

VCU Medical Center

ANNUAL REPORT 2008

CRITICAL CARE HOSPITAL



Taking patient care to new heights

That's what we achieve – every day. Through a unique multidisciplinary approach to individualized care, research of life-changing treatments, education of practitioners and community members, and construction of modern facilities we build on our mission to provide the best medical care in the safest environment possible.



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2008



Filling a critical need

The VCU Medical Center's latest addition fosters innovation and raises the bar for patient care and safety in the region and beyond.

On Oct. 8, 2008, the VCU Medical Center dedicated its newest facility that revolutionizes patient care and launches a new era in how seriously ill and injured patients receive treatment.

"The Critical Care Hospital is distinctive in its evidence-based design and architecture that is focused on quality care and patient safety. It is a state-of-the-art facility that combines the experience and research of our faculty and staff with the newest technology," said Eugene P. Trani, Ph.D., VCU president and president and chair of the VCU Health System. "This is an enormous addition to medical and surgical care offered to the citizens of Virginia."

The \$184 million Critical Care Hospital is the largest capital construction project in the history of the VCU Medical Center. The 15-level, 367,000-square-foot facility houses 40 neonatal intensive care bassinets and 232 adult patient beds, increasing the medical center's ratio of private to semiprivate beds from 37 percent to 70 percent. The private rooms average 250 square feet — large enough to accommodate patients' families and multidisciplinary medical teams. The rooms also provide specialized features, such as built-in, ready-access dialysis portals and mobile headwalls, which reduce the need for moving patients, thereby lessening exposure to infection and risk of injury.

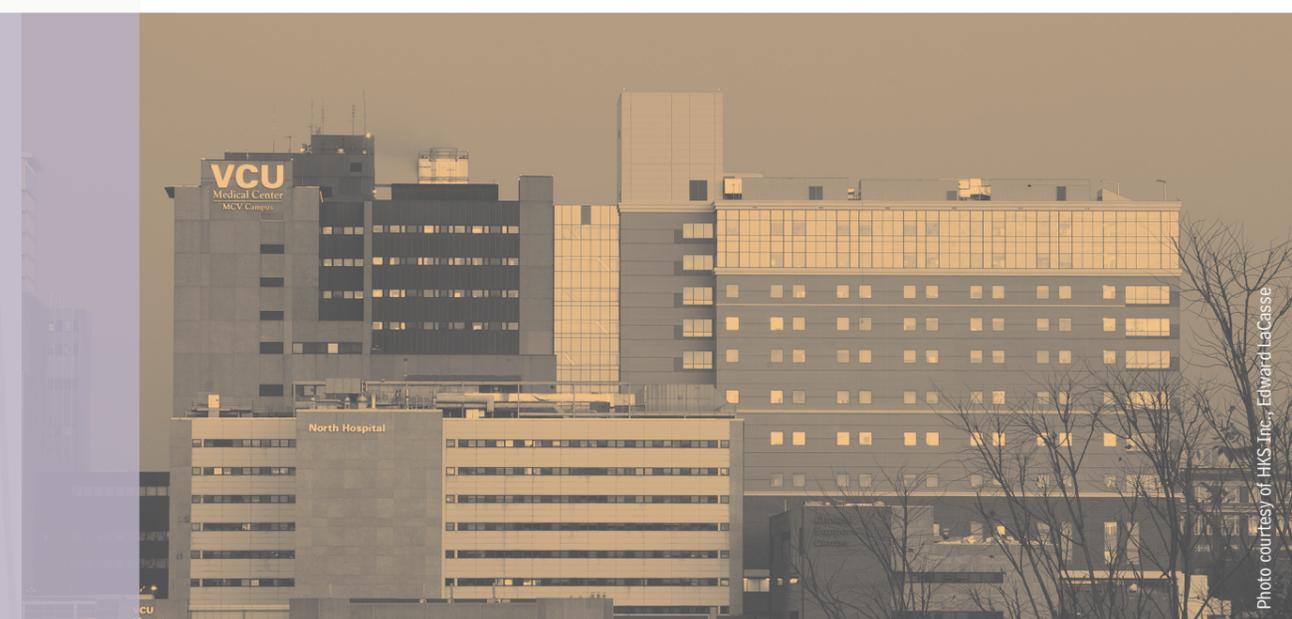


Hybrid operating room in the Critical Care Hospital



State's only Critical Care Hospital
era
"The Critical Care Hospital is distinctive in its evidence-based design and architecture that is focused on quality care and patient safety. It is a state-of-the-art facility that combines the experience and research of our faculty and staff with the newest technology."

— Eugene P. Trani, Ph.D., VCU president and president and chair of the VCU Health System





CRITICAL FACT: The Evans-Haynes Burn Unit, the oldest civilian burn unit in the country, is the region's only resource for the care of acute burns and reconstructive needs of burn survivors. It occupies the entire 8th floor of the Critical Care Hospital, expands from 12 beds to 16 and features eight single, general burn-care beds and eight burn-intensive beds, designed for patients who require specialized care. A mobile headwall located in each room gives doctors and nurses the flexibility to move strategically around each patient, while still keeping all the tools they need at hand.

"The Critical Care Hospital fills a tremendous need in the region for highly specialized care that involves advanced and complex procedures and treatment for seriously ill and injured patients," said Sheldon Retchin, M.D., M.S.P.H., VCU Health System CEO and vice president for VCU Health Sciences.

Patient and health care provider safety were the overarching goals in the design and construction of the new hospital, reflective of input from more than 600 doctors, nurses, staff and patients.

The entire building is digitally wired to accommodate the frequent communications required by critical care units and designed so that medical equipment and personnel are easily accessible.

"We're building on a culture that is focused on safety so that everything we do, from clinical care to housekeeping, is focused on attaining the highest achievable level of safety," said John Duval, MCV Hospitals CEO. "Patients and their families will immediately know that they are receiving great care from the region's most highly trained providers in a facility that ensures their safety."

Examples of the hospital's innovative safety and critical care features include:

- Acute Care Medicine floor rooms with specially designed negative pressure ventilation systems to prevent cross contamination of airborne particles.

"We're building on a culture that is focused on safety so that everything we do, from clinical care to housekeeping, is focused on attaining the highest achievable level of safety."

— John Duval, CEO, MCV Hospitals

From left: John D. Ward, M.D., president, MCV Physicians; John F. Duval, chief executive officer, MCV Hospitals, VCU Health System; Eugene P. Trani, Ph.D., president, VCU and president and chair, VCU Health System; Sheldon M. Retchin, M.D., M.S.P.H., vice president for VCU Health Sciences, and chief executive officer, VCU Health System; Jerome F. Strauss III, M.D., Ph.D., dean, VCU School of Medicine



Critical Care Hospital project managers Bob Reardon (left), director, VCU Health System capital programs, and Darrell Johnson, vice president, support and professional services, VCU Health System

- Surgical trauma rooms with moveable headwalls, referred to as "booms," which provide caregivers with 360-degree access to the patient. The availability of these specially equipped rooms means patients stay on the surgical trauma floor for routine wound care instead of being moved to another floor.
- A new surgical suite with 10 large, 650-square-foot, high-tech operating rooms features suspended equipment to allow staff freedom of movement and quick response to a patient's needs.
- A state-of-the-art neonatal intensive care unit that accommodates overnight stays by parents. Unique headwall design provides caregivers easy access to bassinets, monitors and medical gasses. Rubber floor tiles, acoustical ceiling tiles and privacy curtains

on plastic rollers reduce noise and enhance the developmental care for each neonatal patient. Adjustable lighting reduces infant stress and provides a calming atmosphere.

- The Evans-Haynes Burn Unit with a large procedure room for treatment that previously required movement to an operating room. Specialized hose reels mounted in the ceiling deliver purified water for wound care, while high-intensity lighting allows for better visualization.

The transfer of patients to the new hospital began Oct. 14, 2008. The final phase of the construction project, the expansion of the Emergency Department for the region's only Level I Trauma Center, is slated for completion in 2010.



Elevating patient care

Combining advanced treatment options with compassionate care continues to be our mission at the VCU Medical Center.

VCU MASSEY CANCER CENTER

Massey earns distinctive honors and reaches significant milestones in 2008.

Anthem Blue Cross and Blue Shield recognizes Massey as a distinctive center

Anthem Blue Cross and Blue Shield in Virginia named the VCU Massey Cancer Center a Blue Distinction Center for Complex and Rare Cancers in 2008. This distinction recognizes facilities within participating Blue Cross and Blue Shield networks that offer comprehensive inpatient cancer care programs for adults, delivered by multidisciplinary teams with training and expertise in treating complex and rare subtypes of cancers.

Only 85 of 1,500 cancer centers nationwide have earned this distinction.

The cancers considered by Anthem to be complex and rare include acute leukemia, brain cancer, esophageal cancer, gastric cancer, head and neck cancers, liver cancer and pancreatic cancer.

“The multidisciplinary teams at Massey work together to create individual treatment plans for patients. This unique approach to highly specialized patient care is one of the key reasons we were named a Blue Distinction Center,” said Gordon Ginder, M.D., the Eric and Jeanette Lipman Chair in Oncology and director of the Massey Cancer Center. “Massey also provides a whole host of clinical trials that will advance cancer care for patients throughout the world.”

The VCU Health System has now earned Blue Distinction Center designation for several areas: cancer, cardiac care, bariatric surgery and liver and bone marrow transplants. Massey’s Bone Marrow Transplant Program, celebrating 20 years of service in 2008, has become one of the fastest-growing programs in the nation, with nearly 1,600 transplants performed.

Massey expands team of nationally ranked Urologic Tumor Program twofold

Massey Cancer Center’s Urologic Tumor Program increased its ability to treat cancers of the urinary system with the addition of two new team members.

Lance J. Hampton, M.D., a urologist with expertise in minimally invasive, laparoscopic and robotic techniques, and Georgi E. Guruli, M.D., a physician-researcher specializing in the mechanisms of prostate cancer, joined the Division of Urology, ranked 49th in the nation by *U.S. News & World Report*.

Olubunmi Abayomi, M.D., associate professor, VCU Department of Radiation Oncology, VCU Massey Cancer Center

[Debra's story]

Debra Ferrara-Coseboom found the lump in her left breast in March 2007. As a long-time employee at the VCU Women's Health Center at Stony Point, she understood the importance of preventive care and performed regular monthly self-examinations. "I just knew to do that," she said.

Her caregiver, Mimi Bennett, NP, sent Ferrara-Coseboom for a diagnostic mammogram with Gilda Cardeñosa, M.D., M.S., who holds the Veronica Donovan Sweeney Professorship for the Chief of Breast Imaging, and is director of the VCU Breast Imaging Center. The lump was so small that it did not show on the mammogram, but both women could feel it and knew it was there. Cardeñosa immediately ordered an ultrasound and biopsy.

When Cardeñosa said she'd like to see her patient in the morning, "I knew I was in trouble," Ferrara-Coseboom said. "And sure enough, she told me I had breast cancer."

To hear those words was surreal for Ferrara-Coseboom, who rarely got sick and had no family history of the disease. "I was always healthy. I barely even got a cold," she said.

An MRI-guided biopsy discovered cancer on her right side as well. After consulting with her surgeon, Brian Kaplan, M.D., Ferrara-Coseboom decided on a double mastectomy. Next came four rounds of chemotherapy. To get through her ordeal, she relied on her family, her sense of humor and her medical team, including oncologist, Mary Helen Hackney, M.D.

"The day I met her she said to me, 'We are going to get through this.' She never said *you*," Ferrara-Coseboom recalled. "She was so warm. She put her arm around me, and I thought, 'I love this woman.'"

Her team continues to monitor her progress with phone calls from Cardeñosa and alternating three-month checkups with Kaplan and Hackney. "I'm just so grateful to all of them," Ferrara-Coseboom said.

With her last chemotherapy session a distant memory and breast reconstruction well under way, Ferrara-Coseboom feels fortunate to focus on her good health and her two grandchildren. "How much happier could I be about that?" she said. "That's my world and that's what I strive to live for."

Hampton brought his vast experience with the da Vinci Surgical System, the latest in robotic technology that offers a minimally invasive option for complex and delicate urologic, pediatric, gynecologic and cardiothoracic surgical procedures. For the patient, benefits may include significantly less pain, less blood loss and scarring, shorter recovery times, a faster return to normal activities and better clinical outcomes.

"Not every prostate cancer is the same, so we offer a wide variety of state-of-the-art treatment options," said Mitchell Anscher, M.D., the Florence and Hyman Meyers Chair of Radiation Oncology, chair of the Department of Radiation Oncology and expert on prostate cancer. "Drs. Hampton and Guruli are tremendous assets to our National Cancer Institute-designated center, adding robotic surgery to our vast array of treatment options and integrating more clinical trials into our menu."



Gordon Ginder, M.D., the Eric and Jeanette Lipman Chair in Oncology and director, VCU Massey Cancer Center

Researchers explore chemotherapy's role at the end of life
Physician-researchers from Massey — home to one of the nation's leading palliative care programs — published a case study in the *Journal of the American Medical Association* exploring the role of chemotherapy given in the last phases of life to cancer patients in the U.S.

The authors explored the issue of the treatment of cancer at the end of life, proposing that less chemotherapy allows for better quality of life and easier transitions toward death for terminally ill patients.

The authors, Thomas J. Smith, M.D., and Sarah E. Harrington, M.D., serve respectively as medical director and attending physician of Massey's Thomas Palliative Care Program. The award-winning, 11-bed inpatient unit has served as a model of quality care and training site for more than 75 other institutions.

"As doctors, we are taught to save lives and much of our training and practice is geared toward that effort," said Smith, who holds the Massey Endowed Chair in Palliative Care Research. "Patients and their families want and need more information to transition toward death. This article provides several helpful sections to identify the appropriate goals of chemotherapy, to transition to palliative or hospice care and to discuss prognoses in clear and effective manners with patients."

VCU PAULEY HEART CENTER

Pauley Heart Center earns accolades for leadership in cardiovascular care in 2008.

VCU Medical Center ranks as one of Top 100 heart hospitals

A Thomson Reuters study identified the VCU Medical Center as one of the top 100 U.S. hospitals that set the nation's benchmarks for cardiovascular care. The medical center is one of only two Virginia hospitals named in the study.

The annual study, the 2008 Thomson Reuters 100 Top Hospitals: Cardiovascular Benchmarks for Success, examined the performance of nearly 1,000 hospitals by analyzing clinical outcomes for patients diagnosed with heart failure and heart attacks and for those who received coronary bypass surgery and angioplasties. According to Thomson Reuters, the Top 100 hospitals identified in the study provide enormous value to their communities because heart disease is still the nation's No. 1 killer.

"This recognition reaffirms our position as a national leader in advanced cardiac care," said Eugene P. Trani, Ph.D., VCU president and president and chair of the VCU Health System. Dr. Trani, who underwent quintuple bypass surgery at the VCU Medical Center in 2008, knows firsthand the quality of care at Pauley.

The VCU Pauley Heart Center is nationally recognized for treating heart failure and for heart transplantation. In 2006, it became the first on the East Coast to implant the CardioWest temporary Total Artificial Heart, or TAH-t — the only total artificial heart approved by the U.S. Food and Drug Administration.

In 2008, SynCardia Systems Inc., manufacturer of TAH-t, honored the VCU Medical Center as a CardioWest 100% Center. The medical center bridged 100 percent of its patients who received a CardioWest artificial heart to a donor heart transplant in 2007.

"We are steeped in the tradition of being at the vanguard," said Vigneshwar Kasirajan, M.D., professor and chair of cardiothoracic surgery. "The Thomson Reuters study validates that our commitment to advance all areas — from the latest diagnostic tools and medical therapies to mechanical assist devices — is making an impact and saving lives."

Recognition of that commitment and tradition was evident on Oct. 22, 2008, at the dedication of a historical marker commemorating the birthplace of cardiac transplantation on the MCV Campus.

The marker honors the work of VCU's pioneers in cardiac care, including two fixtures at the medical center, Richard R. Lower, M.D., and James W. Brooks, M.D., both of whom passed away in 2008. Lower, a professor emeritus at the VCU School of Medicine and former chair of the Division of Cardiothoracic Surgery, helped develop the techniques for transplanting a human heart, which were reported in "Every Second Counts: The Race to Transplant the First Human Heart," by Donald McRae. Brooks, also a professor emeritus and a longtime thoracic and vascular surgeon at VCU, trained the next generation of surgeons.

Pauley achieves certification for ventricular assist devices

This past year, the Joint Commission awarded Pauley Heart Center its Gold Seal of Approval for the Disease-Specific Care Certification for ventricular assist devices.

“The Pauley Heart Center pursued this comprehensive, independent evaluation to confirm that the safety and quality of care we provide is second to none,” said the center’s director George W. Vetrovec, chairman of the Division of Cardiology at the VCU School of Medicine and the Martha M. and Harold W. Kimmerling M.D. Chair in Cardiology. “Because Joint Commission standards are regarded as the most rigorous in the industry, we’re proud to achieve this distinction.”



CRITICAL FACT: The Critical Care Hospital’s wireless network means the facility contains no spot where the signal weakens or threatens to lose connectivity. That access is key to allowing “COWs,” or Computers On Wheels, to make electronic medical records work as they should. The hospital’s 139 COWs allow physicians and nurses to access and enter information right at the patient’s bedside, not down the hall at the nurses’ station where they might have to wait in line to access a computer.

Jerome F. Strauss III, M.D., Ph.D., dean, VCU School of Medicine

To earn this distinction, a disease management program undergoes an extensive, unannounced, on-site evaluation by a team of Joint Commission reviewers every two years. The program is evaluated against the commission’s standards through an assessment of the program’s processes, the program’s ability to evaluate and improve care within its own organization, and interviews with patients and staff.

“This certification means the VCU Pauley Heart Center does the right things and does them well for ventricular assist device patients,” said Jean E. Range, M.S., R.N, C.P.H.Q., executive director, Disease-Specific Care Certification, Joint Commission.

Pauley becomes first in nation to use intracardiac ultrasound

In 2008, the VCU Pauley Heart Center became the first in the nation to use a new type of intracardiac ultrasound machine that produces enhanced imaging of the heart, allowing cardiac electrophysiologists to better diagnose and treat atrial fibrillation.

Intracardiac ultrasound allows doctors to better visualize structures in the heart using a special catheter that is laced through a blood vessel in the leg and advanced into the heart. Traditionally, ultrasound imaging of the heart is done outside the chest with a probe and requires a large, heavy machine that cannot be moved easily.

“We’re going from a machine that is quite big and takes up a lot of space to one the size of a laptop computer that is positioned at the bedside,” said Kenneth Ellenbogen, M.D., who holds the Hermes A. Kontos, M.D. Professorship in Cardiology and is professor of cardiology and director of the cardiac electrophysiology lab at the VCU Medical Center. He performed the procedure using the new technology. “It gives us spectacular images of the heart, our catheters in the heart and the structures in the heart, and helps us do an even better job of ablating atrial fibrillation more safely and more effectively.”

VCU surgeons perform first live Mini-Maze training session

As leaders in the field of cardiothoracic surgery, a group of VCU cardiothoracic surgeons conducted a training session on Jan. 17, 2008, of a procedure to help stop irregular heart rhythm, atrial fibrillation. The session was transmitted live from an operating room at VCU’s Pauley Heart Center to a large audience of electrophysiologists gathered at the 13th Annual International Boston Atrial Fibrillation Symposium in Massachusetts.

The VCU team, led by Vigneshwar Kasirajan, M.D., chair of cardiothoracic surgery, and Kenneth Ellenbogen, M.D., professor of cardiology and director of the cardiac electrophysiology lab, used a minimally invasive technique called a modified Mini-Maze. This approach allows surgeons to block the abnormal impulse from getting to the heart to trigger the arrhythmia.

“The opportunity to educate the wider electrophysiology community about the benefits of surgical therapy for atrial fibrillation was tremendous and well-received,” Kasirajan said.



[Kyle’s story]

At age 33, Kyle McGhee drove the open road as a truck driver with his dog, Ghostface, at his side. Suddenly, after 14 faithful years, McGhee had to put Ghostface to sleep.

“I got sick right after that,” McGhee said. “On May 29, 2007, I was told that I had major heart failure and that at any minute, I could go.”

McGhee’s doctor sent him to the Pauley Heart Center at the VCU Medical Center where the heart transplant team, led by cardiothoracic surgeon Vigneshwar Kasirajan, M.D., said McGhee would need a heart transplant.

Some heart failure patients, like McGhee, are too sick to wait for an available donor match and need immediate help. For these patients, the Pauley Heart Center provides a lifeline through the use of medical assist devices, including the CardioWest temporary Total Artificial Heart. In 2008, SynCardia Systems Inc., manufacturer of the CardioWest temporary Total Artificial Heart, honored the VCU Medical Center as a CardioWest 100% Center. The medical center bridged 100 percent of its patients who received a CardioWest artificial heart to a donor heart transplant in 2007.

The successful surgery, performed in August 2007, bought McGhee some time. After his temporary artificial heart transplant, he immediately felt better. Two-and-a-half months later, on Oct. 26, a donor heart match was found. “I said, ‘Okay, let’s go.’ I wasn’t scared because if I didn’t get it, I was going to die,” McGhee said.

On Nov. 17, 2007, McGhee was released from the medical center. “I was surprised how soon after my donor heart transplant I could go home,” he said. “Every day, I get a little bit stronger and a little bit better. I’m living my life the right way and making sure it counts.”



[Melissa's story]

After being up

most of the night tending to 10 four-day-old puppies, Melissa Bowen, age 22, tried to get some much-needed rest. She retired to a bedroom in her sister's house in Midlothian, Va. Half asleep, she heard an engine roar getting louder and louder.

At 10:20 a.m. on April 27, 2008, a small plane slammed into the ground 20 feet from the house and slid into the foundation underneath where Bowen slept. In an instant, she was enveloped in a fire ball. "I thought I was going to die," Bowen said.

The force of the explosion tossed her onto all fours. Miraculously, two of the bedroom walls fell out, providing Bowen with an escape route. Barefoot, she ran through the opening. Bowen stopped, dropped and rolled, and lay on the grass. She didn't feel any pain and, in fact, thought she had escaped unscathed. "At no point did I feel like I was burned," Bowen said. "I thought I had gotten out before anything had touched me."

Neighbors converged on Bowen as emergency crews arrived. She was rushed to the VCU Medical Center emergency room and woke up eight hours later in the intensive care unit of the Evans-Haynes Burn Unit, where she would remain for the next six weeks. Burned over 50 percent of her body, Bowen's left side was the most severely injured. Every day she endured painful wound care procedures to help her heal. Five skin-graft surgeries followed, one per week.

Over the course of her 41-day hospital stay, Bowen said the burn unit staff became her family, with Andrea Pozez, M.D., who holds the Leroy Smith Distinguished Professorship in Plastic and Reconstructive Surgery, supervising her care. When Bowen first arrived at the burn center, "I had black scabs all over my face, and I remember Dr. Pozez peeling the scabs. Her touch was so gentle."

Discharged from the medical center on June 6, 2008, Bowen returns for hand therapy twice a week. Additional laser surgeries every other month will continue to improve her skin. "The skin I have now is getting better and better," Bowen said. "It looks amazing."

Bowen is headed to a full recovery, and she's surprised at how far she's come. "When I play it over in my mind, I can't believe I'm here," she said. "People trapped in house fires come out worse than I am. People lose their legs and their fingers. I'm doing exceptionally well."

NURSING

Nursing at the VCU Medical Center builds on Magnet status.

Bedside project proves successful for nurses, patients

In 2007, the VCU Medical Center was chosen as one of 68 hospitals nationwide to participate in a two-year project to improve patient care. "Transforming Care at the Bedside" (TCAB) launched at the medical center in January 2008 in the Acute Care Medicine Unit. The project was led by Joan Dagenhart, nurse manager of the unit, and Heather Craven, nurse clinician.

The TCAB program was designed to develop new interventions that improve the hospital work environment, with the goal of improving the safety and quality of care provided by nurses at the bedside.

During the project, Dagenhart and Craven mentored nursing staff as they investigated and identified processes they could use to engage registered nurses and other health care staff caring for the patient to become more involved in the decision-making process.

"We have empowered staff to talk with each other," Dagenhart said. "We are finding that there are so many ways you can change your work flow to improve patient care."

Initial data suggest that the project at the medical center has led to increased patient satisfaction on the unit.

"Patient satisfaction has skyrocketed, including satisfaction with nursing care and with explanations from nurses and doctors. Other performance measures have improved as well," Craven said.

The future goal of the project is to disseminate information about TCAB to other units at the medical center and to expand the project throughout the entire organization.

STICU earns prestigious Beacon Award

The American Association of Critical Care Nurses awarded VCU's Surgical Trauma Intensive Care Unit the prestigious Beacon Award in May 2008. The STICU is the first ICU in Richmond, Va., to receive the award, which recognizes the nation's top hospital critical care units that exemplify strong patient outcomes and a healthy work environment for nurses, and demonstrate excellence and innovation.

"As a former critical care nurse, I am continually awed by the expert technical and compassionate care provided by our STICU nurses," said Nancy New, nursing director, VCU Health System. "They have positively impacted so many patient and family lives."

The 18-bed STICU houses critically ill patients from trauma, vascular, general and oncology surgery, as well as otolaryngology services. The unit, which currently has 75 nursing staff members, is led by Deborah Graham Burnette, nurse manager; Christi Adams, nurse clinician; and Rao Ivatury, M.D., chief trauma and medical director.

"I am proud of our STICU team. It is a privilege to be working with such consummate professionals who have their patients' improvement as their only goal and toil hard to achieve this," Ivatury said. "The Beacon Award is one of the highest achievements possible for an intensive care unit along with the medical center's Magnet designation for nursing excellence."



Nurses' station in the Critical Care Hospital (above); Jennifer Graham, R.N., (right) with VCU Pauley Heart Center patient



VCU Medical Center institutes da Vinci robotic procedures

The VCU Medical Center now offers the latest in robotic surgery technology with the recent addition of the da Vinci Surgical System.

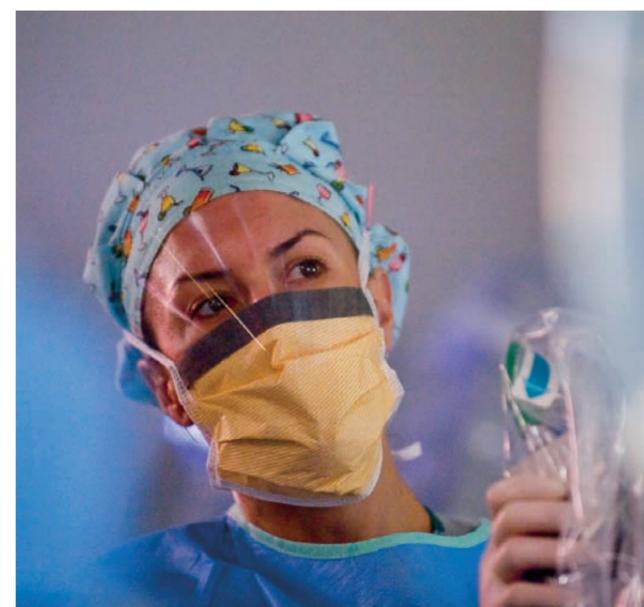
In April 2008, David Lanning, M.D., and Claudio Oiticica, M.D., from the VCU Division of Pediatric Surgery, performed the first da Vinci surgery at the medical center on a 17-year-old patient with significant gastroesophageal reflux with esophagitis as well as a hiatal hernia.

“We are the only general pediatric robotic surgery program in the region,” said Lanning, who added that there are less than a handful of hospitals in the country performing robotic surgery on pediatric patients.

One of the main advantages offered by the da Vinci system is the unique dual scopes that provide the surgeon sitting at the controls with a 3-D view of the surgical site. “When millimeters count, this 3-D view allows surgeons to perform an operation in a safer, more precise manner, which means better patient outcomes,” said Lanning who has performed more than 50 robotic cases in the past five years and now provides expertise as a mentor to other surgeons training on the system at the medical center.

The second main advantage of da Vinci lies in the robotic joints of its “wrists.” The wide-ranging movement of these joints allows surgeons to use intricate instruments in very tight spaces at difficult angles, which again means more precision.

Other divisions use the da Vinci as well. Catherine Matthews, M.D., associate professor in the Division of Urogynecology in the Department of Obstetrics and Gynecology, performs da Vinci sacrocolpopexy — a minimally invasive surgical procedure designed to correct pelvic organ prolapse.



Catherine Matthews, M.D., associate professor, VCU Department of Obstetrics and Gynecology

Post-operative benefits of the da Vinci-assisted sacrocolpopexy include a significantly shorter hospital stay, less pain and minimal oral pain medications. Patients also have the ability to return to regular activities, including work, within about two weeks as opposed to six to eight weeks after a standard abdominal incision.

“This really allows people to have an efficient, effective operation from which the recovery is very reasonable,” Matthews said. “I think it has really opened the gateway to many more people to be able to physically address something that otherwise they might have been putting off. The cosmetic benefits of tiny laparoscopic incisions as opposed to a major abdominal incision are also notable.”

Stroke program receives Joint Commission certification

The VCU Stroke Program, which offers quality care for both ischemic and hemorrhagic stroke patients, received Joint Commission Primary Stroke Centers certification in 2008. This honor recognizes centers that make exceptional efforts to foster better outcomes for stroke care.

The certification enhances the program’s recognition as a “Get with the Guidelines” stroke participating hospital by the American Heart Association and American Stroke Association.

“The mission of the VCU Stroke Program is to improve the quality of and access to care for stroke patients throughout Virginia,” said Warren Felton, M.D., medical director for the stroke program. “The program is an interdisciplinary effort, including specialists in neurology, neurosurgery, emergency medicine, radiology, vascular surgery, critical care medicine, physical medicine and rehabilitation, among others.”

The program features many facets that have helped it to achieve its national reputation and the Joint Commission’s certification.

“Strengths of the program include a CT scanner in the Emergency Department, which allows diagnostic testing within minutes of arrival; neurologists and neurosurgeons available in-house 24/7; the Acute Stroke Treat and Transfer Program; telemedicine; and clinical stroke research,” said Stacie Stevens, nurse coordinator of the program.

The Acute Stroke Treat and Transfer Program provides area physicians 24-hour-a-day consultation with VCU attending stroke neurologists. Patients may be stabilized and receive initial treatment locally, then transported by VCU LifeEvac to the VCU Medical Center.

The new Critical Care Hospital, including the expanded Neuroscience Intensive Care Unit and a hybrid OR suite for treating neurovascular disease, enhances the program’s capacity to care for patients with complex stroke conditions.

With the recruitment of John Reavey-Cantwell, M.S., M.D., the Richard Roland Reynolds Chair in Neurosurgery who leads the VCU Department of Neurosurgery’s Neurovascular Program, Felton said stroke patients will benefit from advanced interventional techniques. Reavey-Cantwell is one of about 75 doctors in the U.S. with subspecialty training in endovascular neurosurgery.



[Stuart and Jane’s story]

On New Year’s Eve 2008, Stuart Butler attended a party

in Richmond’s Museum District. As he hung out on a second-floor balcony with his friends, he had no idea that the new Critical Care Hospital had opened at the VCU Medical Center two months earlier. Lucky for him it had.

At approximately 2 a.m., Butler, age 26, fell 20 feet off the balcony and landed on his head. Emergency crews rushed him to the hospital where John Reavey-Cantwell, M.S., M.D., performed surgery to repair Butler’s skull.

Responsive after the surgery, Butler was placed in a medically induced coma to decrease brain swelling. He recalls nothing of the next two weeks. His mother, Jane, however, remembers everything about his hospital stay and the care he received.

“I was impressed by every nurse and every doctor that we encountered,” she said. “There wasn’t one who didn’t try to answer our questions, one who wasn’t reassuring, to let us know that everything that could be done would be done.”

After waking up from the coma and pulling out his IV (“I didn’t know where I was,” he said), Butler was moved to the rehabilitation floor on Jan. 19. Dubbed “miracle boy” by the hospital staff, he began doing daily physical, occupational and speech therapy. He progressed so quickly that he was released from the hospital on Jan. 29.

“I’m glad I didn’t fall in the Civil War era,” Butler said jokingly. “I was in and out in a month, and I like to think that the fact that I’m young helped everything heal up pretty quickly.”

Butler continues with daily therapy sessions for just over two hours but hopes to get back to his network engineer job and his apartment, as well as gain back the 25 pounds he lost.

Recently, Butler and his mother returned to the Critical Care Hospital to say thanks to the medical team that treated him. “I introduced myself and said, ‘I don’t remember you, I’m sorry,’” Butler said. “They told stories of me taking out my tubes and stuff.”

The visit meant a lot to Butler’s mother, who witnessed firsthand the attention the team afforded her son. She wanted them to see the result of their tireless efforts. “They were so happy to see him alert and awake,” she said. “They do so much more than just their job. To see them taking care of your child and doing things for your child that you can’t do, how do you thank someone for that?”

Bringing new hope

VCU researchers have long been leaders at discovering treatments and therapies that improve – and ultimately save – lives.

School of Medicine department chair leads landmark genetic and cancer studies

Paul B. Fisher, M.Ph., Ph.D., the Thelma Newmeyer Corman Endowed Chair in Oncology and a professor and chair of the Department of Human and Molecular Genetics and director of the VCU Institute of Molecular Medicine in the VCU School of Medicine, and colleagues discovered how an antibiotic works to modulate the activity of a neurotransmitter that regulates brain functions. Their findings could lead to therapies to treat Alzheimer's disease, Huntington's disease, epilepsy, stroke, dementia and malignant gliomas.

Fisher and his colleagues reported on the action mechanism of ceftriaxone, a third-generation antibiotic with neuroprotective properties. The findings suggest that this antibiotic or a similar drug may serve as a potential therapy against neurodegenerative disease caused by glutamate toxicity, an important and fundamental process in neurodegeneration.

In another study, Fisher and his colleagues uncovered how a melanoma differentiation associated gene induces a bystander effect that kills cancer cells without harming healthy ones. The findings may provide a method to target metastatic disease, which is one of the primary challenges in cancer therapy.

In the study, researchers report on the molecular and biochemical mechanisms by which the gene, mda-7/IL-24, selectively kills cancer cells through apoptosis, or programmed cell death. The gene not only kills the original tumor, but distant ones as well.

In a separate related study, Fisher and researchers from VCU Massey Cancer Center and the VCU Institute of Molecular Medicine published findings that implicate a new chemoprevention gene therapy for preventing and treating pancreatic cancer.

The researchers showed that combining the dietary agent perillyl alcohol with mda-7/IL-24 eliminates human pancreatic cancer cells in mice displaying sensitivity to these highly aggressive cancer cells. The results indicate that this approach not only prevents pancreatic cancer progression, but it also effectively kills established tumors, thereby displaying profound chemopreventive and therapeutic activity.

"We are very excited at the prospect of this therapy as a means of both preventing and treating pancreatic cancer, and it has significant potential to move rapidly into human clinical trials," Fisher said.



Doctoral candidate Upneet Sokhi in the laboratory of Paul B. Fisher, M.Ph., Ph.D., professor and chair, VCU Department of Human and Molecular Genetics

Massey researchers discovered that a combination of anti-cancer compounds kills chronic myelogenous leukemia cells previously resistant to conventional forms of therapy.

Work in another cancer cell study discovered that SARI, a new anti-tumor gene identified by VCU researchers, suppresses the growth and survival of tumor cells by interfering with the action of cancer cell molecules that drive cell division and promote survival.

The investigators delivered SARI to cancer cells using a virus and the infected cancer cells subsequently stopped dividing and died. As 90 percent of all cancer types rely on a similar mechanism to proliferate and evade destruction, researchers noted that SARI could be an effective anti-cancer treatment for many tumors. Subtraction hybridization, a powerful technique pioneered in the Fisher laboratory, uncovered SARI.

Funding for these studies includes grants from the National Institutes of Health, the Samuel Waxman Cancer Research Foundation and the National Foundation for Cancer Research.

PET scans influence clinicians' cancer treatment decisions

Clinicians using positron emission tomography (PET) scan results in cancer detection changed their treatment decision in more than one-third of patient cases, according to a national study led by Bruce Hillner, M.D.,

who holds the Internal Medicine Professorship II, is a professor in the Department of Internal Medicine at the VCU School of Medicine and a member scientist with the VCU Massey Cancer Center. The findings, published in the December 2008 *Journal of Nuclear Medicine*, suggest the critical importance of the PET scan as a diagnostic technology.

In 2005, PET became one of the first technologies to be covered by an insurance policy known as Medicare Coverage with Evidence Development. To help determine coverage requirements, the National Oncologic PET Registry (NOPR) was established to collect relevant data.

Hillner, chair of NOPR, and his colleagues collected data from referring physicians on approximately 41,000 patients at 1,300 medical centers across the U.S.

The team reported that on the basis of PET scan results, clinicians changed their intended course of management in 36.5 percent of cases. Additionally, for patients who were scheduled to undergo biopsy prior to PET, the biopsy was avoided in approximately 70 percent of cases due to results of the scan.

Massey physician spearheads two innovative cancer studies

The VCU Massey Cancer Center initiated a National Cancer Institute-sponsored, Phase II clinical study in August 2008 to study the effects of a novel drug combination on two sub-types of non-Hodgkin's lymphoma: B-cell lymphoma and mantle cell lymphoma.

CRITICAL FACT: The oncology unit on the 2nd floor of the Critical Care Hospital extends the reach of the multidisciplinary care provided by the VCU Massey Cancer Center, one of only 64 National Cancer Institute-designated centers

in the U.S. Specialists from all areas of oncology, including surgical oncology, medical oncology and radiation oncology, as well as nurses, genetic counselors, social workers and mental health workers, offer medical expertise and family-centered care to patients. The floor's 28 large, private patient rooms provide more open visitation for family and friends in a comfortable setting.



Adly Yacoub, Ph.D., assistant professor, VCU Department of Radiation Oncology, VCU Massey Cancer Center

Led by Steven Grant, M.D., the Shirley Carter Olsson and Sture Gordon Olsson Chair in Oncology Research, Massey's associate director for translational research and co-leader of the cancer center's Cancer Cell Biology Program, the multi-institutional study will enroll patients whose disease has progressed following treatment with other regimens. The study aims to determine whether these types of lymphoma respond to the dual-drug treatment.

The study's results could lead to a new regimen for treating fast-growing B-cell and mantle cell lymphomas. A number of researchers worldwide, including Grant, have reported synergistic interactions between the two drugs, marketed as Velcade and Zolinza, in leukemia and other hematologic malignancies. "Phase I data from studies in patients with multiple myeloma have given us a good idea of safe and appropriate doses of these two agents when they are administered in combination," Grant said. "Such information has allowed us to open this as a Phase II study in patients with lymphoma to determine how effective this novel drug combination is in this setting."

In another study led by Grant, Massey researchers discovered that a combination of anti-cancer compounds kills chronic myelogenous leukemia (CML) cells previously resistant to conventional forms of therapy.

The anti-cancer agent, imatinib mesylate, inhibits the activity of a mutant protein, known as Bcr/Abl, which is responsible for CML; however, patients eventually become resistant to the agent, often through the development of further mutations in the Bcr/Abl protein.

According to Grant, resistance to imatinib mesylate prompted the search for newer agents, such as MK-0457, a Bcr/Abl kinase inhibitor.

Working under grants from the National Institutes of Health, the Leukemia and Lymphoma Society of America, the V Foundation, and the Department of Defense, Grant and colleagues examined the effects of combining MK-0457 with vorinostat, a drug recently approved for the treatment of cutaneous T-cell lymphoma. They found that this combination leads to a dramatic induction of programmed cell death in CML cells, including imatinib-resistant cells.

Researchers link gene to dangerous pregnancy condition

An international team of researchers, including Jerome F. Strauss III, M.D., Ph.D., dean of the VCU School of Medicine, identified a gene that controls the catechol-O-methyl transferase (COMT) gene that may play a role in pre-eclampsia, a condition that affects 5 to 8 percent of pregnancies. Left untreated, pre-eclampsia can be fatal for mother and infant.



Photo courtesy of HKS, Inc. Edward LaCasse

The study results may one day help physicians identify women with an increased risk of developing pre-eclampsia early in pregnancy through genetic and metabolic screening. Additionally, it could lead to the development of therapeutic interventions and preventive measures to reduce the risk of developing pre-eclampsia. Currently, there is no way to predict which women will develop the condition.

Supported by grants from the National Institutes of Health, the British Heart Foundation and the Kanae Foundation for the Promotion of Medical Science in Japan, researchers found that the COMT gene is associated with pre-eclampsia.

At VCU, Strauss together with Lori Hill Walsh, an M.D./Ph.D. candidate, presented findings that a polymorphism or genetic variant in the fetal COMT gene is associated with pre-eclampsia, providing additional evidence that the gene plays a role in human pre-eclampsia.

“In the future, the findings may lead to the development of genetic testing or, even easier, screening of pregnant women for low levels of 2 methoxyestradiol in their blood or urine. If this problem is recognized early in pregnancy, physicians could supplement these mothers with 2 methoxyestradiol and prevent their pre-eclampsia,” Walsh said.

Multicenter trial reinforces accuracy of virtual colonoscopy

A study conducted at the VCU School of Medicine and 14 other sites confirmed that the Computed Tomographic (CT) colonography, also known

as virtual colonoscopy, could serve as a screening option for colorectal cancer, the third most frequently diagnosed cancer and second-leading cause of cancer death in men and women in the U.S.

The CT colonography, highly accurate in its ability to detect cancer and precancerous polyps using conventional colonoscopy as the gold — or reference — standard, could serve as a primary screening option for colorectal cancer, according to the results of the American College of Radiology Imaging Network (ACRIN) National CT Colonography Trial.

The ACRIN trial, sponsored by the National Cancer Institute, part of the National Institutes of Health, is the largest multicenter study to estimate the accuracy of CT colonography involving 117 participants at VCU and 2,600 participants total nationwide.

CT colonography employs virtual reality technology to produce 3-D images viewed as a video of the inside of the colon and permits a thorough and minimally invasive evaluation of the entire colorectal structure.

In the ACRIN trial, CT colonography was found to be highly accurate for the detection of intermediate and large polyps, with 90 percent of the polyps one centimeter or larger detected.

National study finds lower survival rate for cardiac arrests

Patients who have an in-hospital cardiac arrest at night or on the weekend have a substantially lower rate of survival to discharge than hospitalized patients who experience a cardiac arrest during the day

A study conducted at the VCU School of Medicine and 14 other sites confirmed that virtual colonoscopy could serve as a screening option for colorectal cancer, the third most frequently diagnosed cancer in the U.S.



David C. Sarrett, D.M.D., M.S.,
associate vice president, academic
affairs, VCU Health Sciences

on weekdays, according to a nationwide study of hospitals led by Mary Ann Peberdy, M.D., associate professor in the cardiology division of the VCU School of Medicine’s Department of Internal Medicine.

Peberdy and colleagues evaluated survival rates of 86,000 adult, in-hospital cardiac arrest patients at more than 500 hospitals across the country that are part of the American Heart Association’s National Registry of CardioPulmonary Resuscitation.

The study indicates that the detection and treatment of cardiac arrests may be less effective at night because of patient, hospital, staffing and response factors. If in-hospital cardiac arrests are more common or survival is worse on nights and weekends, this information could have important implications for hospital staffing, training, care delivery processes and equipment decisions.

Study uncovers sodium’s role in ion channel modulation

Diomedes Logothetis, Ph.D., the John D. Bower, M.D. Endowed Chair in Physiology and chair of the VCU School of Medicine’s Department of Physiology and Biophysics, is studying the modulation of ion channel activity at a molecular level.

Ion channels are transmembrane proteins that serve as the gatekeepers for the movement of ions in and out of each cell. In neurons, heart cells and other excitable tissues, ion movement generates tiny electrical currents that form the basis of the rapid communication between cells, enabling processes such as thought, learning and the heartbeat.

During modulation of ion channel activity, extracellular signals are transduced to generate intracellular signals that interact with ion channels directly or indirectly to alter their activity and allow cells to respond to their environment.

Intracellular sodium is known to control the opening and closing of certain potassium channels and, recently, Logothetis and his colleagues uncovered how sodium is able to control these specific channels.

“By examining in which cells these sodium-sensitive channels are expressed and how sodium may be critical for the function of these cells, we hope to uncover the physiological importance of sodium-mediated activation of potassium channels,” Logothetis said.

These findings may help researchers gain a greater understanding of the mechanisms involved in ion channel gating and may one day set the stage for new approaches in drug design.

New technique may offer pain relief to osteoporosis patients

Approximately 25 million Americans — predominantly women 50 years of age and older — suffer from osteoporosis, the leading cause of sacral insufficiency fractures (SIF). According to a new multicenter pilot study, an X-ray-guided injection of synthetic bone cement into fractured pelvic bones may provide rapid and safe pain relief to osteoporosis patients with low back pain. The research team includes spine and rehabilitation specialists from the VCU School of Medicine, Advanced Pain Management and Spine Specialists in Florida, and the OrthoCarolina Spine Center in North Carolina. The study evaluated the efficacy and safety of a technique called sacroplasty, a percutaneous injection of synthetic bone cement into 52 patients with SIFs, representing the largest prospective trial of sacroplasty for osteoporosis SIFs.

“Our findings demonstrate that a technique similar to what has been performed for painful spinal osteoporotic fractures is equally effective for osteoporotic pelvic fractures,” said Michael DePalma, M.D., associate professor in the Department of Physical Medicine and Rehabilitation in the VCU School of Medicine, who led the team at VCU. “Furthermore,





Masoud H. Manjili, D.V.M., Ph.D., assistant professor, VCU Department of Microbiology and Immunology

the results are very encouraging in that patients typically experience rapid and significant improvement in low back pain and reduction in disability and narcotic pain medication utilization.”

According to DePalma, who also serves as medical director of the VCU Spine Center, the technique allows patients to participate in physical therapy much sooner than those who have not undergone the treatment.

Researchers learn how herpes virus takes control of host cell

VCU researchers uncovered new information about how the herpes simplex virus (HSV) takes control of the host cell, setting the stage for the development of antiviral drugs that serve to fight herpes infections.

Anthony V. Nicola, Ph.D., associate professor in the Department of Microbiology and Immunology in the VCU School of Medicine, and Mark G. Delboy, a predoctoral candidate in Nicola’s laboratory who led the study, report that HSV takes complete control of normal cell function,

or parasitizes, to infect host cells. Specifically, they found that HSV requires the proteasome for entry into target cells. The proteasome is a large enzyme complex in all cells that is essential for normal cellular functions.

“HSV initiates infection by taking advantage of cellular machinery that is required for normal host function. If we understand how HSV initiates infection, we can design improved ways to prevent infection and disease,” Nicola said. “Further, this research has identified new targets that can potentially be used to develop novel antiviral drugs against herpes infections. HSV appears to be the first virus to take advantage of the proteasome in this way.”

Researchers develop compound that blocks brain enzyme

A team of researchers, which includes Aron Lichtman, Ph.D., associate professor in the VCU Department of Pharmacology and Toxicology, has

developed a compound able to block the action of a key enzyme in the endocannabinoid signaling pathway of the brain, which results in reduced pain sensitivity and marijuana-like behavioral effects in mice.

The findings shed light on the molecular mechanisms involved in the endocannabinoid system and may ultimately point investigators to possible new therapeutic targets for the treatment of pain.

The collaborative study, led by The Scripps Research Institute, together with VCU School of Medicine researchers, employed a mouse model to examine the interaction between the enzyme monacylglycerol lipase (MAGL) and a compound developed by the team, JZL184.

Enzymatic hydrolysis, a chemical reaction that governs endocannabinoid system signaling, causes molecular events resulting in disruption in the system’s signaling. MAGL may play a key role in hydrolyzing the naturally occurring cannabinoid 2-arachidonylglycerol (2-AG), which is responsible for activating cannabinoid receptors in the central nervous system and throughout the body. The team developed JZL184 as the first drug that selectively inhibits MAGL.

In the study, the team found that blocking MAGL with JZL184 led to a dramatic increase in 2-AG in the brain, resulting in decreased pain sensitivity and a subset of other marijuana-like effects.

The study was supported by a grant from the National Institutes of Health, the Helen L. Dorris Child and Adolescent Neuro-Psychiatric Disorder Institute and the Skaggs Institute for Chemical Biology.

School of Medicine professors continue key genetic research

Several studies in 2008 uncovered the role genes play in schizophrenia, fear and depression.

VCU researchers identified a gene associated with schizophrenia that could provide further insight about the pathophysiology of the disease.

Led by Xiangning Chen, Ph.D., assistant professor of psychiatry and human genetics in VCU’s School of Medicine, and Kenneth S. Kendler, M.D., who holds the Rachel Brown Baaks Distinguished Professorship in Psychiatry and is professor of psychiatry and human genetics in VCU’s School of Medicine, the research team studied variants of the gene, MEGF10, in affected and unaffected individuals from Ireland and Northern Ireland. Supported in part by the National Institute of Mental Health and the National Alliance for Research on Schizophrenia and Depression, the team found that some variants of MEGF10 had a higher frequency in schizophrenia patients than in healthy controls, and these variants were associated with higher expression of the gene in the brain of affected subjects.

The results of this research provide “evidence that a gene directly involved in apoptosis, or cell death, is associated with schizophrenia,” Chen said.

“Apoptosis has long been speculated to be involved in schizophrenia, but no gene directly involved in this process was found to be associated with the disease.”

In 2008, Kendler and his colleagues also studied the genes that influence common fears.

Supported in part by the National Institute of Mental Health, the Swedish Council for Working Life and Social Research and the Swedish Research Council, the VCU team, together with researchers from the Karolinska Institute and Uppsala University in Sweden, evaluated fear factors among 2,500 twin pairs born between 1985 and 1986.

The team discovered that the genes that influence common fears change considerably over time rather than staying static. “Evolution has likely shaped our genomes to adapt to changing developmental situations,” Kendler said.

CRITICAL FACT: The Surgery Trauma Intensive Care Unit on the 9th floor of the Critical Care Hospital includes four surgical trauma rooms. These rooms feature moveable headwalls, referred to as “booms,” which provide caregivers with 360-degree access to the patient. The availability of these specially equipped rooms means patients stay on the surgical trauma floor for routine wound care instead of being moved to another floor.



“The results are very encouraging in that patients typically experience rapid and significant improvement in low back pain and reduction in disability and narcotic pain medication utilization.”

– Michael DePalma, M.D., associate professor, VCU Department of Physical Medicine and Rehabilitation

Advancing innovation

With the growth of grant funding in 2008, the VCU Medical Center builds on its commitment to breakthrough discoveries.

VCU School of Dentistry sees external grant funding increase to \$2.2 million

The School of Dentistry's research enterprise grew in size, scope and funding in 2008, with external funding increasing from \$0.9 million to \$2.2 million.

The Philips Institute for Oral and Craniofacial Molecular Biology maintained the largest amount of grant funding, with associate professor Ping Xu, D.D.S., and assistant professor Janina Lewis, D.D.S., receiving nearly \$600,000 from the National Institutes of Health for basic research on gene expressions and inhibitions of pathogens that cause systemic diseases.

While the Philips Institute maintained the largest amount of grant funding, the greatest unit growth during the year occurred in the Department of Periodontics. Under the leadership of Harvey Schenkein, D.D.S., who holds the Paul Tucker Goad Professorship, the department received funding of more than \$400,000 from the National Institutes of Health for two new major projects.

The first grant, a collaboration between the schools of Dentistry and Medicine, is a major component of VCU's center grant on minority health and health disparities. A second periodontal grant examines the role of antiphospholipid antibodies in the induction of vascular inflammation in patients with aggressive periodontitis. For this study, the research team will evaluate patients with aggressive periodontitis to determine their blood levels of antiphospholipids and vascular inflammation.

VCU Department of Rehabilitation Counseling earns three research grants

Three members of the VCU Department of Rehabilitation Counseling in the School of Allied Health Professions earned substantial grants in 2008.

Allen Lewis, Ph.D., associate professor and department chair, received a \$1.78 million Disability and Rehabilitation Research Projects grant from the National Institute on Disability and Rehabilitation Research. Lewis will serve as the principal investigator for this grant focusing on building the current capacity of the public rehabilitation and disability system to conduct minority disability research.

Professor Christine Reid, Ph.D., was one of two recipients to earn funding from the U.S. Department of Education's Rehabilitation Services Administration. Her project on personnel development through distance learning will be funded for five years for a total of \$2 million.

After intense competition, Steven West, Ph.D., was awarded a \$600,000 National Institute on Disability and Rehabilitation Research field-initiated grant over three years to study substance use among college students with disabilities.

Tuyen Nguyen, M.S., 2008 graduate, VCU Department of Pharmacology and Toxicology, in Goodwin Research Laboratory

As one of the country's leading academic medical centers, the VCU Medical Center receives funding for clinically sponsored research to advance evolving treatments.

School of Nursing faculty members earn research funding

In 2008, the VCU School of Nursing earned National Institutes of Health research funding of nearly \$2 million. Specifically, Mary Jo Grap, Ph.D., received six grants totaling more than \$500,000; Nancy L. McCain, D.S.N., R.N., FAAN, received two awards totaling more than \$800,000; and Rita Pickler, Ph.D., R.N., APRN-BC, received a grant totaling more than \$400,000. Grap is a professor in the VCU School of Nursing Department of Adult Health and Nursing Systems, McCain is professor of nursing and director of the Center for Biobehavioral Clinical Research, and Pickler is professor and chair of the Department of Family and Community Health Nursing.

“Thanks to the work of our talented researchers, the school is creating new nursing knowledge, enhancing the practice of nursing and improving health care and outcomes for our patients,” said Nancy F. Langston, Ph.D., R.N., FAAN, dean, VCU School of Nursing.



Nancy F. Langston, Ph.D., R.N., FAAN, dean, VCU School of Nursing

Researchers earn grant to study asthma, allergic disease

A team of VCU researchers received a National Institute of Allergy and Infectious Diseases grant totaling nearly \$7.3 million for a Cooperative Research Center to study various aspects of asthma and allergic disease.

The five-year Cooperative Research Center project brings together four departments at VCU to study different aspects of asthma and allergic diseases.

“The collaborative nature of this center aims to create synergy between the various investigators and departments involved, and thereby facilitate a greater understanding of asthma and allergic diseases than could be achieved by each investigator working independently,” said principal investigator Lawrence B. Schwartz, M.D., Ph.D., the

Charles W. and Evelyn F. Thomas Chair in Rheumatology, Allergy and Immunology, a division within the School of Medicine’s Department of Internal Medicine.

Schwartz will be collaborating with VCU researchers John Ryan, Ph.D., associate professor, VCU Department of Biology; Dan Conrad, Ph.D., VCU Department of Microbiology and Immunology; and Sarah Spiegel, Ph.D., professor and chair, VCU Department of Biochemistry and Molecular Biology, who holds the Mann T. and Sarah D. Lowry Distinguished Professorship in Oncology.

NIH grant supports translational research center for PCOS

The VCU School of Medicine received a competitive grant totaling nearly \$6 million from the National Institutes of Health’s National Institute on Child Health and Human Development to examine polycystic ovary syndrome (PCOS), a disorder of the endocrine system that affects as many as 5 million women.

The five-year grant will support an interdisciplinary and translational research center in PCOS, making VCU one of only 15 Specialized Cooperative Centers Program in Reproduction and Infertility Research locations in the country.

“This research program initiative expands the existing PCOS program at VCU, allowing interdisciplinary and collaborative studies with partnering institutions, and will enhance our ability to bring research discoveries from the laboratory bench quickly to the clinical care of women with PCOS,” said John Nestler, M.D., who holds the William G. Blackard Professorship in Endocrinology and serves as vice chair of the Department of Internal Medicine and chair of the Division of Endocrinology and Metabolism at the VCU School of Medicine. Nestler, a pioneer in PCOS research, is the primary investigator for the project.

NIDA grant trains researchers to develop new statistical tools

Michael Neale, Ph.D., professor in the departments of Psychiatry and Human and Molecular Genetics and associate director of the Virginia Institute for Psychiatric and Behavioral Genetics at VCU, received a National Institute on Drug Abuse education grant totaling more than \$2 million to train the next generation of researchers studying the underlying causes of substance use behavior.

The five-year grant will bring together predoctoral and postdoctoral fellows from multiple academic backgrounds to develop and apply statistical genetic methods that can be used to analyze data on substance use, abuse and dependence. They will test hypotheses about the risk for substance abuse. These new methods will then be put into practice with the goal of preventing addiction and improving its treatment.

“We aim to make the most of the new data being collected by developing novel statistical methods and applying them to uncover complex genetic and environmental pathways that lead to serious substance



Photo courtesy of HKS Inc., Edward LaCasse

CRITICAL FACT: The Medical Respiratory Intensive Care Unit on the 4th floor of the Critical Care Hospital provides intensive and intermediate care for patients with breathing problems. The unit features 20 intensive care beds, eight less-intensity or “step-down” rooms, a waiting room, two conference rooms, two consultation rooms, as well as large family zones and advanced monitoring systems for patients.

“The university provides an ideal environment for participants in the research education program to obtain a well-rounded education in this area.”

— Michael Neale, Ph.D., associate director, Virginia Institute for Psychiatric and Behavioral Genetics at VCU

abuse and addiction,” Neale said. “We are very fortunate that substance use research at VCU is very broad and deep, spanning multiple departments and institutes. The university provides an ideal environment for participants in the research education program to obtain a well-rounded education in this area.”

Massey receives two grants for colon cancer disparity study

The National Cancer Institute awarded two grants totaling more than \$4.25 million to Laura A. Siminoff, Ph.D., the Theresa A. Thomas Memorial Foundation Chair in Cancer Prevention and Control, and associate director of the Cancer Prevention and Control Program at the VCU Massey Cancer Center. She will lead two studies to examine delays and disparities in colon cancer diagnosis.

Siminoff, a nationally recognized expert on health communication and decision-making in disease treatment, also chairs the VCU School of Medicine’s Department of Social and Behavioral Health. In these roles, she and colleagues focus on understanding how social, cultural and behavioral factors affect public health and educating the public to make lifestyle and other changes to improve the standard of health. Their emphasis is on cancer, chronic disease and health care disparities.

The first study will focus on appraisal delays and disparities in timely colon cancer diagnosis. The second study will test whether or not primary care physicians communicate with patients differently depending on race and gender.

VCURES receives grant funding from two military sources

VCU’s Reanimation, Engineering and Shock Center, VCURES, earned two large grants in 2008. The first, from the Office of Naval Research, awarded \$3.5 million in four grants to VCURES for research using the blood substitute Oxycyte in studies of decompression sickness, embolisms, traumatic brain injury and blast injuries.

“These grants will allow us to expand upon the previous studies that showed early intervention with Oxycyte can prevent the destruction of nerve cells and brain tissue in a number of conditions,” said Bruce Spiess, M.D., VCU professor of anesthesiology and emergency medicine.

The second grant, a three-year, \$1.5 million award from the U.S. Army, will fund the study of new technologies for optimizing wound healing and limiting wound infections. The study is based on technologies discovered at VCU that have demonstrated a naturally occurring hormone called androstenediol (AED) is biologically active and can reverse stress-inhibited wound healing. In addition, AED has been shown to have biological ability to combat bacterial, viral and fungal infections as well as protect against lethal radiation poisoning.

“These findings have significant clinical implications for today’s military where extremely severe and complex wounds are much more prone to infection,” said Robert F. Diegelmann, Ph.D., professor of biochemistry, anatomy and emergency medicine. “These infections and delayed healing jeopardize both life and limb.”

Honoring quality care

Our stellar programs, dedicated health care teams and supportive work environment continue to garner the highest praise.

Several VCU Medical Center units mark historic milestones and anniversaries

The past 12 months witnessed significant achievements in patient care and programs at the VCU Medical Center.

The year 2008 marked the 65th anniversary of the VCU Medical Center's Department of Pastoral Care, with the first chaplain joining MCV Hospital in 1943. It was also the 50th for the clinical pastoral education training program, a component of VCU's Program in Patient Counseling.

The VCU School of Allied Health Professions' innovative doctoral program in Health Related Sciences turned 10. The program meets the critical need for doctorally prepared allied health professionals across the U.S. in the areas of teaching, research and administration.

VCU's School of Pharmacy and VCU Health System's Department of Pharmacy Services marked the 30th anniversary of the Pharmacy Services Clinic, which sees about 7,000 patients annually.

Two awards name VCU Health System's Virginia Premier Health Plan 'best'

The VCU Health System's Virginia Premier Health Plan was selected in the U.S. News Media Group and the National Committee for Quality Assurance's (NCQA) fourth edition of America's Best Health Plans as the 24th-ranked Medicaid plan in the country and the top program in Virginia.

The plan also received the Recognizing Innovation in Multicultural Health Care Award, sponsored by the California Endowment with support from the Centers for Medicare and Medicaid Services and the Office of Minority Health. The award is part of NCQA's efforts to improve the quality of health care in the U.S. through development of a truly multicultural health care system.

To reduce disparities and barriers to breastfeeding, Virginia Premier collaborated with the Virginia Department of Medical Assistance Services and other community agencies and regional health departments to develop a comprehensive program for the African-American community.

Virginia General Assembly recognizes VCU's Institute for Women's Health

The MCV Foundation honored the VCU Institute for Women's Health in recognition of House Joint Resolution No. 78. The resolution commends the institute on its continuing commitment to provide quality health care for women in Virginia and for its mission to improve the health of women through clinical care, research, education, community outreach and leadership development.



From top: Thomas P. Loughran, M.D., associate professor, VCU Department of Orthopaedic Surgery; Nancy McCain, D.S.N., R.N., FAAN, director, Center for Biobehavioral Clinical Research, VCU School of Nursing; Joseph Ornato, M.D., professor and chair, VCU Department of Emergency Medicine



Anne Scher, J.D., director, VCU Health System Department of Professional Liability, with her children

In 2003, the institute was designated a National Center of Excellence in Women's Health by the U.S. Department of Health and Human Services. Del. Jennifer McClellan presented a copy of the House Joint Resolution to Susan Kornstein, M.D., executive director of the institute, as an expression of the General Assembly's appreciation for the organization's many outstanding accomplishments.

Breast Imaging Center earns excellence distinction status

The VCU Breast Imaging Center, directed by Gilda Cardeñosa, M.D., M.S., who holds the Veronica Donovan Sweeney Professorship for the Chief of Breast Imaging, earned a Breast Imaging Center of Excellence designation from the American College of Radiology in April 2008. This distinction recognizes centers that have earned accreditation in all of the college's voluntary breast imaging accreditation programs and modules, in addition to the mandatory Mammography Accreditation Program.

The breast imaging services at the VCU Breast Imaging Center are fully accredited in mammography, stereotactic breast biopsy, breast ultrasound and ultrasound-guided breast biopsy. Peer-review evaluations, conducted in each breast imaging modality by board-certified physicians and expert medical physicists, have determined that the center has achieved high practice standards in image quality, personnel qualifications, facility equipment, quality control procedures and quality assurance programs.

VCU Health System ranks among America's best hospitals

For the second consecutive year, the VCU Health System earned a ranking in U.S. News Media Group's 2008 publication of America's Best Hospitals. The VCU Health System was one of 170 medical centers named among the best out of a survey of nearly 5,500 hospitals. Specifically, the VCU Health System was noted for excellence in rehabilitation, ranking 25th in the country for dealing with difficult or complex cases. It also ranked in the top 50 nationally for treatment of urological disorders, including prostate cancer, and for the management of kidney disease.

Health system makes Working Mother's 'best companies' list

Working Mother magazine named the VCU Health System as one of the nation's 100 best companies of 2008 for working mothers, marking the fourth time the health system has received the honor.

According to the magazine, the VCU Health System leads a significant and ongoing culture shift and uses companywide benefits and programs, such as adult day care and housing assistance 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 VCU Health System gained recognition for designing, building and opening the region's first on-site adult care center for employee dependents. The magazine also recognized the health system's dedication to the advancement of women.

Association names health system tops for female executives

The National Association for Female Executives (NAFE) named the VCU Health System one of the Top 5 not-for-profit organizations in the nation. The association also named the health system as one of 30 companies in the nation demonstrating a commitment to advancing women throughout the ranks of the organization. The NAFE designation is based on female representation among top salaried and top ranking positions. Additionally, the ranking measures the total number of female employees in the organization, females in management and female representation on the board of directors.

Health system receives third consecutive employer award

For the third year in a row, the VCU Health System was named the Greater Richmond Area Employer of Choice. The health system also received the national Alfred P. Sloan Award for Business Excellence in Workplace Flexibility.

"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, CEO and president, Working Mother Media

The Employer of Choice award recognizes that the VCU Health System, as the region's largest employer with 8,000-plus employees, embodies a set of principles that are honored, a culture that is well-defined and, most importantly, is characterized by satisfied employees.

The Alfred P. Sloan award, sponsored by the U.S. Chamber of Commerce and the Alfred P. Sloan Foundation, was awarded to the VCU Health System for its creativity in addressing employee needs for workweek flexibility.

VCU professor receives award for discrimination research

Brian T. McMahon, Ph.D., a professor in VCU's Department of Rehabilitation Counseling, and his colleagues received the Kevin Karr Innovative Rehabilitation System of the Year Award.

McMahon and his colleagues were selected for their contributions to the National Equal Employment Opportunity Commission Americans with Disabilities Act Research Project. This project, housed at VCU, addresses disability discrimination in the workplace.

Institute of Medicine elects VCU Medical Center physician

Joseph Ornato, M.D., professor and chair of VCU's Department of Emergency Medicine, has been elected to the Institute of Medicine of the National Academies.

Ornato is among 65 new members and five foreign associates elected in 2008. With their election, members make a commitment to volunteer a significant amount of time as members of IOM committees, which engage in a broad range of studies on health policy issues.

CRITICAL FACT: Each room of the 40-bed Neonatal Intensive Care Unit in the Critical Care Hospital sets the stage for a positive healing environment for patients and their families. Created with input from the VCU Medical Center staff and based on years of research into the developmental needs of premature and critically ill newborns, the unit features four double rooms for twins and 32 single family rooms, pull-out sofas in each room for parents, a family lounge, resource center and play area for visiting siblings.



Photo courtesy of HKS Inc., Edward LaCasse



Joseph Ornato, M.D., (far left)
professor and chair, VCU
Department of Emergency
Medicine

“Dr. Ornato has been a pioneer in resuscitation after cardiac arrest and has made lasting contributions that have saved countless lives through the years.”

— Sheldon Retchin, M.D., M.S.P.H., VCU Health System CEO and vice president for VCU Health Sciences

“This honor is confirmation of Dr. Ornato’s achievements in a long and distinguished career,” said Sheldon Retchin, M.D., M.S.P.H., VCU Health System CEO and vice president for VCU Health Sciences. “He has been a pioneer in resuscitation after cardiac arrest and has made lasting contributions that have saved countless lives through the years.”

Professor earns distinguished clinician award for excellence

Thomas P. Loughran, M.D., associate professor in the VCU Department of Orthopaedic Surgery, earned the MCV Physicians Distinguished Clinician Award, which recognizes clinical excellence among faculty.

A team physician for VCU and Virginia Union University, Loughran’s practice addresses a wide variety of injuries suffered among professional and college athletes, weekend warriors and those with everyday orthopaedic injuries.

Loughran joined the VCU faculty in 1983 after completing his medical degree and orthopaedic training at VCU and a fellowship in sports medicine at the University of Pennsylvania.

Professional organizations elect School of Pharmacy faculty

Five members of the VCU School of Pharmacy faculty were elected to prominent professional organizations.

Victor A. Yanchick, Ph.D., dean of the School of Pharmacy, was named president of the American Association of Colleges of Pharmacy.

Jeffrey Delafuente, M.S., FCCP, FASCP, professor and associate dean for professional education, was elected a member of the American Society of Consultant Pharmacists’ board of directors.

Jean-Venable “Kelly” Goode, Pharm.D., BCPS, FAPhA, FCCP, associate professor in the Department of Pharmacy, was elected a member of the American Pharmacists Association’s board of trustees.

Gary Matzke, Pharm.D., FCCP, FCP, professor and associate dean for clinical research and public policy, was elected president of the American College of Clinical Pharmacy.

William E. Smith, Pharm.D., M.P.H., Ph.D., executive associate dean, was the first pharmacist named to the Agency for Healthcare Research and Quality’s National Advisory Council.

School dean earns recognition for allied health achievements

Cecil Drain, Ph.D., CRNA, FAAN, dean of VCU’s School of Allied Health Professions, earned the Darrell Mase Presidential award from the Association of Schools of Allied Health Professions (ASAHP).

The Darrell Mase Award is given to a member of ASAHP who has shown dedication to maintaining the qualities of excellence that characterize a truly professional organization.

“I am really pleased to receive this award and to represent VCU and our highly ranked school,” Drain said. “I am truly in shock. This award is a lifelong achievement.”

In addition to the award, Drain received the association’s Bardner Chair and had his name inscribed on the presidential plaque, a mark of distinction among professionals in the allied health field.

Six VCU School of Medicine faculty earn endowed positions

The VCU Board of Visitors appointed six distinguished VCU School of Medicine faculty members to newly created chairs and professorships.

Sarah Spiegel, Ph.D., was appointed to the Mann T. and Sara D. Lowry Distinguished Professorship in Oncology. Since 2001, Spiegel has served as professor and chair of the Department of Biochemistry and Molecular Biology and has established an outstanding record of teaching, research, service and administration.

Laura A. Siminoff, Ph.D., is the Theresa A. Thomas Memorial Foundation Chair in Cancer Prevention and Control at the VCU Massey Cancer Center. Siminoff, professor and chair of the Department of Social and Behavioral Health, is a national and international expert on breast cancer, informed consent and organ transplantation.

Andrew C. Larner, M.D., Ph.D., has been appointed as the Martha Anne Hatcher Distinguished Professor in Oncology at VCU. A professor in the Department of Biochemistry and Molecular Biology, Larner is a premier researcher of the molecular biology of signal transduction and interferon gene regulation.

Norbert F. Voelkel, M.D., is the E. Raymond Fenton, M.D. Chair in Pulmonary Diseases at VCU. Voelkel, professor in the Division of Pulmonary Medicine and director of the Victoria W. Johnson Center for Obstructive Pulmonary Disease Research, is a leading researcher of pulmonary and vascular physiology and pathophysiology.

Diomedes Logothetis, Ph.D., chair of the School of Medicine’s Department of Physiology and Biophysics, is the John D. Bower, M.D. Endowed Chair in Physiology. Logothetis is an internationally recognized leader in the study of ion channels.

Paul Fisher, Ph.D., is the Thelma Newmeyer Corman Endowed Chair in Oncology. He is a professor of human genetics and chair of the Department of Human and Molecular Genetics and has an appointment

at Massey. Fisher developed techniques for gene discovery and carried out groundbreaking research in the identification and validation of genes involved in tumor growth and suppression.

Family medicine physician wins humanism in medicine award

Janet Eddy, M.D., received the Leonard Tow Humanism in Medicine Award, sponsored by the Arnold P. Gold Foundation. The award honors a faculty member for his or her demonstration of humanism in medicine.

Three School of Nursing faculty members receive honors

Several VCU School of Nursing faculty members earned recognition for their achievements in the field.

Nancy L. McCain, D.N.S., R.N., FAAN, professor of nursing and director of the Center for Biobehavioral Clinical Research, was awarded the 2008 Southern Nursing Research Society Distinguished Researcher Award, which recognizes the lifetime achievements of an individual whose research has enhanced the science and practice of nursing.

Rita H. Pickler, Ph.D., R.N., APRN-BC, professor and chair of the Department of Family and Community Health Nursing at the VCU School of Nursing, was inducted into the American Academy of Nursing as a new fellow for her outstanding achievements in the nursing profession.

The American Association of Critical Care Nurses selected Mary Jo Grap, Ph.D., for the 2009 Distinguished Research Lecture award. Grap is a professor in the VCU School of Nursing’s Department of Adult Health and Nursing Systems. AACN presents this annual award to a nationally recognized nurse researcher.

VCU recognizes professional achievement award winners

Ellen Brock, M.D., associate professor of obstetrics and gynecology in the VCU School of Medicine, and Bridget Ellen Byrne, D.D.S., Ph.D., professor in the VCU School of Dentistry, earned the Women in Science, Dentistry and Medicine Professional Achievement Award for their contributions, dedication, leadership, mentorship and accomplishments in the schools of Medicine and Dentistry.

Brock is the section head in general obstetrics and gynecology. She recently created a yearlong instructional simulation training course for residents, teaching them minimally invasive surgery — primarily laparoscopic surgery. Brock also has been named the first medical director of the Center for Human Simulation and Patient Safety for the VCU School of Medicine.

Since graduating from the School of Dentistry in 1983, Byrne has taken on numerous teaching and administrative responsibilities serving as a teacher, interim department chair and assistant dean. She also has represented school faculty on the Council of Faculties in the American Dental Education Association.

06

Shaping health care

VCU Medical Center teachers educate students and community members, creating opportunities to enrich tomorrow's medical practitioners.

VCU School of Dentistry secures \$5 million from General Assembly for clinic For 10 years, Wise County, Va., has hosted the largest Missions of Mercy Project conducted by the Virginia Dental Association in collaboration with the VCU School of Dentistry. The three-day event draws thousands of patients to the southwestern corner of Virginia for free, desperately needed dental care.

In 2008, the Virginia General Assembly approved \$5 million for construction of a permanent building in Wise, \$700,000 for equipment and \$50,000 for planning.

"The clinic serves two purposes: student education and patient care," said Ronald J. Hunt, D.D.S., M.S., dean of the VCU School of Dentistry, who holds the Harry Lyons Professorship. "Initially, we envision five dental students, two dental hygiene students and two full-time faculty members participating in a long-term educational experience in an off-campus setting, while meeting the dental needs of patients in this underserved area of the state. As the program matures, it would grow to accommodate additional students and patients."

In another community outreach effort, the dental school increased students' clinical rotation sites. As part of its Preceptorship Program, the school developed affiliation agreements with 13 community-based sites for senior dental and dental hygiene students. Just two sites existed when the program began in 2003-04. New locations for 2008 include CrossOver Ministry's Dental Clinic and the Daily Planet in Richmond, Va.

The Preceptorship Program is part of a broader spectrum of strategies at the school designed to eliminate oral health disparities, improve access to comprehensive, high-quality oral health care services and increase the number of oral health care providers working in underserved patient populations.

In the second half of 2008, the School of Dentistry also implemented new practice groups as part of its clinical education. Seven practice groups of 13 second-, third- and fourth-year dental students work together to care for patients. Smaller group instruction allows faculty a chance to get to know students better while grouping students from different years creates a buddy system that fosters real camaraderie.

Each group has faculty, staff and dental assistants to facilitate the care. Students must first complete rigorous didactic and preclinical work, including DentSim instruction, before treating patients. Since 2006, DentSim, a virtual reality-based training tool, has allowed VCU dental students to reach higher performance levels in less time in comparison to traditional teaching methods.



School of Pharmacy implements team-based curriculum

The VCU School of Pharmacy instituted a new curriculum for its Pharm.D. program in 2008. The curriculum incorporates a team-based, active-learning approach with a much heavier emphasis on medication therapy outcomes and wellness. Additional basic sciences courses became prerequisites, giving faculty more time to focus on issues related to contemporary pharmacy practice. Other changes included a new course, "Introductory Pharmacy Practice Experiences," which gives students 300 hours of direct contact with patients before their fourth year, and a sequence of scholarship courses that introduce students to the research process.

"Our new curriculum is designed to prepare our graduates to accept primary responsibility for the outcomes of medication use as a member of the health care team," said Victor Yanchick, Ph.D., dean of the School of Pharmacy. "Using this approach, our students will be able to integrate

and apply what they have learned to work with their patients to improve the safe and effective use of medications as well as to promote wellness in the community."

Allied Health Professions programs earn national rankings

The VCU School of Allied Health Professions, led by dean Cecil Drain, Ph.D., CRNA, FAAN, earned top honors for five of its graduate programs by *U.S. News & World Report*: Nurse Anesthesia, No. 1; Health Administration, No. 4; Occupational Therapy and Rehabilitation Counseling, both No. 13; and Physical Therapy, No. 24.

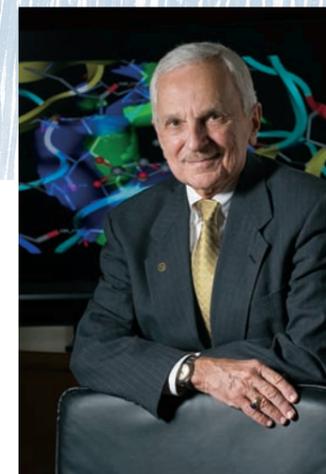
In 2008, the Department of Nurse Anesthesia enrolled its first doctoral candidates in the newly established Doctor of Nurse Anesthesia Practice Program.

The program emphasizes knowledge development beyond that of entry-level nurse anesthesia programs by including course work in adult education, patient safety and human factors, quality assessment and improvement, health care systems and organizations, leadership, evidence-based research, statistics, and interdisciplinary teamwork. Graduates of the program will be prepared to assume leadership roles in education, management and clinical practice, and to work with other members of the health care team to improve patient care and clinical outcomes.

Currently, the program boasts 46 students and will graduate its first students in May 2009.



Cecil Drain, Ph.D., CRNA, FAAN, dean, VCU School of Allied Health Professions



Victor A. Yanchick, Ph.D., dean, VCU School of Pharmacy

School of Medicine earns praise during reaccreditation

The VCU School of Medicine received full reaccreditation in 2008 from the Liaison Committee on Medicine Education for the maximum eight-year period. The committee commented on many aspects of the school, including the significant resources committed to the development of the Inova Fairfax regional campus. A new medical education building on the Inova campus provides an excellent education setting for VCU students. Investments in telecommunications infrastructure also encourage close collaboration and interaction of faculty and students between the Inova and Richmond sites.

Nursing expands clinical simulation use to other units

The VCU School of Nursing offered various training programs in its Clinical Learning Center (CLC) for staff of several VCU Medical Center units. The flight crew of VCU's LifeEvac helicopter and health care staff from the Evans-Haynes Burn Unit incorporated Metiman, an advanced patient simulator, into their educational programs.

The CLC also hosted students from local high schools, including Cosby High School Health Science Specialty Center and the Governor's School for Life Science and Medicine, as they participated in hands-on learning activities and gained a better understanding of the nursing field.

VCU-William and Mary Health Policy and Law Initiative begins

A new VCU-William and Mary Health Policy and Law Initiative will bring together faculty and students from a variety of disciplines from the two institutions to conduct research, provide public service and offer joint degree programs that focus on solving topical problems in health policy, law and bioethics.

"This is a new form of inter-institutional collaboration in Virginia," said Eugene P. Trani, Ph.D., VCU president and president and chair of the VCU Health System. "As public institutions of higher education, we are pooling the resources of two major universities to leverage our strengths in public policy, health and law to help solve a major problem."

Faculty and students from the VCU School of Medicine and the William and Mary Law School will work together in the initiative.

"We are pooling the resources of two major universities to leverage our strengths in public policy, health and law to help solve a major problem."

— Eugene P. Trani, Ph.D., VCU president and president and chair of the VCU Health System

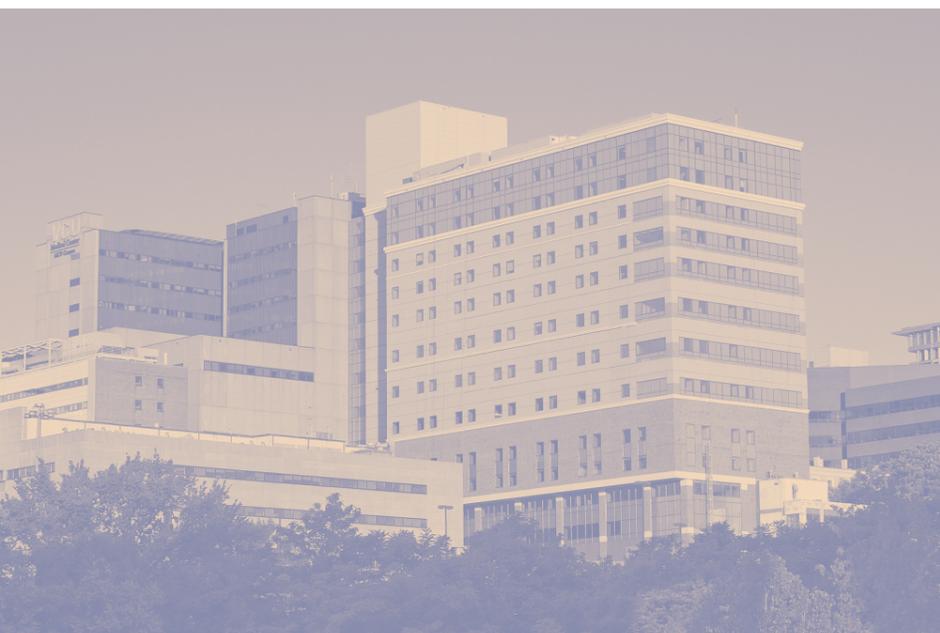


John Reavey-Cantwell, M.S., M.D., (right) the Richard Roland Reynolds Chair in Neurosurgery, VCU Department of Neurosurgery

CRITICAL FACT: The Critical Care Hospital houses the mid-Atlantic region's first, fully equipped hybrid operating suite dedicated to the full spectrum of treatments for neurovascular disease. The suite allows physicians to perform endovascular surgeries and traditional neurological surgeries in the same room. In addition, it includes a state-of-the-art bi-plane angiography machine for treating aneurysms that employs X-ray guidance to view a 3-D model as well as two different angles simultaneously.

Building the future

The VCU Medical Center strengthens and expands – from the inside out – to offer the most advanced facilities for our community.



Ronald J. Hunt, D.D.S., M.S., (above) dean, VCU School of Dentistry, and holder of the Harry Lyons Professorship, and Alistair Erskine, M.D., (above right) chief medical information officer, VCU Medical Center

New Molecular Medicine Research Building provides additional laboratory space

Construction neared completion in 2008 on the Molecular Medicine Research Building at the VCU Medical Center. 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. When complete, the nine-story building will connect floor to floor with the Hermes A. Kontos Medical Sciences Building and will include a pedestrian walkway between the two buildings.

School of Dentistry's addition, W. Baxter Perkinson, Jr. Building, nears completion

Named in honor of alumnus W. Baxter Perkinson, Jr., D.D.S., this \$20 million, 55,000-square-foot addition to the VCU School of Dentistry will provide more classrooms, clinics and laboratories to meet the current and future oral health needs of Virginians. The extra space will allow the school to educate doctoral students and generate new knowledge through research in collaboration with VCU's Massey Cancer Center and School of Engineering. Slated to open summer 2009, the building also permits expanded patient care and increased enrollment in its dental and dental hygiene degree programs.

VCU Breast Imaging Center offers the latest MRI technology

Providing the latest technology and expertise in women's health, the Breast Imaging Center at the VCU Medical Center upgraded its magnetic resonance imaging unit at its Stony Point facility.

Specially trained radiologists perform an MRI using advanced equipment and software that can detect minuscule breast cancers. Using a magnetic field to offer 3-D images, breast MRI scans are more sensitive and can provide more information than a mammogram, ultrasound or clinical breast exam.

"Simply stated, our focus is to save lives by pursuing early detection through imaging delivered efficiently, accurately and with compassion," said Gilda Cardeñosa, M.D., director of the center, whose expertise has raised today's level of breast imaging technology.

The Breast Imaging Center offers women superior diagnostic accuracy from a team of world-class physicians. In addition to the newly upgraded MRI unit, the center provides a full range of screening and diagnostic breast imaging services, including mammography and ultrasound.

Pharmacy secures funds for renovations and gains space

The Virginia state legislature allocated \$5 million to the VCU School of Pharmacy for renovations to the first three floors of the R. Blackwell Smith Building. With the goal of increasing student learning and activity space, the renovation project will commence during the 2009-10 academic year.

The school also gained an additional 35,000 square feet in McGuire Hall and BioTech One, part of the Virginia BioTechnology Research Park. Faculty and graduate student offices and research laboratories, as well as three areas for small-group teaching inhabit the newly acquired space.

VCU Health System upgrades software

The VCU Health System continued its quest to be one of the most digitally advanced health care systems in the world. VCU has now implemented the next generation of electronic medical records software. Since the original Cerner software was installed in 2004, paper-based medical records have been steadily converted to electronic records, including patient documentation, discharge summaries, prescriptions and other components of medical records.

"Currently, our electronic medical records system is rated in the top 2 percent of health systems in the country, according to objective measures by HIMSS Analytics, the largest

health information technology group in the world," said Alistair Erskine, M.D., chief medical information officer. "We're already pretty sophisticated in terms of our computerized physician-order-entry system. The upgrade will improve effectiveness of care, efficiency, safety and timeliness."

The upgrade to "Enhanced View," a Windows-based application, impacted all 8,000 Cerner users at the health system. Working with the Performance Improvement Group, IT focused on picking key safety issues to help direct the software upgrades.

The VCU Medical Center has had mandatory computerized physician-order entry for almost 30 years. In January 2009, the VCU Health System took a major step toward completion of a comprehensive electronic medical record when it required all provider documentation for inpatients to be in the computerized record.

Medical center's patient safety initiative concludes phase one

The VCU Medical Center completed the first phase of its new patient safety initiative: Safety First, Every Day. Developed to change the way people work in health care, the medical center-wide initiative is based on the science of safety.

Leaders at the medical center looked outside to other industries, such as nuclear power and aviation, where the science-of-safety concept has increased reliability. Applied to the medical center, this concept will bring strategies and tools to improve quality and patient safety in health care.

"We're doing this because it's the right thing to do for our patients," said John Duval, CEO of MCV Hospitals. "We are not content to be simply better than average in safety. We want to achieve the very highest standards every minute of every day."

CRITICAL FACT:
The Critical Care Hospital's Surgical Suite features 10 large, 650-square-foot, high-tech

operating rooms with suspended equipment, allowing critical care staff freedom of movement and quick response to a patient's urgent need. One of the operating rooms features a built-in bi-plane CT scanning device, making the Critical Care Hospital one of only five in the country with this technology.



08

Tallying our progress

We're maintaining the financial health of the VCU Medical Center.

VCU Health System volume

Fiscal year	2004	2005	2006	2007	2008
Inpatient discharges	29,847	30,134	30,539	31,778	31,865
Adjusted discharges	44,756	46,528	47,750	50,675	50,984
Emergency Department visits	75,747	77,148	81,364	79,259	78,048
Outpatient clinic visits	432,509	442,107	454,674	458,513	482,892
Total surgeries	17,293	17,912	18,043	17,782	18,345
Virginia Premier member months	957,095	1,077,760	1,221,886	1,314,248	1,452,675

VCU Health System financial statement*

(in thousands for fiscal year ending June 30, 2008)

Total operating revenue	\$1,378,221
Nonoperating revenues and expenses	\$(44,118)
Salaries, wages and benefits	\$574,666
Supplies	\$182,414
Purchased services and other expenses	\$133,162
Depreciation and amortization	\$43,146
Medical claims expense	\$355,330

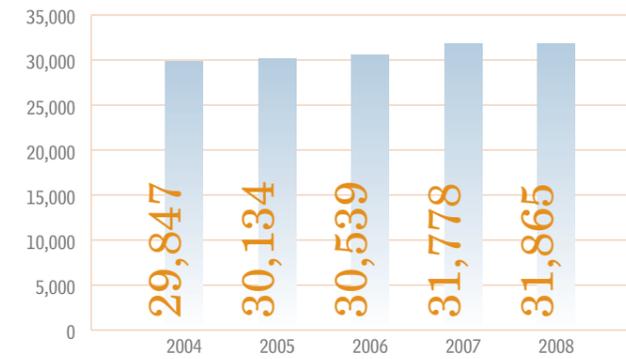
*includes VCU Health System components: MCV Hospitals, MCV Physicians, Virginia Premier Health Plan, Carolina Crescent Health Plan, University Health Services (UHS)

VCU Medical Center student enrollment*

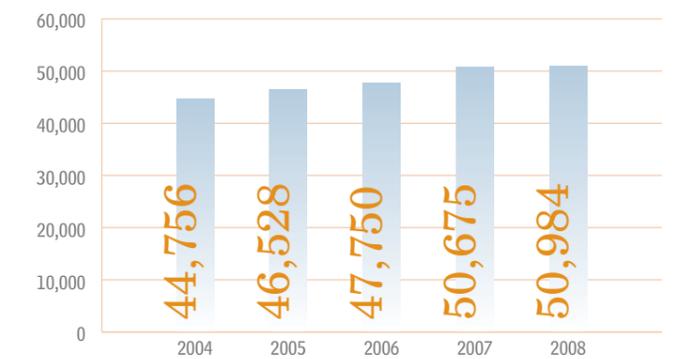
Fiscal year	2004	2005	2006	2007	2008
School of Allied Health Professions	862	904	964	990	1,036
School of Dentistry	452	454	454	452	465
School of Medicine	1,120	1,156	1,180	1,239	1,262
School of Nursing	837	830	922	1,005	967
School of Pharmacy	514	542	569	572	617

*includes on-campus and off-campus enrollments

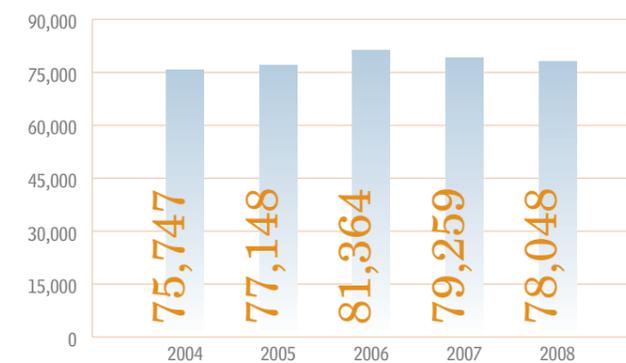
Inpatient discharges



Adjusted discharges



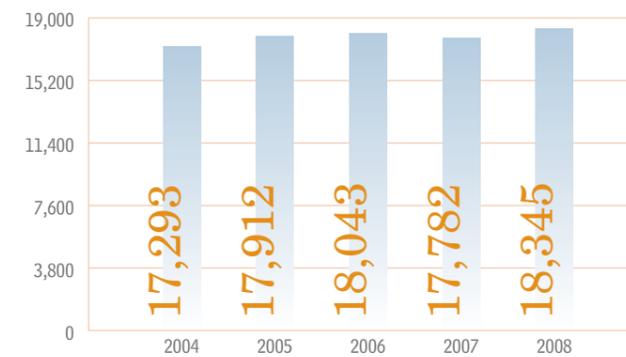
Emergency Department visits



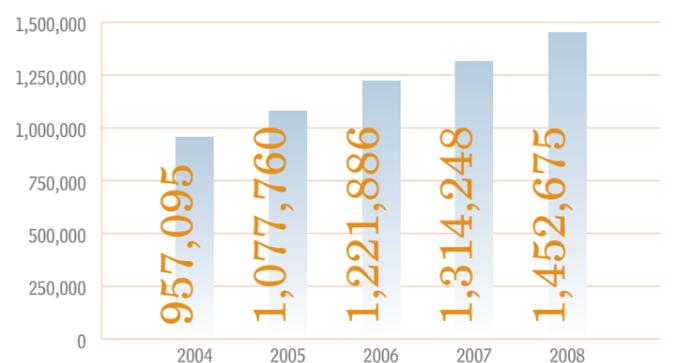
Outpatient clinic visits



Total surgeries



Virginia Premier member months



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