

The Beat

A PUBLICATION OF
VCU HEALTH
PAULEY HEART CENTER



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A Spectacular Run

Meet John Duval, Dr. Jerry Strauss and Dr. John Ward—the VCU administrative dream team that has helped shape Pauley into a leading heart center.

For over a decade, the Pauley Heart Center has benefited from the teamwork and devotion of the senior leaders of the VCU Health System and VCU Medical Center.

Continued >>>



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Pauley Heart Center

▶▶▶ **CEO John Duval, MBA, FACHE, Medical School Dean Jerome F. “Jerry” Strauss III, M.D., Ph.D., and President of MCV Physicians John Ward, M.D., MSHA, have worked closely together and with heart center leaders to provide Pauley with the support and vision necessary to become a top-tier heart program.**

With Duval’s retirement last September, and Strauss and Ward returning to research and medicine full-time this year, they will leave behind a legacy of excellence.

When **John Duval** began as CEO of VCU Hospitals and Clinics and vice president for Clinical Affairs in June 2004, he was impressed with the institution’s innovative cardiology and cardiac surgery programs. But one of his first goals was to rebuild the renowned heart transplant program that began at MCV in the 1960s.

“Dr. Richard Lower developed the techniques for human heart transplantation right here on this campus,” says Duval, from his Marshall Street office, where he is working as a consultant until March. “We were one of the most active heart transplant centers nationally and internationally then, but we lost our focus in the ‘80s and ‘90s and the program was impacted.”

Duval partnered with cardiothoracic surgeon Vigneshwar Kasirajan, M.D., to help rejuvenate the program. Kasirajan helped recruit others, and “we’ve grown from the five transplants that we did back in 2002 to 30 in 2016,” says Duval.

Additionally, the pair, along with Michael Hess, M.D., and George Vetrovec, M.D., were instrumental in bringing the total artificial heart program to VCU in 2006. “We’ve done 100 now, and are now among the largest programs in the world for the total artificial heart,” says Duval. When combined with the explosive growth of the heart failure and mechanical assist device programs, he says, “it’s just been a spectacular run.”

“John always had this notion that what sets this place apart, and what made this place great in terms of cardiovascular science, was the development of heart transplantation here by Dr. Richard Lower decades ago,” said Chair of Cardiology and Kontos Professor Kenneth Ellenbogen, M.D. “John helped us put together what is once again a world class program in heart transplantation, as well as heart failure and mechanical assist devices.”

“We’ve done 100 now, and are now among the largest programs in the world for the total artificial heart,” says Duval.

Duval also pushed for the creation of the \$184 million Critical Care Tower, which opened in 2008. The 15-story, 232-bed facility



includes intensive care units for surgical trauma, neonatal, burn center, cardiac, neuroscience, medical respiratory and oncology patients and was designed from the ground up to meet the complex needs of critically ill patients, with larger rooms for multidisciplinary care and safety features such as single occupancy and negative pressure ventilation systems that prevent cross-contamination of airborne particles.

“Some were skeptical, at the time, of the tower. But today, I can’t imagine us not having it,” said Chair of Surgery Vigneshwar Kasirajan, M.D. “John always saw things beyond the horizon.”

Under Duval’s leadership, a hospital safety program began in 2008 that has resulted in over 16,000 team members receiving training in safe behaviors and error prevention. VCU has since experienced a 50% reduction in serious safety events, and in 2014, was awarded the American Hospital Association McKesson Quest for Quality Prize, the organization’s top honor for leadership in safety and quality improvement.

One of the highlights of his career at VCU has been “the dedication of the teams to becoming the safest health system in America,” he says. “The fact that patients are leaving our building today not knowing that they benefited from the infection they didn’t get, from the mishap they didn’t have, from the complication that didn’t occur. That excites me. And I think that’s what this journey is all about: We are reducing harm in the delivery system.”

“I could not be more proud of the accomplishments of my teammates.”

Jerry Strauss III, M.D., Ph.D., an internationally recognized researcher in obstetrics and gynecology, began his tenure as dean of the VCU School of Medicine and executive vice president for medical affairs for the VCU Health System in September 2005.

When Strauss arrived to VCU, “the major goal that was handed to me was to increase the quality and the quantity of the research at the institution,” he says, from his office on the 4th floor of the James W. and Frances T. McGlothlin Medical

Education Center. “I certainly saw a lot of opportunities for the medical center to become a prominent leader in some core

areas, and cardiovascular medicine, because of the rich history of the institution in that research and clinical care domain, really stood out as one of my top priorities.”

Strauss worked with Shelden Retchin, M.D., the former senior vice president for VCU Health Sciences, and then-Chair of Cardiology George Vetrovec, M.D., to begin a philanthropic campaign to build the resources to support the cardiovascular programs. “That’s how the Pauley Heart Center was created initially, with a \$5 million gift from Stan and Dorothy Pauley.”

“I think the three of them working together has made a lot of things happen. The CEO of the hospital, the dean of the School of Medicine, and the head of the practice plan all being aligned has really allowed us to move clinical programs, quality, education and research forward.”

— Vigneshwar Kasirajan, M.D.

The 2006 gift led to other significant donations from the philanthropic community to invest in program development “and endow positions that have allowed us to recruit a team of truly exceptional clinicians and researchers,” he says. The donors played a critical role. “We could not have done all this without them.”

Over the past decade, the research of the faculty—including both clinicians and basic scientists—has helped the institution grow in national and international prominence. Strauss points out many examples, including the work in cardiac resuscitation of emergency physician Joe Ornato, M.D., and cardiologist Mary Ann Peberdy, M.D., which recently helped attract the Weil Institute to VCU.

“Jerry had a vision of what he wanted the heart center to become and he has worked tirelessly towards making it one of the top clinical and scientific centers in cardiovascular disease. He has been steadfast in his determination and devotion,” said Kenneth Ellenbogen, M.D.

“From a Department of Surgery standpoint, he’s put a lot of effort into helping us to grow innovative programs and research.



LEFT: JOHN DUVAL TOURS THE ED WITH WILL WADE. / JOHN WARD, M.D. AND JERRY STRAUSS, M.D.

Over the last few years, he has given us academic funds for research, which we have used as seed money for new faculty to start some new projects,” said Vigneshwar Kasirajan, M.D.

In 2013, Strauss introduced a new medical school curriculum, which departed from the traditional path of two years of basic sciences followed by two years of clinical education. While still a four-year program, “we compressed the preclinical component into one year to get the students into the clinical arena as soon as possible, so that the basic science had meaning with respect to patient care,” he says.

Boosting the success of the new curriculum—and something that was not anticipated when Strauss began his position—was the opening in 2013 of the 12-story medical education center, a stunning, modern building designed by I.M. Pei’s firm. The building was initiated with a \$25 million gift from the McGlothlin family, and ultimately made possible with over \$190 million in gifts and pledges. With two floors dedicated to simulation and learning clinical skills, “the James W. and Frances T. McGlothlin Medical Education Center is the embodiment of the new curriculum in a physical space,” he says.

All the investments are paying off. “Applications to medical school have more than doubled. When I came, there were

about 4,200; now we’re close to 9,000,” says Strauss. “What’s happened over the past few years has been remarkable.”

Neurosurgeon and President of MCV Physicians **John Ward, M.D., M.S.H.A.**, is having a busy morning, but makes time for an interview. He’s already made morning rounds and attended senior leadership and MCV Physicians committee meetings. More sessions will follow in the afternoon.

“We have about 700-720 physicians, and as president of the practice plan I represent those physicians, work closely with the chairs in terms of the faculty, and am responsible for the strategic direction of the practice plan,” he says. “It’s a real partnership between myself and the 19 department chairs.”

Since taking the reins in 2009, Ward, working with Strauss and Duval, has been involved with chair and physician recruiting efforts for the downtown campus, including the recruitment of six heart failure cardiologists. He also heads up recruiting for the affiliated specialty clinics. For the VCU Community Memorial Hospital in South Hill, for instance, he helped bring in 14 new physicians, including cardiologists.

“John Ward is the glue that holds the doctors together and makes sure the doctors in the medical center work together. He has also done an outstanding job of putting

VCU PAULEY HEART CENTER STANDS AS A LEADER AMONG ITS PEERS—A REPUTATION MADE POSSIBLE BY THE EXTRAORDINARY TEAMWORK OF IT PHYSICIANS, NURSES AND OTHER STAFF.

together a core of cardiovascular doctors throughout the state of Virginia, and taking our footprint outside of downtown Richmond,” said Kenneth Ellenbogen, M.D.

“He has been very important in helping us recruit faculty, making sure that we recruit the right faculty, and that we have the correct resources behind them. For the heart center, that’s been critical,” said Vigneshwar Kasirajan, M.D.

Pauley Heart Center has outreach clinics in Williamsburg, Fredericksburg, South Hill, Ridgefield and Colonial Heights and offers outpatient pediatric cardiology through the Children’s Hospital of Richmond at VCU, which joined as an affiliate in 2010.

The outreach clinics provide greater access to care for patients, especially those who live in suburban and rural areas. “The secret when you’re doing outreach is to, as best you can, complement rather than compete with other local services,” says Ward.

Over the years, Ward observes that patient care—especially for the sickest patients—has grown increasingly multidisciplinary. Some examples include the cardio-oncology program at Massey Cancer Center, and cardiac surgeons and interventional cardiologists working together on hybrid procedures, such as trans-aortic valve replacements.

“Disease is too complex now, no one can really treat in a vacuum any more. And with the explosion of information in terms of genetic markers, new treatments, and the emphasis on more minimally invasive work, we’ve seen more of the various departments working together,” he says.

It’s no surprise that “we’ve seen a gradual coming together of the chairs. They’re much more working like a unit now, which I am happy to see.”

Indeed, when visiting physicians come to VCU, they notice “the way that we work so well together. You don’t always see that in a lot of academic centers.” The collaborative environment, “allows us to focus on the patient and their problems, and not worry about other things,” he says. “So, we can spend most of our energy trying to get patients well.”

The physicians, nurses, administrators and staff of the Divisions of Cardiology and Cardiothoracic Surgery are grateful to John Duval, Dr. Jerry Strauss, and Dr. John Ward for their many years of hard work and tremendous commitment to the Pauley Heart Center, the VCU Health System, and the VCU School of Medicine. Thank you for sharing your extraordinary talents. ❤️

Guzman Expands Interventional Team

Since arriving in August 2015, Cardiac Catheterization Laboratory Medical Director Luis Guzman, M.D., has brought significant changes to interventional cardiology. The changes include new approaches, interventions and research to better meet the needs of an increasingly complex patient population.

"The cath lab has been transforming into a much more up to date and modern program," he said. The addition of physicians with new expertise along with improved facilities make the innovations possible.

"We have transformed most of the interventions from femoral to radial access, moving from 30% radial before to nearly 90%," he said. Approaches through the femoral artery in the groin "are known increase bleeding complications and the need for vascular surgery to repair problems." Radial access, through the veins in the wrist, can lead to shorter hospital stays for percutaneous interventions (PCIs). "Starting in December 2015, we are now doing same day discharges."

"In one year, we completed over 100 CTOs with a very high success rate," said Guzman.

Late 2016 saw the introduction of bioabsorbable stents, which allows the stent to disappear over time and restore the artery to its original condition.

Pauley's interventional cardiologists are also treating an increasing number of patients with chronic total occlusions (CTOs), who make up more than 15% of the case load. Previously, the group made up less than 1% of patient cases. "In one year, we completed over 100 CTOs with a very high success rate," he said.

While many hospitals offer CTOs, Pauley's team uses antegrade approach, retrograde approach and re-entry approaches. "These are very advanced techniques in opening occluded arteries. There are very few doctors in the entire country that do these type of procedures," he said.

The structural heart disease program has grown significantly. "We more than doubled the number of procedures from 2015/2016 compared to 2014/2015," he said. Trans-aortic valve replacements, which also involve the guidance and occasional intervention of cardiothoracic surgeons, are now performed without general anesthesia. Most patients can go home the following day as part of the new protocol. Previously, patients usually remained in the hospital for 3 to 5 days.



LUIS GUZMAN, M.D., JOSE EXAIRE, M.D. AND BARBARA LAWSON, M.D.

In 2016, the program began offering MitraClip interventions for leaky valves. "Instead of surgical repair this can now be done with a minimally invasive percutaneous procedure," said Guzman. MitraClip provides an alternative to patients who were previously deemed too high risk for surgery.

The program introduced interventions in peripheral artery disease—that is, the narrowing of the arteries to the legs, stomach, arms and head—completing over 100 to date.

VCU is the only hospital in the state involved in a clinical trial for patients with critical limb ischemia. "It involves angiogenesis therapy, which is the

regeneration of new vessels to provide circulation to areas that do not have circulation in the lower extremities. This is mainly for diabetic patients, and those with no-heal ulcers." Interventional cardiology works closely with vascular surgeons in planning the care of these patients. "There is a very significant crossover, an most patients with diabetes will have coronary heart disease."

Interventional Cardiology is part of new, multidisciplinary team that supports patients in cardiogenic shock due to heart failure. "They are very, very sick patients with a high mortality," he said. Other team members include Cardiothoracic Surgery, Heart Failure, Coronary Intensive Care, and Perfusion. "We standardize protocol and work as a team to decide the best treatment modalities for the patients."

Cardiogenic shock patients are among those that require Complex, High Risk Indicated Interventions (CHIP), another group that Pauley interventional cardiologists are reaching in increasing numbers.

With all of these advances, Guzman is optimistic that VCU Health Pauley Heart Center has continued its course "of being one of the leading cath labs in the country."

Welcome New Faculty!

Jose Exaire, M.D., has taken the position of associate professor at VCU. He arrives from Oklahoma City, where he served as the director of the Cardiac Care Unit of the V.A. Medical Center and an associate professor at the University of Oklahoma Health Sciences Center. He received his medical training from the National Autonomous University of Mexico, and completed his residency at the National Institute of Medical Sciences and Nutrition Salvador Zubiran in Mexico City. He completed fellowships in Cardiology and Interventional Cardiology. He is board certified in ABIM, Cardiovascular Disease and Interventional Cardiology.

"Jose brings significant expertise to the group in complex coronary interventions and the treatment of chronic total occlusions and procedures in peripheral arterial disease and critical limb ischemia—which is much needed in this community," said Cardiac Catheterization Laboratory Medical Director Luis Guzman, M.D. Exaire will also help develop these programs at the Hunter Holmes McGuire V.A. Medical Center.

Barbara Lawson, M.D., joins as an assistant professor at VCU. She received her medical degree from University of Texas Medical Branch at Galveston and completed her residency at Johns Hopkins Hospital. From there, she completed a Cardiovascular Fellowship at the Cleveland Clinic, and Interventional Cardiology and Structural Heart Disease fellowships at Johns Hopkins Hospital. She is board certified in Internal Medicine, Echocardiography, Cardiovascular Disease and Interventional Cardiology.

"Structural heart disease is the fastest growing area in interventional cardiology, and she will bring to the group, including the McGuire V.A. Hospital, the development of a larger team. She was trained in one of the most prominent training places in the country for Structural Heart Disease and will bring her knowledge to increase the treatment of these types of patients," said Guzman. ❤️

Mobile ECMO Program Saves Lives

When patients fall gravely ill with respiratory or cardiac distress, Pat Nicolato, D.O., and her team can treat them at VCU Health Pauley Heart Center or travel to their hospital by helicopter or in MOBI, a mobile intensive care transportation rig.

Extracorporeal membrane oxygenation provides cardiac and respiratory support to patients whose heart and lungs are unable to sufficiently function to sustain life. "It's a little portable system that oxygenates and pumps the blood for the heart and lungs," said Nicolato, a cardiothoracic surgeon and the program's Adult Surgical Director.

ECMO was first used in the neonatal and pediatric population, but VCU initiated its adult program about 10 years ago. "Hospitals throughout the state began calling us when patients were typically coding," she said. The VCU team treats

Placing them on ECMO allows us time to treat with antivirals and other medications, to allow the lungs to recover while the patient is being completely supported."

40 to 60 adult ECMO cases each year, including pediatric patients who weigh over 110 pounds. The neonatal and pediatric ICUs each care for an additional 5-10 patients annually. VCU owns a total

of nine ECMO pumps.

VCU treated several patients, including many younger adults, who contracted the deadly H1N1 during the swine flu epidemic in 2009. "What happens is that flu attacks the system so profoundly that the body doesn't have time to recover before the patient's lungs fail.

Placing them on ECMO allows us time to treat with antivirals and other medications, to allow the lungs to recover while the patient is being completely supported."

The team, which generally includes a surgeon and perfusionist, has gone to the bedside of patients throughout the state to cannulate patients—that is, to insert a thin tube into their heart that will

connect to the pump—before bringing them back for treatment at VCU Medical Center. Nicolato once traveled across the state to cannulate a patient

who had ruptured his lungs. He was brought back via MOBI to VCU, where he remained on ECMO and had surgical interventions. The patient was treated for over a month, but recovered.

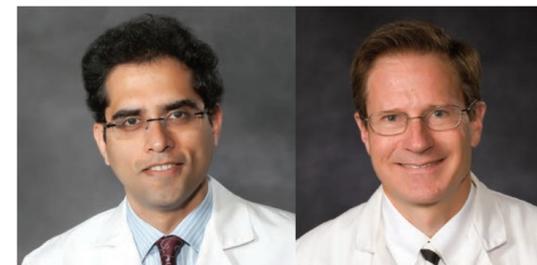


PAT NICOLATO, D.O., WITH JOHN CORNETT, FLIGHT PARAMEDIC, AND CHIEF PERFUSIONIST HARRY "MAC" MCCARTHY.

There are two types of ECMO. "Veno-veno is strictly for those patients who are in respiratory failure and their heart has good function," she says. "Veno-arterial is used for those patients who are in cardiac failure, whether it's because they had an acute myocardial infarction—a bigger heart attack—or they are in congestive heart failure for a number of reasons," she said. In those cases, ECMO provides a chance for the heart to recover, "or we may use it as a bridge to an assist device or a transplant. All that evaluation is taking place, while we're supporting them so we don't have any loss of organs, like kidneys or liver."

"It's very rewarding to be able to reach our community to treat such critically ill patients when conventional treatment is failing." ❤️

Doctors at the Forefront of Complex Lead Extractions



JAY KONERU, M.D. AND RICHARD SHEPARD, M.D.

Pacemakers and defibrillators are lifesaving devices, but occasionally their leads—the wires that run between the battery and the electrodes attached to the heart—need to be replaced.

"Sometimes a patient will contract a bloodstream infection and because these wires are in the heart, the infection cannot be treated or eradicated without taking them out because the bacteria colonize them," said Assistant Professor Jay Koneru, M.D. The

infection can even spread to the valves, creating an emergency for the patient.

Other problems include broken leads, leads that are recalled by their manufacturer, and excessive wiring that clogs up the blood vessels. The latter may happen when a young person receives a pacemaker, and leads are

added over time, but none are removed.

Koneru and fellow Pauley Heart Center electrophysiologist Richard Shepard, M.D., are innovative in their approaches and use of a wide variety of tools, including lasers and femoral snares. The doctors often receive referrals from other electrophysiologists around the state for high risk cases.

"They're incredibly experienced and skilled. They do complex lead cases that are done in very few medical centers," said Chair of Cardiology Kenneth Ellenbogen, M.D.

Koneru undertook the first case in the

world involving a patient who required a bilateral filter to her carotid arteries during her lead extraction. The patient was born with a hole in her heart, and the infection was on the right side. "The infectious material started slipping into the left side and into her brain, causing strokes." A neurosurgeon placed the filter on her arteries to protect the material from spreading, then Koneru did the extraction. Several years later, the patient is still doing fine.

VCU was one of the first facilities to use an angiovac, which is a vacuum pump placed inside the heart to remove infectious materials—which "can grow to the size of a ping pong ball."

Since Koneru and Shepard work around the major blood vessels to the heart, rupturing is an ever-present concern.

All the complex cases require a cardiac surgeon either on site or scrubbed in and present in the operating room. "I think what really separates us is the planning that goes into the procedures, the team work, and our thinking outside the box to do innovative things—but safely." ❤️

VCU Honored for 100th Total Artificial Heart Implant; Mechanical Device Program Enjoys Explosive Growth

John Duval recalls the day in April 2006, when Vigneshwar Kasirajan, M.D., now chair of Surgery, led the first surgical team on the East Coast to implant a total artificial heart.

The surgery was successful, but the day was filled with “the excitement but also the tension of doing the first case of its type,” says Duval, the recently retired CEO of VCU Hospitals and Clinics. He remembers Sherry Lockhart, Cardiac Surgery ICU nurse manager, leaning against the wall after the exhausting day. “I related to her, ‘There will come a time when these cases will be routine.’”

That time is now at VCU Pauley Heart Center, which in September 2016 implanted its 100th SynCardia CardioWest total artificial heart. Dan Tang, M.D., director of Heart Transplantation, Heart-Lung Transplantation and Mechanical Circulatory Support, led the surgical team.

“VCU is the third busiest program in the country,” says nurse practitioner Laura Kreisa, program manager, Heart Failure and Transplant. Much has changed for patients over the years. “In 2010, we did 21 total artificial hearts and at that time, people were not leaving the hospital” until they received their transplant.

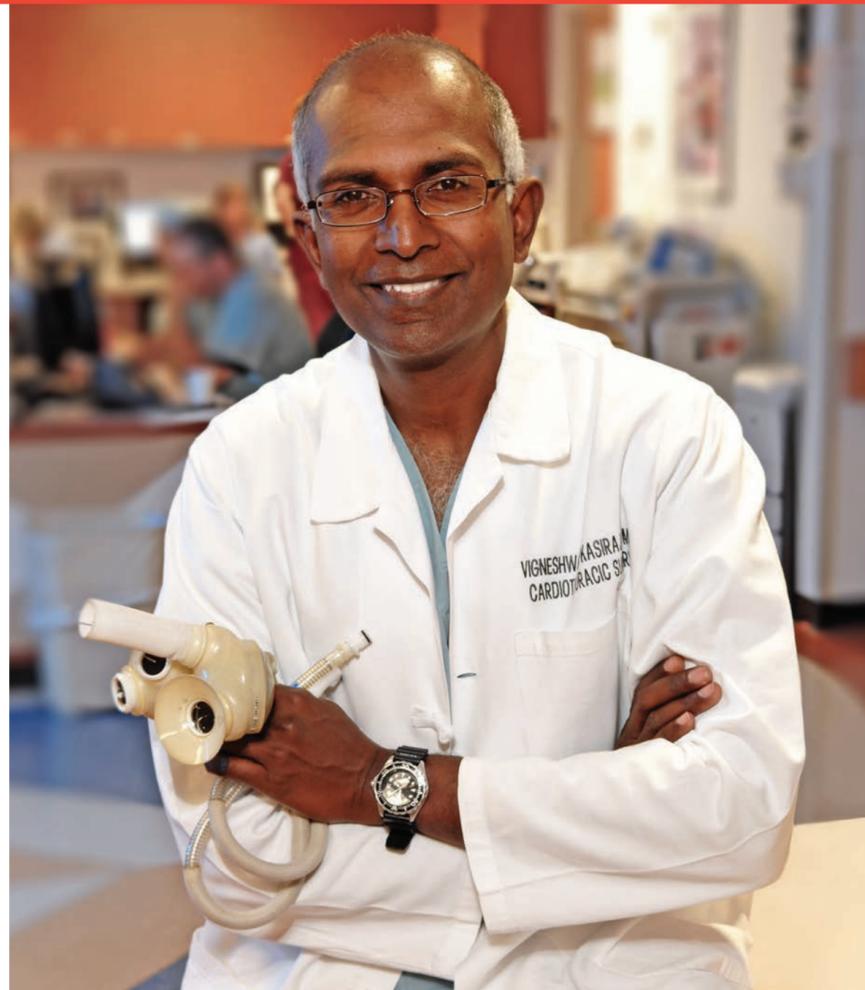
Then, total artificial heart patients were hooked up to “Big Blue,” a 400-pound air console that kept their hearts pumping. Beginning in March 2011, with the use of the more portable Freedom Driver at VCU, many patients could go home until their transplant heart became available. Kasirajan was the lead investigator of the national clinical trial for the 14-pound driver.

Heart failure cardiologist and researcher Richard Cooke, M.D., describes the advent of the artificial heart as one of the highlights of his career at VCU. “This has permitted us to help a group of patients who otherwise would have perished without this technology,” he says.

Currently, a patient may have to wait six months to two years for a transplant heart. The mechanical heart provides a “bridge to transplant”—an opportunity to sustain and improve the patient’s health as they wait for a transplant.

VCU is also conducting a clinical trial exploring the artificial heart as “destination therapy,” that is, as a permanent solution, says Tang. “This is important as this can be the only option for patients who are not a candidate for an LVAD (Left Ventricular Assist Device) or transplant.”

LVADs, which can be a destination



VIGNESHWAR KASIRAJAN, M.D.

therapy, “are mechanical pumps that can assist the heart and augment blood flow to the left ventricle,” says Keyur Shah, M.D., medical director of the Mechanical Circulatory Support Program. Although they have the potential for complications, “the devices are remarkable in that they last years and years and they improve quality of life and they improve duration of life.”

“This has permitted us to help a group of patients who otherwise would have perished without this technology,” says Cooke.

VCU was involved in early trials for the LVAD, first implanting one in 1994. Then, Shah, Cooke and Tang were all recruited to VCU in the 2008-2010 period, which “was sort of the birth of the LVAD era,” says Shah. Since then, the program has continued to grow, and now has six heart failure cardiologists and four cardio-thoracic surgeons. The unit implants an average of 50 LVADs and artificial hearts each year.

Whatever the therapy chosen, the

patient’s surgical and post-operative team play a critical role in recovery. After surgery, the patient is transported to the Cardiac ICU and then to Main 10 West/Central, the step-down floor for transplant, mechanical assist device, and heart failure patients. Follow-up care is provided at the hospital’s specialized clinic for patients with assist devices.

In 2015, the Cardiac Surgery ICU received the Gold Beacon Award for Excellence, the highest award given by

the American Association of Critical-Care Nurses, while last year Main 10 West/Central and the Cardiac ICU were each honored with a Silver Beacon Award.

“The heart failure team is such a well-honed, skilled group,” says Duval. “And, they’re just such a humane group of professionals and care for these extraordinarily ill patients with a kindness and a compassion that just makes you really proud to be part of VCU.” ❤️

Weil Institute Selects VCU Health As New Home



JOSEPH ORNATO, M.D., MARY ANN PEBERDY, M.D., WANCHUN TANG, M.D., WITH A PORTRAIT OF MAX HARRY WEIL, M.D., PH.D.

An internationally renowned cardio-pulmonary resuscitation research institute has recently moved its headquarters from Rancho Mirage, California to VCU Medical Center.

Founded in 1961 by the late Max Harry Weil, M.D., Ph.D. and the late Herbert Shubin, M.D., “the Weil Institute is one of the premier basic science and critical care laboratories in the world,” said Mary Ann Peberdy, M.D., a Pauley Heart Center cardiologist and director of VCU’s Advanced Resuscitation, Cooling Therapeutics, and Intensive Care (ARCTIC) program.

The teaching hospital was selected after a yearlong search, said Weil Institute Director Wanchun Tang, M.D. “The institute’s board of advisors unanimously chose VCU as their new home based on the academic medical center’s excellent clinical and resuscitation program.”

The ARCTIC program was developed at VCU Medical Center in 1998 and uses advanced resuscitation techniques and therapeutic hypothermia to improve patient outcomes following cardiac arrest. About 80-90 patients benefit from ARCTIC’s lifesaving procedures each year.

Weil is regarded as one of the fathers of critical care medicine. In 1955, he created the first bedside shock cart—the precursor to today’s “code cart” in all hospitals. Then, in 1959, Weil and Shubin developed the first intensive care ward for critically ill patients in Hollywood Presbyterian Hospital. Although he died in 2011, Weil’s legacy lives on in the work at the institute, where current research focuses on improving outcomes of CPR, circulatory shock, life-threatening heart failure, acute lung failure and overwhelming infections that produce septic shock. The institute is also making significant advances in life-sustaining

medical technology.

Prior to the partnership, “what we did not yet have at VCU was a basic science laboratory that focused on CPR,” said Joseph Ornato, M.D., chair of the Department of Emergency Medicine. “What we now have is one of the strongest comprehensive basic science, clinical and translational resuscitation program in the world.”

In addition to their other roles, Peberdy and Ornato will serve as co-deputy directors of the Weil Institute of Emergency and Critical Care Research at VCU, which held its grand opening on Oct. 24.

“[Dr. Weil] would have been proud to see what the next step is for the Weil Institute,” said his widow, Marianne Posner, who joined VCU President Michael Rao, Ph.D., in the ribbon-cutting ceremony.

Located on the first floor of the Hermes A. Kontos Medical Sciences Building on the MCV campus, the new institute’s décor includes a portrait of Weil and historic photos of the first ICU.

“What we now have is one of the strongest comprehensive basic science, clinical and translational resuscitation program in the world.”

“Dr. Weil’s contributions to resuscitation and critical care are unparalleled. He published some of the most groundbreaking work in these areas over a 50-year career and trained over 400 physician-scientists worldwide in basic science critical care and resuscitation research,” said Peberdy.

“Dr. Weil was a dear friend and mentor to me for over 25 years,” she added. “I can think of no greater honor in my career than to be given the opportunity to play a role in carrying on his legacy.”

For more information, please visit Weil.VCU.edu. ❤️

Pauley Unveils New EP Lab

Procedures are underway at VCU Health Pauley Heart Center’s newest electrophysiology lab, which opened late December. An additional lab was completed in September 2013, and another is scheduled to be unveiled this spring. The three labs will help VCU meet growing patient demand, including an increasing number of

complex, high-risk cases.

“The volume of EP procedures we’re doing is close to 2,000,” said Chair of Cardiology Kenneth Ellenbogen M.D. “The labs will have state-of-the-art imaging, made by GE, which will allow us to do things better and safer than we’ve ever done before.”

The labs are part of a \$24 million

renovation that VCU Pauley Heart Center began in 2013 to improve its interventional cardiology suite. When completed, the project will include seven highly advanced GE labs, including the three EP labs as well as four cardiac catheterization labs that have already been completed.

Stay tuned for a visit to the labs in our next issue of *The Beat*. ❤️

Two Young Transplant Patients Appreciate the Joy of Each Day

“I Try Not to Hold Back”

Meet Jerron Hargrove and Jesse Torrence, two young men who underwent heart transplantations at VCU and are now back to living their lives.

At a recent checkup, transplant patient **Jerron Hargrove** shared his story. “I was born with an irregular heartbeat, but never had any problems with it, I played sports all my life, joined the military.” About 6-7 months after completing his Marine Corps service, he blacked out. “And that’s when I was diagnosed with congestive heart failure.” He was 21.

Jerron was put on a pacemaker with an internal cardiac defibrillator and IV inotropes. After about two and half years, his health deteriorated and he was admitted to VCU Medical Center, where he received care for eight months before receiving a total artificial heart. “I was on Big Blue [a 400-pound console that drives the artificial heart] for six months in the hospital, then I received my heart transplant on August 31, 2010, two weeks before my 25th birthday.”

Surgeons Dan Tang, M.D., and Vigneshwar Kasirajan, M.D., and cardiologists Keyur Shah, M.D., and Michael Hess, M.D., provided his care. “Those were my all-star doctors.” Additionally, he speaks highly of his nursing team and support staff. “Everyone that I encountered was grand. Some came on their off days just to hang out.”

In his long months in the hospital, “I was on close watch, I couldn’t go outside, I couldn’t leave the floor. I think that was the most difficult thing, not being able to feel the outside world. And me being young and never being sick before and it happening so

fast, it was very hard to adjust to.”

For the surgeries, “I was nervous of course, but it was out of my hands. I just wanted it to be over. At one point, I was at a depression phase that I stopped fighting. But my team of doctors and nurses encouraged me, and I trusted them.”

After his transplant, he returned to school, and completed training in barbering and culinary arts, and now works full-time. He is an active volunteer, visiting with other transplant patients who need encouragement. Last spring, he threw out the first pitch at VCU Pauley Heart Center Night at the Richmond Squirrels game. “I try not to hold back on any of my activities.”

Six years after his transplant, “I’m doing fine,” he said. “I think everything is on a good path now.”

In his August 1, 2016 email thanking his Pauley doctors, nurses and staff, **Jesse Torrence** said, “Today marks five years since my heart transplant. I don’t think they make good Hallmark card for this sort of thing.”

“It is a privilege to be part of Jerron and Jesse’s care. While this is perhaps true in all of medicine, the heart is special. It is inspiring to see individuals faced with such dire circumstances persevere and recover.”
— Dan Tang, M.D.

Torrence was 31 and living in Washington, D.C., when he developed shortness of breath, stomach pain and a cough. He went to the doctor, where because of the fluid in his lungs, “they thought it was pneumonia.” He returned home, but even with treatments, the problem got worse. With the coughing, “at night, I had to sleep on the kitchen table with my head down” because it was the only comfortable position. Finally, he drove himself to the emergency room at Sibley Memorial Hospital, where he was diagnosed with heart failure, and Life-flighted to MedStar Washington Hospital. Doctors diagnosed him with giant cell myocarditis, a very serious heart inflammation. “It is fatal to 90% of the people who do not have a transplant.” He believes that his contraction of Lyme Disease the summer before may have triggered the infection.

He had several surgeries to remove a clot “the size of a tennis ball” from his heart. On Mother’s Day, he was put on ECMO, “they didn’t think my lungs would



survive,” he said. Doctors put him into a medically induced coma for six weeks, during which, he experienced a stroke. Finally, though his health improved enough for him to be transported to a place where he could get an artificial heart. “I woke up in June 2011 at VCU.”

The CICU team tended to him, waiting for his lungs and health to improve. During this time, his family and girlfriend, Oana Cheta, relocated to Richmond, to stay with him around the clock. “I wasn’t strong enough to push the call button.”

He gradually improved, and two months later, he had a successful heart transplant surgery, performed by Kasirajan and Tang. He appreciates the work of his surgeons and Keyur Shah, M.D., and Richard Cooke, M.D., who provided his post-care. Nurse practitioner Maureen Flattery “was a pillar for me,” he said, expressing gratitude to the nurses, physical therapists and many others who cared for him.

Now in good health, he married Cheta in August 2012. The couple lives in Chicago, where they work for nonprofits and are raising their son, Sasha, who was born November 3, 2015. “He’s the light of our lives.”

In his letter, he attached photos of his family and noted, “I could spend years searching for the right words to say thank you, again, for not giving up on me, for dedicating your life to health care/medicine, for listening to and rallying around my family and each other, for keeping faith with us however you knew how...”

“Or I could just shut up and share these photos, which, by my calculations, are worth about 15,000 words and capture best why I’m most grateful to still be here.” ❤️

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ABOVE: JESSE TORRENCE AND FAMILY / LEFT: JERRON HARGROVE AND MAUREEN FLATTERY



Welcome Virginia Medical Group!

On June 1, Virginia Medical Group in Colonial Heights, joined the VCU Health System. The outpatient cardiology and neurology practice is now known as MCV Physicians at Colonial Square.

The clinic primarily draws patients from Colonial Heights, Petersburg, Hopewell and Emporia. Onsite diagnostic testing for cardiology patients include stress tests, nuclear cardiology, echocardiograms, Holter and event monitoring, and pacemaker and automatic implantable cardioverter-defibrillator monitoring. The clinic’s physicians are VCU assistant professors of Internal Medicine and additionally see patients downtown at the Pauley Heart Center for procedures such as cardiac catheterizations.

“Joining the VCU Health family gives us a unique opportunity to blend private practice cardiology with academic cardiology without moving our office location. We are most excited and enthusiastic about the future of our practice,” said **Beverly Spencer, M.D.**,



the facility’s medical director and director of nuclear cardiology. Spencer received her medical degree from Harvard Medical School and served her residency at Massachusetts General Hospital in Boston. She completed her fellowship at University of Virginia.

She holds board certifications in Internal Medicine, Cardiovascular Diseases and Nuclear Cardiology and offers full cardiac outpatient services, including consults, follows, echocardiography, Holter and event monitoring, stress tests, nuclear cardiology and device management.



Spencer is joined at MCV Physicians at Colonial Square by five cardiologists:

George Eapen, M.D., FACC, completed his medical degree

at Trivandrum Medical College in India. He then served his residency at Bergen Pines County Hospital in Paramus, New Jersey, and his fellowship at Metropolitan Hospital at New York Medical College. He is board certified in Cardiology and Interventional Cardiology.

Named an “Unsung Hero” in 2000 by the Virginia Health Care Foundation for his volunteer work, Eapen is a co-founder of Pathways, a Petersburg clinic that offers free medical services to uninsured patients.

Matthew Joseph, M.D., FACC, received his medical degree from Kot-



tayam Medical College in India, then completed his residency and fellowship at Metropolitan Hospital in New York. He served an additional fellowship at SUNY Stony Brook. He holds board certifications in Cardiology and Interventional Cardiology. His areas of specialization include clinical cardiology, echocardiograms, stress tests and angioplasties.

K.L. Ashok Kumar, M.D., FACC, FACP, received his medical degree from



Bangalore Medical College in India, where he also served his residency. In the U.S., he completed an additional residency at Wayne State University Hospital along with a fellowship at University of California at Irvine. He is board certified in Internal Medicine and Cardiovascular Disease.



Satish Pathak, M.D., received his medical degree from the Medical University of South Carolina, and served his

residency at University of North Carolina Hospital in Chapel Hill. He completed his fellowship at VCU Medical Center. He holds board certifications in Cardiology and Interventional Cardiology.

Deepak Thomas, M.D., M.Phil., joined the Pauley Heart Center in the summer of 2015



and works downtown and at Colonial Square. He received his M.D. from VCU School of Medicine, then completed his internship and

residency at Yale University, his fellowship in cardiology at Washington University School of Medicine, and an advanced fellowship in interventional cardiology (Level III Peripheral Vascular and Coronary Intervention) at the University of Virginia.

He specializes in interventional cardiology, conducting peripheral vascular and percutaneous coronary interventions, and is board certified in Interventional Cardiology, General Cardiology, Echocardiography, Vascular Ultrasound (RPVI), and Internal Medicine.

Before turning to medicine, Thomas received his B.A. in Literature & Cultures in English from Brown University and was awarded a full scholarship to Cambridge University, United Kingdom, where he received an M.Phil. in 18th Century British Literature.

Kenneth Ellenbogen, M.D., chair of Cardiology at VCU Pauley Heart Center, said, “I am excited to have such excellent cardiologists joining the MCV Cardiology community. Our partners have a long track record of excellent and compassionate care to their patients and extends our ability to provide outstanding cardiovascular care to their community.”

In addition to the cardiology practice, neurologist Philip O’Donnell, M.D., offers outpatient adult services at the clinic.

MCV Physicians of Colonial Square is located at 2905 Boulevard, Colonial Heights, Virginia 23834. To schedule an appointment, please call 804-526-0682. ❤️

VCU Health Heart Events



PARTICIPANTS RECEIVE INSTRUCTIONS AT THE "HANDS-ONLY CPR" MOBILE VAN.

Saving Lives with Hands-Only CPR

"CPR is not what we all grew up knowing it as. You don't have to do mouth-to-mouth," said Michelle Gossip, a Pauley Heart Center nurse. "Hands Only CPR is easy, and it only takes a few minutes to learn."

Gossip, the program coordinator for the Advanced Resuscitation, Cooling Therapeutics, and Intensive Care (ARCTIC), post cardiac arrest program, was one of about 100 guests who attended a Hands-Only CPR event on Sept. 26. VCU Health helped coordinate and promote the program, which was open to the public and held in anticipation of the Anthem Richmond Marathon, American Family Half Marathon

and the VCU Health 8K.

With the backdrop of a special mobile tour bus, American Heart Association CPR instructors taught participants how to identify the signs of cardiac arrest and demonstrated lifesaving chest pumping movements to the tunes of Shakira. Each guest went home with a Hands Only CPR kit and practice mannequin. Although fun, the program had an important mission.

"The more people that know how to do this very easy skill, the more lives are going to be saved," said Gossip. "Our Pauley Heart team knows that when someone comes to ER for cardiac event, and they've received CPR in the field, it can potentially double someone's chance of survival." ❤️

Heart Matters Conference Held

Over 120 nurses and allied health professionals attended the VCU Health Pauley Heart Center Nursing's 17th Annual Heart Matters Conference, held Nov. 18th at the Richmond Marriott.

Director of Nursing Kathryn Perkinson, MSN, gave the opening and closing remarks for the day-long event. Physician and nurse speakers addressed a variety of

topics in cardiovascular disease, including new research and procedures, and a panel discussion on "Transforming Care at the Bedside."

"The speakers were dynamic, especially Dr. Ashley, whose topic was women's heart health," said Michelle Gossip, a nurse and ARCTIC Program Coordinator.

A former Pauley heart transplant patient and cancer survivor also spoke.

"He shared his story about how caring

Heart Ball Kick-off Highlights Research

On Dec. 1, the American Heart Association Richmond Affiliate with local sponsor VCU Health hosted a kickoff for the upcoming Richmond Heart Ball. About 75 guests attended the event, held at the McGlothlin Medical Education Center.

"The focus was on AHA-funded research in the Richmond community," said Richmond Heart Ball Director of Development Meredith Martin. Speaking at the event were cardiothoracic surgeons and AHA-funded researcher Mohammed Quader, M.D., and a heart transplant patient. "They provided an inspiring, tangible example of how sponsorship and donor dollars are used in our community."

With catering by Mosaic, "it was a special evening highlighting the over 25-year relationship between the AHA and VCU as we celebrate our 25th anniversary Heart Ball," said Martin.

Last year, the Richmond Heart Ball raised over \$1 million to support vital, life-saving research in the cardiovascular and stroke fields as well as professional and educational programs in the Richmond community. This year's ball will take place on April 22, 2017, at Main Street Station — the first event to be featured at the new Richmond event space—and include a cocktail reception, silent and live auctions, dinner, live music and dancing.

For more information, please contact Meredith Martin at Meredith.Martin@Heart.org or 804-965-6533. ❤️

and compassionate the medical providers were who impacted him during this very critical illness. They ultimately impacted his decision to go into a healthcare-related career," said Gossip.

She added, "The purpose of the day is to gain new knowledge, but it's also for rejuvenation. That's why we always end the day with a patient-lived experience: It refills our cup." ❤️

Symposium Spotlights Women's Heart Health



VCU Health Pauley Heart Center will host the second annual "Heart Health in Women Symposium," which will take place on Feb. 4 at the Virginia Museum of Fine Arts.

"Last year, we had a good turnout with 60 participants. We are hoping to steadily grow the program and advance women's cardiovascular knowledge and care in our community," said Phoebe Ashley, M.D., who is for the second year co-chairing the event with Jordana Kron, M.D. Ashley and Kron are among the cardiologists who will speak at the event.

This year's topics include "The Nuances and Truth of Coronary Artery Disease in Women," "Lipid Guidelines: What is New in Lipid Management," "5 ECGs Not to Miss," "Get Up and Go: Exercise and Cardiac Rehab in Women," "Pregnancy and the Heart: Cases from Obstetrics Clinic,"

"Time is Brain: Preventing and Treating Stroke in Women," and "Obesity: Problems and Solutions." There will also be a panel discussion on "Survivorship: The Heart of the Breast Cancer Patient" with specialists in cardio-oncology and heart failure.

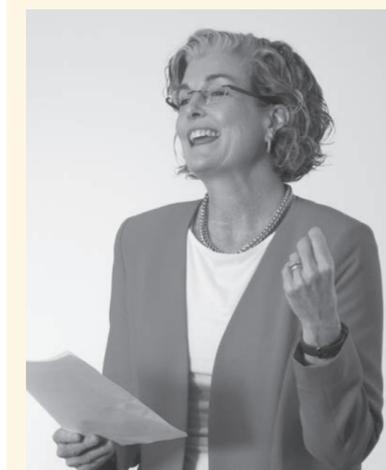
"We are hoping to steadily grow the program and advance women's cardiovascular knowledge and care in our community,"

The event is targeted to healthcare professionals. Registration will begin at 7 a.m. The program will include breakfast and conclude at 12 noon. For more information, please contact: Caroline.Whitbeck@vcuhealth.org.

The VCU Pauley Heart Center is grateful to Ellen and Barry Chernack for their support of the Heart Health in Women Symposium. ❤️

Pauley Celebrates Heart Month

VCU Health Pauley Heart Center is taking part in many special events in February for American Heart Month, including VCU Health Goes Red (Feb. 3), Heart Health in Women Symposium (Feb. 4), Facebook Live Q & A with Phoebe Ashley, M.D. (Feb. 6), AHA Go Red Luncheon (Feb. 10), and information tables at the VCU vs. St. Joseph's Men's Basketball game (Feb. 14).



PHOEBE ASHLEY, M.D.

The heart center will host a seminar series at Lewis-Ginter Botanical Gardens. Topics include:

"An Affair of the Heart: Understanding Women's Heart Disease,"

by Phoebe Ashley, M.D., with health screenings offered by the heart center team (Feb. 9);

"New Treatments for Atrial Fibrillation"

by Kenneth Ellenbogen, M.D., and Vigneshwar Kasirajan, M.D. (Feb. 21); and

"Valve Disease"

by Barbara Lawson, M.D., and Jose Exaire, M.D. (Feb. 28).

The seminars begin at 5:30 p.m. and are free and open to the public. Registration is available at vcuhealth.org/events. ❤️

Read more online at vcuphc-thebeat.org.


DR. KENNETH A. ELLENBOGEN
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VCU Health™

Pauley Heart Center

Friends and Supporters,

As the new year begins, it's a fitting time to reflect upon the past, even as we look forward to the future and many new exciting plans for 2017.

Our cover story profiles three VCU administrators who have been instrumental to our success. John Duval, Dr. Jerry Strauss and Dr. John Ward. These leaders are the team that helped build the Pauley Heart Center and helped us take it to the next level. We are so grateful for all they have done to develop Pauley into a world class heart center.

In this issue, you will also find a history of our programs for heart transplantation and the total artificial heart and advanced left ventricular mechanical assist devices. VCU has become a leading center for these programs in the United States and all over the world. The same is true for our ARCTIC Program, which draws patients from all over Virginia. The dedication and innovative approaches of Dr. Mimi Peberdy and her team helped attract the Weil Institute, one of the world's top resuscitation and critical care laboratories. We anticipate the new partnership will lead to many exciting discoveries.

Our footprint continues to expand in Virginia, and we welcome the outstanding clinicians who are part of MCV Physicians at Colonial Square. Additionally, in this issue you will learn about other doctors and staff who are making a difference in the lives of our patients, including Dr. Luis Guzman and his interventional cardiology team, Dr. Jay Koneru and Dr. Richard Shepard with complex lead management, and Dr. Pat Nicolato and the ECMO team.

February is American Heart Month, and in this issue, you can learn about some of the special events taking place to bring more awareness of cardiovascular disease to the public.

Thank you for your support in making these programs possible.

SINCERELY,
Kenneth A. Ellenbogen, MD

Chairman, Division of Cardiology

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