Hume-Lee Transplant Center 2020-2021 Annual Report

VCU Health

Hume-Lee
Transplant Center

Our mission

To serve our community by being a leader in organ transplantation clinical care, education, and translational research through quality, innovation, and strong partnerships with the transplant community.

Our vision

VCU Health's Transplant Center will be the preferred destination for organ transplantation services on the East Coast of the United States.

Our footprint

Transplant clinic

Gateway Building, Seventh Floor
1200 East Marshall Street
Richmond, Virginia 23298

Satellite clinics

VCU Health at Stony Point
9109 Stony Point Drive
Richmond, Virginia 23235

VCU Health at William & Mary
332 North Henry Street
Williamsburg, Virginia 23185

VCU Health at The Park at Snowden
321 Park Hill Drive
Fredericksburg, Virginia 22401

Letter from the chair

Marlon F. Levy, MD, FACS

Dear colleagues:

I'm pleased to bring you the inaugural end-of-year report for Hume-Lee Transplant Center.

2020 was a year unlike any other. While the COVID-19 pandemic brought unique challenges, we met them head on. In the face of adversity, we adapted quickly and purposefully.

Following COVID-19 testing of both recipients and donors, we continued providing our patients with lifesaving second chances. Even in the face of historic disruptions, our center performed more solid organ transplants in 2020 than any other year in our 64-year history.

As we worked to serve patients during these uncertain times, we were able to expand access to surgeries and services. In 2020 we performed the first blood-type-incompatible liver transplants and complex domino liver transplants. These two transplants would have been remarkable at any time but were a stunning achievement in the midst of a global pandemic. Additionally, we laid the groundwork for a multispecialty clinic in Fredericksburg, Virginia, and set the wheels in motion to re-establish our lung transplant program.

As always, helping us accomplish these goals were our fantastic team, including our transplant director of infectious diseases, Dr. Megan Morales, and others whom you'll read about in this report.

Despite the trials of 2020, we continued to serve our patients, and we continued to grow. Please join me in celebrating our many achievements.

Marlon F. Levy, MD, FACS
David M. Hume-Lee Endowed Chair
Division of Transplant Surgery
Director, Hume-Lee Transplant Center
Vice Chair, Department of Surgery

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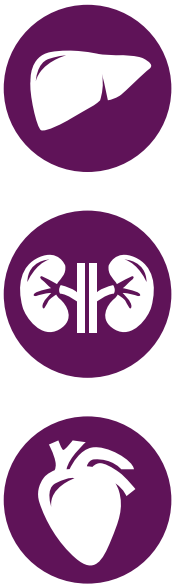
By the numbers

Our team recognizes that every transplant journey is different — and every transplant is a life saved. We care for patients with compassion, and use innovation to grow and to save as many lives as possible each year. This commitment is why we remain a top-tier transplant center in the United States, and are a destination for transplant in and outside Virginia. We are the largest and busiest transplant center in the commonwealth.

Transplants



8
consecutive years of volume growth

255
more transplants a year in 2020 than in 2011*

459
total liver, kidney, heart and pancreas transplants

23rd
in the U.S.**

15th
on the East Coast, by volume**

16th
in the U.S. for **kidney transplant****

18th
in the U.S. for **liver transplant****

top 50
in the U.S. for **heart transplant****

Surgeries

1,908
total surgeries

52
robotic transplant nephrectomies

14
TP-IAT cases

170
vascular access surgeries

26
VA transplant surgeries

50th
TP-IAT procedure in 2020

* 204 total transplants performed in 2011; 459 total transplants performed in 2020.

** Rankings data from Organ Procurement and Transplantation Network (OPTN). Rankings by volume; underscoring our commitment to living donor transplants, even amid COVID-19, the team ranks 6th in the U.S. and 3rd on the East Coast for living donor liver transplants.

Getting to know…

Dr. Yuzuru Sambommatsu, *transplant surgery fellow*

After graduating from the Hokkaido University School of Medicine and completing a clinical fellowship in the Department of Pediatric Surgery and Transplantation at Kumamoto University in Japan, Dr. Yuzuru Sambommatsu identified his interest in transplant surgery. There was just one problem: In his home country, the field is practically nonexistent. Dr. Sambommatsu joined Hume-Lee's program in July 2020, placing him among the more than 300 fellows trained since 1969.

Q: With transplant being so limited in Japan, how did you discover this passion?

A: My boss in Japan underwent transplant training in New York and is highly skilled. After working with him, I felt like that's what I wanted to do. At the same time, transplant surgery isn't popular in Japan and is very underdeveloped, so there were no opportunities for experience there.

Q: How did you decide on Hume-Lee?

A: The program here is involved in so many types of surgery — including robotic surgeries, and not just for transplant — so, there's a large variety that I can gain experience from. I don't know that other centers have such wide-ranging opportunities. Also, when I was interviewing and talking with Dr. Marlon Levy, he was so kind to me.

Q: Speaking of robotics, how important was that to you?

A: I think robotics are very important, especially for younger surgeons to be trained in these minimally invasive donor nephrectomy and implantation techniques. One of the good things about being here at Hume-Lee is working with Dr. Chandra Bhati. He's a great robotics surgeon.

Q: Do you have ambitions for returning to Japan and impacting the field there?

A: Yes. People in Japan aren't informed about transplantation surgery and donation. I have to do something to change the situation there.

Dr. Yuzuru Sambommatsu

Liver transplant

Dr. Richard T. Stravitz
Medical director,
Liver Transplant

Dr. David Bruno
Surgical director,
Adult and Pediatric
Liver Transplant

We believe in second chances. So, whether it was becoming one of the first transplant centers in the country to perform a blood-type-incompatible liver transplant; a rare and complex domino liver transplant; or establishing a unique program to transplant patients who suffer from severe alcoholic hepatitis, a condition that often disqualifies patients at other centers, Hume-Lee's liver transplant program found ways to increase access to lifesaving liver transplants in 2020 amid a pandemic. In the process, we broke our own record.

Liver research highlights

Hume-Lee researchers are active in the area of liver transplantation research, including the use of warm perfusion to organs traveling to their life-changing destination.

Ongoing studies:

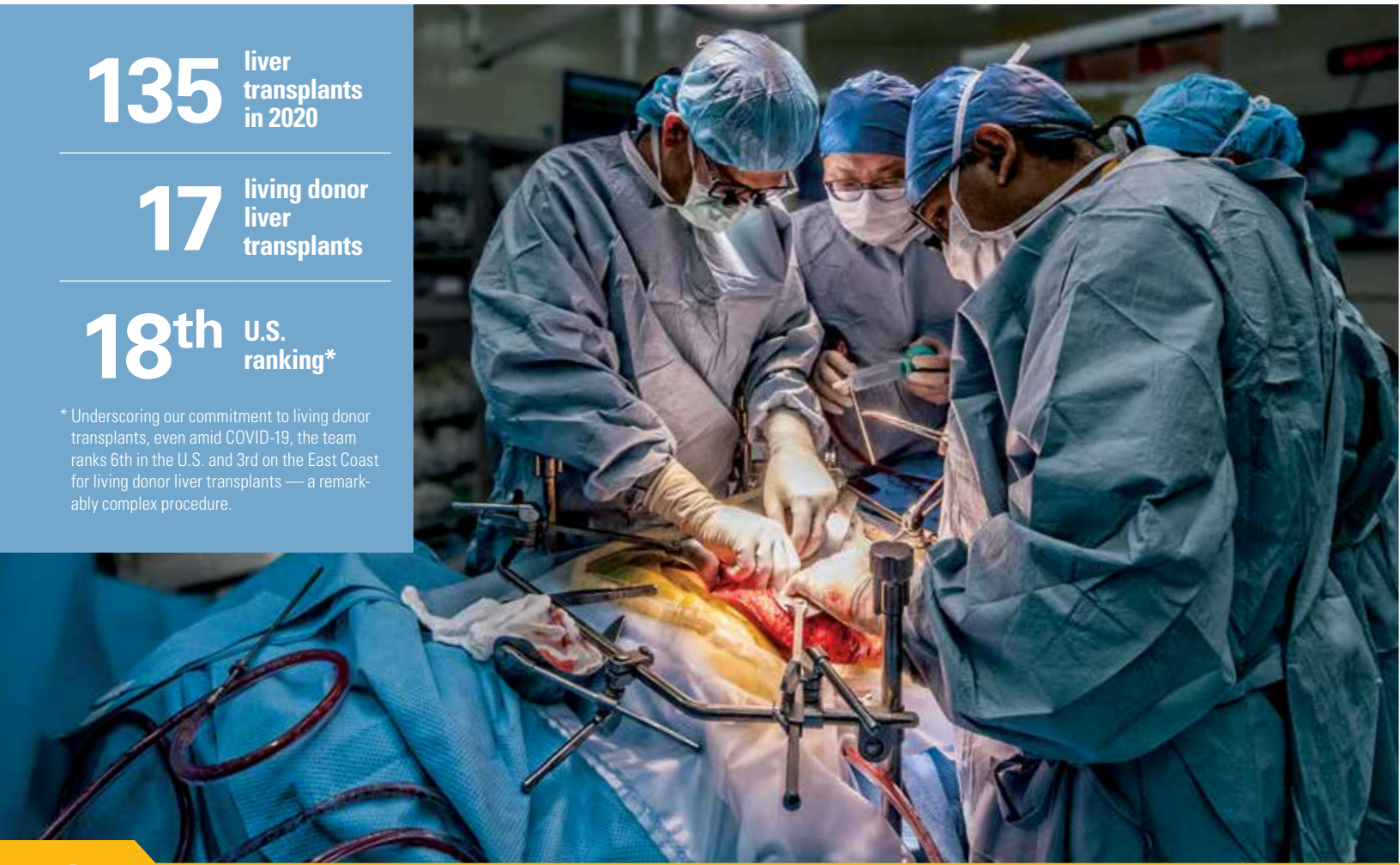
- **INTERLIVER:** Use of a high-power molecular microscope for liver biopsy prior to transplanting the organ; Dr. Chandra Bhati, principal investigator
- **OCS CAP:** Use of warm perfusion to livers for transplant; Dr. Chandra Bhati, principal investigator

135 liver transplants in 2020

17 living donor liver transplants

18th U.S. ranking*

* Underscoring our commitment to living donor transplants, even amid COVID-19, the team ranks 6th in the U.S. and 3rd on the East Coast for living donor liver transplants — a remarkably complex procedure.



Second chance for a veteran through lifesaving liver transplant

As an Air Force commander and "human performance specialist," Adam McLean uses his Ph.D. in performance psychology to coach others to succeed in high-stress situations.

In 2020, he'd need a dose of his own medicine. It was late summer, and Adam and Melissa McLean had started preparing for his end-of-life care.

Diagnosed with cirrhosis more than a year earlier, Adam's liver scarring had progressed to late-stage liver failure. Doctors in Orlando, Florida, told him there was nothing they could do. So, Adam, a 52-year-old Air Force veteran, had gone home to — as the doctor put it — "enjoy your family."

Back home, the McLeans worked with a nurse to make Adam's last few weeks comfortable. Frustrated with the devastating forecast, the nurse inquired as to whether they'd talked to a doctor at the Veterans Health Administration. The McLeans hadn't considered it.

"I called the VA, saw a doctor there, and two days later we were admitted to the ICU," Melissa recalled. Physicians at the VA determined Adam was indeed a candidate for a liver transplant. On Sept. 12, they were transferred from Orlando to the Central Virginia VA Health Care System (CVHCS) in Richmond.

Nine days later, in an overnight surgery at VCU Medical Center, Adam was given a "second chance on life" with a liver transplant.

That second chance was made possible by an anonymous donor and a VCU Health care team that included Dr. Marlon Levy, chair of the Division of Transplant Surgery and director of VCU Health's Hume-Lee Transplant Center. He is one of the many VCU faculty, medical students and fellows who regularly visit the CVHCS to treat veterans at the 399-bed South Richmond facility. VCU has a long-standing academic and medical partnership with the health system. CVHCS is one of only six VA centers in the nation for liver transplant patients.

Adam and Melissa McLean

"The team at VCU Health and McGuire have been amazing. They made it as easy and enjoyable as they could," Melissa said.

"To be given that chance and new lease on life is absolutely humbling," Adam added. "The people who are organ donors, and then the professionals who can make the transplant happen, are truly doing amazing work and are genuinely selfless."

Kidney transplant

Dr. Gaurav Gupta
Medical director,
Kidney/Pancreas Transplant

Dr. Chandra Bhati
Surgical director,
Kidney Transplant

2020 marked a year of continued success for our kidney transplant program. Even amid a global pandemic, the team continued to safely and effectively perform living-donor kidney transplants with minimal delay, while other programs were forced to shutter. The year marked another year of the program offering more second changes with its proven and safe hepatitis-C protocol — increasing access to transplants — and robotic-assisted surgeries, speeding up recovery for living donors and transplant recipients.

Kidney research highlights

Increasing access to kidney transplants drives much of the kidney transplant team's research, part of the team's vision to transform kidney transplantation.

Ongoing studies:

- **APOLLO:** APOL1 genotypes and outcomes in kidney transplantation; Dr. Gaurav Gupta, principal investigator
- **Hope Act:** Kidney transplants from HIV-positive donors to HIV-positive patients; Dr. Gaurav Gupta, principal investigator
- **BB3 DGF:** Reducing the severity of delayed graft function (DGF); Dr. Dhiren Kumar, principal investigator

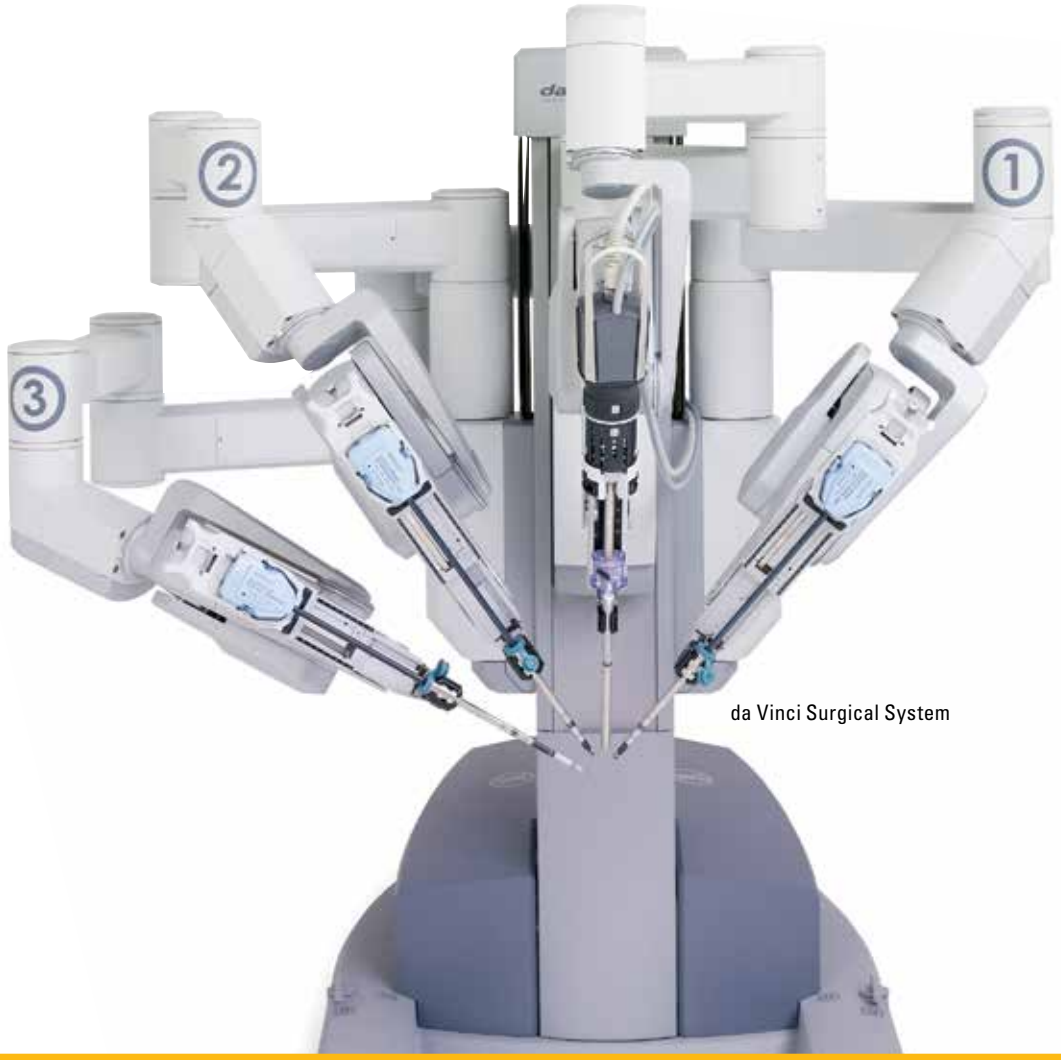
287 kidney transplants in 2020

37 living donor kidney transplants

52 robotic nephrectomies

14 robotic transplants

16th U.S. ranking



da Vinci Surgical System

Getting to know...
Dr. Layla Kamal, *nephrologist*

With a fascination for kidney function and immunology, Dr. Layla Kamal says transplant was a natural fit for her desire to help people. After graduating from medical school at Lebanese University and going to New York for her residency, she says Hume-Lee checked all of the boxes for patient-centered research and care.

Q: What drew you to nephrology?

A: I was always amazed by how kidneys work; physiologically, they were very intriguing to me. I also liked immunology. Transplantation is a happy field — patients are happy to have such great outcomes. I also feel our patients are heroes, so I am compelled to work with them, ensuring they receive the best possible care.

Q: What attracted you to Hume-Lee?

A: New York is a great city but also a tough place to live, so I decided to look for a program and a place that would allow me to achieve life-work balance, while at the same time offering academic excellence. This is a very high-achieving program with a lot of research. At the same time, clinically speaking, we offer the best care.

Q: Your program is known for superior outcomes and is among the busiest in the nation. How do you improve on that?

A: One key improvement includes our ability to provide transplants for so many more people — and not just the number, but that they do extremely well. Everyone here is fully committed to those outcomes. When it comes to deceased donations, we expanded our donor pools while also performing high-risk transplants. I think the next step is exploring the limits for living donation.

Q: How does teaching contribute to your career?

A: I always wanted to be a teacher and to find a field in which I could achieve my academic goals while helping people, so medicine is the best of both worlds for me. I also believe that teaching makes me a better student. As physicians, we want to help patients through the best knowledge and information available, and that makes us continuous learners.

Q: How do you see Hume-Lee influencing the field?

A: One of the biggest ways is how we've increased the use of hepatitis C-positive kidneys under the leadership of Dr. Gupta. Other centers are actually mirroring what we do. I would also point to how we explore novel means for dealing with immunosuppression. The field of transplantation has achieved so much that it would be easy to say, "You know, things are going well. Let's stop here." But at Hume-Lee, we never have this mentality.

Dr. Layla Kamal

Heart transplant

Dr. Inna Tchoukina
Medical director,
Heart Transplant

Dr. Mohammed Quader
Surgical director,
Heart Transplant

In April 2019, VCU Health formalized a unified transplant service line. This structure joins abdominal and thoracic transplant programs under one transplant umbrella to provide greater coordination and care for heart and mechanical circulatory support patients. The team, alongside the VCU Health Pauley Heart Center, is adding a new chapter to our program — where no patient has a condition that's too complex. We're at the heart of compassionate care and outstanding outcomes.

Heart research highlights

In 2020, the heart transplant team maintained its presence as a research leader in the areas of mechanical circulatory support and transplantation, focused on studying and finding the latest breakthrough to help those with heart failure.

Ongoing studies:

- **Genomic Research Alliance for Transplantation (GRAfT):** Genomic transplant dynamics (GTD) study; Dr. Keyur Shah, principal investigator
- **CARMAT:** Total artificial heart early feasibility study; Dr. Vigneshwar Kasirajan, principal investigator
- **Cardioprotection with Cyclosporine-A in donation after circulatory death hearts:** Cyclosporine-A in donation after circulatory death; Dr. Mohammed Quader, principal investigator

31 heart transplants in 2020

13 VADS placed in 2020

Top 50 U.S. ranking by volume

Despite the COVID-19 pandemic, VCU Health patient receives new heart

Raymond Hill needed a new heart — and fast. The Fredericksburg, Virginia, resident suffered from congestive heart failure, and in March 2020, his health was rapidly declining. During a global pandemic, he needed a transplant. "I didn't think I was going to get one, but I prayed on it," he said. Hill prayed from his ICU bed at VCU Medical Center, where staff provided lifesaving care to him and other patients at an unprecedented time. Just days later, Hill was rushed into surgery to receive his new heart.

Dr. Benjamin Medalion, professor and chair for the VCU Health Division of Cardiothoracic Surgery, performed the surgery. Medalion's expertise includes heart and lung transplantation. Hill was critically ill, and declining fast. "Those patients cannot wait long," Medalion said. "That's why we decided to proceed, with precaution that we could apply in this era of COVID-19."

Remarkably, Hill was one of the 14 heart transplant recipients at VCU Health from March to July 2020. All told, VCU Health transplanted a total of 186 organs during that time, which also included 59 livers, 112 kidneys and one pancreas. Today, Hill, a doting grandfather, has a new heart. "It sounds like a drum, a beating drum," he said. "I feel great."

At home, Hill is adjusting to a new normal. And a new outlook on life, made possible by VCU Health. "Stay healthy, eat healthy and stay positive," he said. "I got a new lease on life, so I got to take advantage of it."

Raymond Hill

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