

JOHNS HOPKINS Surgery

NEWS FROM THE JOHNS HOPKINS
DEPARTMENT OF SURGERY

SUMMER 2016



Tackling Aortic Disease from Every Direction

WITH AN INTENSE INTEREST in Marfan syndrome, physician-researcher Victor McKusick put Johns Hopkins on the map decades ago as a haven for patients with genetic aortic diseases. Today, that focus has expanded to encompass the myriad of conditions that affect the aorta.

“One of our biggest strengths is our team approach,” says **Harry “Hal” Dietz**, who’s often the first member of the care team that patients see.

Dietz, a pediatric cardiologist who switched careers to genetics early in his training to better help patients with Marfan syndrome, has made numerous discoveries in inherited aortic diseases. These include identifying the gene responsible for Marfan syndrome and co-discovering the related Loays-Dietz syndrome. He sees patients of all ages with inherited aortic disease, counseling them on their conditions and risks at the Dana and Albert “Cubby” Broccoli Center for Aortic Diseases.

He says being able to care for both pediatric and adult patients is particularly helpful for those with genetic diseases that affect the aorta. “When different family members see different providers based on their ages, they may get different points of view and different recommendations,” he says. “Being able to accommodate all members of the same family gets everyone on the same page.”

Another longtime member of the team is **Elliot Fishman**, director of diagnostic imaging and body CT. Over the past three decades, Fishman and his colleagues have been developing better imaging techniques for aortic conditions. These include three-dimensional CT, an imaging modality now in widespread use across the country.

Fishman’s group provides results from imaging studies using methods that physicians can access remotely, including on tablets or cellphones. “In radiology, we’re in the business of providing information that doctors and surgeons can use to decide on the next step or follow up after procedures to make sure recovery continues in a positive direction.”

Such information provides the impetus for surgeons such as **Duke Cameron, Luca Vricella, Bruce Perler** and **James Black** to move forward with procedures to treat aortic aneurysms with minimally invasive stent grafts or open surgery, or to watch and wait if observation is more appropriate. “Many patients come here because they know we’re somewhat conservative and careful about operating,” Cameron says. “We’ve followed some of our patients for more than 10 years before we eventually move ahead. You don’t typically get that type of long-term monitoring from surgeons.”

Cameron, who, with Vricella and colleagues in pediatric and adult



Without proper pre-emptive care, aortic disease is a ticking time bomb. Specialists at Johns Hopkins focus on the myriad of conditions that affect the aorta. Above, top row, from left, James Black, Harry “Hal” Dietz and Elliot Fishman. Bottom row, from left, Bruce Perler and Duke Cameron.

cardiac surgery, has built one of the largest valve-sparing aortic root replacement case series in the country, focuses on aortic repairs close to the heart. For abdominal aortic aneurysms, vascular surgeons including Perler and Black take the lead.

“Fixing an aortic aneurysm is truly a lifesaving intervention,” Perler says. “It’s extremely gratifying to be part of a team that works together to benefit our patients so tremendously.” ■

To refer a patient: 410-955-2800



Robert Higgins

A key initiative in our Strategic Plan is to attract, engage, develop and retain the world's best people. In the Johns Hopkins Department of Surgery, our goal is to develop a surgical workforce that is representative of the local, regional, national and international communities that it serves. We aim to enhance the diversity of our surgical faculty members, residents and fellows not just for diversity's sake, but to create a workplace of choice.

According to the Institute of Medicine's report "In the Nation's Compelling Interest," diversity enriches academic medicine with new insights and perspectives. Diversity also makes for better health care, reducing patient safety risks and boosting innovation. Health care can't be delivered efficiently or equitably without a diverse student body or groups of residents and faculty members that are representative of the community they serve.

Nationwide, racial disparities have limited the access to care for underrepresented minorities and undermined efforts to create a representative medical workforce. African-Americans make up 13 percent of the nation's population but consist of only 4 percent of the country's physicians, according to the Association of American Medical Colleges (AAMC). In addition, the AAMC finds the annual number of African-American male applicants to medical school dropped from 1,410 in 1978 to 1,337 in 2014.

Among many contributing factors are poor K-12 schools, few role models, negative perceptions of African-American males and the cost of higher education, according to the AAMC report. Reversing this trend, the report concluded, depends on responsive leadership, retooled admission policies, programs for aspiring minority physicians and stronger community engagement.

As the William Stewart Halsted Professor of Surgery and the surgeon-in-chief of The Johns Hopkins Hospital, I look forward to partnering with leaders of The Johns Hopkins Hospital, The Johns Hopkins University, and local and regional communities. The goal is to develop inclusive programs for patient care, research and education so we will continue to distinguish Johns Hopkins Medicine as the surgical provider of choice throughout the region and beyond.

The Ins and Outs of the Minimally Invasive Whipple

Surgeons at The Johns Hopkins Hospital have performed more than 5,000 Whipples since 1980. Today, the mortality rate is less than 1 percent—thanks to the efforts of pancreatic surgeon **John Cameron**, who drastically refined the procedure. Now, in select patients, surgeons at The Johns Hopkins Hospital are applying a minimally invasive approach to this operation.

"We are now routinely removing tumors safely with smaller incisions using the laparoscopic and robotic approaches," says surgical oncologist **Matthew Weiss**.

In 2010, surgeon **Marty Makary** pioneered the laparoscopic Whipple at The Johns Hopkins Hospital. Surgical oncologist **Jin He**, a fellow at the time, attended Makary's operations and is now using his experience to perform open and minimally invasive Whipples.

The principle for the minimally invasive Whipple is identical to an open Whipple but requires particular expertise. "It demands the skills of an expert pancreas surgeon and an expert minimally invasive surgeon," says Weiss. "You have to know how to do the traditional open operation and minimally invasive procedures."

Since 2014, Weiss, He and **Christopher Wolfgang**, director of hepatobiliary and pancreatic surgery, have performed more than 30 Whipples using a robotic approach. Preliminary data show zero infections at the surgery site and oncologic outcomes equivalent to those for open Whipples.

"People may think you leave some tumor behind or you get less lymph nodes with a minimally invasive approach,

but our data show equivalent oncological outcomes when the patient is a good candidate," says He.

Approximately 50 percent of those who have open Whipples at The Johns Hopkins Hospital could be potential candidates for a minimally invasive approach. The robotic approach is appropriate for many cysts and tumors of the pancreas, including intraductal papillary mucinous neoplasms, neuroendocrine tumors and pancreas cancer.

However, Weiss says, each patient is different and has individual needs. Some of the factors the surgical oncologists consider when deciding on a surgical approach include type of tumor, prior surgical history, position of anatomy and major vessel involvement.

Even though the procedure takes longer than an open approach—six or seven hours, compared to three or four—the incision is much smaller. Afterward, patients stay in the hospital for about a week, and the smaller surgical site provides less opportunity for infection and less need for narcotics.

"We're a high-volume pancreas surgery center with great outcomes," says Weiss. "Now we are combining our extensive experiences in both pancreas surgery and minimally invasive approaches." ■

To refer a patient: 410-933-7262

"WE ARE NOW **ROUTINELY REMOVING TUMORS SAFELY** WITH SMALLER INCISIONS USING THE LAPAROSCOPIC AND ROBOTIC APPROACHES."
—MATTHEW WEISS



Fast Facts: Johns Hopkins Minimally Invasive Whipple

30+
Robotic Whipples since 2014



Technique is identical to open but uses a smaller incision (3 versus 20 centimeters).



Causes less postoperative pain, meaning less need for narcotics.



Results in fewer postoperative infections.



Oncological outcomes are similar to open.



Length of stay is similar to open.



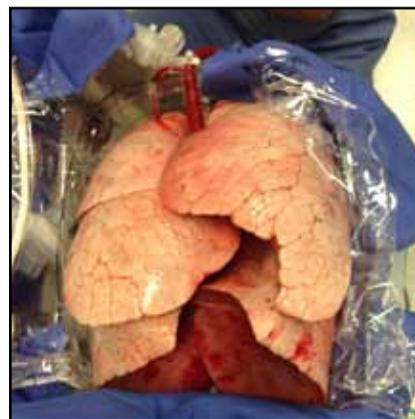
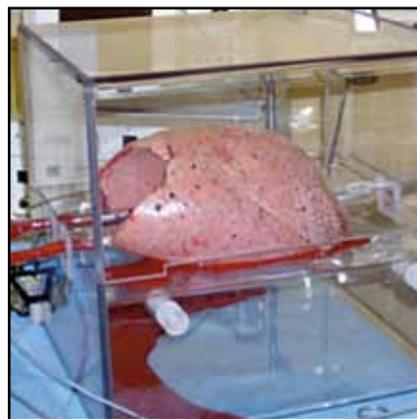
Watch Matthew Weiss discuss minimally invasive options for pancreatic surgery at bit.ly/mipancreas. Watch Jin He discuss minimally invasive options for liver cancer and liver tumors at bit.ly/jinhe.



“AFTER ONE YEAR OF OUTCOMES, THE INCIDENCE OF PGD WITH THE MACHINE WAS SUPERIOR TO BEING ON ICE. **THAT’S VERY PROMISING.**”

—ERROL BUSH

Errol Bush, director of the Advanced Lung Disease and Lung Transplant Program, is building a new EVLP program at Johns Hopkins. Bottom, from left, lungs being prepared for EVLP, lungs in an EVLP machine and lungs perfused by EVLP.



Aiming to Increase the Supply of Donor Lungs with Ex Vivo Lung Perfusion

ACROSS THE NATION, only 20 percent of donor lungs are ever used for a transplant because of suitability. Thoracic surgeon **Errol Bush** wants to dramatically increase this percentage of suitable lungs by improving donor lungs and preventing further injury with ex vivo lung perfusion (EVLP). In fact, he already has.

Bush recently served as a co-investigator of an international clinical trial that compared the results of transplanted lung function after ex vivo machine perfusion and standard-of-care cold storage. The results showed a significant reduction of grade 3 primary graft dysfunction (PGD) in patients with lungs perfused with the ex vivo machine.

“After one year of outcomes, the incidence of PGD with the machine was superior to being on ice,” says Bush. “That’s very promising.”

In contrast to the FDA-approved “Toronto method” of EVLP using a cold solution, the researchers used a normothermic preservation method that perfused the organs with blood. While

traditional preservation techniques attempt to limit cold ischemia times of less than six hours, the normothermic method has less than one hour of cold ischemia time.

In 2015, Bush was recruited to Johns Hopkins Medicine as the director of the Advanced Lung Disease and Lung Transplant Program. With experience in EVLP, he will also serve as director of the new EVLP program. He is currently collaborating with researchers, such as pulmonologist **Bo Kim**, to translate EVLP into clinical medicine.

Kim has been examining the disease process of ischemia reperfusion injury (IRI) for several years. Most recently, he measured mRNA levels from thousands of genes in human lungs that have undergone IRI. After explanted lungs were flushed, insufflated, cold stored, ventilated and then placed on a cardiopulmonary bypass circuit, he collected biopsy samples each hour and extracted mRNA.

Bush says Kim’s findings are important to understanding the cause of IRI and preventing it. “There are many different gene expression patterns to

look at and correlate with recipients to see if change with expression patterns correlates with injuries,” he says.

Together, Bush and Kim are investigating novel therapies to use with EVLP to improve lung function and protect against IRI. “If we can predict PGD and stop it,” says Bush, “it could mean a dramatic increase in the supply of suitable lungs for transplantation.” ■

To refer a patient: 443-997-1508



Watch Errol Bush discuss minimally invasive options for lung cancer at bit.ly/milung.

New Surgeons at Johns Hopkins Medicine

Gina Adrales will build the first Division of Minimally Invasive Surgery at Johns Hopkins. She joins Johns Hopkins Medicine from Geisel School of Medicine at Dartmouth, with clinical expertise in gastroesophageal reflux disease, gallbladder disease, achalasia, splenectomy, bariatric surgery, colorectal surgery (open and laparoscopic), and open and laparoscopic hernia repair (inguinal, ventral, incisional, umbilical, hiatal and paraesophageal). Adrales has served in leadership roles in the Society of American Gastrointestinal and Endoscopic Surgeons, the American Hernia Society, and the Association of Women Surgeons.



Katherine Lamond is the medical director for the Sibley Center for Weight Loss Surgery. She came to Johns Hopkins Medicine from the University of Maryland School of Medicine. Lamond performs Roux-en-Y gastric bypass, sleeve gastrectomy and adjustable gastric banding. She also practices general surgery and advanced laparoscopic surgery for Johns Hopkins Community Physicians. She is a fellow of the

American College of Surgeons, and is active in the Society of American Gastrointestinal and Endoscopic Surgeons and the American Society for Metabolic and Bariatric Surgery.

ICD-10 Is Here

When referring patients to Johns Hopkins Medicine, please be sure to include ICD-10 codes.



For more information, visit www.cms.gov/Medicare/Coding/ICD10/.

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Call 443-997-1508 to refer a patient. Easy access and quick appointments for your patients at these convenient locations:

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White Marsh
Johns Hopkins Bayview Medical Center
The Johns Hopkins Hospital

Our schedulers are available to assist you Monday through Friday, 8 a.m. to 5 p.m. For after-hours or emergency transfers, please use the **Hopkins Access Line** at 410-955-9444.

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