



THE JOHNS HOPKINS
CuttingEdge



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Planets Align to Allow Transplant

For the past three years, Everett Davis' struggles with a rare blood disorder had made him a frequent visitor to Hopkins. But, one afternoon last February, his three-hour trek to Baltimore seemed to take twice as long. With his wife behind the wheel, the 32-year-old accountant rode most of the way from his Kingston, Pa., home in total silence, pondering the sudden news that the liver he desperately needed had been found.

Diagnosed at age 17 with paroxysmal nocturnal hemoglobinuria (PNH), Davis had been on a liver transplant waiting list since last December. His condition—affecting only one or two out of every million people—had caused major blood clots to form in several abdominal veins, including in his spleen and intestines. His kidneys, also riddled with blood clots,

failed in November, and he was placed on dialysis. But the most serious threat was to his liver, which had been destroyed by multiple clots. To make matters worse, no one wanted to give him a liver transplant.

"Because of his condition, we thought that, after

the operation, he would still have clotting problems with his new liver," says transplant surgeon Andrew Cameron. "It would have been a waste of a precious liver."

When Davis first arrived at Hopkins in 2004, his condition was manageable, and his suffering was confined to rare episodes of jaundice, abdominal cramps and fatigue. But by April 2006, his complications had escalated, and by October he could no longer work.



Everett Davis quickly recovered after his liver transplant. He's back at work, and he and his wife are adopting a child.

His physician, hematologist Robert Brodsky, realized that Davis' only shot at survival was an experimental drug, Soliris. Unfortunately, though, there was a catch: Soliris hadn't been approved by the FDA and wouldn't be until March. Davis had less than a year to live, if that. The drug was his only hope.

Davis' family and friends began making countless calls to senators and congressmen, hoping someone could help them procure the drug on a compassionate use basis—a practice reserved for terminally ill patients. "I don't know what happened behind the scenes," Davis says, "but someone decided to give me the drug, and we're thankful for that. Otherwise, I don't think I'd be talking to you today."

On Nov. 30, Davis received his first dose of Soliris. He had such success that by December he was approved for a transplant and put on the waiting list. Then, on the morning of Feb. 6, Davis got the call from the Hopkins Comprehensive

Transplant Center. A liver had just become available, and he was next in line. "I spent most of that morning crying," Davis recalls. "When you hear those words, a ton of things run through your head. I have a wife and a 20-month-old foster child. Naturally I thought about them."

He tried to avoid dwelling on the possibility of not making it through the surgery. Without the operation, he knew he was dead anyway. Still, he was scared. He had learned to live with and manage his blood condition. But receiving a new organ was difficult to fathom.

By 9 p.m., Davis was in the operating room, and Cameron, along with fellow transplant surgeons Andrew Singer and Warren Maley, had signed on to conduct the surgery. He was released from the hospital after only nine days and is now stepping down the road to recovery. "He came at the exact right moment when all the planets aligned and the drug was available

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The Surgeon Speaks

A Life Restored

Every day that he lives, Everett Davis makes history. Before he came to Hopkins, surgeons had only attempted liver transplants in PNH patients two or three times. Each one died—until Everett.

By the time of his surgery, blood clots were clogging up the main blood vessel into Davis' liver, causing fluid to back up into his stomach, which was distended to the size of a basketball. His kidneys were failing, his liver was destroyed and he was jaundiced. Davis had less than a year to live.

PNH patients lack a specific protein that prevents hemolysis—the destruction of red blood cells—which eventually causes clotting. Administered intravenously, Soliris guards against hemolysis and, subsequently, blood clots. Within a month of his receiving the drug, the blood clots in Everett's kidneys and intestines began to disappear. But the damage to his liver was irreversible. Because the drug was showing so much promise, we decided to move forward with the transplant.

The surgery itself was even more complicated. Because of the clotting, we were unable to reconnect many of his old blood vessels to those in the new liver, forcing us to create new ones. In the end, his surgery took 10 hours, five hours longer than normal.

Everett went home nine days later, free of jaundice and with his kidneys and liver properly functioning. There's no doubt in my mind that he'll live a long, complete and active life. ■



"I don't know what happened behind the scenes, but someone decided to give me the drug," recalls Davis.



From Julie Freischlag
Director of Surgery

Personal Sacrifices

Few can speak to the sacrifices surgeons make in life more so than their husbands and wives. Long hours and unpredictable schedules tear us away from Little League games and piano recitals, and our spouses are often left to fill in and cheer extra loud in our stead. But being a surgeon should not mean neglecting all other aspects of life, especially family.

In May, I was able to attend a luncheon for the Department of Surgery faculty spouses and listen to them discuss how much they need us in their lives. They understand that lost time is inevitable. But it's also imperative that sometimes, in the choice between family and work, you choose family.

Recently, a group of researchers at the University of Wisconsin released a study that showed a 21 percent divorce rate among surgical residents over the course of 25 years. While saddening, it's not surprising. With so much focus on getting ahead, it's easy to forget that sacrificing our family lives can be counterproductive to the careers we hope to build.

A surgeon who's worried about neglecting loved ones can become distracted or distraught. That's when errors occur.

Another important topic at the spouse meeting was health. Physical condition is important not just to surgeons' families, but to their work. Fifty percent of the surgery residents tracked in the Wisconsin study were in poor health by age 49, and 10 percent rarely exercised. Between long hours and cafeteria food, living healthy can be hard—an ironic challenge for those of us entrusted with others' good health.

To provide the best care for our patients, we need to be alert and healthy. As surgeons, we also need to set an example of good health. That means doing everything we can to stay as healthy as we want our patients to be.

There are systems in place to balance the demands of work and family. We have surgical partners to cover for us when we're ill or on vacation. We work in teams, and Hopkins offers workshops and classes on time management, parenting and financial planning. Whenever the job takes too heavy a toll at home, tell someone—your team, partner or supervisor—what you need to do to make things right. And then do it. ■

Dress to Impress

Campaign discourages wearing scrubs outside the Hospital.

Surgery Chief Julie Freischlag recalls sitting down at a restaurant one night and seeing a scrubs-clad surgeon walk in for dinner. Another time, she watched as a surgical resident strolled into a Hospital meeting wearing the scrubs he'd worn home the night before. "We've even seen pictures of people riding mopeds in their scrubs," Freischlag says.

Such sightings have become so common that surgery administrators at The Johns Hopkins Hospital have started a campaign to discourage wearing OR attire outside the Hospital, a practice considered potentially dangerous and unprofessional.

Last year, hoping to prevent infections and promote a professional image, Freischlag assembled a committee of nurses, infection control specialists and surgeons to examine and improve the department's attire policy. By the end of their assessment, however, the team members realized that the existing dress code wasn't the problem—enforcing it was. Now, attempting to keep Hopkins-issued scrubs inside the Hospital, the surgery department is embarking on a campaign to alert staff members about the importance of following the rules.

"Our appearance reflects our professionalism," Freischlag says. "We need to look appropriate for those we care for and care about."

It's a difficult policy to enforce. Department administrators want to avoid taking a punitive stance and instead hope that OR staff members will make the effort themselves. "We'd like them to think about what they would want if they were the patient on the table. Would it not matter to them?" asks Laurie Saletnik, the assistant director of the general operating room who chaired the committee. "We think it would matter."

As a reminder, the department will place posters about the policy throughout the ORs. Administrators and infection control staff will keep a close eye out for infractions and recognize those who follow the rules.

"It just makes sense not to go home, dump your scrubs on the floor and then operate on someone without cleaning them," Freischlag says. "We're aiming toward zero infections, and this is part

of that."

The operating room attire policy demands that surgical scrubs not be worn outside the Hospital and that no street clothes be worn underneath. The only policy change the committee suggested was to add wrist watches to the list of forbidden jewelry during surgery.

"Powder, dirt and bacteria get trapped in the grooves and engravings of jewelry," says Peggy Pass, an infection control specialist on the committee. "You don't want any of those excess bacteria to come off onto the sterile field."

A staple in American operating rooms since the 1940s, scrubs were first introduced because of a heightened understanding of the relationship between unsanitary conditions and surgical infections. Still, this standard hospital uniform absorbs dust, pollen, germs and other bacteria just like jeans and Oxford shirts might.

Surgery staff can get clean scrubs from



A new campaign aims to reinforce the OR attire policy.

several machines around the Hospital. But busy schedules often lead OR staff to run out of the OR to grab lunch or head home as soon as they can break free—even if it means not changing clothes and wearing the same scrubs to work the next day.

"Some people say they're too busy, and I don't think there's anyone who

works at Hopkins who couldn't make that statement," Pass says. "But you have to make time to do the things that will impact your patients. You can't ever be so busy that you just let that go."

One of the most difficult aspects of enforcing an operating room dress code is the lack of evidence behind it. There are no known links between surgical infections and unkempt or dirty scrubs. "Physicians, especially Hopkins physicians, always want our policies to be evidence-based," Pass says. Still, she continues, when it comes to maintaining a sterile operating room, some things should just go unsaid. For proof, she mentions a statement a Hopkins physician once made to her. "He said, 'I wouldn't bring my cat into the OR, but there's no evidence against that either.'" ■

Let's Meet: Kim Steele and Bruce Gibbon

For **Kim Steele**, the road to medicine was long, bumpy and covered in ice. A figure skater-turned-laparoscopic surgeon, Steele spent three and a half years training and skating competitively in Germany. In 1994, she was a member of the German National team and was headed for the Lillehammer Olympics, a long-cherished dream. But, just days before the games, a ruptured Achilles tendon sent her home to her native Canada, where she had another lifelong goal to achieve—becoming a physician.

After completing medical school, followed by a surgical residency at Penn State, Steele accepted a minimally invasive surgery fellowship at Johns Hopkins. Now a faculty member, she focuses her research on bariatric surgery outcomes, and she also enjoys teaching each week. "I love working with the medical students here," she says. "They are so eager to learn, and I learn from them, too."

One of the many things **Bruce Gibbon** loves about being a critical care and trauma surgeon is that his practice allows him to see fast results. "It's very gratifying to work in a field where you can make an intervention and get positive results right away," he says. "For instance, when you perform an appendectomy, the patient feels better so soon after surgery. You see results so quickly, and that's what I really like."

Gibbon received a surgical critical care fellowship at The Johns Hopkins Hospital in 2005 after finishing his surgical residency at the State University of New York Hospital in Buffalo. Since joining the faculty full time in July 2006, Gibbon has helped develop a better insulin-control protocol in the ICU—a subject he has researched extensively—to prevent hyperglycemia in intensive care patients. He spends much of his time in the surgical and burn ICUs, as well as performing general trauma surgery. And, he explains, because he works in so many areas, he's able to use all of the skills he learned in medical school, whether academic or clinical.

"I feel like none of my training has gone to waste," he says. "Everything I studied, I use one way or another." ■



A Race Against Time

During the many hours and multiple tests it takes to diagnose an aortic dissection, patients lose valuable time as their risk of death rapidly increases. By the time a physician figures out the problem and orders surgery, it might be too late.

Time is the enemy that vascular surgeon James Black hopes to vanquish by discovering a quick, simple method of diagnosing aortic dissections. The condition occurs when damage to the wall of the aorta—the body’s major artery—causes it to delaminate, dilate, and eventually rupture. It is the same condition that killed actress Lucille Ball and actor John Ritter. Twenty-five percent of sufferers die within 24 hours of diagnosis without treatment, and once a rupture occurs, the chances of survival decrease to less than 50 percent, so a quick intervention is vital. A simple blood test that would reveal a biomarker signaling the likelihood of an aortic catastrophe is precisely

“Patients, on an hourly basis, are really running a race against death.”

what Black hopes to find. “There are so many transfers from hospital to hospital, doctor to doctor, and so many tests along the way to diagnose aortic dissections in patients who, on an hourly basis, are really running a race against death,” Black says. “For them, hours mean survivability.”

This year, Black will begin a study in which he’ll simulate an aortic dissection in mice and then test the animals to determine whether the condition presents a biomarker for the condition. “What we hope to find,” Black says, “is a group of enzymes or chemical signals that could be picked up on a blood test, which would indicate whether an aortic dissection was impending or occurring. This would really help us to diagnose this condition more rapidly.”

So difficult is an aortic dissection to recognize that there are many stories of patients being misdiagnosed, especially



Vascular surgeon James Black hopes to discover a quick, simple method of diagnosing aortic dissections.

in emergency rooms, and their pain wrongly categorized as musculoskeletal pain or a heart condition. “These patients go on to die when they might otherwise have been saved,” Black says. The quicker the diagnosis, he continues, the sooner a physician or surgeon can intervene, whether medically or surgically.

Though no one knows what causes aortic dissections, scientists do know that certain

conditions increase a patient’s risk, including pregnancy, high blood pressure, atherosclerosis, heart valve abnormalities and Marfan syndrome, which, although a relatively rare condition, is still a common cause of aortic dissections.

Fortunately, Black is starting his research ahead of the game. During previous work on aortic disease in mice, he created aortic dissections in

the animals. He plans to use the same model when inducing aortic dissections in the new study mice.

“Within the responses, we hope to find a pattern that may indicate a patient is in the early phase of a dissection,” Black explains. “If we can know what those early signals are, we’ll have a sense of whether we can get a biomarker for the condition.” ■

On the Job

Kathy Nardone, Director of Finance for Surgery, Johns Hopkins Medicine

Kathy Nardone started at Hopkins as a temp in 2002, just picking up some part-time work while her child was in school. Within three years, she had become the Johns Hopkins Medicine director of finance for Surgery—a department so large that its budget, staff and space is comparable to that of a medium-size community hospital.

Currently she’s working on the 2008 budget, an already difficult task made harder in times of lean research funding and stagnant reimbursement rates from Medicare.

What is the most difficult part of your job?

As director of finance, I have to balance what’s important to my own departments with what’s important to Hopkins Medicine as a whole. That can be really hard, because what’s good for one department or entity might be a loss to another. Something that might help Surgery, for instance, might take money away from Medicine, or vice versa. It can be very complicated. Meanwhile, we also have to deal with the funding demands for the new clinical towers, declining reimbursements for our services and tougher competition for research funding, at the same time that costs continue to increase.



How do you deal with these competing interests?

Without a doubt, it’s communication. My main job is to provide my department chairs and administrators, like [surgery chair] Julie Freischlag and [surgery administrator] John Hundt with the information they need to make informed decisions.

For example, if they wanted to expand bariatric surgery at Bayview and add another surgeon, I need to tell them what it means financially and whether it will be successful enough for us to move forward with.

How’s the 2008 budget shaping up?

Next year’s going to be a difficult year for us all. Over 40 percent of our business comes from Medicare, which hasn’t increased their rates in three years. We’re also hoping to renegotiate better professional fee rates in some of our private insurer contracts to increase our revenue. And, of course, on the research side it’s getting more difficult because NIH funding is flat.

How do you make it work?

Anytime the bottom line looks uncertain, we have to look for any opportunities to increase productivity or save money. That’s the really hard part. Once we have the raw financial data—how much we need or want, versus how much we actually have—then we have to figure out how to arrive at those numbers. It’s a lot of work. But we’re getting it done. ■

Funding a Successful Rate of Return

Carlton Hughes had tried every possible method to quit smoking: the gum, the patch, hypnotism and even smoking cessation classes. Nothing worked. Then, in spring 2002, his doctor told him he had lung cancer, and he quit cold turkey.

"I was so frightened," recalls Hughes, 75, who lives in Harrisburg, Pa. "I know the statistics for lung cancer patients aren't very good."

His physician in Harrisburg, concerned about the ramifications of operating on an older patient suffering from emphysema, refused to proceed with surgery until Hughes underwent six to eight weeks of breathing therapy. But for Hughes, then 70, waiting that long was not an option. "I just wanted to get it over with," he says. "It was such a bad time in my life."

Two of his friends—both of whom had suffered from lung cancer—recommended surgeon Stephen Yang, an oncologist and chief of thoracic surgery, who had developed a reputation for operating on older patients when other surgeons refused, often out of concern that the chance of success decreases with age. Many of Yang's patients are 80 years or older, and, at 3 percent, his surgical mortality rate is well below the national average of between 5 percent and 20 percent.

So in late June 2002, Hughes and his wife, Shirley, made the hour-and-a-half drive to The Johns Hopkins Hospital for his first visit with Yang, who agreed to perform the surgery. Just a few days later, on July 2, 2002, Yang operated on Hughes, who's been cancer-free ever since.

"I was so impressed with Dr. Yang because he had such confidence," Hughes says. "I got to know him before and after my surgery, and now I consider him a friend."

Two weeks after his surgery, Hughes was



Carlton and Shirley Hughes are helping fund research on geriatric thoracic surgery.

released from the hospital and he returned to Harrisburg to work and play golf. Soon, he began making regular donations to the Sidney Kimmel Cancer Center. But he hadn't forgotten about Yang.

Last year, Hughes, who once owned a steel fabricating company, and his wife decided to help fund Yang's research, which focuses on geriatric thoracic surgery, a field in which the surgeon is considered a pioneer. Yang's success rate with older patients trumps that of most surgeons, many of whom avoid geriatric surgery altogether.

"I just admire him and his work so much," Hughes says. "Anything that anyone can do to help further his research is worthwhile." ■

To make a gift to the Department of Surgery, contact Boi Carpenter-Mellady at 410-516-5483 or bmellady@jhmi.edu. To no longer receive information about supporting the department, contact her using the information above.

"I was so impressed with Dr. Yang ... I got to know him before and after my surgery, and now I consider him a friend."

FACULTY NEWS

Surgical oncologist **Charles Balch** will receive a lifetime achievement award at the annual meeting of the American Society of Clinical Oncology. ■ Thoracic surgeon **Malcolm Brock** received the Society of Surgical Oncology's Clinical Investigator Award. ■ Cardiac surgeon **Vince L. Gott** received the Heritage Award for outstanding service to The Johns Hopkins University. ■ Pancreatic surgeon **Bidyut Ghosh** received a one-year, \$25,000 grant from the National Pancreas Foundation. ■ Transplant surgeon **Dorri Segev** won the 2007 Dennis W. Jahnigen Career Development Scholars Award for his project "Kidney Transplantation in Elderly Patients with Renal Failure." ■

Transplant

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and we were ready and willing and able to take a chance on a transplant," Cameron says. "He can live to be 100 years old now. I'd be disappointed and surprised if he didn't."

Despite the surgery's success, the weeks immediately afterwards were trying. Davis' health had always been unreliable at best, and he kept waiting for something to go wrong. "Finally, Dr. Cameron told me, 'You're good. You're not going to break. Get used to it.'"

By May he was getting ready to head back to his job, and he and his wife were in the process of adopting their foster daughter. "I don't think the surgery or recovery could have gone any better," Davis says. "My doctors are amazed. To be honest, I'm a little amazed. It's basically a miracle. There's no other way to describe it." ■

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