The Beat

A PUBLICATION OF
VCU HEALTH
PAULEY HEART CENTER

AUTUMN — 2019

A New Chapter Begins

Learn how cardiovascular care is evolving at Pauley with a new director and mission.

Our world-class team takes your heart health personally.

Continued ▸▸▸

VCU Health™
Pauley Heart Center

Building on our history of innovation in patient care, scientific discovery, diversity and collaboration, we improve cardiovascular care for all, while continuously training the next generation of doctors.

These words articulate a new mission, recently unveiled by Pauley. "The new mission reflects the changing terrain of cardiovascular care," said Director Dr. Greg Hundley.

This changing terrain takes many forms. For instance, while Pauley was once limited to downtown, its reach now extends to communities such as South Hill, Colonial Heights and Williamsburg through outreach clinics and hospitals.

"The expansion of our footprint is critical to bringing Pauley's exceptional cardiovascular care to all who need it in our state," said Hundley.

The mission also speaks to the terrains of patient care, scientific discovery and training the next generation of doctors—and the direction Pauley must turn to continue its long history of innovation in these areas.

"In recent years, there has been enormous growth within cardiovascular medicine and cardiovascular surgery," he said. "At the same time, exciting opportunities have arisen through new partnerships with partners in Oncology, Pharmacy, Pharmacology and Physiology, Behavioral Science, Kinesiology and Exercise, Biomedical Engineering, Population Health and issues related to societal demographics."

To encompass both the growth within the traditional fields and expand beyond, he said, the heart center needed to come together to develop a new mission to carry it forward for the next 20 years.

"Collaboration will be one of the keys to attaining our mission, and it's already taking place every day at Pauley," he said.

It's 7:30 a.m., and physiologist Dr. Justin Canada is overseeing an innovative MRI procedure in the Cardiovascular Imaging Suite in the North Hospital. The room is full of monitors, which Canada and the other members of his team continually check. One screen shows the black and white image of a patient's beating heart.

"Please breathe in, breathe out. Now, hold your breath."

On the other side of a glass wall from them, the patient, lying inside an open-sided magnetic resonance imaging (MRI), follows the directions. There's a long *beeep* as her chest scan begins. She is the first patient in this pilot study. During the scan, she pedals a supine exercise bike attached to her table. The harder she pedals, the more her heart rate and VO2 levels—the volume of oxygen that her body uses for metabolic work—spike up.

This is a new diagnostic tool. VCU Medical Center is one of only a handful of centers in the world where this is possible: real-time MRI imaging during an exercise stress test.

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"It's very exciting—I'm stoked," said Canada, principal investigator for the study.

He is measuring the cardiorespiratory fitness of cancer patients who are undergoing evaluation for bone marrow transplantations, then comparing the results to that of age- and gender-matched healthy individuals, like this morning's patient. Through the study, he hopes to establish a protocol for determining the specific causes of exercise intolerance in those with cancer, which may have future applications in the assessment of cardiotoxicity in cancer survivors.

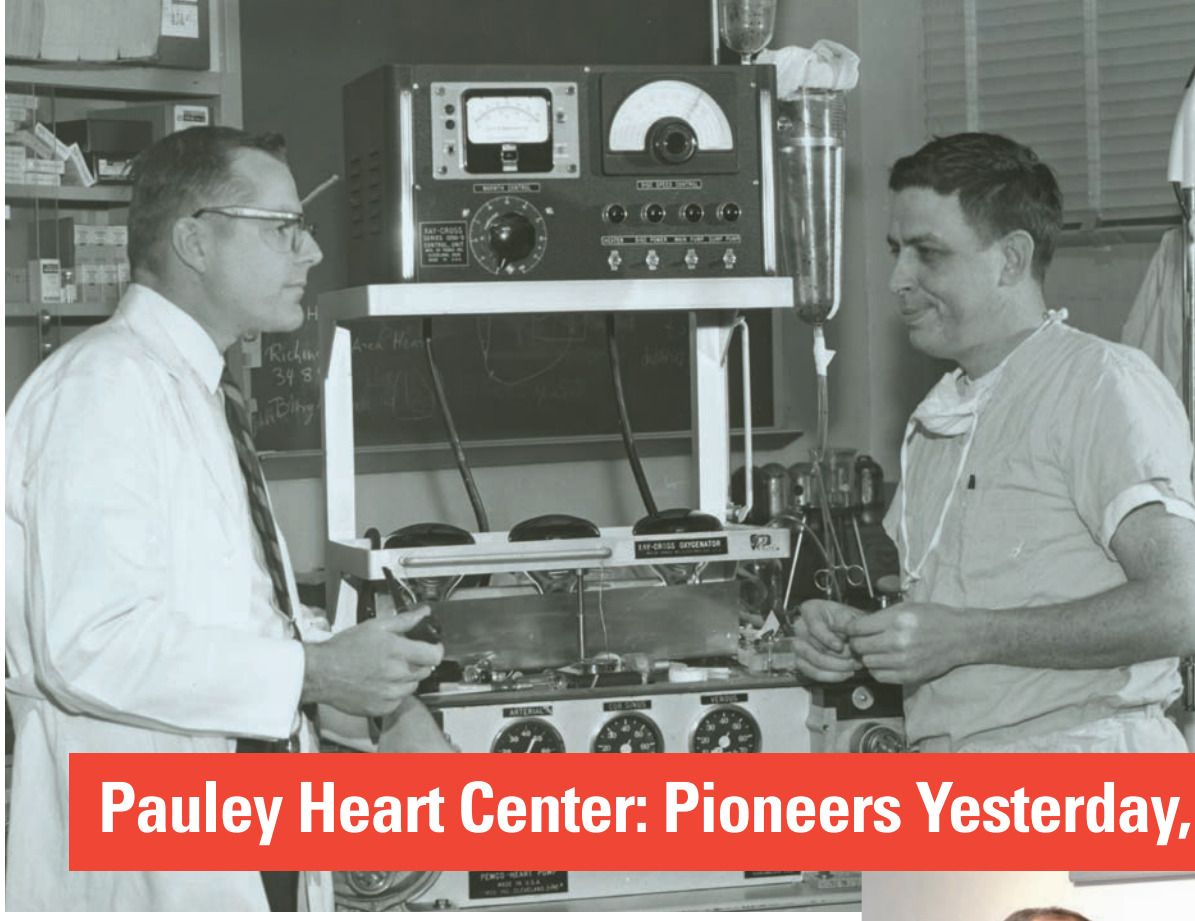
"Cancer-related fatigue is the most predominant quality-of-life disabling symptom of the cancer patient," he said. "With this technique, we'll be able to look at how much a person's exercise capacity is related to the heart's capacity to pump blood and/or the muscles' ability to extract oxygen. The advantage is, this can be done noninvasively, without the need for measures such as cardiac catheterization or exposure to radiation."

Co-Investigator Dr. Jennifer Jordan, a biomedical engineer who directs the lab, watches the screens to see if any adjustments are needed for the scans. She's there to determine "the best way to acquire those images and optimize the protocol—both to get good, crisp pictures and also to reduce patient burden," she said. "We don't want someone in the scanner exercising for 60 minutes when we can get them in and out in 15 minutes."

MRI sessions can involve a series of 1,000 photographs that in many facilities can take 45 minutes to an hour to complete. Pauley's Siemens Magnetom Vida 3T MRI system can complete similar sessions in 15 minutes. In addition to speed, the system offers extraordinary resolution.

Jordan took part in a similar study at another facility, where the team had to move patients back and forth between a treadmill and a scanner. "Each time, there was a 20-second delay. During that time, the heart rate was already starting to recover. But with the scanner we have here, and the supine bike, Dr. Canada is going to be able to answer that question of: What does that peak heart function really look like?"

Pauley Heart Center: Pioneers Yesterday,



ABOVE: DR. RICHARD LOWER (LEFT) AND DR. RICHARD CLEVELAND, WITH ITS PREDECESSOR: THE PEMCO HEART PUMP. RIGHT: DR. DANIEL TANG; ALI PANAHI, COMPUTER SCIENCES GRADUATE STUDENT; AND DAYANJAN "SHANAKA" WIJESINGHE, PH.D., HAVE WORKED TOGETHER TO DEVELOP AR TECHNOLOGY FOR MEDICAL USE.

The mission control atmosphere in the room, and the makeup of the medical team, also reflects a new approach to cardiology.

"We've got an engineer, a cardiologist, an exercise physiologist and an MRI technician. This is a team from across multiple disciplines, across both VCU campuses," said Hundley, who is observing the study. "We are assembling to address our challenges. And that's needed because the disease processes that we are

Today and Tomorrow

managing today are complicated."

In the clinical setting, multidisciplinary teams are playing a key role in tackling tough situations. For instance, Pauley's Coronary Intensive Care Unit (CICU) is taking part in a joint program with the Obstetrics and Labor and Delivery Departments that involves early identification of high-risk maternity patients with cardiovascular disease. Patients with existing cardiovascular conditions are especially vulnerable during pregnancy, which can place a significant burden on the heart.

"By the third trimester, you can increase your cardiac output almost 50% during pregnancy and your blood volume expands 30-40% higher than normal. That increase in fluid can also put stress on the heart," said Jennifer Powers, one of the CICU nursing leaders of the Complex Maternal Cardiac Care Group along with Kerry Patterson and Charlotte Roberts.

The pilot program started five years ago and focused on maternity patients who have advanced heart failure, coronary heart disease with prior heart attacks and congenital heart disease—all of which have been on the uptick in recent years in this population. One troubling condition is hypertrophic cardiomyopathy, which causes an abnormal thickening of the heart muscle that can affect the heart's ability to pump blood and can cause life-threatening arrhythmias.

The goal is to identify the patients who might qualify for the program early in the process, so that they don't arrive in the emergency room and CICU unexpectedly as they have in the past, said Powers. "We have a team that meets monthly and reviews the list of high-risk patients. We talk about what their risks are, what their anticipated needs are for labor, delivery and postpartum."

Depending upon the needs, the team might include representatives from the CICU, Obstetrics (including a specialized pharmacist), Labor & Delivery, Cardiology, Advanced Heart Failure, Electrophysiology, Cardiac Anesthesia and Cardiac Surgery departments. "Everyone knows about the patient before they arrive. The patients are also seeing our cardiologists along with their regular OB visits," Powers said.

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The team creates a plan for each patient that is placed in their file, said Patterson. "We talk about special needs during their stay, maybe certain lines, medicines, or devices they will need—such as an intra-aortic balloon pump, pulmonary artery catheter or a Vigileo monitor." She added, "Myopathies affect the muscle, which makes it weak. Some patients require LifeVest, an external defibrillator, that they wear during and after their pregnancy." The patients check into the CICU the night before their scheduled C-section or induction and undergo any necessary testing or precautions.

Patterson recalls one patient in the high-risk program with a cardiomyopathy, who was also on a CPAP for 18 hours a day, who was at risk of having an emergency early delivery. She was admitted to the CICU very early in her pregnancy for a short stay to help optimize her situation. The team worked closely with the patient to prepare her for what to expect and sent her home with a LifeVest.

The high-risk patient was able to carry to full term and delivered a healthy baby. "She did fine and was discharged four days later," recalled Powers with a smile. "She's much more educated…and is engaged in follow-up care with specialists in Advanced Heart Failure."

Multidisciplinary care is a key part of Hundley's vision. Named Pauley's first director in 2018, Hundley is a renowned leader in the field of cardiac MRI as Principal/Co-Investigator and Imaging Core Lab Director with a lifetime achievement of significant contributions on NIH-sponsored multicenter trials such as the WFSM Claude D. Pepper Older Americans Independence Center, Multi-Ethnic Study of Atherosclerosis (MESA), Preventing Anthracycline Cardiovascular Toxicity with Statins (PREVENT) and Understanding and Predicting Breast Cancer Events After Treatment (UPBEAT) to assess meaningful cardiovascular preventative, diagnostic and therapeutic end points in multiethnic, cardio-oncology and geriatric populations. His multidisciplinary approach and research expertise make him especially qualified to lead Pauley into its next chapter.

Since his appointment, he has led the first-ever research conference between the MCV and Monroe Park campuses. New faculty include those dually appointed between Pauley and other departments. In addition to taking part in research, they move between the two campuses, teaching a new generation of cardiac care providers.

Some of the dual appointees are Drs. Canada and Jordan, along with biomedical engineer Dr. John Wilson, whose research focuses on the biomechanics of aortic aneurysms and cancer-related cardiovascular toxicity; behavior and health policy scientist Dr. Alex Lucas, whose focus includes exercise interventions for cancer patients and survivors; and Dr. Salvatore Carbone, a nutritionist whose studies include an exploration of the effects of a Mediterranean-style diet on patients with obesity and a specific form of heart failure, called heart failure preserved ejection fraction (HFpEF).

Multidisciplinary teams, such as the cardiac sarcoidosis team that includes Jordan as well as Dr. Jordana Kron, Dr. Greg Hundley and Dr. Antonio Abbate, are zeroing in on important treatments for rare conditions (read online: Dr. Jordana Kron is searching for answers to a mystery disease).

Another team, Dr. Antonio Abbate and his colleague from Pharmacy, Dr. Benjamin Van Tassell, have worked together for 10 years developing and exploring the anti-inflammatory drug anakinra, an Interleukin-1 (IL-1) blocker, to treat heart failure. They ▶

A New Chapter Begins *continues*

began with preclinical studies, then small clinical trials. Their work has come to fruition: They are now busy enrolling patients in REDHART2, a phase II clinical trial to test anakinra on 102 patients, funded with a $2.7 million grant from the National Heart, Lung, and Blood Institute.

Both teams received their first funding in the form of pilot studies funded by Pauley donors, said Hundley. Donors also made the new Cardiovascular Imaging Lab and Hundley's recruitment possible with $9 million in gifts.

"Our philanthropic supporters are providing the seed funding for innovative research, recruitment and improved facilities. They are helping us achieve our mission to be a premier site for the delivery of cardiovascular care, encompassing excellence in clinical care, education and research," said Hundley.

Building on the new advances in technology in recent years, multidisciplinary teams that bring together people of different backgrounds and talents are helping to define Pauley's newest chapter and fulfill its mission.

"I think Pauley will be a beacon to others for how to deliver cardiovascular care in the future."

Congratulations, Dr. Ellenbogen!

Last November, Pauley's Chair of Cardiology, Dr. Kenneth Ellenbogen, was named Editor-in-Chief of the *Journal of Cardiovascular Electrophysiology*.

DR. KENNETH ELLENBOGEN

The monthly scientific publication explores the latest developments in the study and management of arrhythmias through peer-reviewed original clinical and basic research articles, editorials, case reports and highlights from arrhythmia imaging and rounds.

"It's the second-oldest cardiac electrophysiology journal, and I've served on the board for a number of years," said Ellenbogen, the Martha M. and Harold W. Kimmerling Professor, who began his term with the JCE in January.

A highly sought-after clinician, researcher, educator and lecturer, Ellenbogen also serves on the editorial boards of the *Journal of the American College of Cardiology, American Heart Journal, Circulation, the Journal of Cardiovascular Electrophysiology, Heart Rhythm* and is a senior editor of *Heart Rhythm, PACE and Circulation: Arrhythmia and Electrophysiology.*

Despite his busy schedule, Ellenbogen enjoys making time for editorial work. "Journals are the lifeblood of medical investigation," he said. "They're critical to furthering knowledge and advancements in our field, and it's really special to be a part of them."

Pauley Celebrates a Record Year for Grants

Two large whiteboards grace Pauley's clinical research offices in West Hospital. They are ledgers, located across the hallway from each other. One shows the status of new research studies in the process of being started; the other, details about active studies. Both ledgers are nearly filled.

"It looks like the arrivals and departures boards at an airport. When people come up here, they say, `Wow,' because they usually don't realize how much research is going on within the division," said Dr. Amy Ladd, research regulatory manager for clinical studies.

The whiteboards are a striking reminder of the success of the clinical research teams in attaining funding for their proposals—but there have been great achievements in basic and translational research as well. In 2018, Pauley celebrated a record-breaking year with $10,924,455 in grants—an increase of $2,841,592 over 2017, including basic, translational and clinical research.

"I am excited to learn we had an amazing year for grants and am so proud of our research teams. Our success comes at a time when research dollars are scarce and funding is extremely competitive. Where we're having growth is in industry-sponsored, society-based or federal research dollars," said Director Dr. Greg Hundley.

Research areas driving the growth include inflammatory heart disease, cardio-oncology, cardiac sarcoidosis, heart failure and transplantation, diet-induced obesity and diabetes (including genetic mouse models) as they relate to cardiovascular disease and devices for electrophysiology applications.

"The funding enables us to develop and discover new therapies to treat disease. What this means, when you see these dollars going up, is that somebody thinks you're doing a good job developing the therapies for the future," said Hundley. "All of this would not be possible without the commitment of the entire team—from the PIs and the clinical research nurse coordinators to the individuals providing fiscal and regulatory oversight."

To read an interview with Dr. Ladd, please visit us online.

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Scientific Discovery

Taking Care of "Unfinished Business": Fellows Win First Place in National Jeopardy Contest

Each year, cardiology fellows from around the country compete in the American College of Cardiology's (ACC) "Fellows-in-Training Jeopardy Competition: Battle of the States" held at their annual Scientific Session conference.

PICTURED ABOVE: FROM RIGHT TO LEFT: DRS. GURU KOWLGI, SAMPATH GUNDA (HOLDING TROPHY) AND PRANAV MANKAD, WHO WON THE NATIONAL FELLOWS-IN-TRAINING JEOPARDY CONTEST AT THE AMERICAN COLLEGE OF CARDIOLOGY'S 68TH ANNUAL SCIENTIFIC SESSION IN MARCH.

Virginia Commonwealth University cardiology fellows represented the ACC's Virginia Chapter and won first place in this year's competition. Drs. Guru Kowlgi, Sampath Gunda and Pranav Mankad made up the team and won the state competition against others from the University of Virginia and Virginia Tech Carilion to face off against the other chapters at the national conference. This is the third year in a row that VCU fellows have comprised the team.

Kowlgi, who serves as chief fellow for his class, has been a member of the Virginia Chapter team for three years. Last year, the team placed second nationally in a close race. Did that drive him to try again? "Absolutely. I felt it was unfinished business last time," he said.

"It was amazing," said Kowlgi. "My teammates and I worked really hard for this. We also got great training from VCU and had a lot of supporters there, cheering for us."

The competition was held during the ACC's 68th Annual Scientific Session at New Orleans in March. Teams from 35 ACC state chapters and Canada participated in the competition, which featured nine 30-minute preliminary rounds. Teams answered questions from four Jeopardy categories based on the American Board of Internal Medicine Certification Examination Blueprint. Nine teams advanced to the semifinals, and three teams competed in the final round.

"Their success in this very prestigious contest is a testament to their talent and hard work and reflects so well on the quality of their education at VCU."

In the final round, the team put on a masterful performance—placing 3,400 points ahead of the second-place team. The Virginia Chapter received a first-place trophy and plaques and three $1,000 travel awards to send next year's team to the 2020 conference in Chicago. Each team member received $1,000.

Upon learning of the victory, "my response was pure jubilation, because I think it's a real credit to VCU and VCU Health's Pauley Heart Center to have the caliber of trainees that are that smart and phenomenally excellent. They basically beat every other institution, including Mayo Clinic, Cleveland Clinic, Hopkins and Harvard. It says something about them and our institution," said Dr. Kenneth Ellenbogen, chair of the Division of Cardiology at VCU School of Medicine.

Dr. Peter Buckley, dean of VCU's School of Medicine, agreed. "All of us at the medical school are so very proud of Guru, Sampath, and Pranav. Their success in this very prestigious contest is a testament to their talent and hard work and reflects so well on the quality of their education at VCU."

During their training, the team spent "hours and hours, day and night to get ready for the competition," said Gunda. In addition, "our program director, Dr. Gautham Kalahasty, was always supportive and encouraging. Drs. Jay Koneru, Santosh Padala and Nayef Abouzaki also helped, as well as other fellows who constantly pushed us to a higher level by testing us and helping us to understand and prepare for the competition."

"It was my first time at the competition, so I enjoyed all of it. We faced really strong teams, and it was fun to compete and network with colleagues across the country," said Mankad. "I loved the enthusiasm from the crowd, as the studio was packed, with half the people having to stand in the back."

Following their win, that evening, the team walked around downtown New Orleans. "The whole place was filled with cardiology fellows and faculty from all over the country," said Kowlgi. Wherever they went, "there was not one place where they didn't stop me and say they were so happy to see VCU win and they wanted to know about the kind of training we get."

Echoing the thoughts of his other team members, Gunda noted that "VCU certainly is an amazing place. The academic environment, friendly colleagues and wide exposure to almost every case in the book helped us get to this point."

Training the Next Generation of Doctors

A Closer Look at VCU's Cardio-Oncology Research

VCU Pauley Heart Center's Director Dr. Greg Hundley is a leader in using magnetic resonance imaging (MRI) to identify early, preclinical signs of heart disease in patients undergoing chemotherapy. Since his arrival, Hundley has been building Pauley's cardio-oncology team and working with researchers from diverse backgrounds. Here are some of the exciting explorations in the field:

The Understanding and Predicting Breast Cancer Events After Treatment (UPBEAT) trial is a national study funded by a $3.2 million grant from the National Cancer Institute (NCI). The multicenter trial seeks to understand and predict fatigue, cardiovascular decline and events after breast cancer treatment. The study is looking at 1,000 women, including 840 patients with stage 1-3, nonmetastatic cancer and 160 healthy women.

Hundley is the national principal investigator (PI) for the trial; Director of the Cardiovascular MR Imaging Core Lab, Dr. Jennifer Jordan, is its national imaging director. Dr. Mary Helen Hackney, medical oncologist and member of the Developmental Therapeutics research program at Massey Cancer Center is the PI for VCU. Clinical Research Nurse Coordinator Laura Johnson follows patients in the VCU study, ensuring that the UPBEAT protocol requirements are met.

Participants undergo a cardiac MRI and other testing to get a baseline of their cardiovascular and neurocognitive health, then receive follow-up testing. If any cardiac disease develops, it can be identified and treated early on. The longitudinal study will follow the patients for 9-11 years.

"Once we have all of this information, we'll have a better picture of the cardiovascular health of these breast cancer patients before and after chemo, and we can use that information to develop new studies and interventions," said Johnson.

Dr. Alex Lucas, an instructor with Pauley and the Department of Health Behavior and Policy, is leading a feasibility study through which he hopes to establish VCU as a site for a large NCI-funded trial led by Hundley and Jordan. Lucas is initiating aerobic exercise programs in patients with stage 2 and above lymphoma to see if it will help prevent heart disease.

Participants undergo a cardiac MRI and other testing to get a baseline of their cardiovascular and neurocognitive health, then receive follow-up testing.

Lymphoma patients typically receive anthracyline-based chemotherapy, a regimen known for its cardiotoxicity. "We're trying to catch them as they begin their chemotherapy. We don't want to wait until those drugs have had negative side effects before we do something about it," said Lucas.

Baseline testing of the patients in the study involves a graded exercise evaluation on a treadmill to measure exercise capacity, followed by a cardiac MRI to evaluate heart function. The patients are slowly moved up in their exercise plans and undergo retesting at three and six months.

While many doctors recommend rest following chemotherapy, this trial goes in a new direction by encouraging patients to exercise.

A similar evolution occurred in cardiovascular rehabilitation, said Lucas. "Thirty years ago, if you had a heart attack, you would have been recommended bed rest until you recovered. We now know that the best thing to do is to start moving and to become physically active as soon as you can."

Another study is being led by Dr. Vanessa Sheppard, chair of the Department of Health Behavior and Policy and the Theresa A. Thomas Memorial Chair in Cancer Prevention and Control at Massey Cancer Center, and her team is assessing the impact of exercise in breast cancer survivors. Their pilot study introduces exercise and nutritional interventions to African American breast cancer survivors, a demographic noted for high rates of obesity and low rates of physical activity.

Sheppard is hoping to find answers to the racial disparity and "better understand factors that may explain this lower level of physical activity in order to inform interventions that could help prevent the onset and/or worsening of comorbidities such as cardiovascular disease."

Diversity and Collaboration

Rare Complication Meets Its Match

ED AND PATTY PRESTEMON WITH DAUGHTER ADRIENNE AND GRANDDAUGHTER PARKER. PHOTO BY ERIC PETERS

In July 2018, five weeks after he underwent a procedure in Asheville to treat atrial fibrillation, Ed Prestemon and his wife Patty traveled to Richmond to visit their daughters.

While there, Ed began to feel extreme fatigue and chest discomfort. Patty, a retired nurse, knew she needed to get Ed to an emergency room. When she did, his condition deteriorated rapidly.

Ed began shaking and spitting up large amounts of blood. They learned that Ed had developed an atrial-esophageal fistula, a rare condition in which a passage forms between the atrium and the esophagus. Every time Ed's heart beat, it pumped blood into his esophagus. He needed emergency surgery.

"We almost said our goodbyes right there, because they gave us a 15% chance that he'd make it through the surgery," Patty told us. "And this was a healthy guy, you know. He hiked, he biked, he weightlifted."

Ed was transferred to VCU Medical Center, where he was met by cardiothoracic surgeons Dr. Daniel Tang and Dr. Rachit Shah. Through nearly 14 hours of surgery over two days, the surgeons successfully repaired the holes in Ed's atrium and esophagus, but not before he suffered several strokes.

What followed was an extensive hospital stay totaling 43 days as Ed moved from the ICU to a step-down unit to inpatient rehab. He then was released to outpatient rehabilitation at home and Sheltering Arms.

Seven months after the emergency surgeries that saved his life, Ed grinned as he recalled, "I actually sent the rehab therapists a photo of me kayaking while we were in Florida."

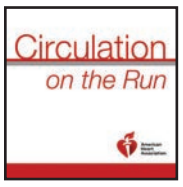
To show their appreciation to the doctors, nurses and rehab therapists who saved Ed's life and helped him get back on his feet, the Prestemons made a generous gift to support cardiothoracic research at VCU Health as well as its new joint venture with Sheltering Arms, the Sheltering Arms Institute.

"I was very unlucky to have the initial problem happen to me," Ed said. "But I was even more lucky to have it happen when I was in Richmond, when I was five minutes from the ER…and when I was able to get to VCU Medical Center, where I could get the surgery I needed right away."

Today, Ed has returned to his active lifestyle. And, "obviously, the most important thing is getting together with our family," he said. "Last Thanksgiving was a really great get-together, and then we're here this week for our granddaughter's second birthday and our other daughter's baby shower. Just being able to be here for those makes us very thankful."

To learn more about making a gift, please contact Carrie Mills at (804) 828-0423 or carrie.r.mills@vcuhealth.org.

Dr. Greg Hundley Co-Hosts Weekly Podcast for *Circulation*



Pauley Director Dr. Greg Hundley serves as one of the co-hosts for *Circulation on the Run*—a "weekly podcast summary and backstage pass to the journal and its editors," according to its introduction.

Hundley creates the podcast with Dr. Carolyn Lam, a professor with the Duke National University of Singapore. Both are associate editors for the peer-reviewed publication *Circulation*, which is produced each week by the American Heart Association. The issue and podcast are released together each Tuesday.

Each podcast highlights about five articles from the journal, which presents original research and other articles related to cardiovascular health and disease. "Our goal is to share the pertinent information from the journal each week; then we also interview some of the leading authors of the research and ask them to explain some of the results," said Hundley. "We put the information into context for how it affects all of us as we work with our patients."

Lam has served as host for about two and a half years. After guest hosting one of the shows, Hundley and Lam wondered about co-hosting, and they began doing so in January. "With two hosts, you can have a discourse, and the listeners feel like they are joining a conversation," Hundley said.

The pair have an easy rapport, albeit a long-distance one. "We interact over the internet because she's in Singapore and I'm in Richmond," he said. "We can see one another and hear one another through the internet, but our recordings are individual." The two taped recordings are put together by a production studio in California.

Hundley describes the audience as readers of the journal, including physicians, scientists, trainees, medical students and allied health professionals, and sometimes the general public.

The 25- to 30-minute show appeals to busy professionals—some of whom might tune in while commuting to the office. "You can listen in and get the components of the articles. What we find is that some people like that to digest what's going on with the journal and then they'll go back and read the key articles."

Hundley enjoys making time for the show, even with his own busy schedule. "It's going well. We like it, and the number of listeners is increasing."

To check out the show, please visit bit.ly/Pauley_OTR_Podcast.

“A Heart of Gold”: Meet Dr. Beverly Spencer

As a child growing up in Portland, Jamaica, Dr. Beverly Spencer was fascinated by medicine and the complexity of the human body.

DR. BEVERLY SPENCER, CARDIOLOGIST, VCU HEALTH COLONIAL SQUARE

“My mother says that from the time I was able to talk, I told everybody that I was going to be a doctor. I was going around giving people injections with straws,” she said with a laugh.

Today, Spencer is director of nuclear cardiology and the medical director of VCU Health at Colonial Square, a highly regarded community practice that joined the VCU Health Pauley Heart Center family in June 2016. She described the practice as a “close-knit group…more like family than co-workers” who are devoted to excellent patient care. She is a frequent lecturer who enjoys volunteering for community events.

While many of her patients come from Colonial Heights, Petersburg, Hopewell and Emporia, some have driven from as far as four to five hours away to see her.

“Our practice has been steadily growing,” she said, sitting in a conference room at the office. “We offer full outpatient cardiology services here.” Patients come to the practice for consultations, Holter and event monitoring, pacemaker and automatic implantable cardioverter-defibrillator monitoring, and cardiac imaging, including cardiac ultrasounds and nuclear imaging. The practice hopes to add 3D echocardiogram technology very soon.

“My mother says that from the time I was able to talk, I told everybody that I was going to be a doctor. I was going around giving people injections with straws,” Spencer said with a laugh.

Spencer explained how her early interest in medicine led her to purse a B.A. in Natural Sciences at the University of Pennsylvania, where she also played on the women’s tennis team.

While a student at Harvard Medical School, her beloved grandmother fell ill with heart disease. “I was pretty keen to get into a field where I could treat patients with heart disease,” she said.

After completing an internship and residency at Massachusetts General Hospital, she studied nuclear medicine during her cardiology fellowship at the University of Virginia.

“Nuclear cardiology just fascinated me because of the ability to use specialized isotopes to image the heart, which tied into my natural love for biology and physics,” she said. This noninvasive tool “uses radioactive markers to take pictures of the blood flow in the heart, and so we’re able to look at heart function, blood flow patterns and cardiac chamber sizes.”

She uses the imaging to evaluate patients for such problems as coronary artery disease, heart failure, coronary blockages, valve disease and congenital heart conditions. One common test is myocardial perfusion imaging, which allows a noninvasive look at the blood flow to the heart muscle.

“Her patients LOOOVE her,” said Zakia Ofori, her medical assistant of 11 years. “She is very compassionate, loves her patients, will go above and beyond to make sure that they are taken care of. Not only to the patients, but to her staff. That’s just who she is: She has a heart of gold.”

In addition, “she is just a genius when it comes to this nuclear part. She is very meticulous and very focused and careful in what she does.”

Recently, Dr. Spencer diagnosed a patient with a rare genetic cardiomyopathy, then diagnosed a sister; after evaluating all the siblings in this family. “They were actually seeing other cardiologists, but the diagnosis never came up,” said Spencer. “That was a big deal, because that heart condition is life threatening and required a defibrillator, and we got her sisters diagnosed for the condition as well.”

“I love patient care. I can’t imagine that there’s anything else that I could have done that would be more rewarding,” she added with a smile. “I just love the art of medicine, which is NOT just being a doctor, BUT being able to listen and understand the whole patient and not just the disease.”

VCU Health at Colonial Square is located at 2905 Boulevard, Colonial Heights, VA 23834. To schedule an appointment, please call 804-526-0682.

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Conference Brings Clarity to Heart Failure with Preserved Ejection Fraction

DR. FADI SALLOUM, NATALIE N. AND JOHN R. CONGDON SR. ENDOWED CHAIR

Dr. Fadi Salloum and his colleague from the Louisiana State University–New Orleans School of Medicine, Dr. David Lefer, co-chaired a one-day conference to discuss a hot topic in the scientific community: heart failure with preserved ejection fraction—HFpEF, for short.

Ninety clinicians, scientists and Pharma and biotechnology representatives attended the 2019 Inaugural HFpEF Summit, which took place at the Bourbon Orleans Hotel in New Orleans. Salloum and Lefer presented the opening and closing remarks, while 12 other leading scientists and clinical experts in the field gave presentations throughout the day. They included Dr. David Kass, Johns Hopkins University School of Medicine; Dr. Gregory Lewis, Massachusetts General Hospital; Dr. Sanjiv Shah, Northwestern Memorial Hospital; and Dr. Joseph Hill, University of Texas Southwestern.

The goal of the event was "to develop a consensus on the key research questions and clinical issues related to the discovery and development of HFpEF therapeutics," said Salloum, a scientist who holds the Natalie N. and John R. Congdon Sr. Endowed Chair at Pauley. "To date, there are no FDA-approved therapies to treat patients with this complex syndrome."

For many years, the gold standard for evaluating heart failure was ejection fraction (EF), a measure of contractility that reflects the amount of blood pumped out of the heart by the left ventricle. Those with low EF were considered to have heart failure; those with normal percentages were not, said Salloum.

He explained that more recent research shows a new category of heart failure patients: those who have ejection fractions within a normal range but suffer an impaired relaxation of the heart. Relaxation, an important part of the cardiac cycle, follows the contraction of the heart. When it's impaired, the chambers do not fill properly.

"Hef-pef," as scientists and clinicians call it, has become something of a buzzword recently. "It's an interesting syndrome that everyone wants to study, but we still have to be careful. We can't just call anything and everything with normal ejection fraction HFpEF," said Salloum.

The goal of event was "to develop a consensus on the key research questions and clinical issues related to the discovery and development of HFpEF therapeutics," said Salloum.

According to Lefer, who directs LSU's Cardiovascular Center of Excellence, "the inaugural HFpEF Summit was a tremendous success and brought together the world leaders in HFpEF research and patient care. We very much look forward to our continued collaboration with Dr. Fadi Salloum and the Pauley Heart Center and continue hosting this exciting event. We have already begun planning for HFpEF Summit 2021."

Dr. Salloum Exploring Cardioprotective Compounds through SBIR, RO1 Grants

Dr. Fadi Salloum and Dr. Aninditas Das, in collaboration with San Diego-based NovoMedix, received a $375,000 Small Business Innovation Research grant from the NIH in July to conduct cardio-oncology research on an antifibrotic compound. Building on past research with cancer cells, the pair will now explore the same compound for its cardioprotective effects in a mouse model of triple negative breast cancer undergoing chemotherapy. Salloum will serve as PI and Das the Co-PI for the phase 1 study.

"Cancer drugs are known to cause cardiac fibrosis—scarring of the heart. The problem is that scar tissue doesn't contract, so this means that the pumping ability of the heart becomes compromised over time," said Salloum.

Salloum has also started research on the benefits of relaxin, a pregnancy hormone recently recognized for its potential cardiovascular benefits. He received an RO1 grant (his second to date) from the NIH, worth $1.6 million over four years. The study will focus on testing the protective effects of relaxin in the context of heart attack and its related complications, ultimately leading to heart failure, and will run from July 1, 2018, to June 30, 2022.

Relaxin is present in both males and females, but its levels rise during pregnancy. "That's what protects a woman from the burden of the excess fluids that build up in her body, which could otherwise damage the kidneys and the heart. Having this hormone is what prevents most pregnant women from developing heart failure."

Dr. Huizar Recognized for Excellence in Research and Clinical Care

DR. JOSE HUIZAR

Congratulations to Dr. Jose Huizar, who in July received a VA Merit Grant from the Department of Veterans Affairs to continue his work in exploring the mechanisms behind a type of cardiomyopathy caused by premature ventricular contractions.

The grant builds on an NIH RO1 grant that he received, which will run from May 2018 to April 2021. He is also principal investigator for an R34 study, funded by the NIH, which will run from August 2017 to June 2023.

"The R34 is a clinical study that is trying to understand the best treatment for PVCs—what in common lingo would be `extra beats,'" said Huizar.

MCV Alumni Initiates Thames-Kontos Mentoring Award: Dr. Abbate is First Recipient

Congratulations to Dr. Antonio Abbate, the James C. Roberts, Esq. Professor in Cardiology, who received the inaugural Thames-Kontos Mentoring Award.

The award was created by MCV alum Dr. Marc Thames in honor of his mentor, Dr. Hermes Kontos. Thames began working in Kontos' cardiac research lab after completing his first year of medical school, and the two quickly established a bond that continues today.

A TALENTED CLINICIAN-SCIENTIST, DR. ANTONIO ABBATE (RIGHT) WAS RECENTLY RECOGNIZED FOR HIS SELFLESS DEVOTION TO MENTORING OTHERS IN CARDIOLOGY.

Read more at
vcuphc-thebeat.org

VCU Students and Faculty Present Research at Translational Science 2019 Conference

Six students and early-career faculty members gave presentations of their work at the Association for Clinical and Translational Science 2019 Conference in Washington, D.C. Over 1,000 researchers from around the country attended the event, where they heard from translational research experts, discussed their research findings, developed their careers and spoke with legislators about the value of scientific research.

Presenting cardiovascular research were Dr. Justin Canada, Dr. Salvatore Carbone, Dr. Dinesh Kadariya, Dr. Cory Trankle, all affiliated with Pauley, and Hayley Billingsley, a graduate student in Kinesiology and Health Sciences and a Pauley research assistant. Amy Northrop, a Ph.D. candidate in Human and Molecular Genetics, shared her findings about breast cancer cells. The VCU Wright Center provided travel allowances for them to attend the national conference. To learn more about their exciting research, please visit us online.

Alumnus Spotlight: Dr. Thomas Porter Presents Groundbreaking Research in Microbubbles

DR. THOMAS PORTER

Dr. Thomas Porter has given new meaning to the term "scrubbing bubbles."

Porter, a former resident and cardiology fellow at MCV, who is now the Theodore F. Hubbard Endowed Chair of Cardiology at the University of Nebraska Medical Center (UNMC), has spent many years studying the efficacy of using microscopic bubbles, known as "microbubbles," combined with ultrasound imaging to break up blood clots. He presented his most recent findings from a clinical trial at the American College of Cardiology meeting in March.

"It was the culmination of the first 100 patients we had tested, [exploring] whether this process would work in patients having an acute heart attack," he said by phone from his office in Omaha.

The study focused on patients in Brazil who were experiencing a heart attack. Before undergoing cardiac catheterization, the patients were injected with commercially available microbubbles through an IV. During the short time before reaching the catheterization laboratory, they underwent a diagnostic and therapeutic ultrasound.

"We demonstrated that the procedure improved the blood flow in the major blood vessels causing the heart attack, but more importantly, improved the blood flow to the microvasculature," said Porter. "It also helped the heart recover from the heart attack, whereas it wouldn't have recovered if we'd just done a stent." He added that the number of patients requiring a defibrillator at six months following a heart attack was cut by 75%.

His interest in microbubbles began in 1990, when he was a cardiology fellow at MCV. At that time, he was exploring the use of the tiny bubbles as an ultrasound enhancing agent for imaging, work that he continued when he joined the faculty of UNMC in 1992.

"Microbubbles are smaller than your red blood cells, they travel with your blood cells and they are bright reflectors of sound. We get beautiful images with ultrasound using them," he said.

Over a period of 20 years, from early test tube explorations to those involving animal models, he discovered that the process of imaging causes the bubbles to shake–a process known as cavitation—which breaks up blood clots without the need for Heparin or other agents. As a result, the treatment may work for acute strokes as well.

"It also helped the heart recover from the heart attack, whereas it wouldn't have recovered if we'd just done a stent."

"We're very excited about this," he said. "For probably the better part of 20-25 years, we've been trying to find ways to address this problem of the scarring and damage that occurs downstream in a heart attack. A lot of research has gone into this. But this is really one of the first treatments that's been tested in humans that actually works."

To learn more about Dr. Porter, please see the online article.

Memories of MCV

After completing his medical degree at the University of Nebraska Medical Center, Dr. Thomas Porter spent many years at MCV, including his residency from 1984-1988 (chief resident, 1987-1998), his cardiology fellowship from 1988-1991, and on the faculty the year following.

Drs. George Vetrovec, Kenneth Ellenbogen, Ian Nixon and Walter Paulsen were among his important teachers. He recalled his first impressions of the Richmond hospital as a resident. "I went from a small medical center in Omaha to this huge, developing, exciting place where there were patients everywhere and all kinds of illnesses that I'd never seen before," he said. As he began the long rotations—all while raising a young family—"every month was just a tremendous learning experience. The hardest days of your life, but the best days."

Porter returned to Richmond in 2011, when he was named Cardiology Alumni of the Year. He spoke at both the medical school and cardiology grand rounds. While much had changed in terms of the hospital's growth and new technologies, "the interest and the enthusiasm of the faculty has remained the same. All those great faculty have really been the fabric that has made Virginia Commonwealth University such a special place to be."

Q and A with Dr. Michael Kontos, President of the Virginia Chapter of the American College of Cardiology

DR. MICHAEL KONTOS

In June, Dr. Michael Kontos visited Manchester, England, where he met with members of the British Cardiovascular Society, the international exchange partner of the Virginia Chapter of the American College of Cardiology since June 2018.

While in England, Kontos attended joint meetings as well as the launch of a leadership academy, modeled on one sponsored by the American College of Cardiology, which provides the tools for fellows and early career cardiologists to become successful as they move through their careers.

The Beat spoke with Kontos, president of the Virginia chapter, shortly after his return to learn more about what he hopes to accomplish in his three-year term, which began in 2018. Kontos is Pauley's medical director of the Coronary Intensive Care Unit and holds the Harry F. Stern Cardiovascular Professorship.

What excites you about this new partnership?

It provides an opportunity to see how other practitioners manage cardiology patients in a different healthcare environment, both from an academic and a governmental point of view. Obviously, the British healthcare system is significantly different than the U.S., where they have a very large national healthcare institution provide universal care, where ours is much more of a mixture of federal, state and private insurance.

One of our goals is to first collaborate and exchange ideas. In the upcoming one to two years, we'd like to do an exchange program, either with fellows or early career cardiologists. They would travel from here to the UK or from the UK to Virginia for a couple of weeks and visit one to two different centers.

What else have you focused on as president?

For the past couple of years, in November, our state ACC meeting has been carried out as a collaborative mid-Atlantic meeting with Virginia, D.C., Delaware and Maryland. We've had speakers from all states and an emphasis on fellow engagement, including research presentations by the Fellows in Training (FITs), and a Jeopardy contest between the different states. Last year, we had an evening program for the fellows on early career planning that will be expanded this year.

Another focus is on quality. Over the past two years, we've created a new registry that includes data collected from cardiology programs throughout the state that compares clinical outcomes and procedures with cost data. There are very few other states that do that. We have a state quarterly meeting which allows sharing of the data as well as sharing best practices to both improve outcomes and decrease cost. Currently, we're looking at PCI cost and outcome variation.

You had great success in the General Assembly, with the passage of four bills. What was your response?

(He laughs) It's one of those things I don't think you can ever predict. I give great credit to the legislators that decided to pass Tobacco 21, which raises the age that one can purchase or possess smoking or vaping products to 21. It's a little bit surprising given Virginia's tobacco history.

I think physicians have a fairly powerful voice with legislators. One of the important things that we bring to the table is, when we're lobbying for something, we're not lobbying for us; we're actually lobbying for the patient.

Was there one law that was especially important to you?

Tobacco 21. If you can delay people initiating smoking until after they're 21, that's likely to substantially reduce overall long-term rates. I think the vaping part is important because vaping is perceived to be a bit cooler than smoking cigarettes; it's not as frowned upon. Yet there's more and more data coming out that shows, while not as dangerous as tobacco smoke, it's clearly not safe. Vaping likely also helps people accelerate into smoking.

Were there any other highlights for you this year?

Watching the Virginia team—which was made up of all VCU fellows—win at the American College of Cardiology Jeopardy nationals. In the last couple of rounds, it was like watching Jeopardy champion James Holzhauer.

Here are some of the results from the four bills, supported by the VCACC, that passed in this year's General Assembly:

Reform of step therapy protocol to allow exemptions in certain situations. These protocols often require patients to fail one or more medications before they can begin a treatment plan preferred by their physician.

Ensuring payment for preapproved surgeries and invasive procedures, including additional medical care for needs that may arise during the intervention.

Raising the minimum age for purchasing and possessing tobacco or vaping products to 21.

Banning tobacco and vaping products on public school grounds, including school buses and school-sponsored events.

Celebrating 40 Years of Angioplasty

Dr. Michael Cowley and Dr. George Vetrovec were the first doctors in Virginia to perform a balloon angioplasty on the coronary arteries. The procedure took place in VCU's cardiac catheterization lab, then located in the West Hospital.

"It was new, it seemed very exciting, very few people were in it. It was an opportunity to be innovative and cutting edge and do something to make VCU special. And we were young and ambitious and decided to take it on," said Vetrovec with a laugh. "It paid off well."

"I think we were one of the first 10 centers in the U.S. to do the procedure, and we actually held off on doing it for a while because we were in the process of having a new cath lab installed"—one with better imaging, said Cowley. "The new lab opened in June 1979, and we did our first angioplasty on July 27, 1979." The intervention was successful.

Today, this once-radical procedure—now known as a percutaneous coronary intervention [PCI]—is the gold standard of care for heart attack victims.

"That's probably the most remarkable part of angioplasty as it's evolved over the years: its impact on acute heart attacks and its ability to reduce mortality and morbidities incredibly well," said Vetrovec.

To read more about this historic event, please see the online article.

Events

Pauley is participating in multiple events across the Commonwealth. Visit us online at **vcuphc-thebeat.org** to learn more.

Early Pioneers Inspire Today's Cath Lab

DR. MICHAEL COWLEY AND DR. GEORGE VETROVEC

In its early years, the VCU cardiac catheterization lab was dedicated to diagnosis. That all changed when Dr. Michael Cowley and the lab's new director, Dr. George Vetrovec, introduced balloon angioplasty to Virginia in 1979.

"It was the first time people with coronary disease could be treated without surgery. That's obviously a huge thing to be able to offer to patients," said Dr. Zachary Gertz, director of the Cardiac Catheterization Lab.

Over the years, as catheters, imaging and techniques have improved, cardiologists have been able to treat more patients, with increasingly complex interventions. In 2018, Pauley's cardiologists performed 3,882 procedures in the hospital's four cath labs, which operate around the clock.

Pauley draws many high-risk patients that other institutions turn away, such as frail patients who require temporary heart pumps during their interventions. "We still get the most challenging cases from all over the state," said Gertz.

Gertz was recruited to the faculty in 2012 to develop the structural heart disease program following his involvement in the first study of transcatheter aortic valve replacements [TAVRs]. In 2017, Dr. Barbara Lawson joined the team, and like Gertz, she performs procedures such TAVRs and percutaneous closure of atrial septal defects and patent foramen ovale.

He has watched the evolution of TAVRs. At first, only patients at high risk of complications during surgery could undergo the procedure; then medium-risk patients were approved. Now, research indicates its suitability for low-risk patients.

He also took part in early studies for MitraClips, which are implanted in patients with leaky mitral valves, and sees mitral valve replacements and tricuspid valve repairs on the horizon.

Dr. Jose Exaire performs the lab's most challenging interventions, on vessels with chronic total occlusion [CTO]—meaning they are completely blocked. He has an 85-90% rate of successful PCIs for these patients. In only 10% of the attempts is he unable to penetrate the arterial wall, using a variety of approaches.

"There are always new developments to try to aid this complex procedure, and thanks to that, we can attempt to tackle more complex patients," said Exaire.

Not all the cases involve the heart; Exaire and Dr. Deepak Thomas also perform procedures on blockages in other parts of the body.

"These include, but are not limited to, interventions for lower extremity peripheral artery disease, upper extremity disease such as subclavian stenoses and renal artery interventions," said Thomas. "Most cardiologists recognize that coronary disease rarely occurs in isolation, and a full understanding of the `vascular' part of cardiovascular can only help our patients in their overall well-being as we attack arterial injury from a medical, interventional and preventative standpoint."

Research in the lab is ongoing, including one study in which stem cells are injected into heart tissue to regenerate areas that have experienced cell death after a heart attack.

Innovation has long been a part of the lab, said Gertz. "George [Vetrovec] started a cath lab that has the reputation of doing the best and most complicated things in Richmond and throughout the state," he said, "and I just want to maintain that, along with our same high qualities and outcomes."

Congratulations to Dr. Gertz on being named director of the Cardiac Catheterization Laboratories this May! Stay tuned for more news about his appointment in our next issue.

Innovation in Patient Care

In Remembrance: Dr. Michael Hess

With great sadness, VCU Health announces the passing of Dr. Michael L. Hess in Richmond on April 13, at the age of 76, following a long illness. Although he is no longer with us, his love of patients and teaching, and his significant contributions to the fields of heart failure, heart transplantation and cardio-oncology will be remembered for many years.

DR. MICHAEL HESS

Dr. Michael Hess was a small man, but he arrived in rooms with a booming voice and a large presence.

"He was a bit of a whirling dervish. A force of nature," said Maureen Flattery, a nurse practitioner in cardiac transplantation who worked with Hess for more than 20 years. But, she added, his energy drove him to great accomplishments—from his innovative work with pioneering surgeon Dr. Richard Lower in the early days of cardiac transplantation and his creation of the International Society for Heart and Lung Transplantation (ISHLT) to his coming out of retirement in 2013 to start the cardio-oncology program at VCU Health.

Dr. Greg Hundley, director of VCU Health Pauley Heart Center, remembers Hess from his years as a student at VCU School of Medicine. "He was on the faculty then, and he was an internationally respected leader in cardiovascular physiology and also formative in many of the medical management issues related to cardiac transplantation," he said. "He was a unique blend of friendliness and exceptional expertise in his craft."

"He was a true giant in the field of medicine. Very few people accomplish in their career what he did in the first 20 years of his career," said Dr. Kenneth Ellenbogen, chair of the Division of Cardiology in VCU's School of Medicine. "He was a completely unselfish teacher, and an amazing physician and human being. So many people owe their lives to him. He was responsible for the field of heart transplantation getting off the ground. I don't know how we could all ever thank him for everything he did for this field."

Born in the small coal mining town of Philipsburg, Pa., on August 10, 1942, Hess attended St. Francis University, then the University of Pittsburgh Medical School, where he met and married his wife, Dr. Andrea Hastillo, who, like him, later became a VCU Health cardiologist. Hess was named a professor of both cardiology and physiology and published more than 200 research papers.

Hess received many honors over the years, including VCU's University Award of Excellence as well as its Distinguished Clinician, Distinguished Scholarship and Distinguished Clinical Care awards. He was recognized seven times with the university's Outstanding Teacher Award, an honor given annually by medical students, and was named the Outstanding Teacher for Advanced Cardiovascular Physiology four times.

"He was a true giant in the field of medicine. Very few people accomplish in their career what he did in the first 20 years of his career," said Dr. Kenneth Ellenbogen.

Early in his career, Hess cared for the post-transplant patients of Lower.

In an interview, Hess recalled spending Tuesday nights on Lower's porch with esteemed colleagues like Dr. H. M. Lee, "trying to pound out the problems that we were having at the time." The problems in the 1970s and 1980s included high mortality rates for transplant patients and the fact that "the world of cardiac transplantation was so young that there were no rules, no guidelines," he said.

At a 1981 meeting of the American Medical Association, Hess co-founded the ISHLT, a network for professionals in the fledgling transplant field, and served as the first president of the society.

Today, the organization is the world's leading scientific society of transplantation physicians and surgeons and operates the International Registry for Heart and Lung Transplantation, the only database of its kind in the world.

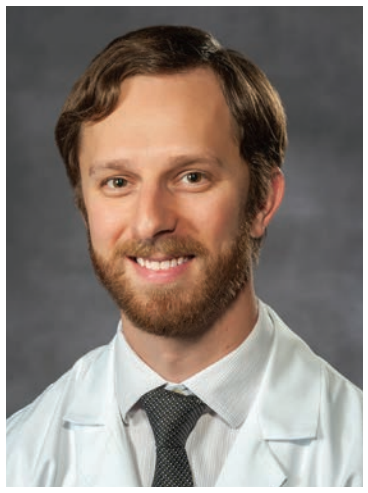
In addition, "he was an excellent educator and clinician. His first concern was the patient and his second was to teach people how to take care of patients," said Flattery. "His patients loved him."

Hess was devoted to his wife and daughter, endocrinologist Dr. Samantha Hudson, and their extended family. In his spare time, he enjoyed reading, spending time with his loved ones and watching his beloved Pittsburgh Steelers play.

After one short-lived retirement, he returned to VCU Health to start Virginia's first cardio-oncology program in 2013. He retired for good in 2017 but stayed engaged publishing and leading a grand rounds—to a standing ovation. On December 8, 2018—the date of his and Hastillo's 50th wedding anniversary—he traveled to VCU Medical Center for the unveiling of the Dr. Michael Hess Library in the West Hospital.

Along with his family, "medicine, his patients, his students were his life. He was fully committed to the field. VCU Health and heart failure were his passion from beginning to end," said Dr. Keyur Shah, section chief of heart failure. "He was very resilient. The fact that he came back and started a successful cardio-oncology program just speaks to not only his motivation but his passion to be involved in clinical medicine this late in his career."

Welcome, New Faculty!


FROM LEFT: DR. ALEXANDER LUCAS, DR. CORY TRANKLE AND ANGIE CARNEAL, NURSING DIRECTOR

Dr. Alexander Lucas joined VCU as an instructor and was dually appointed in the Department of Health Behavior and Policy and the Pauley Heart Center. He has numerous peer-reviewed publications and has received grant support for his studies of exercise interventions on cancer patients.

"Alex Lucas is a young, dynamic behavioral scientist who is working to help us modify lifestyle behavior to help us improve cardiovascular health. We feel fortunate to have him here," said Dr. Greg Hundley.

Lucas received his M.S. in Health and Exercise Science from Wake Forest University and his Ph.D. in Health and Exercise Behavior from the Ohio State University, where he also undertook postdoctoral research. His previous position was as a postdoctoral fellow at Wake Forest School of Medicine, Cancer Prevention and Control.

"I was drawn to VCU to work for Dr. Hundley, who I greatly admire. The opportunity to work with him here at VCU where he was building a new team was very attractive," he said. "Also, upon meeting with the faculty in Health Behavior and Policy, I realized how much of an emphasis VCU places on working within the community and addressing health disparities, which is something I really want to be a part of."

Fun Facts: "I love the outdoors and am also a runner, so I try and do as much of those two things as I can." He is originally from Bulawayo, Zimbabwe. "In Zimbabwe, it's quite a dry climate, and our main economy was based on tobacco, so there are some similarities to Virginia," he said.

A familiar face, **Dr. Cory Trankle**, attended VCU Medical Center for his residency, postdoctoral clinical research fellowship and Cardiovascular Disease fellowship (serving as chief fellow his third year). He received his M.D. from the Medical College of Georgia. Trankle joined the faculty as an instructor in Non-Invasive Cardiology and will focus on cardiac magnetic resonance and echocardiography and conduct research exploring the use of these imaging modalities in new ways. He has published extensively, has led several Phase II clinical trials and is a reviewer for numerous publications, including *Circulation* and the *Journal of the American College of Cardiology*.

According to Dr. Antonio Abbate, who served as his research advisor, "Dr. Trankle is among the most talented trainees we have had at VCU, and we are very excited to have him join the faculty in the heart center. He is a dedicated, knowledgeable and compassionate physician with a clear passion for clinical research. He added, "I am certain that with his clinical and research acumen and his attention to details, Dr. Trankle will continue to promote groundbreaking research in the heart center."

Trankle describes VCU as a "fantastic place to spend my postdoctoral training because of the wide range of patients that we care for, the connections we have with the basic science laboratories and other research organizations within the university, the wide range of subspecialist expertise within the medical center and the strong support from leadership in facilitating clinician-scientists as they pursue research investigations. I am tremendously thankful for the mentorship I have received, and I look forward to further developing as an academic cardiologist as I transition to faculty."

Fun Facts: "In my spare time, I like to garden and homebrew beer. Some of the more exotic projects from this year have been pawpaw trees (native to Virginia), ghost chili peppers (one of the hottest peppers in the world), pineapple sage and three varieties of hops."

Promotions spotlight:
Angie Carneal, Nursing Director

Congratulations to Angie Carneal, who was named Nursing Director of the Pauley Heart Center. Her previous roles at Pauley include Interim Nursing Director and Nurse Manager of the Coronary ICU. She has over 10 years of nurse leadership and over 20 years of clinical experience. She received her RN from Richmond Memorial Hospital School of Nursing, her BSN from the University of Phoenix and her MSN from Western Governors University.

According to Carneal, "This role allows me to fulfill my passion for caring for others. I have simply transitioned over time from caring for few patients a day to impacting the care of all patients in the Pauley. In addition, I have the opportunity to shape an environment where nurses can deliver extraordinary care every day. As a nursing leader, nothing can be more rewarding than watching patients entrusted to your care heal and Pauley Heart nurses achieve their full potential."

Administrator Clare Greene describes Carneal's transition from interim to director as "seamless."

"Angie is passionate about patient care and works diligently to streamline operations. She cares about her physicians and team members. She is a strong advocate for creating a work environment in which all can excel. I enjoy her candor and direct approach," said Greene. "In addition to all this, she is an astute business leader and understands the finances. Angie is an experienced cardiovascular leader and brings to us a wealth of talent."

In Memoriam

The Pauley community mourns the sudden loss of Joshua Kochel, who passed away on June 20 at the age of 37. He was a radiology technician at the VCU Medical Center for 14 years, and a beloved member of the Cardiovascular Imaging team. Our hearts are with his family.

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Letter from the Director

Over the past year, we've given great thought to where we are now and the challenges we will need to address in the future. Out of that process, we emerged with an updated mission for Pauley.

In this issue of The Beat, I hope you'll enjoy reading about the new mission and some of the ways we are already carrying it out. Our cover story, for instance, focuses on the multidisciplinary teams that are helping us remain at the forefront of patient care and scientific discovery. You'll also learn about innovative research taking place in our cardiac catheterization laboratories, now led by the outstanding clinician Dr. Zach Gertz, as well as through the work of our cardio-oncology and other teams. All these efforts are adding up: In 2018, we had a record-setting year for grants.

You'll meet Dr. Beverly Spencer, who leads our Colonial Heights clinic. She's one of the partners who help us better improve cardiovascular care for all by serving patients at our many locations throughout the Commonwealth.

Stories on excellence in training and education are featured throughout this issue—from the Jeopardy win by our fellows and the commitment of faculty like Dr. Antonio Abbate to the achievements of alumnus Dr. Thomas Porter. We also remember one of our great teachers, Dr. Michael Hess, who is sadly missed.

Finally, we celebrate the 40th anniversary of the first angioplasty in Virginia. Performed by Dr. Michael Cowley and Dr. George Vetrovec, the procedure was new and exciting. Though great skepticism surrounded it, it turned out to be an incredible, life-saving endeavor. The same spirit of innovation sparked by leaders like Drs. Cowley and Vetrovec continues today at the Pauley Heart Center—and is growing.

At Pauley, I've found a facility rooted in a restless, creative spirit that is continually renewed by the support of our visionary donors and reflected in our new mission. It's a time of enormous optimism.

Sincerely yours,

Dr. Greg Hundley

A publication of
VCU Health Pauley Heart Center

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