division of Cardiothoracic Surgery at the University of Kentucky's Albert B. Chandler Hospital, developed the guidelines, "Perioperative Blood Transfusion and Blood Conservation in Cardiac Surgery."

According to the report, about 15 to 20 percent of patients undergoing cardiac procedures consume more than 80 percent of the blood products transfused at operation. The guidelines suggest that institutions should screen for high-risk patients; use drugs that increase preoperative blood volume or decrease post-operative bleeding; employ devices that conserve blood; and include interventions that conserve blood during the operation.

"We already do most or all of these things here at the VCU Medical Center and have led the nation in implementing an entire program," said Spiess. "We have not only been successful in cardiac surgery but also now have a full program for the whole hospital." ❖❖

IUDs appear to be a safe and effective option for high-risk patient populations

Intrauterine devices appear to be safe and effective for women who ordinarily might not be considered good candidates for this form of contraceptive because of factors such as a history of sexually transmitted infections, multiple partners or prior pelvic inflammatory disease.

A team led by Catherine A. Matthews, M.D., assistant professor in the VCU Department of Obstetrics and Gynecology, examined the effectiveness and complication rates of the IUD, along with how willing women were to use the device. The study involved 194 women attending a university-based obstetrics and gynecology clinic.

After the IUD was inserted, 5.4 percent of women had a clinically diagnosed STD and 19.4 percent had clinically diagnosed gynecologic infection. Three pregnancies were reported after insertion.

Based on these data, Campbell's team concluded that there's "a significantly higher benefit-to-risk ratio for the use of IUDs in a population that typically was classified as poor candidates for this method of contraception." ❖❖

Nurses participate in national bedside project to help transform patient care

Nurses at the VCU Medical Center are participating in an ambitious program aimed at changing the future of patient care in hospitals across the U.S.



Dawn Williams, RN, with Pediatric ICU patient

The medical center's Acute Care Medicine Unit was selected by the American Organization of Nurse Executives to take part in the Transforming Care at the Bedside (TCAB) project to improve patient care.

"I am so pleased that the health system was selected as one of 68 clinical sites nationwide to participate in the project," said Carol M. Crosby, M.S.N., R.N., CNAA, chief nursing officer and vice president of patient care services. "This selection is an indication that our nurses continually strive to improve the superior care we deliver to our patients."

TCAB is a national program designed to improve the quality and safety of patient care on medical and surgical units, to increase the vitality and retention of nurses and to improve the effectiveness of the entire care team.

Nurses at the medical center and other participating hospitals will be taught the basic principles of the TCAB innovation process with a focus on nurse managers and team training. The two-year program engages nurses to develop interventions and design new processes that improve care and lead to better staff morale.

The acute care medicine unit will work together to develop new interventions and processes to enhance the quality, reliability and safety of patient care at the bedside. As part of the project, the unit also will evaluate the intervention or process to ensure its sustainability. ❖❖

Radiologists provide a new treatment option for repairing spinal fractures

Patients suffering from spinal fractures due to osteoporosis can get back to their lives, thanks to a new treatment option available at the VCU Medical Center. Balloon kyphoplasty, a minimally invasive procedure designed to correct spinal deformity due to osteoporotic fractures, significantly reduces back pain and improves a patient's ability to return to daily activities.

"The balloon kyphoplasty procedure offers an alternative treatment option with a low complication rate for patients suffering from painful spinal fractures," said Malcolm K. Sydnor, M.D., assistant professor in the VCU Department of Radiology. "By stabilizing the fracture and correcting the spinal deformity, patients experience a significant reduction in pain and improvement in mobility."

In balloon kyphoplasty, doctors insert and inflate balloons into the fractured vertebra bone, returning it to its normal position. The process creates a cavity within the vertebra, which is then filled with bone cement to stabilize the fracture.

The procedure has been shown to improve or resolve pain in 90 percent of patients while having a less than 1 percent complication rate. In most cases, the procedure takes less than one hour per fracture and has been performed under conscious sedation. Most patients go home the same day, and the recovery time is minimal. ❖❖

5.4.07

The Alpha Omega Alpha Honor Medical Society inducts Andrea K. Hastillo, M.D., associate professor of cardiology.

5.11.07

VCU holds the 45th Annual Child Psychiatry Spring Forum, an opportunity for participants to network and discuss the mental health needs of immigrant children and families.



Active Hume-Lee Transplant Center delivers memorable patient care

Liza Bruce says her life since receiving a kidney and pancreas transplant “has been a remarkable journey,” one that includes tandem hang gliding and bicycling, walks with her guide dog, Baxter, and national public speaking engagements about Leader Dogs.

The organ donations and the caregivers at the VCU Hume-Lee Transplant Center, she says, changed her outlook.

“When you’re really sick, it’s hard to focus on anything but being sick because it consumes your life,” she said. “But when you get to the other side, you really start to get to know the people ... the transplant people were steadfast and they always cared for me.”

Bruce calls them “angels.”

“They give their lives to do this work, and you’re just one of thousands and thousands of people they see in the course of their work in their lifetime but they treat you like you are the only one,” she said.

That’s a high compliment considering that Hume-Lee is one of the busiest renal transplant centers in the nation.

Of the 250 kidney transplant centers in the U.S., *Nephrology News and Issues* magazine reports that the Hume-Lee center ranks 40th among the most active centers — and is the only renal transplant program in Virginia to make the list. 🍂



Transplant recipient Liza Bruce with her guide dog, Baxter

5.25.07

VCU Medical Center opens an international adoption medical clinic to serve the initial and ongoing medical, developmental and emotional needs of parents and their children adopted from around the world.

6.1.07

The VCU Medical Center holds its annual ceremony for current and former patients of the ASK Pediatric Hematology and Oncology Clinic who are graduating from high school.

6.5.07

James L. Levenson, M.D., chairman of the VCU Department of Psychiatry’s Division of Consultation/Liaison Psychiatry, receives the Society for Liaison Psychiatry’s Lifetime Achievement Award.



Comprehensive care saves teenager following sudden cardiac arrest

On April 19, 2007, while walking across the cafeteria at Powhatan High School in Virginia, junior Brittany Worsham dropped dead to the floor. A heart arrhythmia sent the healthy 16-year-old cheerleader unexpectedly into cardiac arrest. Two teachers, both volunteer firefighters with EMT training, quickly assessed Worsham, started CPR and grabbed the automated external defibrillator off the wall to administer shocks to restart her heart in a normal rhythm.

Worsham was rushed to a nearby hospital, which sent her to the VCU Children's Medical Center for treatment, where, on the cardiac surgery unit, she received an intra-aortic balloon pump.

"This helped support her circulation as her heart (with mitral valve prolapse and a leak) sustained a major insult with her sudden death episode," said William B. Moskowitz, M.D., FAAP, FACC, FSCAI, professor of

pediatrics and internal medicine and chair of the VCU Division of Pediatric Cardiology.

Once stabilized, doctors induced Worsham into a state of mild hypothermia, a new lifesaving technique called "cooling." This procedure brings the body temperature down to about 91 degrees Fahrenheit, not only giving the patient a better overall chance of surviving after a cardiac arrest but also increasing the chances of improved brain function.

Worsham spent three weeks at the heart center. She had a cardiac catheterization and underwent an electrophysiology study during which an arrhythmia site was ablated with a radiofrequency catheter. She was then implanted with a defibrillator to protect her from future life-threatening arrhythmias.

Today, Worsham, now 17, is a picture of health. After making a full recovery, she's back in school, cheering for the Powhatan Indians and graduating with her class this June.

"She is a remarkable survivor," Moskowitz said. ■■

Brittany Worsham back in uniform following lifesaving cardiac care

6.26.07

The VCU Human Research Protection Program earns full accreditation from the Association for the Accreditation of Human Research Protection Programs Inc., making VCU the first and only university in Virginia to receive full accreditation from AAHRPP.

6.27.07

VCU becomes one of the first in the U.S. to offer a Doctor of Nurse Anesthesia Practice degree.

Real-time tracking improves radiation delivery for prostate cancer patients

More than a million Americans undergo radiation treatment for cancer each year, including many of the 218,000 men with newly diagnosed prostate cancer, according to the American Cancer Society.

Maintaining its place on the cutting edge of cancer treatment, the VCU Massey Cancer Center is the first center in the Southeast to provide prostate cancer patients access to the latest radiation therapy delivery technology.

With the new Calypso 4D Localization System, doctors can now accurately and continuously track a tumor's exact location during cancer radiation treatment. Being able to monitor a tumor in real time allows doctors to aggressively attack the tumor, while avoiding healthy tissues and organs.

"The Calypso system functions much like GPS in your car," said Mitchell Anscher, M.D., chairman of the VCU Department of Radiation Oncology.

The image-guided radiation therapy involves implanting small Beacon electromagnetic transponders, each slightly larger than a grain of rice, in or near the treatment area. During treatment, the transponders relay a constant signal pinpointing the tumor's exact location. A computer alerts technicians if and when the tumor or organ moves during treatment.

"Even small movements of a few millimeters can mean the difference between attacking cancerous cells and damaging healthy tissue," said Anscher. "This is an important new capability, which is available locally only at Massey." ❖❖

Human trial shows that imaging agent may help detect cancer drug resistance

VCU recently completed a first-in-humans trial of a new imaging agent, fluoropaclitaxel (F-18). PET imaging using this agent may identify patients who are resistant to certain common types of chemotherapy, such as paclitaxel (Taxol), which would cue physicians to prescribe an alternate therapy and spare the patient a course of chemotherapy that would be ineffective.

By adding a radiolabel (F-18) to paclitaxel, the team was able to use PET/CT imaging to localize the actual area of drug accumulation in the tumor and throughout the body. Tumors that do not respond to paclitaxel often express a phenomenon known as "multidrug resistance" (MDR), in which a tumor is resistant to a wide range of commonly used chemotherapy drugs. When combined with radiolabeled paclitaxel (FPAC), PET imaging can detect the presence of MDR. This will allow doctors to predict whether a tumor will respond to a proposed chemotherapy treatment.

"This is an important new capability, which is available locally only at Massey."

Mitchell Anscher, M.D.

Researchers in the VCU Molecular Imaging Center developed an automated method of making FPAC, then assisted with the preclinical work required for obtaining an Investigational New Drug designation from the FDA.

The preclinical work was funded by the American Cancer Society and the clinical work was funded by a Massey Cancer Center Pilot Fund grant. ❖❖

Interventional pulmonology program offers effective alternative to surgery

Interventional pulmonology, a rapidly growing subspecialty of pulmonary medicine, provides a new, minimally invasive way to diagnose and treat lung disease that can take the place of traditional surgery.

Two of the most experienced interventional pulmonologists in Virginia — Wes Shepherd, M.D., and Leonard Moses, M.D. — call the VCU Division of Pulmonary Disease and Critical Care Medicine home. Together with the VCU Division of Cardiothoracic Surgery, a new fellowship program has been created — one of only a few comprehensive interventional pulmonology training programs in the country.

7.1.07

Theresa Murray, M.D., associate professor in the VCU Department of Pediatrics, establishes a neuro-developmental follow-up clinic for high-risk infants discharged from the Newborn Intensive Care Unit.



7.1.07

The VCU Department of Internal Medicine recruits Norbert Voelkel, M.D., a distinguished senior investigator, to serve as the leader of the new Victoria Johnson Center for Obstructive Pulmonary Disease.



Ilona Scanlon, M.S., CCLS, Helping Children of Adult Patients program

Using state-of-the-art technology, interventional pulmonologists perform a variety of diagnostic and therapeutic treatments, working in concert with other health professionals to determine the best route of care.

“The comprehensive interventional pulmonology program allows us to choose which course of treatment is really the best for the patient, and many of these treatments involve more than one tool,” said Shepherd. “With our advanced diagnostic tools and therapeutic techniques, no other hospital in Virginia offers this spectrum of advanced airway management.” ❖❖

Hospital service provides support to families in helping children cope

To help families provide the best environment for children facing the illness, injury or death of a loved one, the VCU Department of Pediatrics has pulled together a team of experts to offer support.

The Helping Children of Adult Patients team is a new hospitalwide service created by Lauren Goodloe, Ph.D., R.N., CNAA, director of Medical and Pediatric Nursing and assistant dean for clinical operations of the VCU School of Nursing, and Janet Younger, Ph.D., R.N., PNP, professor and associate dean of the School of Nursing.

“Adults don’t always know how much to tell children or whether or not to let them visit the hospital,” Goodloe said. “They don’t know how to prepare them to see

a loved one on a ventilator and hooked up to tubes or if they should attend the funeral.”

Led by Deborah Fisher, PNP, CPON, clinical director of the pediatric palliative care program and pain management team, the HCAP team is composed of pediatric nurse practitioners, clinicians, clinical coordinators, child life specialists and a pediatric chaplain. Each team member can help staff and families cope with children’s questions, concerns and behavioral issues related to a loved one’s serious health issue. ❖❖

Richmond group makes generous gift to establish a new Parkinson’s clinic

A group of Richmonders living with Parkinson’s disease has created a grassroots movement for a new clinic. Thanks to a \$1 million gift from FitzGerald and Margaret Bemiss, the Parkinson’s Disease and Movement Disorders Clinic at the VCU Medical Center is one step closer to becoming a reality.

The gift to the VCU School of Medicine will be used to recruit an established researcher in the field of neurodegenerative diseases who will provide a leadership role in building the program and creating the proposed clinic. The couple’s gift will also fund an endowed chair in the Department of Neurology.

The School of Medicine has committed an additional \$5 million to the proposed clinic, and recruiting faculty

7.1.07

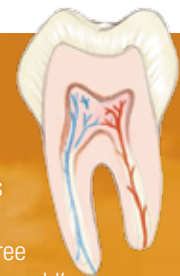
Danielle M. Dick, Ph.D., joins the VCU Department of Psychiatry and the Virginia Institute for Psychiatric and Behavioral Genetics as an assistant professor.

7.15.07

W. Gregory Miller, Ph.D., professor in the VCU Department of Pathology, receives the Award for Outstanding Contributions to Clinical Chemistry at the annual meeting of the American Association for Clinical Chemistry.

7.20.07

The VCU School of Dentistry partners with the Virginia Dental Association to provide more than 1,300 citizens free oral health care over four days at the world’s largest outdoor health fair in Wise County, Va.



with research interests in neurodegenerative diseases has already begun.

Mr. Bemiss, an 84-year-old retired businessman and former state senator, was diagnosed with Parkinson's disease in 1987. ❖

WoundStat dressing compound wins FDA approval for battlefield use

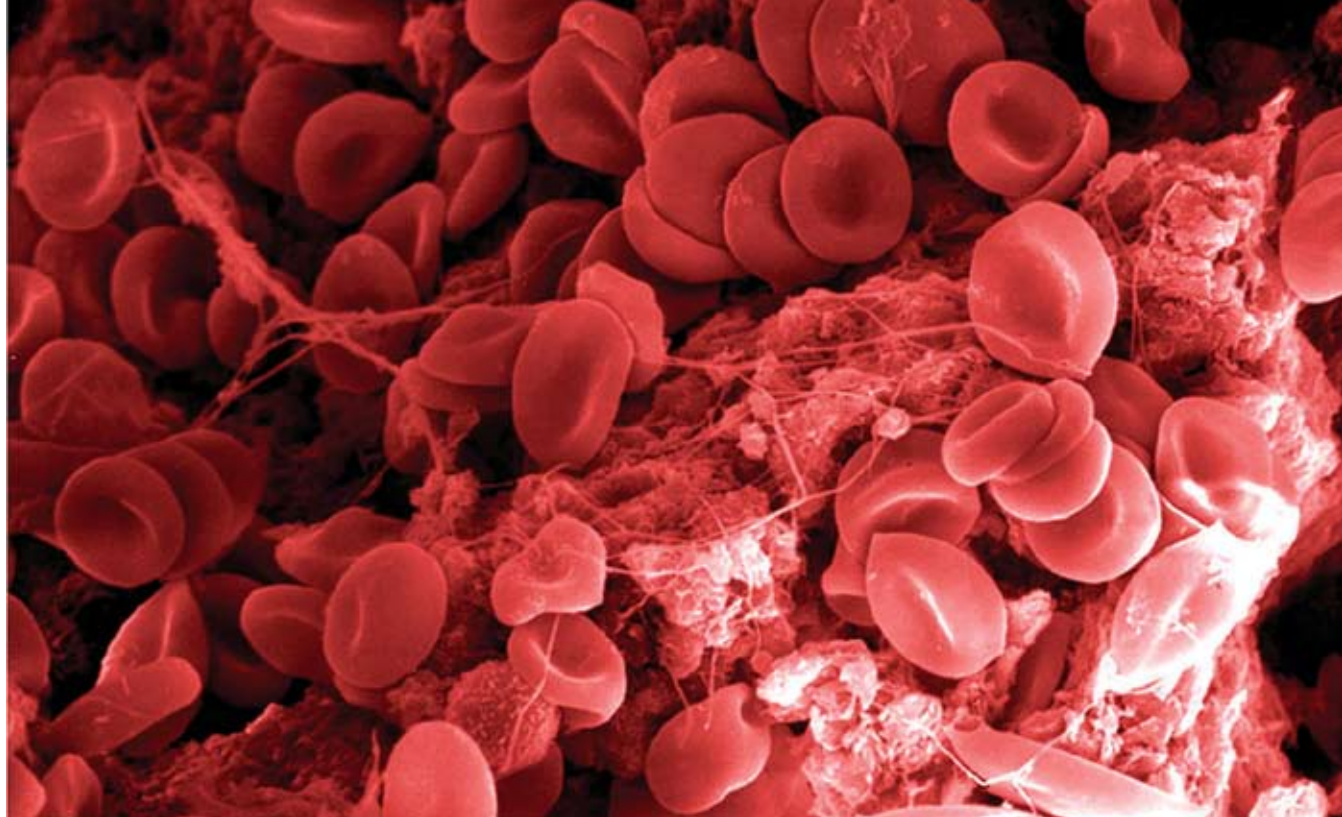
A lightweight, granular dressing compound developed by VCU researchers that quickly stems high-pressure bleeding in moderate to severe wounds has received FDA approval and will soon be used in combat.

VCU researchers have been studying the compound — WoundStat — and say federal approval is good news for soldiers and civilians alike, since the product is easy to carry and can be applied on the spot.

“Uncontrolled bleeding continues to be the primary cause of death on the battlefield,” said Kevin Ward, M.D., a VCU emergency physician and associate director of the VCU Reanimation Engineering Shock Center (VCURES).

The patent-pending technology behind WoundStat is the result of more than three years of study and development by VCURES researchers. VCU licensed the technology behind WoundStat to TraumaCure Inc. of Bethesda, Md.

A study published in the *Journal of Trauma* compared WoundStat to other blood-clotting agents. Results



WoundStat interacting with whole blood

found WoundStat performed better at securely stopping potentially deadly arterial hemorrhaging in three minutes, and continued to do so for at least two hours.

Both U.S. military and foreign military allies have expressed interest in the new product, but WoundStat's benefits may extend far beyond the battlefield to natural disasters such as earthquakes, according to retired

Lt. Gen. Ronald Blanck, D.O., former Surgeon General of the Army.

Along with Ward, VCURES researchers Robert Diegelmann, Ph.D., of the Department of Biochemistry and Molecular Biology, and Gary Bowlin, Ph.D., of the Department of Biomedical Engineering, are the inventors of the WoundStat technology. ❖



7.26.07

VCU Massey Cancer Center hires internationally renowned physician-scientist Andrew Larner, M.D., Ph.D., to co-lead its immune mechanisms research program.

8.1.07

VCU Medical Center represents Virginia on a new international, multi-center study to prevent Type 1 diabetes.

VCU



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Every day, we motivate, educate and empower people

Our educational efforts — from community outreach programs and patient education, to physician and health professional training — focus on preventing disease and improving health outcomes. ❖❖

Medical, pharmacy schools break new ground with Inova Campus partnership

The VCU School of Medicine's Inova Campus graduated its first class in May 2007 — just two years after the school, in partnership with Inova Health System, opened the first regional branch medical campus in Northern Virginia.

Located on the grounds of Inova Fairfax Hospital in Falls Church, Va., the VCU School of Medicine Inova Campus offers an M.D. degree program, residency training program, continuing medical education initiatives, clinical outcomes research and biotechnology collaboration.

The curriculum's design has medical students completing their first two years of training on VCU's Richmond campus. For both the third and fourth years of training, up to 50 medical students are assigned to the Inova Campus.

Following in the School of Medicine's successful footprints, this past fall, 15 students from VCU's School of Pharmacy settled into their third-year classes at the satellite campus — the site of the first pharmacy school in Northern Virginia.

The pharmacy program accommodates up to 20 students from each of the third and fourth years on the Inova Campus. Most of the curriculum is delivered to students via two-way videoconferencing with their peers and instructors on the Richmond campus, although the skills lab, practicum and some elective course work is taught by the Inova campus faculty.

Michelle Mosteiro, a third-year pharmacy student and Fairfax High School graduate, said she was excited about starting classes at the Inova Campus.

"I'll still feel connected to the VCU campus in Richmond, but I'll be with my family here in Fairfax. I'm also looking forward to getting to know some of the students in the medical school," she said.

The curricula are designed so the students from the medical and pharmacy schools will interact and collaborate on projects.

"Inova's partnership with VCU has been extremely successful," said Russell Seneca, M.D., associate dean, VCU School of Medicine Inova Campus. "The medical students from the Inova Campus have moved on to residencies at prestigious institutions, and we have high expectations that the students at the School of Pharmacy will achieve success as well."

For the first two years of the partnership, Inova gave VCU the needed educational and administrative space to support its undergraduate medical education program, but earlier this year, med students moved into the Claude Moore Health Education and Research Center. Pharmacy students will use the space previously occupied by the medical school as their permanent home base.

The Claude Moore building features 11,000 square feet of space dedicated to the educational needs of students of the VCU School of Medicine Inova Campus. The Claude Moore Charitable Foundation provided a \$5 million grant, the largest in Inova's history, to develop the center. Designed to be a high-tech environment, the center includes equipment for simulation-based clinical skills training and extensive teleconferencing capabilities, as well as administrative offices, classrooms and a self-directed learning center. The building will also serve as a platform for groundbreaking medical research. ❖❖



Theater training helps doctors enhance patient care with improved clinical empathy skills

Doctors taught empathy techniques by theater professors show improved bedside manner, according to a pilot study by a VCU research team.

Results of the VCU study, conducted by faculty members from the departments of Theatre and Internal Medicine, indicate a significant improvement in the clinical empathy skills of internal medicine residents at the VCU Medical Center following six hours of instruction with professors of theater. Existing medical training in empathy skills is minimal, and no previous study has examined the efficacy of clinical empathy training.

"We think it's important that this study showed that there are measurable clinical empathy skills and that those skills can be taught to residents," said study co-author Alan Dow, M.D., associate director of residency training and assistant professor of internal medicine at the VCU Medical Center. "Improved empathy skills for doctors will mean that patients have better interactions with their doctors and are more satisfied with their care."

According to Aaron Anderson, Ph.D., associate professor of theater at VCU and a study co-author, clinical encounters are similar to the interactions that actors experience during a performance. Members of the VCU Theatre-Medicine Team translated

the skills of the stage to fit the doctor-patient dynamic, emphasizing the importance of both verbal and nonverbal cues to the study's 14 participating residents. The doctors attended lectures and workshops in which they engaged in role-playing, occasionally with acting professors playing the parts of patients.

"We were not teaching doctors to be actors," Anderson said. "But there are some elements of theater training that can be applied to medical training and can be useful for doctors trying to connect with patients."

In addition to Dow and Anderson, the pilot study's authors include David Leong, chairman of VCU's Department of Theatre, and Richard Wenzel, M.D., chairman of the VCU Department of Internal Medicine. ■■

"We think it's important that this study showed that there are measurable clinical empathy skills and that those skills can be taught to residents. Improved empathy skills for doctors will mean that patients have better interactions with their doctors and are more satisfied with their care."

Alan Dow, M.D.

8.13.07

VCU Department of Family Medicine, its faculty and programs sweep the Virginia Academy of Family Physicians awards.

9.1.07

VCU Medical Center begins providing radiation oncology physician services at Southside Regional Medical Center in Petersburg, Va.

Clinics meet the emotional and physical needs of cancer patients and survivors

With people living longer and more productive lives after cancer diagnosis and treatment, the National Cancer Institute and the Centers for Disease Control have asked the cancer community to put more emphasis on survivorship. More than 10 million American cancer survivors are alive today, and the CDC anticipates that by 2015, the population of cancer survivors will reach 20 million.

Add Amanda Weeks to that total. Diagnosed with non-Hodgkin's lymphoma in 1991, Weeks endured six rounds of chemotherapy, underwent one cycle of radiation and lost her hair three times before her cancer was considered to be in remission. In November 2007, Weeks declared her final victory when she hit the five-year mark — a milestone in cancer survivorship.

The 36-year-old Chester, Va., resident — once the Diamond Duck mascot for the Richmond Braves — credits prayers and the “knowledgeable, compassionate, loving” doctors and nurses at the VCU Massey Cancer Center for her recovery.

Positive thoughts and supportive environments, she said, pulled her through some tough times.

“I knew I was in the best hands with the doctors and nurses at Massey, and they even made sure I had access to programs that helped me adjust to the changes in my physical appearance,” Weeks said. “At a time when I had

no hair, I still felt beautiful thanks to the instruction and support they provided.”

Massey continually develops resources for cancer patients as well as clinics to address the long-term physical and emotional needs of cancer survivors.

Last year, Massey opened a Survivor's Clinic, which is initially focused on breast cancer survivors who are five years out from treatment. Clinic Director Alton Hart, M.D., M.P.H., says that having a medically supervised survivorship plan is essential.

“We can combine our knowledge of the cancer treatments a patient has had with conditions that may present later — from hot flashes to cardiac abnormalities — and offer an extra layer of insight to manage long-term survivorship,” Hart said.

Because about 15 percent of cancer patients develop a second primary cancer 10 years after their first cancer, the clinic also supports patients with cancer prevention and early detection tools.

In addition to the new Survivor's Clinic, Massey and the Greater Richmond Affiliate of Susan G. Komen for a Cure launched their second Cancer Survivors Symposia Series. Led by panels of experts from Massey and other prominent institutions, survivors and their families can attend the free educational events to learn about important facets of survivorship such as nutrition, psychosocial relationships, employment and health insurance, and genetics. ■■



Cancer survivor Amanda Weeks at The Diamond



9.11.07

VCU faculty members serve on multi-university research team that received a National Institutes of Health grant to explore and reshape the standards of scientific conduct.

9.14.07

VCU Medical Center hosts a wound care educational conference, attracting health professionals from Virginia, Hawaii, New York, Tennessee and the Netherlands.

Grant allows nursing school to extend its off-campus RN-to-B.S. program

The VCU School of Nursing received a grant from the Mary Washington Hospital Foundation to extend its off-campus RN-to-B.S. offering to Fredericksburg, Va. The offering is a collaborative venture between the schools of Nursing at VCU and the University of Virginia. As the principal investigator for the grant, VCU will implement the undergraduate portion of an articulated undergraduate-master's program and will subcontract with U.Va. for the graduate component of the program. The first cohort of undergraduate students enrolled in the fall of 2007. ■■

Training evolves with iStan, a fully wireless, portable patient simulator

The VCU Medical Center's Department of Emergency Medicine welcomed a new educational tool in December 2007 — iStan, the first fully wireless, portable patient simulator truly based around a human-like skeletal structure.

The medical center is one of the first hospitals in the country with the new simulator, which closely mimics the anatomical workings of the human body. In addition, iStan features true-to-life articulated motion, human-like skin and bodily secretions.

VCU plans to use iStan in training exercises within the hospital as well as throughout the community. ■■

Physician training key in reducing health disparities, according to leading journal

Medical students and physicians should learn about racial and ethnic health disparities to help eliminate them, according to a report in the *Annals of Internal Medicine*.

Racial and ethnic minorities often receive lower quality health care compared to whites, even after controlling for socioeconomic status, education, access and other factors, according to lead author Wally R. Smith, M.D., professor of medicine and medical director of the VCU Center on Health Disparities.

"Recommendations for Teaching about Racial and Ethnic Disparities in Health and Health Care" offers a core set of facts about health disparities that should be understood by all doctors. It also provides teaching methods, venues and resources to assist in teaching. ■■

VCU's community engagement council awards grants to promote health careers

VCU's Council for Community Engagement awarded two grants that will benefit community education initiatives.

The VCU Community Workforce Investment Project, a collaboration of the School of Social Work and the VCU Health System with the Richmond Career Advancement Center, will use the funding to offer pre-employment counseling, on-the-job training, mentoring and other

services to help community residents get entry-level jobs with the health system, maintain their employment and advance to higher-paying positions.

The Cosby High School/VCU Partnership, a collaboration between University College, the School of Medicine, the Center on Health Disparities, Cosby High School Health Sciences Specialty Center and the Virginia Mentoring Partnership, will use the grant to introduce Cosby students to health careers through expert presentations, service activities, lab experiences and mentorships with current VCU pre-health sciences students. ■■

Nursing, dental simulation laboratories revolutionize preclinical education

When the VCU School of Nursing began developing plans for its new facility, one of the first strategic decisions was to dedicate the second floor to clinical learning. Today, one year after opening, the school's high-tech Clinical Learning Center is transforming nursing education.

"We thought it was all going to be about the technology but it really isn't. The Clinical Learning Center has changed how we teach and how we approach learning," says Director Sandra Voll, M.S., RN, CNM, WHNP, FNP.

In the new facility, students learn on sophisticated patient simulators that can be programmed both to show symptoms of certain conditions and diseases and to respond to various interventions, such as medications.

9.15.07

Anthem holds the 9th annual Gurney Tourney to benefit the Hospital Hospitality House and the Pediatric Cancer Research Fund at VCU Massey Cancer Center.



9.27.07

The Campaign for VCU raises more than \$247 million for the MCV Campus, as part of the university's overall record-breaking \$410.3 million.



Nursing simulation laboratory

Students and faculty have the ability to watch simulations while using hand-held devices to indicate whether they agree or disagree with a particular intervention.

The center's impact on student learning has prompted the school to initiate a working group to develop a model for integrating simulation throughout the school's curriculum.

The School of Dentistry, whose DentSim Virtual Reality Simulation Laboratory went into full swing in 2007, followed a similar track, restructuring its curriculum to provide students with an earlier entry to patient care. Curriculum changes included amalgamating six separate courses into one clinical mega-course.

First- and second-year dental students began developing their manual skills in the school's DentSim lab, and first-year dental students also moved into the newly configured, 108-station Woolwine Mannequin Lab — named for alumnus Robert E. Woolwine Jr., D.D.S., and his wife, Elizabeth R. Woolwine — which prepares students in operative dentistry. ❖❖

Major gifts promote education, research initiatives in the health sciences schools

VCU alumni gifts totaling nearly \$6 million will support development in the university's schools of Nursing, Medicine, Allied Health Professions and Pharmacy.

Michele Romano, M.D., and her husband, Don Romano, each pledged \$500,000 to the VCU School of

“We thought it was all going to be about the technology but it really isn't. The Clinical Learning Center has changed how we teach and how we approach learning.”

Sandra Voll, M.S., RN, CNM, WHNP, FNP

Nursing. In addition, Dr. Romano, a 1984 graduate of the VCU School of Medicine and vice rector of VCU's Board of Visitors, has pledged \$1 million for a chair in family medicine and \$400,000 for endowed scholarships in the School of Medicine. Mr. Romano, a 1973 graduate of the School of Allied Health Profession's health administration program, also has pledged a \$1 million chair in the Department of Health Administration and another \$350,000 for endowed scholarships in the department.

In addition, School of Nursing alumna Helen Birch of Lakeland, Fla., pledged \$1 million to the nursing school to establish an endowed scholarship fund.

The School of Pharmacy received a \$1.2 million gift to establish the Archie Owens McCalley Endowed Chair in honor of the Richmond pharmacist, who graduated from the school in 1927. McCalley's wife, Beulah, bequeathed the gift to the school on behalf of her husband, who died in 1999. ❖❖

10.11.07

VCU School of Medicine receives a nearly \$2.5 million grant from the National Institutes of Health to continue a mentoring and training program for young scientists researching women's health.

10.12.07

VCU Massey Cancer Center hosts Southeast premiere of “The Breast Cancer Diaries,” a critically acclaimed documentary and “The Richmond Diaries,” a short film featuring local cancer patients.

10.16.07

VCU partners with Columbia University in a study that shows reducing the class size in U.S. primary schools may be more cost-effective than most public health and medical interventions.



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Every day, grants generate tomorrow's discoveries

VCU ranks among the top universities in the country in sponsored biomedical research. ❖❖

Researchers work to improve pregnancy outcomes among African-Americans

Despite improvements to the nation's general health, African-Americans experience adverse pregnancy outcomes much more frequently than whites. Two new grants will allow VCU researchers to study why the disparities occur and to develop preventive measures.

The VCU School of Medicine received a grant totaling nearly \$6.4 million from the National Institutes of Health's National Center on Minority Health and Health Disparities. The five-year grant will support basic and clinical research that will help identify women at risk of adverse pregnancy outcomes and evaluate new interventions to improve maternal and neonatal health. The grant will also raise awareness and promote participation in evidence-based research among minority populations.

"In developing new ways to ensure healthy pregnancies with healthy outcomes, we will have a major impact on the cost of health care and, in the long term, reduce the burden of chronic diseases that have their roots in pregnancy complications," said Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine, executive vice president of medical affairs for the VCU Health System and primary investigator for the project.

Through the NIH grant, Strauss and a multidisciplinary research team at the VCU Center on Health Disparities will initiate three research projects that will focus on varying aspects of health disparities to identify and implement new diagnostic tools and interventions.

VCU also received a nearly \$2 million grant from the Centers for Disease Control and Prevention to improve pregnancy outcomes among African-American populations in Richmond. VCU was one of 40 institutions selected nationwide to receive funding through the CDC's Racial and Ethnic Approaches to Community Health (REACH) U.S. program.

Through the five-year grant, a VCU team led by principal investigator Dace Svikis, Ph.D., deputy director of the VCU Institute for Women's Health, professor of psychology and director of Promoting Healthy Pregnancies in the VCU Department of Obstetrics and Gynecology, will support local efforts to address infant mortality and prenatal awareness among economically disadvantaged African-Americans. The program will be a collaboration between the institute and the VCU Center on Health Disparities. ❖❖

Study examines how health insurance affects breast cancer patients' decisions

In May 2007, Cathy Bradley, Ph.D., a professor in VCU's Department of Health Administration, received a \$3 million grant from the National Cancer Institute to study the effects of employer-based health insurance on the labor decisions and treatment choices of women with breast cancer. Over the next five years, a team of researchers led by Bradley will follow 500 women from the central Virginia region recently diagnosed with breast cancer. Original data regarding work habits, treatment decisions, spousal employment, insurance options and health outcomes will be collected and analyzed to examine decision making under various scenarios. ❖❖



Genetic counseling student Jessica Waxler and Jayne Shepherd, VCU Partnership for People with Disabilities

Scientists research the role mast cells play in inducing asthma and allergy

A \$1.5 million, five-year National Institutes of Health grant has spurred a multidisciplinary team to study the production and survival of mast cells, which are known to play a central role in asthma and allergy.

The work being conducted by John Ryan, Ph.D., associate professor in the VCU Department of Biology, and colleagues may one day point researchers to new therapeutic strategies for the treatment or prevention of asthma and allergy, and inflammatory conditions such as rheumatoid arthritis, multiple sclerosis and heart disease.

The studies conducted by Ryan's team will include collaboration with Chris Kepley, Ph.D., and Larry Schwartz, M.D., Ph.D. in the VCU Department of Internal Medicine. ❖

Disability research grant establishes national ADA resource center at VCU

A \$4.25 million grant from the U.S. Department of Education's National Institute on Disability and Rehabilitation Research is funding a national office at VCU for Americans with Disabilities Act resource centers.

The Department of Rehabilitation Counseling in VCU's School of Allied Health Professions will use the grant

to establish VCU's national Coordination, Outreach and Research Center, which, according to Robert L. Clifton, Ed.D., interim chairman of the department, will enhance and improve the effectiveness of the institute's network of 10 regional resource centers.

Under the direction of Brian T. McMahon, Ph.D., professor in the Department of Rehabilitation Counseling and principal investigator, the center will seek to advance the implementation of the ADA by minimizing workplace discrimination. ❖

Study looks at how electronic records aid preventive health care decisions

A VCU researcher has received a \$1.2 million federal grant to study whether an interactive system linking patients to their health information in the electronic record of their primary care physician will increase the delivery of screening tests, immunizations and behavioral counseling.

Alex Krist, M.D., an assistant professor in the VCU School of Medicine's Department of Family Medicine, received the three-year grant from the Agency for Healthcare Research and Quality.

He will study whether an interactive preventive health record, or IPHR, called "My Preventive Care," will result in more patients receiving preventive health care interventions and referrals. The development of the IPHR

10.18.07

VCU Medical Center earns the Health and Human Services' Medal of Honor for organ donation efforts.

11.1.07

VCU and The Black History Museum and Cultural Center of Virginia, in conjunction with the Southern Historical Association annual meeting, sponsor a discussion of "Historical Perspectives on Health Disparities and African Americans in Virginia."



will be designed to place patients at the center of their preventive care. ❖

NCI awards \$10.7 million to fund the next generation of radiation therapy

Researchers at VCU’s Massey Cancer Center are working on a way to track tumors by incorporating image analysis into radiation treatment planning. The effort will be funded by a five-year \$10.7 million grant from the National Cancer Institute.

The grant was awarded to Jeffrey F. Williamson, Ph.D., professor in the VCU Department of Radiation Oncology

and chairman of the department’s medical physics division, for his work with image-guided adaptive radiation therapy (IGART).

In IGART, an imaging device about the size of a grain of rice is implanted into a cancerous tumor so doctors can monitor the tumor’s movement within the body over time, thereby predicting where it will be during treatment. Treatment can then be more precisely targeted, preventing damage to the body’s normally functioning tissues and organs.

“Human anatomy is dynamic and constantly changing. We know that tumors have day-to-day motions and

“Human anatomy is dynamic and constantly changing. We know that tumors have day-to-day motions and even second-by-second motions.”

Jeffrey F. Williamson, Ph.D.

even second-by-second motions,” said Williamson. “By acquiring data on these motions and developing 4-D models and predictions, we will be better able to predict where a tumor will be a second from now rather than where it was a second ago as we deliver radiation.”

One of the technologies being adopted for the project actually functions much like GPS and will provide real-time feedback to scientists.

The treatment method is considered to be an especially effective option for patients with lung, cervical and prostate cancers. In the next two years, 75 patients with these cancers will be able to participate in the groundbreaking clinical studies, becoming the first cancer patients to benefit from the revolutionary potential of IGART.

This project will involve the contributions of dozens of researchers at VCU. Massey also will collaborate with investigators from Stanford University, the M.D. Anderson Cancer Center at the University of Texas, the University of Iowa and the Netherlands Cancer Institute. ❖

Sponsored program awards (in thousands of dollars)

School	'03	'04	'05	'06	'07
Allied Health Professions	2,656	1,539	2,633	2,457	3,235
Dentistry	2,886	2,957	3,014	1,396	902
Medicine	92,348	93,941	100,999	100,748	102,113
Nursing	1,790	2,889	2,413	3,200	2,699
Pharmacy	10,455	3,790	4,956	3,721	4,767
Health sciences other	3,978	1,968	1,382	4,635	4,756
Totals	114,113	107,084	115,397	116,157	118,472

11.12.07

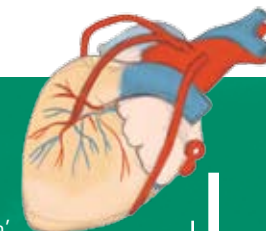
The VCU Medical Center joins a National Institutes of Health-funded clinical trial network, a groundbreaking, multicentered research endeavor designed to shorten the number of years needed for researchers to complete a study.

11.29.07

Kenneth Ellenbogen, M.D., professor of cardiology, moderates the first live webcast of the Heart Rhythm Society’s series “Reality EP Series,” a quarterly show featuring state-of-the-art procedures in clinical cardiac electrophysiology.

12.16.07

The Italian Society of Cardiology (Societa’ Italiana di Cardiologia) awards a training grant to Antonio Abbate, M.D., assistant professor of cardiology. The award honors a young investigator involved in clinical or basic science research outside Italy.



High honors

We're proving our mettle in education, employment and patient care. ❖

Stately award. Gov. Timothy Kaine named Steven Grant, M.D., as one of the state's Outstanding Scientists of 2007. Grant, associate director for translational research at the VCU Massey Cancer Center, and co-director of the cancer center's Cancer Cell Biology Program, was recognized for his widely renowned research in developing new strategies to combat leukemia and other hematologic malignancies.

National appointment. The U.S. Secretary of Health and Human Services, Michael Leavitt, appointed Sheldon M. Retchin, M.D., M.S.P.H., CEO of the VCU Health System and vice president for VCU Health Sciences, to the Council on Graduate Medical Education. The 17-member council provides ongoing assessments of workforce trends, training and financing policies and proposes efforts to address graduate medical education issues.

International honor. Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine and executive vice president of medical affairs for the VCU Health System, was named Cheungkong Scholar and Lecturing Professor at Heilongjiang University of Chinese Medicine by China's Ministry of Education. The program recognizes individuals who have made exceptional contributions to research and education. Strauss is one of only a few recipients without Chinese ancestry to ever receive this honor.

Role models. VCU's Women in Science, Dentistry and Medicine organization honored Aradhana Bela Sood, M.D., M.S.H.A, and Sarah Spiegel, Ph.D., for their service as strong role models and mentors for the professional development of women faculty. Sood, who also received the 2007 VCU Distinguished Service Award, is chairwoman of child and adolescent psychiatry and medical director of the Virginia Treatment Center for Children, and Spiegel is professor and chairwoman of the Department of Biochemistry and Molecular Biology.

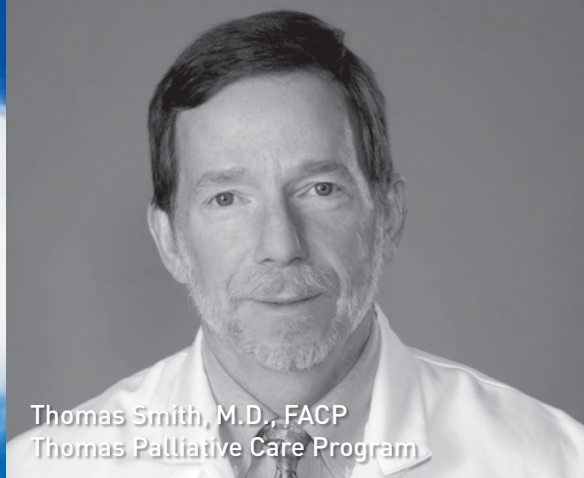
Promising scientist. The International Liver Transplantation Society named Valeria Mas, Ph.D., assistant professor in the VCU Department of Surgery, one of six winners of its Young Investigator award. Mas' work involved the study of high-density oligonucleotide microarrays in the gene expression patterns in HCV cirrhotic liver tissues of patients undergoing liver transplantation.



George W. Vetrovec, M.D., VCU School of Medicine, and Maria "Dhol" Tuason, R.N., B.S.N.



Susan G. Kornstein, M.D.
VCU Institute for Women's Health



Thomas Smith, M.D., FACP
Thomas Palliative Care Program



Sarah Spiegel, Ph.D.
VCU Department of Biochemistry
and Molecular Biology

Outstanding educator. Cecil B. Drain, Ph.D., FAAN, FASAHP, dean of the VCU School of Allied Health Professions and a certified registered nurse anesthetist, received the Helen Lamb Outstanding Educator Award from the American Association of Nurse Anesthetists.

The award was presented to Drain for his commitment to the profession of nurse anesthesia and to the advancement of educational standards that further the art and science of anesthesiology, resulting in high-quality patient care.

Drain has served as dean since 1997, moving the School of Allied Health Professions into position as one of the top 10 schools in the country. Under Drain, the school's enrollment has doubled, and he has facilitated the development of four doctoral programs including the Ph.D. in Health Related Sciences, which is ranked in the 25th percentile in the country.

Gifted teacher. George W. Vetrovec, M.D., professor and chairman of cardiology at the VCU School of Medicine, was honored by the International Academy of Cardiology with The Melvin L. Marcus Memorial Award for distinguished contribution as a gifted teacher.

Microbiology fellow. Dennis Ohman, Ph.D., professor and chairman in the Department of Microbiology and Immunology in the VCU School of Medicine, was named a Fellow of the American Academy of Microbiology. Ohman's research has focused on determining the

various pathogenic properties of *Pseudomonas aeruginosa*, a bacterium responsible for causing life-threatening infections in those with immuno-compromised conditions. Ohman and his group were the first to determine the function of many of its genes and the basis for their regulation.

Clinically acclaimed. The VCU Health System bestowed its highest honor for a physician — the Distinguished Clinician Award — to Julia R. Nunley, M.D., program director of the Dermatology Fellowship. Nunley has served for 18 years as a professor in the Department of Dermatology.

Primary caregiver. The Thomas Palliative Care Program, directed by Thomas Smith, M.D., FACP, chairman of the Division of Hematology/Oncology and Palliative Care in the Department of Internal Medicine, received the LifeNet Health Celebration of Life annual national service award for service supporting organ donation, donor family and transplant patient advocacy.

Lifetime achievement. The American Heart Association selected Joseph Ornato, M.D., professor and chairman of VCU's Department of Emergency Medicine, as recipient of the 2007 Resuscitation Science Symposium Lifetime Achievement Award for Cardiac Resuscitation Science. The annual award recognizes

pioneers in the field of cardiac resuscitation science for their outstanding contributions to the field.

Ornato chaired the steering committee for a National Institutes of Health-sponsored public access defibrillation clinical trial, which found that trained laypersons could use automated external defibrillators, or AEDs, in public places safely and that such use could double the odds that a cardiac arrest victim will survive.

Association leader. Susan G. Kornstein, M.D., executive director of the VCU Institute for Women's Health and professor of psychiatry and obstetrics-gynecology in the School of Medicine, is in line to take the helm at two prominent professional associations. In 2007, she was named president-elect of both the International Association for Women's Mental Health and the North American Society for Psychosocial Obstetrics and Gynecology.

Best friend. A VCU-supported effort that links volunteers with the elderly was one of 17 programs recognized nationwide for creating innovative and effective partnerships between county governments and the communities they serve. The National Association of Counties named Chesterfield County's ElderFriends program, which is supported by VCU's Department of Gerontology, a winner in its 2007 Acts of Caring Awards Program. The Chesterfield program currently links 30 volunteers from a variety of locations, including VCU, to elderly residents. ■■



Healthy environment

The VCU Health System receives national recognition for leadership in human resources and patient care. ❖

Health system makes *Working Mother* list of best companies for a third time

Working Mother magazine has named the VCU Health System one of the nation's 100 best companies of 2007 for working mothers, marking the third time the health system has received the honor.

According to the magazine, the VCU Health System is leading a significant and ongoing culture shift and is using companywide benefits and programs to ensure the retention and advancement of working mothers.

"The VCU Health System not only offers essential benefits like flextime, they go above and beyond with a range of best practices and policies to ease the difficulties for working parents and their families," said Carol Evans, CEO and president, Working Mother Media.

"The working environment here supports mothers and this is a very important consideration when we're looking for a job," said Luciana Torres, Ph.D., a mother

"The VCU Health System not only offers essential benefits like flextime, they go above and beyond with a range of best practices and policies to ease the difficulties for working parents and their families."

Carol Evans, Working Mother Media

Joy Intal, M.S., R.N., CNA, BC,
with her children



Gary W. Tye, M.D., and JoAnn Tillet, RN, VCU Department of Neurosurgery, with patient

of twin daughters and a postdoctoral associate in VCU's Department of Physiology. "The staff here is really willing to provide the kids with the best service."

"These awards are a wonderful affirmation of our workforce strategy, the strength of our people and our value to this community."

John Duval

Association names health system a top company for female executives

The National Association for Female Executives has named the VCU Health System one of five top nonprofits in the country.

"As one of the largest employers in the Richmond area, half of our top executives are women," said Maria Curran, VCU Health System vice president for Human Resources and Family Care.

Curran added that the VCU Health System continues to develop and support various groups geared toward female advancement, including Women in Science, Dentistry and Medicine (WISDM), VCU's well-known women's medical professional organization that develops strong female leaders across Virginia.

Awards underscore commitment to employee and community well-being

For the second consecutive year, the VCU Health System has been named the Greater Richmond Area Employer of Choice. The VCU Health System also received the national Alfred P. Sloan Award for Business Excellence in Workplace Flexibility.

"These awards are a wonderful affirmation of our workforce strategy, the strength of our people and our value to this community," said John Duval, CEO of MCV Hospitals of the VCU Health System.

In addition, the Center for Companies that Care has named the VCU Health System to its Honor Roll for the second time, recognizing the organization's commitment to elevating the quality of the work environment for employees and the quality of life for people in the community.

Hospital ranks among America's best, leads Central Virginia in excellence

The VCU Health System was named to the *U.S. News & World Report's* 2007 rankings of America's Best Hospitals.

The VCU Health System was the only medical center or hospital in Central Virginia to be named among the best hospitals. The *U.S. News & World Report* annual survey evaluated nearly 5,500 hospitals, with fewer than 200 meeting the standard in one or more areas. In particular, the VCU Health System was noted for excellence treating patients with kidney disease, ranking 42nd in the country. ■■



Kathie Cho, M.D., VCU Department of Internal Medicine, and patient



Global Ambassadors Program participants

Groundbreaking additions

New and expanded VCU Medical Center facilities represent more than physical growth. They symbolize our commitment to quality education and patient care. ■■

Critical Care Hospital

The Critical Care Hospital officially became part of the Richmond skyline with the topping out of the final steel beam on March 13, 2007, completing the structural steel frame of the \$192 million, 367,000-square-foot building. When finished in the fall of 2008, the 15-story hospital will enlarge the VCU Medical Center's critical

care capacity with new intensive care units for surgical trauma, neonatal, cardiac, neuroscience, medical respiratory and burn center patients. The project also includes floors for oncology and acute care specialties as well as the expansion of the Emergency Department, home to Central Virginia's only Level I Trauma Center. The new facility will house 232 adult patient beds, greatly increasing the medical center's critical care capacity.

VCU Medical Center at Stony Point

An extension of the VCU Medical Center, Stony Point offers leading-edge, specialty health care in a suburban setting, and in 2007, outpatient services were expanded in two areas.

Renovations to the VCU Breast Imaging Center at Stony Point were completed last year, but it's not just the décor that's changed. The center's staff has implemented changes to offer women a comprehensive, efficient and personalized approach to breast health screening and evaluation.

Patients who come to the remodeled Stony Point facility now have a "process that is very personal and very private," said Gilda Cardenosa, M.D., the center's director.

Opened in spring 2007, the VCU Spine Center at Stony Point offers a comprehensive resource for Central Virginia. Led by Michael DePalma, M.D., associate professor of physical medicine and rehabilitation and director of the Interventional Spine Care Fellowship Program, the center offers a multidisciplinary team approach to the management of patients with all spine ailments and chronic painful conditions, addressing surgical, pain management and rehabilitation needs.

School of Allied Health Professions

The School of Allied Health Professions relocated its departments of Gerontology, Occupational Therapy and Rehabilitation Counseling and the Virginia Center on Aging into an 18,659-square-foot space in the Theater



VCU School of Nursing



Medical Sciences Building II, opening Summer 2008



Critical Care Hospital, opening Fall 2008



W. Baxter Perkinson, Jr. Building, opening Summer 2009

Row Building on Broad Street. This move will enable the school to respond to enrollment growth in several academic programs and provide higher quality instructional resources.

Following the relocations, the school renovated two wings in the basement and the first floor on the south wing of West Hospital. The newly renovated spaces will comprise a significant addition to the school's instructional laboratory and distance-education space and provide critical expansion space to support its growing research programs.

W. Baxter Perkinson, Jr. Building

In October 2007, VCU broke ground on a new, \$20 million addition to its School of Dentistry, Virginia's only dental school. The new four-story building, named in honor of alumnus W. Baxter Perkinson Jr., will house research laboratories, classrooms, conference facilities, dental clinics and faculty offices, and connect the school's existing Wood and Lyons buildings.

The 55,000-square-foot structure will increase the school's laboratory space, enabling faculty members to expand their research in oral cancer — part of a collaborative effort made with VCU Massey Cancer Center. In an entirely new venture, faculty from the School of Dentistry will collaborate with faculty from the School of Engineering to create a new focus of research in dental bioengineering.

Completion of the W. Baxter Perkinson, Jr. Building is projected for summer 2009.

School of Medicine

The School of Medicine renovated several of its facilities in 2007 to enhance the training of medical and other health sciences students. Renovations included the Gross Anatomy Laboratory in Sanger Hall, the Computer-Based Instruction Lab in the Hermes A. Kontos Medical Sciences Building, clinical skills training rooms on the third floor of the Egyptian Building and major research lab renovations on the third and seventh floors of Sanger Hall.

Medical Sciences Building II

Construction started in late 2007 on the new Medical Sciences Building II. The 125,000-square-foot facility will include research laboratories to support 48 principal investigators, a vivarium, a stadium-style lecture hall and multipurpose seminar space. The nine-story building will connect floor to floor with the Hermes A. Kontos Medical Sciences Building and include a pedestrian walkway between the two buildings. Projected opening is August 2008.

School of Nursing Building

Dedicated in April 2007, the \$17 million, four-story School of Nursing Building offers increased space for expanded enrollment to address Virginia's nursing shortage. In the teaching and research facility, students learn on sophisticated patient simulators that can be programmed both to show symptoms of certain conditions and diseases and to respond to various interventions.

Students in the 150-seat auditorium are able to watch other students working on the simulators and use hand-held devices to indicate whether they agree or disagree with a particular intervention. The facility also includes research space and laboratories, a community outreach nursing center, faculty offices and a heritage room.

School of Pharmacy

The School of Pharmacy expanded into a renovated 4,500-square-foot space in the McGuire Hall Annex. The additional five laboratories and seven offices support research, faculty and administrative office needs. The school renovated an additional 11,193 square feet in the annex for use by faculty members for their research programs.

The school also renovated three rooms in the Smith Building, including a new 138-seat lecture hall equipped with technology for in-class presentations as well as video teleconferencing with students at the Inova Campus, and two clinical skills laboratories designed for interactive learning with small groups. One of the labs also has the capability to video teleconference to four external sites simultaneously.

Gumenick Suites

Thanks to a donation from the Gumenick family, Main Hospital's Gumenick Suites received updated décor and upgraded media and wireless access in 2007. These were the first renovations to the six-suite unit since it opened in 1989, offering comprehensive medical care combined with the luxury of first-class accommodations. ■■

Year-end statement

We're ensuring the financial health of the VCU Medical Center. ::

VCU Health System volume

Fiscal year	'03	'04	'05	'06	'07
Inpatient discharges	30,389	29,847	30,134	30,539	31,778
Emergency Department visits	78,653	75,747	77,148	81,364	79,259
Adjusted discharges	45,529	44,756	46,528	47,750	50,675
Outpatient visits	490,114	432,509	442,107	454,674	458,513
Total surgeries	16,624	17,293	17,912	18,043	17,782
Virginia Premier member months	828,580	957,095	1,077,760	1,221,866	1,314,248

VCU Health System financial statement*

Total operating revenue	\$1,230,558
Nonoperating revenues and expenses	\$17,567
Salaries, wages and benefits	\$509,544
Supplies	\$169,692
Purchased services and other expenses	\$143,670
Depreciation and amortization	\$39,978
Medical claims expense	\$285,314

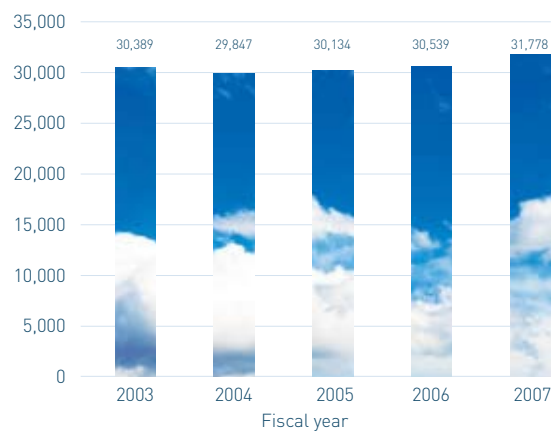
* in thousands for fiscal year ending June 30, 2007; includes VCU Health System components: MCV Hospitals, MCV Physicians, University Health Services, Virginia Premier Health Plan, Carolina Crescent Health Plan

VCU Medical Center student enrollment*

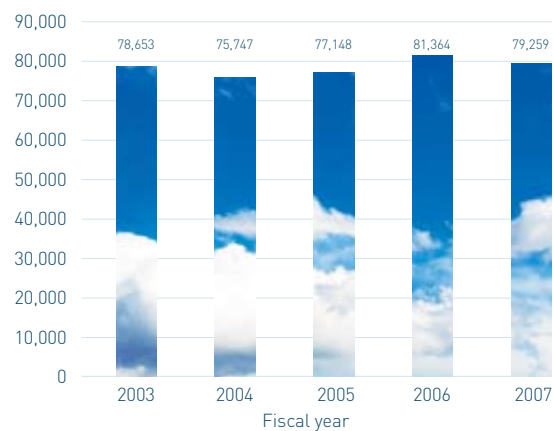
	'03	'04	'05	'06	'07
School of Allied Health Professions	882	862	904	964	990
School of Dentistry	445	452	454	454	452
School of Medicine	1,060	1,120	1,156	1,180	1,239
School of Nursing	792	837	830	922	1,005
School of Pharmacy	497	514	542	569	572

* includes on-campus and off-campus enrollments

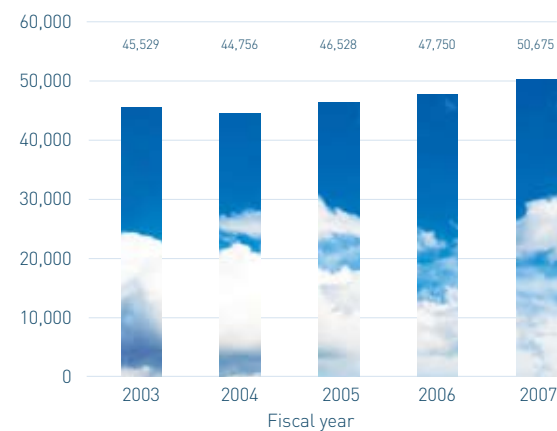
Inpatient discharges



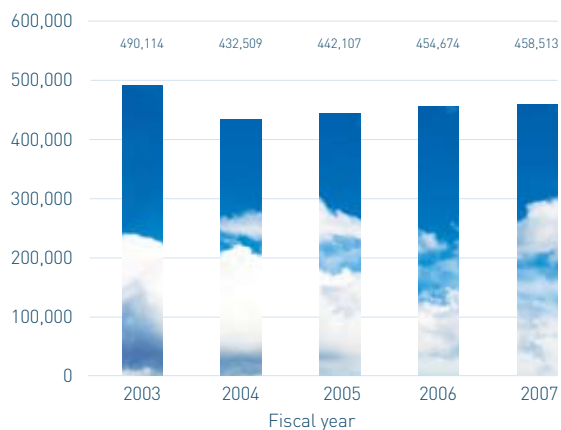
Emergency Department visits



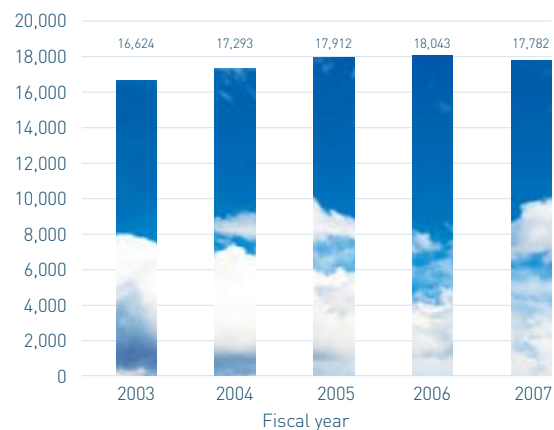
Adjusted discharges



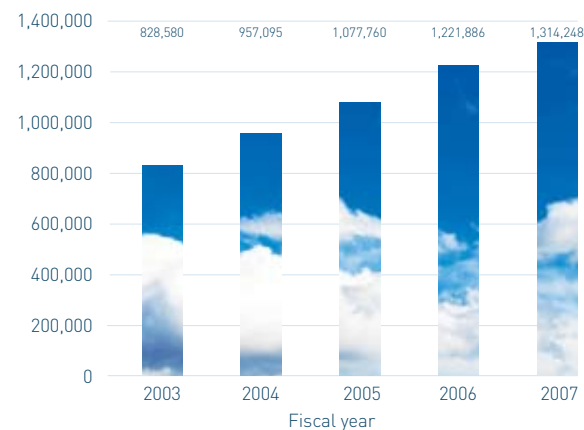
Outpatient visits



Total surgeries



Virginia Premier member months



Leadership



Eugene P. Trani, Ph.D.
President, VCU
and VCU Health System



Sheldon M. Retchin, M.D., M.S.P.H.
Chief executive officer, VCU Health
System, and vice president
for health sciences, VCU



Jerome F. Strauss III, M.D., Ph.D.
Dean, VCU School of Medicine,
and executive vice president
of medical affairs,
VCU Health System



John F. Duval
Chief executive officer,
MCV Hospitals,
VCU Health System



Richard P. Wenzel, M.D., M.Sc.
President, MCV Physicians,
and chairman,
VCU Department
of Internal Medicine



David C. Sarrett, D.M.D., M.S.
Associate vice president
for health sciences,
academic affairs



**Cecil B. Drain, Ph.D., FAAN,
FASAHP**
Dean, VCU School of Allied
Health Professions



**Nancy F. Langston, Ph.D.,
RN, FAAN**
Dean, VCU School of Nursing



Ronald J. Hunt, D.D.S., M.S.
Dean, VCU School of Dentistry



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