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VanderbiltMedicine

SUMMER 2005



Matters
of the
heart



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Going for the gold

Vanderbilt Medicine's spring 2004 cover, a photographic illustration depicting the struggle with eating disorders, won a gold medal in the Visual Design in Print category from the Council for Advancement and Support of Education (CASE). The entry was one of nine gold medals awarded out of 307 entries.

:: on the cover

From the moment of birth to the moment of death, the human heart beats more than 2.5 billion times. A look at what Vanderbilt is doing to care for this incredibly powerful organ.



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HEALING LITTLE HEARTS 16

BY HARRY R. JACOBSON, M.D.
Vice Chancellor for Health Affairs

Whenever we talk about the most dangerous

DEAN DIXON



diseases... the killers... heart disease always tops the list. More people die from cardiovascular disease than any other cause year after year. But as is sometimes the case, the numbers can mask an important truth. The fight against cardiovascular disease is one of the greatest success stories in medicine. The rate of cardiovascular death fell by 18 percent from 1992 to 2002. The success is largely driven by four factors – a widespread and very effective public education campaign, breakthroughs in surgical technique, discovery of new medicines and therapies and broad scale behavior change.

Most observers agree that the real driver of this precipitous drop in cardiovascular death rates was a concerted 30-year educational campaign led by the American Heart Association. Beginning in the late '60s and early '70s we've learned many things; the warning signs of heart attack, the dangers of smoking, the symptoms of stroke, the consequences of a high-fat diet, measuring cholesterol and why it is important, and the value of regular exercise. With the possible exception of the March of Dimes campaign to promote prenatal care, no single effort at educating the public has produced such powerful and pervasive public health benefit. Vanderbilt is proud of our long association with the

American Heart Association. We are routinely one of their top corporate givers and help the Heart Association with many of their fund raisers. We are proud of the research accomplishments of Vanderbilt researchers like Sergio Fazio, Mac Linton and Doug Vaughan. Many of these achievements have resulted in research grants from the Heart Association. And of course, we are proud of Dr. Rose Robertson, one of our faculty, who just recently completed her term as President of the American Heart Association.

The AHA's public education effort brought about a wide range of social responses that include changing behavior. Proper diet, exercise and smoking cessation have become a mantra of both preventive health and modern life. As we have discussed in these pages before we have a long way to go before, we as a society can be content that we are doing everything we can to prevent disease, but we must acknowledge that we've come a very long way.

Surprising to many is the finding that new surgical procedures and new medicines have had a smaller impact on the overall cardiovascular death threat. Breakthroughs in heart surgery, angioplasty, stenting, electro-physiology and robotics have all played a part and will continue to prove their value. The statins, ACE inhibitors, beta blockers, and tPA are the new medicines joining that most miraculous of all miracle drugs, aspirin, in the war against heart disease. Our ability to image and diagnose have similarly marched forward – angiography, cardiac MRI and molecular screening.

This edition of *Vanderbilt Medicine* will talk about how the field of cardiovascular disease and intervention is changing Vanderbilt and how Vanderbilt is changing this all-important field. **vm**

Internal fat's role in type 2 diabetes probed

A multi-disciplinary research team at Vanderbilt University Medical Center is looking past waistlines and deeper into the role visceral fat plays in type 2 diabetes.

A new study will test how patients' insulin sensitivity is affected by removal of the omentum, a blanket of internal abdominal fat that rests on top of the intestines and is attached to both the stomach and the small bowel.

The study, led by Naji Abumrad, M.D., professor and chair of General Surgery, will combine the removal of the omentum with gastric bypass surgery.

The investigation is a novel approach to treating type 2 diabetes, based on years of obesity and diabetes-related research, Abumrad said.

"It's known that the higher the weight, the higher the chance of developing type 2 diabetes," Abumrad said. "We have also shown the reversal of this through gastric bypass surgery. This surgery leads to significant weight loss and a significant resolution of diabetes. We wanted to know how the reversal occurred."

With Alfonso Torquati, M.D., assistant professor of Surgery, Abumrad learned that the only weight-loss variable of sufficient determining power in the reduction of type 2 diabetes is waist circumference.

"The larger the waist circumference, the higher the incidence of type 2 diabetes," Abumrad said. "So we started asking - what is it about waist circumference that is so predictive?"

The answer could be the internal or visceral fat padding the waistline. Studies have shown that removing large amounts of abdominal fat on the periphery through liposuction does not affect insulin sensitivity. Therefore, Abumrad said, they are looking at the fat inside the belly, most of which is located in the omentum. **VM**

-LISA PEPER

News and happenings at Vanderbilt Medical Center

Children's Hospital opens new childhood obesity clinic

A pediatrician at the Monroe Carell Jr. Children's Hospital at Vanderbilt has opened a clinic to help families tackle the problem of childhood obesity. Gregory Plemmons, M.D., assistant professor of Pediatrics, opened the clinic in December 2004 and immediately had eight referrals.

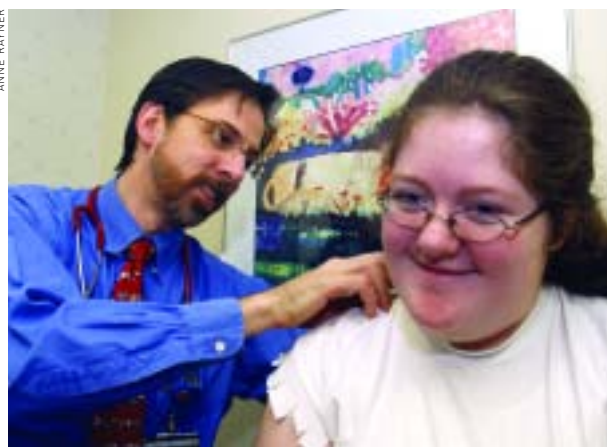
Plemmons says he didn't start this clinic because of any particular interest in obesity, even though he overcame the problem himself as a child. He says it was a simple matter of seeing a need.

"Several of our pediatricians had been seeing these kids in our consultation clinic. Basically that's where community pediatricians refer parents for a second opinion to find out why a child might be overweight," Plemmons said. "Our endocrinology clinic was also being inundated because most families think it's a thyroid problem, but 99 percent of the time it's not."

Plemmons said parents were frustrated and didn't know where to begin to help their children. He begins by giving parents the basics of why treatment for childhood obesity is different from the treatment in adults. Older teens will continue to be seen in the Adolescent Medicine Eating Disorders Program.

"Adults try rapid weight loss programs or even surgery, but we don't generally recommend either of those things for children because the science is not in to prove it's safe," Plemmons said. "Our goal is to catch the weight problem early and stabilize it as they grow into their size, or if a child is truly obese, help them lose weight slowly while creating better habits that will last." **VM**

-CAROLE BARTOO



Gregory Plemmons, M.D., examines 15-year-old Sarah Howard during her first visit to the clinic.

\$27 million center to sharpen VUMC's imaging capabilities

Construction has begun on a four-floor, state-of-the-art facility in the old emergency room parking lot between the A and B wings of Medical Center North that will house the Vanderbilt University Institute of Imaging Science (VIIS).

The \$26.7 million project, which has been approved by the University Board of Trust, is "a critically important project for the research enterprise," said Fred DeWeese, vice president of Planning and Development for Space and Facilities.

While the 40,000-square-foot facility won't be completed until the spring of 2006, Vanderbilt is going ahead with

plans to purchase one of the world's most powerful research magnets. The \$7 million, 7 tesla magnet will be installed, with 400 metric tons of steel shielding around it, on the ground floor of the new facility in mid-December.

"Vanderbilt University Medical Center is making this investment now to assure that it captures the best opportunity to attract top-notch scientists and government research grants," said Jeffrey R. Balsler, M.D., Ph.D., associate vice chancellor for Research. "If you delay for six months, it really limits the opportunity in this fast-paced field of science."

A tesla is a unit of magnetic field strength. One tesla is roughly 20,000 times the strength of the magnetic field of the earth. The 7 tesla magnet, one of only about seven or eight in the United States, will enable researchers to generate images down to the molecular level, and will ensure VIIS remains at the forefront of research in magnetic resonance imaging (MRI).

"One reason we're getting a 7 tesla magnet is to perform more advanced magnetic resonance spectroscopy," explained Institute director John Gore, Ph.D. "MR spectroscopy uses the same technology as magnetic resonance imaging (MRI) and functional MRI but it produces ... biochemical information, from small volumes within the body.

"For example, in the brain you can measure the levels of certain neurotransmitters ... You can get a very precise assay of each of these molecules," he said. That's important not only for studying brain disorders

such as addiction, but also for determining the effects of some drugs in the brain.

Another MRI technique that already is being tested at Vanderbilt is dynamic contrast imaging, which uses a contrast agent to generate images that provide information on angiogenesis, new blood vessel formation required for tumor growth. This method one day may provide a way of determining the effectiveness of potential new drugs that are used to treat cancer, Gore said.

After 20 years on the faculty at Yale University, Gore joined the Vanderbilt faculty in July 2002 as the founding director of a new trans-institutional institute, bringing a team of more than a dozen former Yale scientists with him.

The facility will integrate current activities in imaging research and will provide research space for 18 faculty members and more than 40 graduate students and post-doctoral fellows in biomedical science, engineering and physics. Three existing research magnets and other imaging systems used in animal studies will be housed on the second floor. A new facility will also be provided for imaging non-human primates. In addition, a new 3 tesla human MRI scanner will be placed adjacent to the 7 tesla system.

The location — adjacent to the Medical Center North post office — will provide excellent access to the Department of Radiology, where many of the institute's faculty hold appointments. **VM**

—BILL SNYDER





Researchers identify eye disorder gene

Investigators at Vanderbilt University Medical Center and Duke University Medical Center have identified the first major gene that increases a person's risk of developing age-related macular degeneration (AMD).

AMD is a progressive eye condition that affects as many as 15 million people in the United States and is the leading cause of vision loss and legal blindness in people over age 60.

The researchers reported in a March issue of *Science Express*, the online version of the journal *Science*, that a common variant of the gene for Complement Factor H accounts for up to 43 percent of age-related macular degeneration.

The finding "opens the door toward the possibility of pre-symptomatic testing and potentially even pre-symptomatic treatment," said first author Jonathan L. Haines, Ph.D., director of the Vanderbilt Center for Human Genetics Research. It also sheds light on the biological mechanisms underlying the disease and offers real hope for drug development, he said.

"Knowing this gene now narrows us from millions of potential targets for drug treatment and drug development to one. That's not bad," Haines said.

Vision loss often occurs late in the progression of AMD, and current treatments help stabilize the disease but do not

reverse its course, said Anita Agarwal, M.D., assistant professor of Ophthalmology and Visual Sciences and study co-author. "Less than 2 percent of patients show improvement in vision with treatment when the center of the macula is involved by abnormal blood vessels," she said.

"No one knows if available treatments — sometimes as simple as dietary changes — might prevent vision loss if they were given 10 years earlier," Haines said. "Now we potentially have a way of screening for patients at high risk and doing early intervention trials."

The toll of AMD is expected to mount as the U.S. population ages, Agarwal said. The disease affects nearly 30 percent of people over age 75, she said. Severe AMD robs affected individuals of the sharp central vision necessary for reading, driving, watching television, safely navigating stairs and identifying faces.

Although the underlying causes of AMD are unknown, risk factors include age, smoking, high blood pressure, exposure to harmful sunlight, obesity and diet. Genetics is also a known risk factor, although it was expected to be less important than the environmental factors, Haines said.

"No one expected the genetics to work out this way — that a single gene variant would potentially explain as much as 40 percent of a disease that affects millions of people," Haines said. **VM**

—LEIGH MACMILLAN



VUMC tops Consumers Digest, Solucient rankings

Vanderbilt University Medical Center is among the premier health care institutions in the United States, according to two separate national rankings.

Consumers Digest magazine ranked VUMC number eight on a list of "50 Exceptional U.S. Hospitals," and the Solucient Institute once again named VUMC one of the top 100 hospitals in the country.

Consumers Digest derived its rankings from a survey of hospitals by The Leapfrog Group, 165 of the nation's largest employers that have banded together to promote health care quality and safety.

Respondents to the Leapfrog Hospital Quality and Safety Survey receive separate scores for each of four quality and safety "leaps": use of computers by physicians to enter hospital orders; staffing of intensive care units by physicians specially trained to care for critically ill patients; outcomes, process and patient volumes associated with selected high-risk treatments; and adherence to 27 patient safety practices advocated by the National Quality Forum.

Also, for the sixth consecutive year, Vanderbilt University Hospital has been recognized as one of the top 100 hospitals in the country in a study by Solucient Institute.

The list identifies hospitals that have "achieved national benchmark level scores for overall organizational performance in comparison with their peers across the nation." **VM**

—PAUL GOVERN/DOUG CAMPBELL

VICC takes lead role at cancer meeting

ORLANDO, Fla. – The field of oncology will weather the coming storms created by the flattening of the federal research budget, ever-increasing regulatory pressures, scrutiny of research ethics and industry-physician relationships, and other challenges – if oncologists remain solely motivated by the quality of care they provide their patients.

So predicted David Johnson, M.D., in his presidential address at the 2005 annual meeting of the American Society of Clinical Oncology (ASCO) in May, which drew more than 25,000 cancer specialists and industry representatives to discuss the latest advances in the field.

Johnson, deputy director of the Vanderbilt-Ingram Cancer Center, noted that his year as ASCO's president was punctuated by a number of challenges, including the Medicare Modernization Act (MMA) that threatened to disrupt care of cancer patients. Under Johnson's leadership, ASCO worked closely with the federal government to develop a "common sense" policy to reimburse oncologists more appropriately, not only for administration of drugs but also the care provided to manage symptoms and side effects.

"Challenges imposed by reimbursement changes or regulatory burdens must retreat before our most fundamental charge, which is to put our patients first and to do all we can to treat their disease and to alleviate their suffering," said Johnson.

Johnson's mark on ASCO was visible throughout the five-day meeting. The mark of the VICC was also apparent, with several of Johnson's colleagues playing prominent roles in the meeting. **VM**

–CYNTHIA FLOYD MANLEY

DANA JOHNSON



New emergency department debuts

Vanderbilt University Medical Center has debuted the first phase of its sparkling new, state-of-the-art Emergency Department.

It provides more patient and family privacy and almost doubles the space from the previous facility.

The new Emergency Department opened on April 19. Patients seeking treatment there will find one of the most sophisticated emergency departments in Nashville.

"It's a great place for patients and clinical staff," explained Corey M. Slovis, M.D., professor and chairman of Emergency Medicine. "We had a number of problems in the old ED with space and layout that affect how we do our jobs. It was designed in the 1970s and built in 1980 and was envisioned to be a clinic and walk-in area for a university hospital, not the home of a regional trauma center."

The number of exam and treatment rooms rises from 27 to 46. The new area includes four trauma bays (equipped with operating room-quality lighting and medical gases that drop from the ceiling), a family grief room, 16 acute care rooms, a second CT scanner, a classroom, a private registration area and an EMS workroom. Each of the patient care rooms has telephones and televisions to make family members more comfortable.

The new ED also has a greatly expanded waiting room area for family and visitors, a new hazardous materials decontamination area, storage for stretchers and a conference and teaching center. There are also new areas for psychiatric patients.

The current Emergency Department is being remodeled and will be utilized for "fast track" patients, 23-hour observation, chest pain, stroke patients and ob/gyn patients.

"It is an emergency department that Vanderbilt and Nashville can be proud of," said Brent Lemonds, R.N., MS, administrative director of Emergency Services.

Vanderbilt's adult Emergency Department sees more than 42,000 patients a year. **VM**

–JERRY JONES

Lipid lowdown

BY ELIZABETH OLDER



To fight heart disease, doctors often advise patients to eat a healthy diet, exercise regularly and take a pill. When blood tests indicate too much low-density lipoprotein – the so-called “bad” LDL cholesterol that can contribute to the accumulation of damaging plaque in the artery walls – evidence continues to point to the life-saving benefits of lowering that level by taking prescription medication.

And the most recent recommendations suggest even more people should consider drug intervention, and target an even lower LDL level for those at the highest risk for coronary heart disease.

Statins, the most widely prescribed cholesterol-lowering medications, have been shown to reduce the risk of heart attack and stroke in large clinical trials. In addition to lowering LDL cholesterol by 30 percent to 60 percent, statins have been proposed to have benefits that go beyond LDL cholesterol-

Statins, the most widely prescribed cholesterol-lowering medications, have been shown to reduce the risk of heart attack and stroke in large clinical trials.

lowering, including anti-inflammatory effects.

“There is a continuing debate – to what extent are the benefits of statin therapy due to LDL-lowering versus proposed non-LDL lowering effects such as anti-inflammatory effects,” says MacRae Linton, M.D., director of the Vanderbilt Lipid Clinic. “I’m more in the LDL-lowering camp.”

And he’s in good company there. The National Cholesterol Education Program (NCEP) has recommended that some patients who previously weren’t treated with cholesterol-lowering drugs might benefit from that therapy those with diabetes, coronary heart disease (CHD) or multiple risk factors putting them in the “high risk” category, with an LDL level of 100 to 129 mg/dL (milligrams per deciliter). Treating these patients, whose LDL cholesterol levels were not far from the goal of less than 100 mg/dL, had previously been left to the physician’s judgment but is now considered the standard of care.

This same report also suggests that very high-risk patients – those who already have cardiovascular disease plus other major risk factors – might benefit from pushing their LDL cholesterol even lower than previously recommended, to less than 70mg/dL.

In addition, the report said high-risk patients might consider taking more than one drug if their other lipids – triglycerides or HDL – were at undesirable levels, explains Sergio Fazio, M.D., Ph.D., who partners with Linton at Vanderbilt in studying how infection-fighting white blood

cells handle cholesterol buildup and inflammation in artery walls.

Lipid guidelines continue to develop, Linton observes.

“They don’t offer much guidance for triglycerides or HDL,” he says, referring to the other fats and fatlike substances that help fuel the body.

While lifestyle changes are beneficial, most patients don’t manage to reach and maintain their targeted weight, explains Fazio.

“Patients only have a few years to make the right choices,” he observes.

Statin drugs used by millions worldwide typically are today’s first line of defense, but newer medications may offer additional benefits, Linton explains. These include cholesterol absorption inhibitors such as Zetia, which work locally in the intestine to block cholesterol absorption.

“Actually, for most people, your liver puts more cholesterol into your intestine per day than your diet does. The liver controls and regulates your blood level of cholesterol,” explains Linton.

Another class of drugs – fibrates – also may prove beneficial by lowering triglycerides and raising HDL, but more study is needed, Linton says. New medications called CETP inhibitors that raise HDL or the “good cholesterol” are currently in clinical trials and have tremendous potential if they are found to reduce atherosclerosis and cardiovascular events.

Linton thinks future research might point to combination therapies that maintain all the lipids at optimal levels, an outcome that could help keep hearts healthier and loosen the grip of the nation’s No. 1 killer. **VM**



Steve Jones, M.D.

Army officer Steve Jones battles Afghan health standards and promotes good will



PHYSICIAN WARRIOR

STEVE JONES, M.D., DOESN'T SEE HIS JOB as being very different from any other physician's. He cares for the sick, provides patient education and works in the community to try to improve conditions that create disasters and cause disease.

It's a regular workaday existence. He sees patients and goes home. But every day, there are landmines exploding around him and weekly rocket fire and mortar attacks. Since May 2004, "home" has been a bunk in a tent in a compound nine and a half time zones from the U.S. in the mile-high deserts of Afghanistan.

But it is nothing out of the ordinary for Col. Jones, VU A&S '74, MD '78, a career soldier physician who completed Airborne and Ranger courses before he graduated from college.

"It's just a way of life," Jones says. "I've been in the Army my whole life (his father was a soldier for more than 30 years.) We train for this our whole careers, so this just seems natural." And when the rockets head his way, "you just go to the bunkers and wait 'til it's over."

And lest you think working in a war zone is dangerous, Jones says assuringly, "They're not very good shots. It's a nuisance more than anything. Last week, out of six rockets fired only three hit the base. I haven't had anybody shoot (directly) at me over here."

RAMPING UP

With the vast majority of U.S. physicians seeing patients and operating with the most advanced equipment in the world, and in relative luxury, the thought of a doctor sleeping on a cot and dodging rocket fire and improvising explosive devices is hard to conjure.

But military training is a career-long procession of two- to three-year long missions, each equipping the soldier for greater responsibilities. Through the years, Jones has racked up plenty of academic and practical experiences. Before medical school, he completed Army Airborne and Ranger courses. His CV includes stints through light infantry training and the "Air Assault Course," and between assignments as a cardiologist he completed several specialty officer training programs, including the National War College, where he earned a master's in national security strategy.

In October 1992, Jones left the tropical paradise of Tripler Army Medical Center in Hawaii for eight months in the jungles of Honduras and his first taste of diplomatic doctoring. Working with the Ministry of Health, he established a vaccination program for children that reached a 90 percent vaccination rate.

After Honduras, Jones went to North Carolina to be the military equivalent of the chief of staff at the Womack Army Medical Center at Fort Bragg. While he was there, an F-16 fighter jet collided with a C-130 transport plane when both tried to land on the same runway at nearby Pope Air Force Base. The resulting fireball engulfed more than 150 paratroopers preparing to board a plane.

Col. Harry Warren, M.D., worked with Jones when they were both at Womack.

"His job was to honcho, or manage, the medical resources to assure that resources were sufficient and when they were getting low he had to find them," Warren recalls. "At one time, we had 28 patients on

WRITTEN BY CLINTON COLMENARES

PHOTOGRAPHY COURTESY OF STEVE JONES, M.D.

AND U.S. ARMY



1 PRIVATE FIRST CLASS CHERYL TRANSFORD, U.S. ARMY



2 BEN BARBER, U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT



3 PRIVATE FIRST CLASS CHERYL TRANSFORD, U.S. ARMY

“Twenty-five years of war and five years of drought have produced a major humanitarian crisis in Afghanistan,” Jones says.

Pictured above, from left to right:

1. Lt. Julie Sheets, a physician assistant, discusses an infant’s illness with Steve Jones, M.D., in Bamyan Province.
2. Steve Jones, M.D., meets with the village elders in Tor Mai, Ghazni Province to get permission to set up a school clinic.
3. Steve Jones, M.D., evaluates a patient in the village of Qamchi, Kunar Province.

vents (ventilators); normally we have one or two. He essentially created four ICUs, when we normally have two.

“Steve was calm, focused. He identified what needed to be done and did it without a fuss. That’s the way he is,” Warren says. An account of the accident was chronicled by the Army in a book, “Disaster on Green Ramp.” Jones is mentioned several times.

Also while at Womack, Jones cared for casualties from the Battle of Mogadishu in Somalia that killed 18 soldiers and wounded 84.

Between 1996 and 2001, he held desk jobs, running a military hospital in Fort Belvoir, Va., and the military’s managed care organization for more than 1 million beneficiaries in the Northeast. After that, a posting in Miami took him on temporary assignments to Columbia with Army Special Forces and to El Salvador to provide medical relief after the 2001 earthquakes.

For six months starting in October 2001, Jones oversaw care to the Al Qaeda and Taliban detainees transferred from Kandahar, Afghanistan to Guantanamo Bay, Cuba.

“It was interesting to watch a discussion on CNN about how (the detainees) would be sedated for the 23-hour flight, when I had already decided not to,” Jones says. “Not only did we treat them in accordance with the provisions of the Geneva Conventions, but we saved quite a few lives.”

In 2002 Jones became the commander of the Blanchfield Army Community

Hospital, at Fort Campbell, Ky. It was, he said, “my most demanding and most rewarding assignment. These soldiers defeated the Taliban in Afghanistan, then turned around and deployed to Iraq a few months later.” He made sure they were healthy enough to fight and saw them off, and then greeted most of the flights that brought more than 1,000 home as casualties. During his command, many of his staff rotated through Vanderbilt’s trauma center and burn unit to hone their skills, a relationship which still exists.

BOOTS ON GROUND

Jones volunteered to go to Afghanistan. He shucked the shackles of administration for a small, swift moving detail of nine more to his liking. Jones doesn’t treat U.S. soldiers. Instead, he works with the U.S. Agency for International Development, representing all Americans as a medical emissary. Many times, he is the first American to meet village leaders, the first to bring even a modicum of modern medicine to the area.

“Twenty-five years of war and five years of drought have produced a major humanitarian crisis in Afghanistan,” Jones says. “The physical infrastructure and human resource base have deteriorated, leading to a health status that is the worst in Asia and about the fifth worst in the world.”

The statistics are staggering: one in four children die before age 5; only 5 percent of women deliver babies in hospitals and only 7 percent have medical assistance during delivery, mostly midwives; one in six women

die in childbirth, and in one province the rate is one in three, the world's highest; each year, 23,000 Afghans die of tuberculosis, 600,000 cases of malaria are reported and 35,000 children die of measles; and, Jones says, polio is still prominent. All of the children, he says, are dewormed for intestinal parasites.

USAID plans to build 400 medical clinics across Afghanistan, one within a four-hour walk of every Afghan. Jones has implemented programs to address children's and women's health, and he works with the minister of women's affairs to try to improve the status of women in society in general. He has provided solar-powered refrigerators to store vaccines and solar-powered lab equipment because there is no electricity.

But many of Jones' patients aren't people. "The wealth of most Afghan families is measured in terms of the livestock they own," Jones says. So, two of his team members are veterinarians.

In an April e-mail, Jones wrote, "Today was a good mission. We treated 383 Kuchi nomads and 1,645 animals on the border with Pakistan. There were a wide variety of animals, 1,278 goats, 141 cows, 172 sheep, three horses, three dogs and two camels.

"When the vets on our team treat a herd, they increase its value by 10 to 20 percent," Jones explains. "The animals are healthier, bigger and fewer die. That means more money for the farmer and more food for his family."

MEDICATING TENSIONS

Jones' team is based at the Baghram Airfield. They spend a week in the camp and then a week traveling through mountain passes 12,000 feet above sea level, sometimes flying in helicopters to avoid the 10 million landmines left from the war with the Soviets and sometimes going off-road to avoid IEDs (improvised explosive devices), to reach out to villages.

Often, they're welcomed, but not always. At times the medical crew has air cover. "It sends a real message when a B-1 bomber flies over my clinic at 500 feet," Jones says.

In August in the town of Disi, in Ghazni province, guards shot and killed three villagers who ran an Afghan roadblock. "To demonstrate the fact that the coalition forces care about the village, my team was the first to go in," Jones says. "Initially, they were hostile to us. They were a very conservative village. They threw rocks at our female vet." Care was being provided in a compound, and Jones stood watch at the gate to keep away hostile people. "Only 100 people came in to be treated, out of a village of about 5,000." Jones says he blew up balloons and played with the children, and by the end of the day the village had relaxed its posture.

"We went back to that village in December, to show them we hadn't forgotten about them. We must have seen 1,000 people that day. It was a very warm reception."

The compassion pays off militarily, as well. "To show their gratitude, they point out where weapons caches are hidden, where IEDs are placed, and they'll point out who the bad guys are," Jones says.

"A couple of weeks before the national elections, at a school one of the teachers came up to me and gave me information about a six-person Taliban cell working in the area. We don't make an effort to collect intelligence; we're there purely for humanitarian assistance. We provide to all comers, no strings attached."

On radio stations, he says, people thank Allah for the Americans and the new Afghan Army. "They think that the Americans' coming ended the drought, that Allah was upset with the Taliban, and we came and kicked them out, and because of that it started to rain again."

Jones sees his mission as another armament for justice, but one that has unique effects. "This is the one form of aid where we care for people one on one," he says. "When you go out and build a schoolhouse or dig a well, you're helping the whole village. But we may be the one time in their lives when someone sits down and demonstrates care for them as a person."

NEXT MISSION

Back at the camp the Army tries to make life as "normal" as possible. Jones placed fourth in the "Honolulu Marathon-Afghanistan." There's cable TV and satellite Internet, and there's a gym. But soldiers and airmen can't get too comfortable. When Jones rides his mountain bike around camp, "there are land mines on either side."

Jones is proud to be in the military. "No country takes better care of its soldiers than the United States," he says. "No army has better trained combat medics and physicians, and no army sends them farther forward on that battlefield."

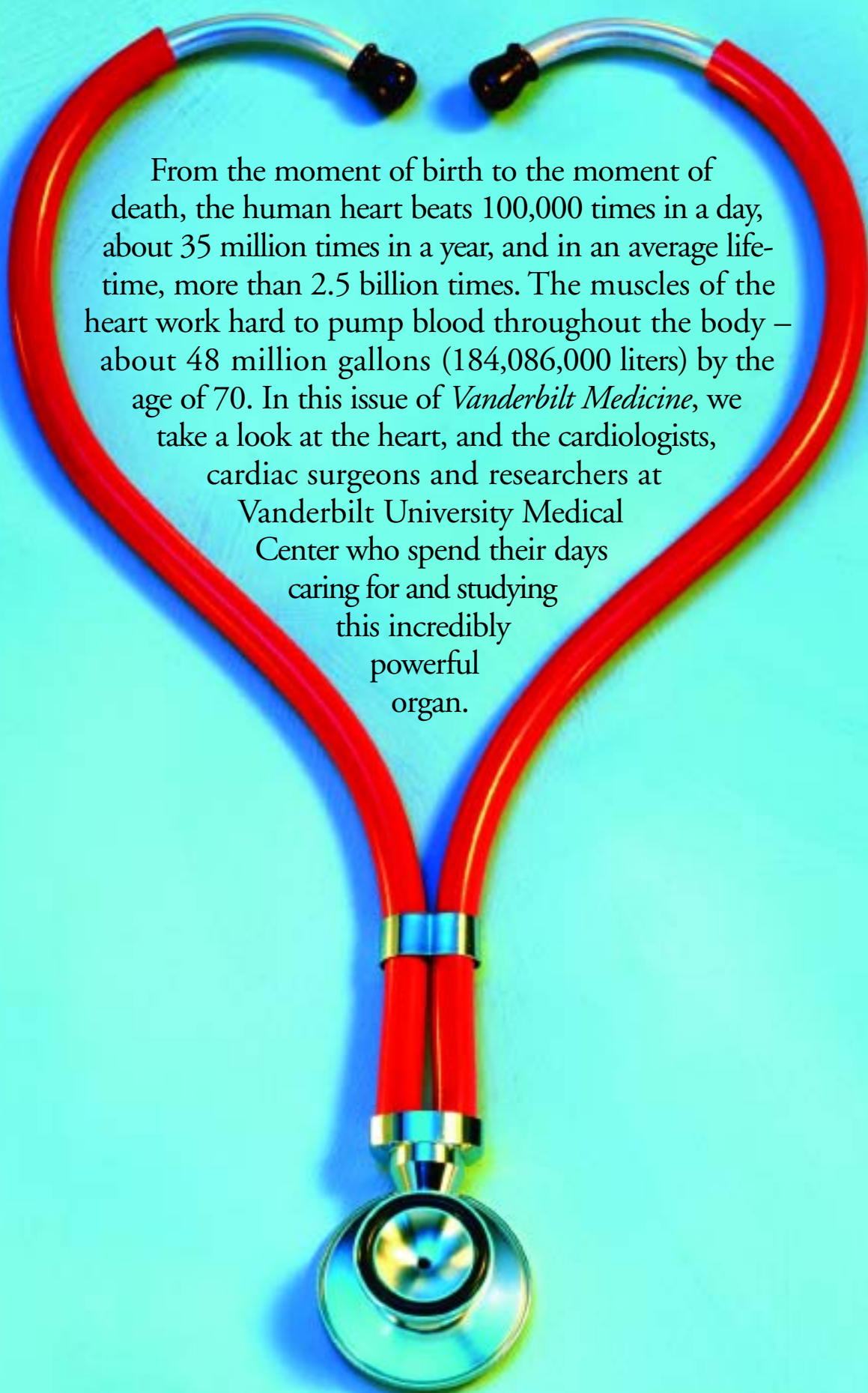
At Vanderbilt, Jones says, "I learned not only how to treat patients, but how to really care about them, too." He remembers lessons from the stalwarts like Tom Brittingham, M.D., and the care shown to medical students by the late former Dean John Chapman, M.D., and he's tried to emulate them to his staff and patients.

As a student he garnered highest honors: magna cum laude, Phi Beta Kappa, Sigma Xi (Scientific Research Society of North America) and the medical honor society Alpha Omega Alpha.

But erudition need not be confined to ivory towers or supreme commands. After May, after Afghanistan, he says, "I'm just waiting to see what my next assignment is. I might go back and practice some cardiology, and prepare to go to Iraq, or back to Afghanistan. I'd just as soon spend a few months at home before I do that again."

Ever the soldier, he adds, "They (his command) want me to do a staff position up in Washington, but I've had enough of those. I'd rather be taking care of soldiers." **VM**

editor's note: Jones has been given his next assignment: Multi-National Force-Iraq Surgeon. He will oversee all medical activities in Iraq, including humanitarian assistance, reconstruction, developing a medical system for the new Iraqi Army and providing care for U.S. forces and detainees.



From the moment of birth to the moment of death, the human heart beats 100,000 times in a day, about 35 million times in a year, and in an average life-time, more than 2.5 billion times. The muscles of the heart work hard to pump blood throughout the body – about 48 million gallons (184,086,000 liters) by the age of 70. In this issue of *Vanderbilt Medicine*, we take a look at the heart, and the cardiologists, cardiac surgeons and researchers at Vanderbilt University Medical Center who spend their days caring for and studying this incredibly powerful organ.

Treating *the* troubled heart



DOCTORS AND RESEARCHERS AT VANDERBILT UNIVERSITY MEDICAL CENTER are offering some of the best heart care in the Southeast, especially for heart failure, and are looking at new ways to provide optimal care for all heart patients and for novel ways to help prevent heart disease in the first place.

“Vanderbilt’s cardiology program has offered a robust and comprehensive program in the management of advanced heart failure for years, and is one of the referral sites in the state and region for patients with severe heart failure,” says Douglas Vaughan, M.D., C. Sidney Burwell Professor of Medicine and director of the Division of Cardiovascular Medicine. “We have a growing heart failure patient population out there, thousands of patients,” he said.

According to a July 2004 study in the *Journal of the American Medical Association*, the incidence of heart failure, or the inability of the heart to keep up with the demands on it, specifically failure to pump blood with normal efficiency, did not decline over the last decade of the 20th century, but survival after the onset of heart failure has increased overall, with less improvement among women and the elderly.

WRITTEN BY **NANCY HUMPHREY**
ILLUSTRATION BY **PETE MCARTHUR**

The most important aspect in the future care of patients with heart failure will be preventing it from developing in the first place.

Tom DiSalvo, M.D., associate professor of Medicine, medical director of Vanderbilt Page-Campbell Heart Institute and director of the advanced heart failure program, says that heart failure is a public health problem that affects both genders, and about 1 percent to 2 percent of the population. If you look at the lifetime of patients, there's an approximate equal lifetime rate of heart failure in men and women, but it's more common in men, because the prevalence of coronary disease is more prevalent in men. He said that women are more likely to develop heart failure later in life due to their increasing longevity.

One of the areas of treatment of heart failure (that Vanderbilt is a leader in) is the use of defibrillators to treat the arrhyth-

mias that are increasingly common as the heart's pumping function declines with heart failure. The risk of sudden death due to arrhythmias also increases as the heart becomes more enlarged and dysfunctional.

"It appears that below a certain degree of dysfunction, defibrillators help prevent mortality and sudden death in patients who have mild, moderate or severe symptoms," Di Salvo said. In a study published recently in the *New England Journal of Medicine* more than 100 health care centers across the United States, including VUMC, were able to prove that the use of defibrillators in heart failure patients reduced the mortality rate by 23 percent.

"What is known is that the most common cause of cardiac deaths is sudden death, which is especially true for congestive heart failure patients," said Mark Wathen, M.D., associate professor of Medicine, who directed the study at VUMC.

Vanderbilt's cardiologists take care of about 150 patients with defibrillators each year, DiSalvo said, adding that he expects those numbers to increase markedly with the expanded indication of defibrillators, particularly with technology called cardiac resynchronization therapy (CRT) that involves the placement of additional leads or wires into the heart chambers to allow the heart to be electrically activated in a more synchronized manner.

And VUMC is the first center in the state and one of only 20 in the world to employ a novel device to predict the hospitalization of heart failure patients up to two weeks in advance. The device, the Medtronic Insync Sentry Heart Failure ICD, is able to detect fluid accumulation in the chest, which is a key sign that a patient's condition is worsening and hospitalization is imminent, with an average stay of five days. The device is a component of an implantable cardioverter defibrillator. The Sentry device is an approach to care that Wathen said will allow physicians at Vanderbilt to treat and manage heart failure at an earlier stage.

When you have heart failure, you collect fluid in your chest, which makes it

Heart hospital within a hospital to offer one-stop shopping

For the first time at Vanderbilt University Medical Center, cardiovascular services will soon be under one roof.

The concept of "one-stop shopping" will combine inpatient and outpatient services, assisting patients logistically as well as bringing together all disciplines that serve the cardiovascular population. The end result – a heart hospital within a hospital.

"We are not just relocating physically, but also organizationally," said Thomas DiSalvo, M.D., associate professor of Medicine. "We are bringing together, in one location, all the disciplines that contribute to the total cardiovascular care – cardiologists, cardiac surgeons, vascular surgeons, radiologists and anesthesiologists, in addition to all non-invasive diagnostic modalities.

"This provides not only "one-stop shopping" for patients with even the most complex cardiovascular disorders, but also allows all the care providers (physicians, nurses, technicians) to interact in more collegial and efficient ways for patient care. The end result will be the provision of more outstanding and better coordinated care to our deserving patients."

The plan, which has come about because of enormous growth in the cardiovascular program, calls for the outpatient center and non-invasive diagnostic facilities to be on the fifth floor of Medical Center East 1 and 2 in September. Inpatient units will be located on the fifth floor of VUH with connectors between the two buildings. Future plans call for the construction of a bed tower that will go above the Emergency Department.

Currently all outpatient services are located at the Page-Campbell Heart Institute, nearly one-fourth mile from the hospital. Beginning in September those offices will be moved, while the building of the new bed tower is not slated to begin until January 2008.

"It's going to be amazing," said Robin Steaban, administrative director of Cardiovascular and Inpatient Medicine. "We strive to provide exceptional care. This facility change will remove the physical barriers to excellence that patients, staff and physicians experience. The space will enhance the team's ability to achieve higher levels of customer service and quality care." **VM**

— JESSICA PASLEY

difficult for a person to breathe because air can not circulate,” Wathen said. “This often is not known until most patients are in dire need of hospitalization to remove the fluid and treat other complications. This device can detect accumulation of fluid two weeks prior to a patient’s need for hospitalization.” The device is undergoing further study at Vanderbilt and other institutions.

DiSalvo said besides investigating new device therapies for heart failure, there are also studies under way for pharmacological therapies. It’s not yet clear what new class of drugs will have the largest impact in treating heart failure patients,” he said. “The current paradigm of how heart failure progresses is due to the influence of several hormonal factors in the body that feed back on the heart and alter its structure and function. It’s not clear what the next hormonal target will be.”

But the most important aspect in the future care of patients with heart failure will be preventing it from developing in the first place. “There’s been a recent reclassification of patients at risk of heart failure who don’t yet have the symptoms or signs, and those guidelines need to be disseminated widely so we can perhaps prevent the clinical syndrome from ever evolving,” DiSalvo said.

“The most common cause of heart failure in this country – two-thirds of the cases – is coronary artery disease, he said. “Any effort to reduce both the degree of coronary disease and the after-effects of a

heart attack will go a long way to reduce the severity of the heart failure burden in the general population. The second most common cause is hypertension, so more effective screening programs and more effective pharmacological treatments will go a long way toward reducing that problem.”

Making sure that patients with heart failure receive benchmark care is also a priority at VUMC. Computerized physician order entry programs (CPOE) have been developed to make sure that patients with heart failure get the right drugs have the right assessments.

“We are making sure that 100 percent of all eligible heart failure patients at Vanderbilt get the standards of care set up by JCAHO (Joint Commission on Accreditation of Healthcare Organizations) and CMS (Centers for Medicare and Medicaid Services),” said Javed Butler, M.D., assistant professor of Medicine. “No ifs, ands or buts, no exceptions.”

Butler said the CPOE will make sure that patients don’t receive any therapy they shouldn’t, that all patients receive counseling about things like smoking cessation, weight control and diabetes control, that they are given resources about where to go to get help, and that a seamless, updated summary sheet is created for each patient.

Vaughan says the goal of the increasing use of CPOE in the treatment of patients with heart failure is simple, “providing the optimal care for our patients with heart failure.” **VM**

Diabetes slows progress in fighting heart disease

It’s a rotten chain of events.

One out of four Americans born today will develop diabetes. The epidemic of diabetes is related to the epidemic of obesity. “And while we generally have had a great impact in reducing cardiovascular risk in the general population, the new epidemic of obesity really threatens to undermine a lot of advances we’ve made in reducing cardiovascular risk,” says Doug Vaughan, M.D., C. Sidney Burwell Professor of Medicine and director of the Division of Cardiovascular Medicine. The overall incidence of cardiovascular events is going down in general in the population, except in patients with diabetes, he said.

But unless there are circumstances you can’t control, like your genes, there’s no reason why any person should have heart disease in this day and time.

“Public awareness has led to the reduction of smoking, to the diagnosis and treatment of high blood pressure and to the widespread application and use of cholesterol-lowering drugs, Vaughan said. “There’s no reason young Americans now should ever have heart disease if they make sure they don’t develop high blood pressure, they don’t smoke and they take care of their cholesterol throughout their life. But the reality is people don’t live that way,” he said. “We still can’t change your genes, and there are other factors, but if any given individual tends to those basics, they can develop a level of confidence they wouldn’t have had 20 to 30 years ago.” **VM**

– NANCY HUMPHREY



Douglas Vaughan, M.D., examines patient E. T. Augustine of Clarksville, Tenn.

healing little
hearts in a



big





NATHAN STICKLES OF SPRING HILL, TENN. IS A REDHEADED, blue-eyed blur of movement. The energetic 7-year-old likes gymnastics, Little League Baseball, riding his bicycle and climbing trees. But there was one thing that threatened Nathan's full slate of activities and even his life – a serious congenital heart problem called atrial septal defect (ASD).

When a heart murmur was discovered at his 6-month checkup, his parents learned of the nearly inch-in-diameter hole between the heart's two upper chambers causing the oxygen-rich blood to leak from the heart's left side to the heart's right side. The defect, found in about four out of 100,000 people, was causing the blood to be pumped back to the lungs despite having already been refreshed with oxygen.

Nathan was followed by cardiologists in Arkansas until the family moved here in August 2004. Soon after he was seen at the Monroe Carell Jr. Children's Hospital at Vanderbilt, Thomas Doyle, M.D., recommended a percutaneous ASD closure, in which an Amplatzer septal occluder is used to seal the hole. The device is a wire mesh patch that is inserted by catheter into a vein in a leg and directed to the upper chambers of the heart where it is put in place and expands to seal the hole. The procedure has been used more than 200 times at Vanderbilt since 1998. Nathan's mom, Angie, who is expecting her third child, another boy, said Nathan was out of the hospital the next day by lunchtime and his month-long recovery has been uneventful.

"Every day I get more relaxed," Stickles said. "I know this procedure is just routine at Vanderbilt now, but when it's your child, it's anything but routine. It's a modern day miracle."

Closing ASDs is just part of a larger pediatric cardiology program that didn't exist prior to the arrival of Thomas P. Graham, M.D., professor of Pediatric Cardiology, in 1971. In 34 years, since his arrival, Vanderbilt's pediatric cardiology division has grown to be one of the most highly regarded programs of its kind in the country.

"We started out with one clinic, one day a week," Graham said. "The first year, we did about 100 cardiac catheterizations and about 100 cardiac operations. The advances have been incredible, and we're doing a lot more non-invasive procedures."

Currently, pediatric cardiologists perform some 450 catheterizations and 400 operations each year. There's been a recent upsurge in the areas of pediatric interventional cardiology and fetal cardiology.

The pediatric interventional cardiology program, which began 11 years ago, deals specifically with the mechanical treatment of heart diseases. It's a relatively new field where traditional surgical procedures are now performed during a heart catheterization.

These procedures include opening narrowed areas with balloons and stents, closing unwanted vessels with coils or intravascular devices, and ablation for unwanted rhythm problems.

"This is one of our biggest programs now," said H. Scott Baldwin, M.D., Katrina Overall McDonald Professor of Pediatrics, who was recently appointed to succeed Graham as chief of the Division of Pediatric Cardiology. "We used to do open heart surgery for nearly every condition, now we can often use a catheter."

WRITTEN BY **JESSICA HOWARD**
PHOTOGRAPHY BY **DEAN DIXON**

“Every day I get more relaxed,” Stickles said. “I know this procedure is just routine at Vanderbilt now, but when it’s your child, it’s anything but routine. It’s a modern day miracle.”



Nathan Stickles, above and page 16, age 7.

Thomas P. Doyle, M.D., the Ann and Monroe Carell Professor of Pediatric Cardiology, came to Vanderbilt to build the program in 1994. Doyle said that Vanderbilt was the first in Tennessee to address the following areas of pediatric interventional cardiology: closing atrial septal defects; closing patent foramen ovaes; closing ventricular septal defects; closing patent ductus arteriosus; and performing stent therapy for congenital heart disease.

About 440 pediatric patients each year require catheterization, and about 270 of those receive some sort of interventional cardiology procedure. Children’s Hospital likely treats the largest number of patients in the state, according to Doyle.

With recent advancements in the field, Doyle says there are conditions that can now be fixed surgically that previously had no other options. A child who may not have been well enough to survive open heart surgery may be eligible for a combined approach where the outcome is probably much better.

“The key to being successful is to have a dedicated cath lab staff,” said Doyle. “We’re blessed to have them. The other key is to have a very strong collaborative relationship with the cardiothoracic surgeons.”

A fourth-year fellowship in the subspecialty has been created, and the first fellow has completed the training.

“One of the joys of working in an academic center is being able to train somebody to do what you love to do,” Doyle said. “There are fellows each year who train in the basics of catheterization and general pediatric cardiology. But the opportunity to train in the sub-specialty of interventional cardiology, for me, is an additional excitement.”

Doyle plans to train an additional new fellow each year with support from the Carell Chair endowment.

Pediatric ablation services

One very successful form of pediatric interventional cardiology is radiofrequency ablation (RFA). RFA was developed in the 1990s as a catheter-based technique

for curative therapy of various abnormal cardiac rhythms. The source of the abnormal rhythms is identified and eliminated with heat by applying radiofrequency electrical current at the site.

RFA is now used to treat a wide array of arrhythmias. Patients may include younger ones who have irregular rhythms that are difficult to manage with medications; those with congenital heart disease; or those who have other medical problems which make it difficult to manage their conditions medically. In older patients, including adolescents and teenagers, RFA may be used as the primary therapy soon after diagnosis of the abnormal rhythm.

The Pediatric Arrhythmia Service at Children’s Hospital has a very active RFA program. Seventy to 80 ablations are performed each year at Children’s Hospital in children and adults with congenital heart disease. The volume continues to increase, and appears likely to exceed 100 ablations in 2005.

Adults with arrhythmias associated with congenital heart disease are often treated at Children’s Hospital. Their arrhythmias are often complicated by their complex cardiac anatomies and subsequent cardiac operations, such that each case presents unique complexities.

Because of the familiarity with these complex anatomic variations and the availability of specialized 3-D anatomic mapping techniques available at Children’s Hospital, these procedures are typically performed at VCH.

Frank Fish, M.D., associate professor of Pediatrics, helped start the RFA program at Vanderbilt in 1992, first in adults, and in children soon thereafter. In addition to performing nearly 800 ablation procedures in children, he has actively participated in more than 300 adult RFA procedures over the years, particularly in complex or difficult cases. With an overall success rate of over 98 percent, the pediatric ablation program at Vanderbilt is one of the more successful programs in the country. Most procedures are performed

with Fish and Prince Kannankeril, M.D., assistant professor of Pediatrics, working in tandem.

“We’ve been particularly active and successful at targeting some of the more difficult and complex arrhythmias – especially in adults with congenital heart disease where we now are successful in more than 95 percent of cases,” Fish said.

Added Baldwin, “Basically no one has better results than Frank.”

Two newer innovations have been employed since the move to the new Children’s Hospital. One of these is an ultrasound-based 3-D mapping system. Using highly sophisticated and targeted 3-D cardiac mapping, Fish and Kannankeril can accurately identify and localize an arrhythmia in complex underlying anatomy and promptly treat the condition — all in one procedure.

Often, these arrhythmias are related to surgical scars, which create an abnormal electrical pathway or “short-circuit” within the heart. The electrical activity of the heart can be recorded and displayed in real-time on 3-D, color-coded cardiac maps. This helps to accurately determine the location of the abnormal circuit, along with the orientation and location of the mapping and ablation catheter. Then ablation is used to heat the abnormal circuit, blocking the abnormal conduction pathway, and eliminating the arrhythmia.

Newer yet is the use of cryoablation for certain ablation procedures.

Children’s Hospital is the first pediatric or adult center in the state to acquire the equipment to perform cryoablation. Rather than heating the tissue, the new technique freezes tissue to ablate arrhythmias. This technique is particularly useful in treating arrhythmia sites lying close to normal electrical structures. This decreases the risk of damage to the underlying normal electrical system of the heart.

“Along with high success rate, we are equally proud of having probably the lowest rate of heart block among pediatric centers around the country. Still, we hope to make the procedure even safer by using

Endowed chair honors Thomas P. Graham, M.D.

Beloved cardiologist Thomas P. Graham, M.D., will soon be honored with the creation of an endowed pediatric cardiology chair in his name. A campaign to fund the chair is currently underway.

“I am so incredibly honored by the naming of this chair,” Graham said. “I get choked up about it.”

Graham, a graduate of Duke University Medical School, joined Vanderbilt Children’s Hospital in 1971 to start the hospital’s first Pediatric Cardiology program, and served as chief of the division until his semi-retirement in 2004. He reduced his clinic hours by half, and now sees pediatric cardiology patients twice a week.

During his long and distinguished career, he served as interim chair of the Department of Pediatrics, as vice chair for Clinical Affairs in the department, and as chair of the Medical Center Medical Board.

Graham was named the Ann and Monroe Carell Family Professor of Pediatric Cardiology in 1985; this chair is now held by Thomas Doyle, M.D., associate professor of Pediatrics and director of the Cardiac Catheterization Laboratory in the Division of Pediatric Cardiology.

“Receiving the chair 20 years ago was quite an honor,” Graham said. “After going to a half-time schedule last year, I knew that it needed to go to someone else, and I am delighted that it went to Dr. Doyle.”

Graham added, “He is very deserving, and I know we’ll continue to see great things out of him in the future. I am proud of his accomplishments and I know he’ll accomplish even more.”

Doyle, a graduate of the University of Arizona School of Medicine, joined Vanderbilt Children’s Hospital in 1994 to start the first pediatric interventional cardiology program, after meeting with Graham.

“I do not feel worthy of this honor,” Doyle said. “It’s an unbelievable honor to inherit this from Dr. Graham. He is the reason I came to Vanderbilt. He encouraged me to do things right out of my fellowship that I wasn’t certain I could do, and he supported me throughout my efforts to build an interventional cardiology program.”

Doyle added, “I look at Dr. Graham as someone who is a true gentleman in every sense of the word. He is a wonderful husband, a superb father and a doting grandfather – and at the same time, one of the most respected, intelligent pediatric cardiologists in the world.”

Doyle said he was very thankful and appreciative of Monroe Carell Jr. and his wife, Ann, for continuing to fund the chair in the Pediatric Cardiology division.

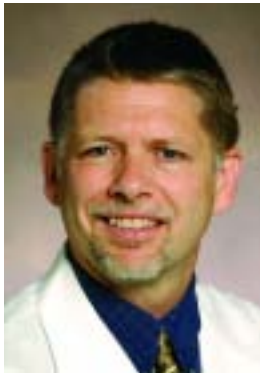
“This is a family that through their generosity has impacted the lives of thousands of children and that is a non-repayable debt,” Doyle said.

Scott Baldwin, M.D., the new chief of Pediatric Cardiology, added “I cannot think of a better person than Tom Doyle to carry on the legacy of the Ann and Monroe Carell Chair. Dr. Graham has served as an exemplary model for academic pediatric cardiologists worldwide and I think Tom Doyle is certainly following in his footsteps. Utilization of a portion of the Carell Chair endowment to fund a fourth-year fellow in Interventional Cardiology provides a unique opportunity for Dr. Doyle to share his unique talents by training the next generation of leaders in the field.” **VM**

- JESSICA HOWARD

Thomas P. Graham, M.D.





**Pictured left to right:
Frank Fish, M.D., Ann
Kavanaugh-McHugh, M.D.,
Thomas Doyle, M.D.**

cryoablation when working close to the normal electrical system.”

Prenatal diagnosis

Even before a child is born, doctors can look for potential cardiac problems. The Fetal Cardiology Clinic screens about 200 patients each year for prenatal congenital heart disease through a non-invasive ultrasound, also called an echocardiogram.

From 18 weeks on, a mother can be referred to the Fetal Cardiology Clinic if she exhibits one of a variety of potential risk factors, affecting the mother or the baby. Such risk factors can include diseases affecting the mother, such as diabetes, or medications, including some antidepressants, which can be associated with the development of heart disease in the fetus. Other concerns about the fetus at the time of routine obstetric evaluation may prompt a request for a fetal evaluation. In the course of routine obstetric ultrasound, only about 15 percent of fetuses with heart disease are diagnosed. Fetal echocardiography is a targeted ultrasound evaluation of the fetal heart and vessels, as well as the umbilical vessels. This study is much more sensitive for the detection of fetal heart disease.

In the 13 years the Fetal Cardiology Clinic has been open, the largest change

has been the great increase in the number of patients being referred to the clinic by area obstetricians. When fetal cardiac abnormalities are diagnosed prenatally, a team of physicians, nurses and social workers counsel the family on the significance of the heart problem. Prenatal diagnosis gives the family the time to prepare and familiarize themselves with their child's condition. The cardiologists set up an appropriate plan for treatment once the baby is born.

In the course of fetal evaluations every four to six weeks, the family receives counseling regarding the heart defect and plan for care. They meet with social workers for support, and meet nurses who will be involved in their child's care. They'll even tour the nursery and the PCCU where their child will be taken care of after birth and after surgery, if needed.

“This helps the family know what's in front of them and what they and their child will face after birth,” said Ann Kavanaugh-McHugh, M.D., assistant professor of Pediatrics. “We can have everything ready when the baby is born. Children with heart disease may need medical therapy or surgical interventions after birth. We've taken one baby directly from the delivery room to the cath lab for a fixed balloon dilation of the septum. It was a life-saving procedure. If that child had been born in

another hospital without prenatal diagnosis, she would've perished.”

Some fetuses require treatment of diseases before birth. If a fetal arrhythmia is discovered, often the mother can be treated with oral medication, which can cross the placenta, until the baby is born. Diagnoses like these are very important for the baby, because some can become critically ill in utero if not treated.

“We're moving into an era when we are starting to intervene in fetal diseases,” Kavanaugh-McHugh said. “With prenatal surgical interventions we may change the course of some congenital defects.”

At the present time, the fetal echocardiographers are involved in monitoring fetuses undergoing fetal surgery at Vanderbilt, assuring that they remain stable from a heart standpoint during repair of myelomeningocele (the backbone and spinal canal do not close before birth), performed while they are still in their mother's uterus. No fetal cardiac surgical procedures are presently done at Vanderbilt. A small number of cardiac interventions have been performed at other centers, though the jury is still out on their efficacy. In the future, however, treatments such as balloon procedures for valve disease may be done prenatally.

“Fetal diagnosis is crucial to optimize the care we give patients now, and essential to advancing the care of children with heart disease in the future,” Kavanaugh-McHugh said. **VM**

“Fetal diagnosis is crucial to optimize the care we give patients now, and essential to advancing the care of children with heart disease in the future.”

Epiphany moment pays off for Strauss, patients

Many doctors speak of life-shaping moments that make years of hard work worthwhile — epiphany moments if you will.

For heart specialist, Arnold Strauss, M.D., one of those moments happened eight years ago.

"It was the first baby we saved, based upon our emerging knowledge of fatty acid oxidation disorders (FODs)," said Strauss, James C. Overall Professor and Chair of Pediatrics and medical director of the Monroe Carell Jr. Children's Hospital at Vanderbilt. "The baby (Katie Frakes) was being taken care of in an intensive care unit by a neonatologist who was the wife of a colleague. She had heard us talking about these genetic, metabolic disorders we were studying in our lab, called FODs. She asked if the baby's illness could be related to an FOD disorder because the mother had suffered from acute fatty liver of pregnancy, also a sign of these disorders."

Years before, an adult cardiologist had come to Strauss' lab to study children with cardiomyopathy, or those who had died from heart failure that appeared to be related to the accumulation of certain fatty acids in the body. His lab began to take a close look at a relationship between the heart and certain enzymes in the body that are used to break

down fat to create the energy for the heart's pumping action.

"The heart needs incredible amounts of energy and needs a consistent, dependable source," Strauss said. "The heart derives 70 to 80 percent of its fuel from fatty acids, a more efficient and dependable source."

A baby with an FOD is born without one of the special enzymes that generate energy from fats. The heart is left depending on glucose — a system that can fail. A newborn with an FOD has enzyme deficiencies with names like MCAD, VLCAD and SCHAD. Each can be deadly.

"Stressors, like viral illness, exercise, or an infection can all cause a crisis," Strauss said. "There are different degrees of severity of these disorders, but in the most severe cases, babies don't live to their first birthday."

In 1997, when the neonatologist asked Strauss to test Katie, he took some samples. "Three days later, the baby's mother, Mary Frakes, called from an Emergency Department in a rural town in Missouri in a panic and asked if Strauss could help. "Upon our advice, the E.D. gave the baby a bunch of intravenous glucose and saved her life," Strauss said.

"Katie had been so lethargic that day. We knew we had to take her to the ER," Frakes recalled from her home in



Caledonia, Mo. "I just remembered what Dr. Strauss had said about Katie possibly having a disorder, and called him. While I was talking to him, Katie had quit breathing, and it took four hours to resuscitate her. When she was transferred to the children's hospital he was waiting for her."

Katie is now an 8-year-old elementary school student, legally blind, with a bit of a developmental delay; residual effects of the lack of oxygen she suffered as her heart failed that day in the ER. But her heart recovered just fine and she is alive and thriving because of a special diet, and the massive doses of glucose Strauss prescribed to reverse her cardiac crisis.

Five years later, prenatal testing showed Katie's little brother too had a fatty acid oxidation disorder. He got special formula from birth and is now an appropriately developing 3-year-old.

The simple fix of using formulas mixed to reduce the fatty acids the baby can't digest, and packing it with other fatty acids to keep the heart well fed has worked very well, so far. And now

newborn testing is designed to detect FODs earlier, making preventive treatments better. And it's working.

Last winter, Joseph Steuwe was born at a Clarksville, Tenn. hospital. A few drops of his blood were sent to the State Department of Health as part of newly expanded public newborn screening. A few days later his parents were called by the Division of Medical Genetics at Vanderbilt Children's and Joseph became the first child in Tennessee discovered to have an FOD called VLCAD — with no known family history or indications of problems at all.

An epiphany has become life's work for Strauss, who now has \$1.6 million in funding from the National Institutes of Health to study mouse models and to follow young patients with FODs. "This is clearly one of the most preventable of all problems that affect the heart," Strauss said. **VM**

- CAROLE BARTOO



h•a•r•v•e•s•t•i•n•g hope

Vanderbilt heart transplant program performs 500th procedure

JIM BUNNING DOESN'T NEED NATIONAL RANKINGS to tell him where the best doctors and hospitals are. All he needs to do is look into a mirror and he sees the answer.

Bunning, 62, of Evansville, Ind., is Vanderbilt University Medical Center's first successful heart transplant. As he reflects over the past two decades since his transplant, he takes a deep breath.

"Without this transplant I would have died," Bunning said. "I would have missed everything. I got to see my grandchildren. I got to see my son grow up. He was 14 months old when I got my heart.

"This transplant gave us a second opportunity at life. This heart gave us the hope of an extended life."

Now 20 years later he is the longest living heart transplant recipient in the Medical Center's history.

He still recalls the days in late 1984, at age 42, when he laid on the bathroom floor begging God to either let him die or give him a heart. Doctors told him that his heart was four times the normal size and a virus had destroyed his left ventricle. They gave him one year, at most, to live.

Although the transplant program was in its infancy, Bunning turned to the Vanderbilt Transplant Center. During a pre-transplant visit in July 1984, he was told he needed to stay. With nothing but the clothes on his back, he was admitted and three days later, on July 9, received a new heart.

"At that time, I was the only transplant patient they had," Bunning said. "I received the heart of a 13-year-old girl from Jackson, Tenn., who was killed in a car accident. I was told after the surgery that I was only the second heart transplant performed at Vanderbilt. The first one died from complications of surgery.

"I was the first successful heart. It should have been a big deal but it didn't make a difference until later on. I never thought about not making it. I refused to take that approach."

WRITTEN BY JESSICA PASLEY
ILLUSTRATION BY MARIA RENDON



Troy Mickens attends cardiac rehabilitation three times a week at the Dayani Center since his heart transplant in December 2004.

DANA JOHNSON

Bunning, the sixth heart transplant in the state, was then connected to the VA system so that he could begin receiving medications as well as follow-up care. The transplant programs at VUMC and the Nashville VA Medical Center have a contractual agreement to offer lifesaving procedures to corps of men and women who have served in the United States Armed Forces.

In the years since his heart transplant, Bunning received a new kidney in 1996, and in 1999 and 2000 had his legs amputated - a result of long-term steroid use that can often lead to diabetes.

But he is working part-time and busy with volunteer work. He continues to travel and enjoys watching his youngest son's college soccer games as well as his two new grandchildren.

As he looks back over the past 20 years, he is reminded how blessed he was to be a part of the Vanderbilt family.

"There was no track record with Vanderbilt when we came there. It was all trust. We were just so happy and pleased, and everyone was so caring and wonderful to us. We like to look at the positives that life holds."

Javed Butler, M.D., medical director of the heart transplant programs at both Vanderbilt and the VAMC, said the relationship shared by the medical centers has been a win-win situation for the medical community as well as its patients.

Although both centers house their own transplant programs, all the surgical procedures are performed at Vanderbilt under the agreement. The VAMC is responsible for all of the pre-and post-transplant care.

"The Nashville VA is one of only four veteran's hospitals in the country with a heart transplant program," Butler said. "I think that speaks volumes and is a true testament to the fact that our VA is a center of excellence for advanced cardiac disease care."

Vanderbilt's transplant program, the largest in Tennessee, has continued to be the region's premier center. It includes adult and pediatric transplantation and

Frist left mark on Vanderbilt's transplant center before taking on D.C.

Before U.S. Sen. Bill Frist was widely known on Capitol Hill for his political views, he was a heart/lung surgeon at Vanderbilt University Medical Center and the founder of the Transplant Center.

Under his leadership, the center became nationally recognized as a multi-disciplinary facility. Frist was the first surgeon to successfully perform a heart/lung transplant in the Southeast.

He came to VUMC in 1985 after serving as senior fellow and chief resident of the Cardiac Transplant Service and Cardiovascular Surgery at Stanford University School of Medicine. He graduated from Princeton University and then Harvard Medical School before spending seven years in surgical training.

In 1993, Frist turned his attention to the political arena to become the only challenger to defeat an incumbent and the first practicing physician elected to the U.S. Senate since 1928. In 2000, he won the largest vote total ever received by a candidate for statewide election in the history of Tennessee, securing his position within the Republican Party.

His rapid rise in the Senate is marked by several events including his unanimous election as chair of the National Republican Senatorial Committee in 2000, followed by unanimous election as Majority Leader of the Senate in 2002. The first time in history in which the party of the President won back majority control of the Senate was during Frist's tenure as Majority Leader, and he did so having served fewer total years in the Senate than any previous leader.

Now his medical interests include the global AIDS pandemic. He travels to Africa often to care for those in need. In his role as Senate Majority Leader, he has been able to help educate and raise awareness about the HIV/AIDS crisis. **VM**

- JESSICA PASLEY

mechanical circulatory support systems, including ECMO and Heartmate ventricular assist devices. There are many other components that make up the transplant program including smoking cessation programs, rehabilitation, nutritional counseling and the nationally renowned Return-to-Work program, which has been lauded as a model for similar programs.

The Vanderbilt Transplant Center was established in 1989 by Bill Frist, M.D., (now U.S. Senate Majority Leader) four years after the first heart transplant was performed. Milestones for the heart program include the 100th transplant in 1990, 300th in 1995 and the 500th in late 2004. It is this unique relationship with the VAMC and strong referral base that helped the Transplant Center reach its most recent milestone.

500th and going strong

The 500th recipient was a 25-year-old Air Force Reservist, Troy Mickens

Vanderbilt's transplant program, the largest in Tennessee, has continued to be the region's premier center.

from Atlanta. He received his heart on Christmas Eve 2004 – one day after turning 25.

Diagnosed with cardiomyopathy (an enlarged heart) in February 2004, he began seeing heart specialists at the Veterans' Hospital in Atlanta. Later that year, a defibrillator was implanted to help with the irregular heart rhythms. Soon after that surgery, it became evident that he would need a transplant to survive. He was placed on the transplant list in early November 2004.

"I was trying not to get my hopes up," he recalled. "I had asked God to bring me a heart for the New Year and this was great because it was early. But I also knew that the heart could get here and not be suitable. You know, there's always Murphy's Law.

"But it all worked out. I could tell a difference after I had the surgery. My complexion came back. My toenails became clear. I could walk around the room one day after my transplant. I even went shopping and out to eat after I was discharged. I could finally do things because I had energy."

"When my son was born, I was taking more naps than he was. I couldn't pick him up or anything."

Now, he is busy adapting to home life and family.

"Just spending time with my son (who will be 1 in June) is enough for me," he said, "pushing him in the stroller in the park and just the little things you don't ever think about until something like this happens." **VM**

Jim Bunning with 4-year-old granddaughter, Samantha.

Vanderbilt home to state's only pediatric heart transplant program

The pediatric heart transplant program at the Monroe Carell Jr. Children's Hospital at Vanderbilt is first in many ways – the first center to perform a pediatric heart transplant in Tennessee, and the first to offer transplants to infants with hypoplastic left heart syndrome.

Since the first transplant in 1987, there have been 104 pediatric heart transplants at Vanderbilt Children's Hospital.

Vanderbilt Children's, still the only pediatric heart transplant hospital in the state, is among the moderate-sized programs, with an average of 10 transplants a year. Worldwide about 300 pediatric transplants are performed each year.

Nearly two-thirds of the pediatric transplants are performed on patients under the age of 7 with a majority of those less than 6 months old.

With the program ranking eighth out of 55 and survival and outcome rates that exceed the national average, Debra Dodd, M.D., associate professor of Pediatrics, is pleased with the program's progress.

The statistics speak for themselves – overall survival is 92 percent and the national survival rate is 86.4 percent. Vanderbilt patients have an 85 percent expected survival rate, which means the hospital's patients are slightly higher risk than the national average. The three-year patient survival is 90 percent versus the national average of 79.9 percent and an expected patient survival of 79.4 percent.

"We continue to improve in the new era of post-operative management," Dodd said. "There is no question that the riskiest time for patients is while they are on the waiting list." **VM**

– JESSICA PASLEY



DANIEL R. PATMORE

H. Scott Baldwin, M.D.



of Mice and Mending

WRITTEN BY MELISSA MARINO
PHOTOGRAPHY BY DEAN DIXON

The development of a healthy baby from a fertilized egg requires an almost inconceivable number of molecular events, occurring at precisely the right place and time, in the appropriate order and magnitude.

ERRORS IN THIS COMPLEX PROCESS can and often do happen, leading to an array of possible birth defects. Congenital heart defects are some of the most frequent.

Despite surgical advances that have improved our ability to mend these defects, babies born with ‘broken hearts’ still face an uncertain road ahead. Genetic factors that trigger the defects may manifest themselves once again, later in life, in the form of adult heart disease or be passed on to subsequent generations. With help from a troop of small, furry assistants, H. Scott Baldwin, M.D., is one of a large team of Vanderbilt researchers focused on finding the responsible genes.

“Roughly one in 100 children is born with a congenital heart defect,” said Baldwin, Katrina Overall Professor of Pediatrics and professor of Cell and Developmental Biology at Vanderbilt University Medical Center.

“Right now our ability to surgically correct congenital heart defects is pretty good. But this success has created a new set of problems and a new patient population. In less than five years, we’ll have more adults with congenital heart defects than children. We must begin to figure out how defective genes that caused fatal defects in the past now impact the lives of surgically repaired patients.”

“Two to three percent of adults will have some abnormality in their aortic valve at some time in their life. If that’s in normal patients, how are people who are predisposed to a valve defect that we may have repaired going to fare over the years facing aging?” Baldwin asked.

To find an answer to that question, Baldwin and others have identified mutations in a multitude of genes that may disrupt heart function and development.

The darlings of biomedical research

Much of the research to hunt down the genes involved in heart development has been accomplished using mouse models. Mice have become the darlings of biomedical research because their genome has been sequenced and is roughly 85 percent identical to the human genome. This allows researchers to manipulate mouse genes to identify their role in normal development and disease, and match them up with related human genes.

The most common type of genetic manipulation is called a knockout, in which mice are engineered to completely lack a specific gene. In these mice, researchers can observe the effects of a missing gene. This method has allowed the identification of numerous genes involved in heart development. However, knockout mice are often a research dead-end because many die in utero.

“While it’s fascinating that X, Y, or Z gene is involved in heart development, in the long run, it doesn’t tell us very much,” Baldwin said. “While mice that die in utero may tell us a lot about the causes of spontaneous abortion, they don’t tell us much about our patients who survive to birth.”

Using the traditional knockout approach, Baldwin has identified NFATc1 (nuclear factor of activated T cells) as a critical gene in heart development. Mice lacking NFATc1 devel-

oped no aortic and pulmonary valves and died in utero at around 14 days of gestation.

The aortic and pulmonary valves keep blood flowing in one direction – from the heart to the peripheral circulation. Closure of these valves prevents blood from flowing back into the ventricles.

Baldwin and colleagues later used an in utero ultrasound specifically designed for small animals to examine blood flow in these mouse embryos just before they died. They found that while the hearts of NFATc1 knockout embryos contracted normally, they exhibited increased regurgitant, or backward, flow of blood compared to their normal siblings. This abnormal blood flow contributed to lethal heart failure.

Although the results from knockout mice provided a startling picture of the importance of this single gene, understanding the genetic defects that underlie heart defects seen in patients will require researchers to find models more similar to the clinical condition.

“We’re met with a significant challenge in that we have very few good mouse models of congenital heart defects,” Baldwin said. “It’s been frustrating for us – we want to get more toward being able to develop models that mimic congenital heart defects in kids we see.”

The simple fact that children are born with heart defects tells researchers that the culprit is not simply a missing or defective gene.

“There are few cardiac-specific genes, so any defect or mutation would affect organs other than just the heart. However, our patients most often only have heart defects.”

It’s more likely, said Baldwin, that the defect is in regions of the genome that control the expression of those genes in specific tissues.

To address this, Baldwin has turned to a strategy called conditional mutagenesis. With this technique, researchers can take out a gene in a specific cell type in the heart or at different times in development.

“We’ve spent a lot of time developing animals that will allow us to do that – to

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Mice are the darlings of biomedical research.

allow us to drive the enzymes that will delete genes just in the endothelial cells vs. those that will drive mutation in heart muscle cells and do so at discrete stages of development.”

In a recent study, Baldwin and colleagues identified two regions of the genome that specifically control the expression of NFATc1 in a small population of cells that will form the valve. One site, to which the NFAT protein binds, drives the expression of NFATc1 in valve-forming cells. The other site, to which other transcription factors bind, suppresses NFATc1 expression and maintains its specificity for pro-valve cells.

Knowing where these genetic ‘switches’ are will allow Baldwin to selectively shut off expression of NFATc1 in only the cells that form the valves or at specific times during heart development. These models may be more clinically appropriate and lead to a better understanding of the causes of congenital heart defects.

The goal of clinically relevant mouse models is within reach for one type of congenital heart defect, atrioventricular canal defects (AVCD).

Using the same (conditional knockout) approach, Baldwin, Kia Jiao, a postdoctoral fellow and Brigid Hogan, formerly professor of Cell and Developmental Biology at

“As we begin to understand gene regulation and modification of gene regulation, the whole concept of individualized medicine will come into play.”

Vanderbilt, disrupted the expression of bone morphogenic protein-4 (BMP4) specifically in heart muscle cells.

Previous research had shown that ubiquitous loss of BMP4, which is expressed in many tissues of the developing embryo as well as in the septal region of the developing heart, was lethal – yet another dead-end.

But Baldwin and Hogan’s conditional knockout of BMP4 in heart muscle cells resulted in a spectrum of heart defects that looked exactly like those in human AVCD.

“With this technique, we can actually titrate the gene dosage,” Baldwin said.

“When we take out most of it only in the heart, we get the mild form of the disease. When we take it all, we get the most severe of the defects. It may be one of the first true models that mimic human congenital heart disease.”

“These observations have really enforced for us a significant shift in our idea of where we should be focusing our efforts,” Baldwin said. “We think it’s in the regions that regulate the expression of heart genes that we should be looking.”

What the future holds

Since the heart develops before many women even realize they are pregnant (by about the sixth week of human pregnancy), would the increased knowledge of the genetic underpinnings of heart development lead to therapies to reverse or correct congenital heart defects?

Probably not, says Baldwin.

“I don’t think that the idea of using gene therapy to prevent or treat congenital heart disease is feasible,” he said.

But he is optimistic that the information could be utilized in other ways. The knowledge may reveal external factors, like environment or diet, that affect heart development.

“We are working on a gene now that is sensitive to homocysteine levels. So, gene-nutrient interactions become important.”

But the area where this information may have the most impact is in predicting which patients may later have problems related to their congenital heart defect.

“We think that some of these processes (of heart development) are recapitulated during disease in the adult,” Baldwin said. “We are now starting a study to see how the genes that we’ve focused on in the embryo (e.g., NFATc1, BMP4, and another called PECAM) are turned on and off during disease processes – atherosclerosis, abnormal blood flow.”

“It’s going to be important for us in realizing that if you have a particular gene defect that resulted in a structural heart defect, you are now more susceptible to having a valve abnormality or any number of things that might happen to the heart, in addition to your congenital heart disease.”

If a physician can determine the genetic abnormality that caused a patient’s congenital heart defect, they can be more vigilant for later problems, like hypertension, related to the gene. Heightened vigilance could lead to better treatment.

“As we begin to understand gene regulation and modification of gene regulation, the whole concept of individualized medicine will come into play.”

Truly individualized medicine may mean that we will one day be able to grow replacement heart valves by supplementing our own endothelial cells or stem cells with factors that will shape them into the needed tissue, Baldwin said. His work identifying the genes involved in this process may make this possible.

Baldwin admits that it sounds like science fiction, but considering the progress already made in identifying the genes that control heart development and developing clinically-relevant mouse models of human disease, such custom-fit body parts may be realized within our lifetimes. **VM**

The beat goes on

Investigators search for heart rhythm genes

BY LEIGH MACMILLAN

A clinical mentor's offhand remark more than 20 years ago captivated Dan M. Roden, M.D. The two were discussing a case of drug-induced torsade de pointes, an irregular heart rhythm that can cause sudden death.

"He said, 'you know, this is a really interesting arrhythmia, nobody has a clue about the underlying mechanisms,'" recalls Roden, the William Stokes Professor of Experimental Therapeutics.

It was a challenge he couldn't resist. Roden has characterized the cellular and molecular roots of heart rhythm disturbances, gaining international renown for his work. He was honored this year with the Distinguished Scientist Award from the Heart Rhythm Society, the dominant organization dedicated to arrhythmia management.

Heart rhythm abnormalities are common clinical problems, says Roden, who also is the first director of the John A. Oates Institute for Experimental Therapeutics at Vanderbilt. "They can range from being asymptomatic to being a nuisance to being markers of abnormal heart function and susceptibility to much more serious symptoms." They are also a common cause of death, particularly the sudden death that claims one American every minute, he adds.

Unfortunately, antiarrhythmic medications "don't work terribly well to prevent recurrences of the abnormal

rhythm or to prevent episodes of cardiac arrest," Roden says. "Antiarrhythmics are also famous for their side effects, which include worsening the heart rhythm and even creating new abnormal rhythms.

"The idea that drugs can be what we call 'proarrhythmic' has gone from a curiosity piece to the centerpiece in the drug therapy of arrhythmia," he says.

Antiarrhythmic drugs are not alone in having proarrhythmic effects. A wide range of non-cardiovascular drugs including antihistamines, antibiotics, and antipsychotics also can create life-threatening abnormal heart rhythms. One of these abnormal rhythms is torsade de pointes, the disturbance that first intrigued Roden.

"Torsade has a very distinctive 'look' on the electrocardiogram," Roden explains, "and one of the only other places that we see this unusual arrhythmia is in patients that have a disease called congenital long QT syndrome." "Long QT" refers to a longer than normal time between two points – Q and T – on the electrocardiogram, a characteristic that predisposes patients to arrhythmias.

The connection between a drug-induced arrhythmia and a congenital disorder prompted Roden and others to look to the genome for answers.

"We're asking the questions, are there variations in the key genes that control electrical signaling in the heart, and do these genetic variations account for variability

in response to drugs and also in susceptibility to common arrhythmias?" Roden says.

The answer to date: a resounding yes.

Many of the variations that have been identified are in genes that encode proteins called ion channels – donut-like pores that open and close to control the flow of electrically-charged ions across the cell membrane. This flow of ions including sodium, calcium, and potassium is the "electricity" that powers the action potential, the basic cellular unit of the heart's electrical system.

In studies of isolated cardiac cells in the early 1980s, Roden and colleagues noted that drugs and other torsade-causing manipulations had striking effects on the action potential.

"Not only did things that cause torsade in patients prolong the action potential," he explains, "they actually introduced deformities called early afterdepolarizations into the action potential. Both of these changes can trigger abnormal rhythms."

The molecular explanation for these effects came from studies of congenital long QT syndrome. In 1995, Mark T. Keating, M.D., and colleagues reported disease-causing mutations in two ion channel genes – one sodium channel and one potassium channel. The potassium channel, now called HERG, turned out to be blocked by many drugs, resulting in action potential prolongation, long QT syndrome and life-threatening arrhythmias. The Food and Drug Administration now requires that all drugs in development be screened for

their HERG-blocking potential.

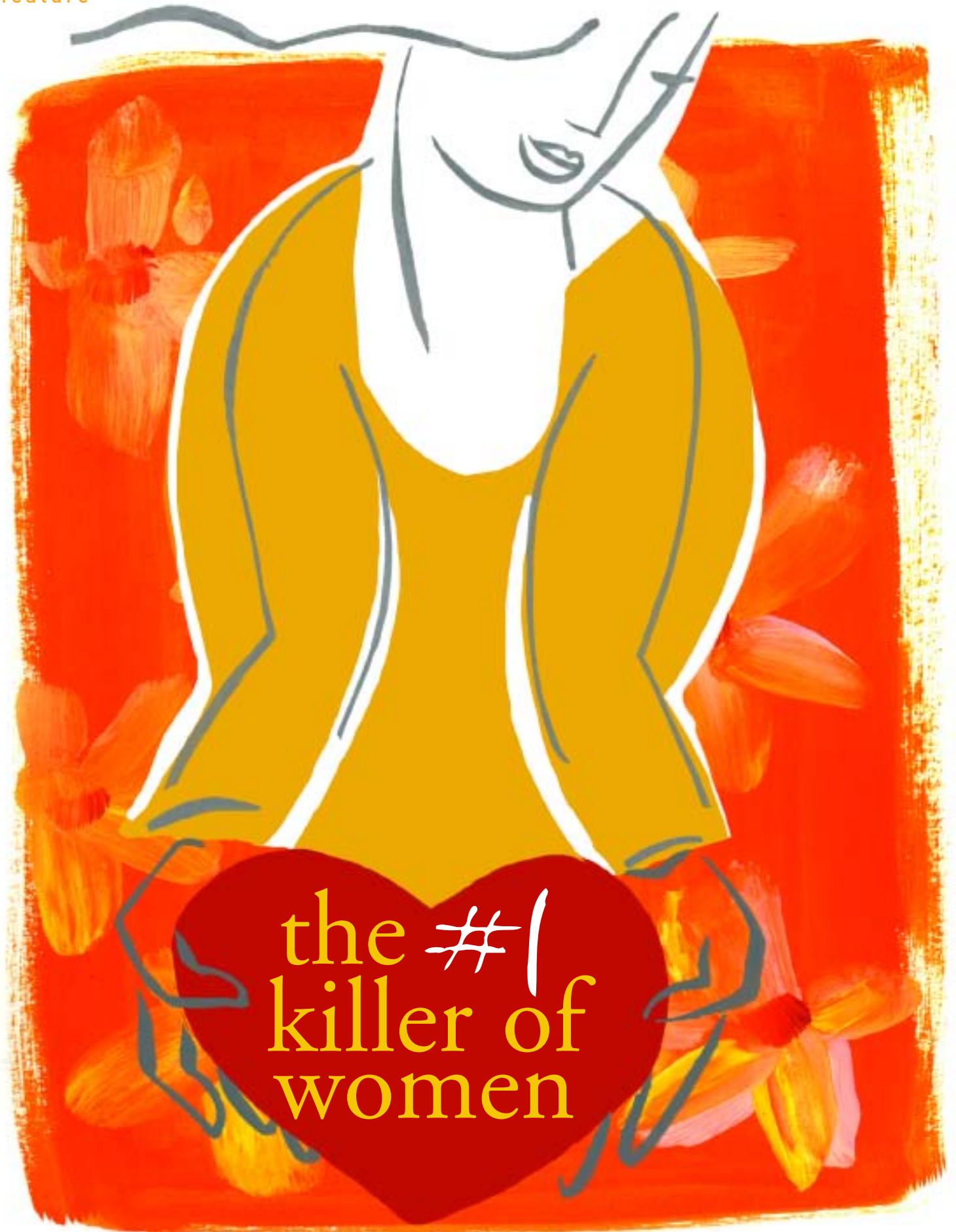
"Perhaps as much as 30 percent of all drug candidates are thrown out because they block HERG," Roden says. "So we're losing these candidates even though they may never cause an arrhythmia in the real world." One of the key questions for drug development now, Roden says, is whether there are more sophisticated markers that can determine the likelihood that a HERG-blocking drug will cause heart rhythm abnormalities.

In their search for genetic variations that will predict who is most susceptible to drug-induced long QT syndrome, Roden and colleagues hope to find these kinds of markers.

A unique collaboration with the FDA is making it possible for Vanderbilt investigators to amass the large number of patients necessary for such genetic studies. When physicians report QT prolongation as an adverse drug event, the FDA will refer those physicians and their patients to Vanderbilt for inclusion in the study.

"It's very exciting that the FDA not only thinks this is an important idea, but also that they've agreed to serve as a conduit for collecting DNA samples," Roden says. "It's the first time the FDA has done this."

Vanderbilt investigators also are looking for genetic variants that explain susceptibility to atrial fibrillation and to ventricular fibrillation and sudden death. Ultimately, Roden says he expects the findings to contribute to an era of personalized medicine, when therapies will be tailored to each individual's genetic profile. **VM**



At age 47, Denise Hess
had what most women
dream of: a loving
family, a home in a posh
suburb and a successful career
as a marketing executive.
Then one Saturday night
in 2001, her dream
became a **nightmare**.

“I had pain in my chest that dropped me on the kitchen floor,” she recalled. “I’d never felt that kind of pain. It never crossed my mind that there was anything wrong with my heart.”

When the pain spread down her arm, Hess’ husband rushed her to a nearby emergency room, where doctors found two blocked arteries. Hess underwent bypass surgery, then transferred to Vanderbilt University Medical Center, where Rose Marie Robertson, M.D., became her cardiologist.

“Heart disease is the number one killer of women in this country,” said Robertson, professor of Medicine at VUMC and chief science officer of the American Heart Association. “But no one thinks it will happen to them. We need more outreach to encourage prevention and get women thinking about it.”

That outreach must include physicians as well, Robertson added. “When women have chest pain, 98 percent of the time it’s missed. Doctors don’t think of heart attacks in women. We need to figure out a way to solve that.”

According to the American Heart Association (AHA), cardiovascular disease claims more women’s lives than the next seven causes of death combined – about 500,000 a year. Thirty-eight percent of women will die within one year after their heart attack, compared to 25 percent of men. The death rate is substantially higher in black women, and the risk of heart disease increases dramatically when a woman reaches age 50.

WRITTEN BY **LYNNE HUTCHINSON**
ILLUSTRATION BY **GAYLE KABAHER**

“Not everyone *drops dead* from a heart attack. Strokes, congestive heart failure, amputations – women can suffer with these for the rest of their lives.”

Despite these grim facts, many women are unaware they are at risk for a heart attack or stroke. “Women need to pay attention to when heart disease starts – in their teens or 20s,” said Lisa Mendes, M.D., assistant professor of Medicine and director of the Vanderbilt Women’s Heart Center. “And everyone needs to be aware of the signs of a heart attack.”

Most people know that chest pain and pressure could signal a heart attack. But women often experience atypical signs such as pain in the jaw or gastrointestinal symptoms such as nausea, vomiting, stomach pain and heartburn. “Women shouldn’t blow off these symptoms, especially if they come with shortness of breath,” Mendes said.

Denise Hess experienced another warning sign: extreme tiredness. “I learned the hard way that being exhausted can mean something besides working hard and having a lot of responsibility,” she said.

The AHA encourages women to minimize their risk of a cardiovascular

Denise Hess works with Jordan, left, and Jayla Foster in her job with Tennessee Infant Parent Services.



event by practicing a healthy lifestyle, and smoking should be the first thing to go.

“It’s the greatest risk for heart disease,” Robertson said. “However, a recent study suggests that obesity may be overtaking smoking as the leading cause of preventable death. Diabetes and high cholesterol occur in the obese, so it’s hard to separate what is causing the death. But either way, obesity is second.”

But Hess warns women shouldn’t let a healthy lifestyle lull them into a potentially fatal sense of security. “I didn’t have high blood pressure, I didn’t have high cholesterol, and I was young,” she said. “Not everyone fits the profile.”

Women also should take a hard look at family history and ask their doctors about the C-reactive protein blood test, which may detect early signs of heart disease, Hess added. “That way women won’t be sitting in the hospital 10 years from now saying, ‘I didn’t have high blood pressure and cholesterol.’”

Often, though, women are brought up to care for family, career, home – even pets – before they care for themselves. Women with young children barely have time to take a shower, while aerobics at the Y is just a fantasy.

When women do talk with their doctors, the focus usually is on reproductive health. Robertson sees that as a golden opportunity to raise awareness and remind women about cardiovascular disease.

“When a woman goes in for her annual mammogram and Pap smear, she should review her heart disease risk with her doctor,” Robertson said. “It’s a great time of year to get all your health issues in order at once.”

Women must learn about and practice heart disease prevention beginning in

their 20s, Robertson added. The AHA has published official heart disease guidelines specifically for women, available on the Web at www.americanheart.org.

“Doctors now have recommendations on what category a woman falls in on risk for heart disease: low, medium or high,” Mendes explained. “Women can go on the Heart Association’s Web site, print out the guidelines, and take it to their doctor to discuss.”

The Vanderbilt Women’s Heart Center is also taking an active role in raising awareness about heart disease in women. Since opening, the Center has offered free cholesterol screenings and information about heart health at special events for women. Even the Center’s name is part of the message: “If you can get ‘women’ and ‘heart’ in the same phrase,” Robertson said, “you can get a woman to start thinking about heart health.”

Vanderbilt Women’s Heart Center also is helping correct several misconceptions about women and cardiovascular disease. The biggest of these is the belief that cancer – especially breast cancer and cancer of the reproductive tract – is a woman’s greatest health risk.

In truth, heart disease is appallingly more lethal. According to the AHA, cardiovascular disease killed 493,623 women in 2002, while all forms of cancer combined killed 268,503.

“People also have misconceptions of what it’s like to live with heart disease,” Mendes said. “Not everyone drops dead from a heart attack. Strokes, congestive heart failure, amputations – women can suffer with these for the rest of their lives.”

Another myth is that heart disease is a “man’s disease” – a gender bias that occurs on both sides of the stethoscope.

Denial or fear may make a woman avoid medical care when she experiences heart-related symptoms. But more often than not, it never crosses her mind that she could be having a heart attack.

“My regular doctor never talked to me about heart disease,” Hess said. “I had no idea there was anything wrong with my heart. When I was in rehab, I met a nurse in her 40s who had back pain, not chest pain, with her heart attack. It never occurred to her either.”

It doesn't surprise Mendes that many clinicians do a marginal job connecting the dots of women – especially young, seemingly healthy women – and heart disease.

“Doctors have preconceived notions about women and heart disease, but it's getting better,” she said. “And gender bias isn't always inappropriate. Women tend to be older and sicker than men with heart disease, and aggressive treatment might not be the best decision for them. It's OK to be cautious and use medicine instead of surgery.”

Robertson thinks the problem runs deeper than simple gender bias; it comes down to time and money. “We need to provide information on smoking cessation and obesity, but people in health care barely have time to focus on today's problem. It's not that doctors don't want to help with prevention. We just need more time,” she said.

“The American Heart Association sent 80,000 kits with the new official guidelines on women and heart disease to doctors' offices,” she continued. “But it's hard to get this information to the patients. We need a better system.”

Vanderbilt University Medical Center is using technology to meet these challenges. Physicians use WizOrder, a computerized order entry system developed at Vanderbilt, to order tests, treatment, or drugs. When a doctor discharges a patient with a heart attack, WizOrder prints out instructions on how to prevent the next heart attack.

“WizOrder was a landmark effort in providing prevention information,” Robertson said. “Hospitals nationwide get

this right only 40 to 60 percent of the time, while Vanderbilt's system gets it right nearly 100 percent of the time.

Guidelines and technology can educate patients and improve medical outcomes. But in the end, heart disease prevention and a healthy lifestyle are the responsibility of each woman and her doctor.

With this in mind, Mendes offers some advice: “Doctors, practice what you preach and be a good example. Tell women the risks and that it's OK to ask questions.”

Robertson is even more succinct: “If a woman got a pain in her chest every time she ate a piece of pie, she'd think about heart disease. Women are wonderful at taking care of others. But they need to protect themselves against heart disease and let the people they love have them around for a good long time.” **VM**



DANA JOHNSON

Lisa Mendes, M.D.

Eisenstein Symposium offers women valuable information on heart disease

Each spring, events for women in Nashville offer advice on everything from business to Botox. But the Ann F. Eisenstein Women's Cardiovascular Symposium provides women with something much more valuable: information on heart disease that could save their lives.

Heart disease is the No. 1 killer of women in the United States. Nearly 500,000 women die from it each year, yet only 8 percent of women see heart disease as their biggest health risk.

“Educating women about heart disease is crucial,” said Lisa Mendes, M.D., assistant professor of Medicine and director of the Vanderbilt Women's Heart Center, the event sponsor. “We need to focus on lifestyle and health, get out in the community, and make it fun.”

Vanderbilt health experts offer free blood pressure and cholesterol screenings at the annual symposium, which is now in its sixth year. They also present workshops on diet, exercise, and heart disease prevention and treatment.

This year Mendes shared the new American Heart Association guidelines on women and heart disease with about 200 women. The guidelines assess a woman's health and lifestyle, then place her in a category of low, medium or high risk of heart disease.

“Women need to know their category, get a list of concerns, and take it to their doctor,” said Mendes.

The symposium is funded by a gift from the late Ann F. Eisenstein, a heart patient at Vanderbilt for more than 40 years and an advocate for women and heart disease. **VM**

- LYNNE HUTCHINSON



“SIGHTED” HEART SURGERY



WHEN JOHN BYRNE, M.D., JOINED Vanderbilt University Medical Center a year ago, he brought a novel idea that he hoped would impact the cardiovascular world, much like air bag safety equipment revolutionized the auto industry.

Called the Hybrid OR/Cath Lab, the state-of-the-art operating suite houses all the equipment and monitoring devices necessary to perform both open-heart surgeries like coronary bypass as well as percutaneous coronary interventions and procedures, including angioplasty and stenting.

Although Byrne was not the only cardiovascular surgeon exploring the concept, he is believed to be the first to put the plan into action in the Southeast.

A major advantage of this new approach is the ability to perform completion angiography or an X-ray of routine cardiac surgical cases. Traditionally a “before picture” is obtained prior to surgery, but an X-ray study after procedures are completed was not the standard of care.

Byrne acknowledges the weight that the change will have on the standard of care for cardiovascular patients and is excited about the positive outcomes it can bring.

“We wear our seat belts everyday and have air bags. How often does an air bag deploy? Maybe once or twice in your life. I for one am glad it’s there when and if it does deploy. The Hybrid OR/CathLab will catch the rare, but very important, technical errors (if they arise). Just like seat belts and air bags save your life in a car accident.”

Byrne, the William S. Stoney Jr. Professor of Cardiac Surgery and chair of the department, said most people have no idea that X-rays of cardiac surgical procedures were not performed post surgery. He refers to the new operating environment as “sighted” cardiac surgery. It’s an environment that is very dependent upon the work of a team – which includes Byrne and David Zhao, M.D., assistant professor of Medicine and director of the cardiac catheterization lab and interventional cardiology.

“In virtually every reconstructive procedure in medicine and surgery, the medical team takes a “before” and “after” picture,” said Byrne. “When we put in a central line, nasogastric tube, a chest tube or an endotracheal tube, when your knee or hip is operated on, when you have gall bladder surgery, you get a before and after picture. When you have your heart valve operated on you have a before and after picture (intraoperative echocardiography).

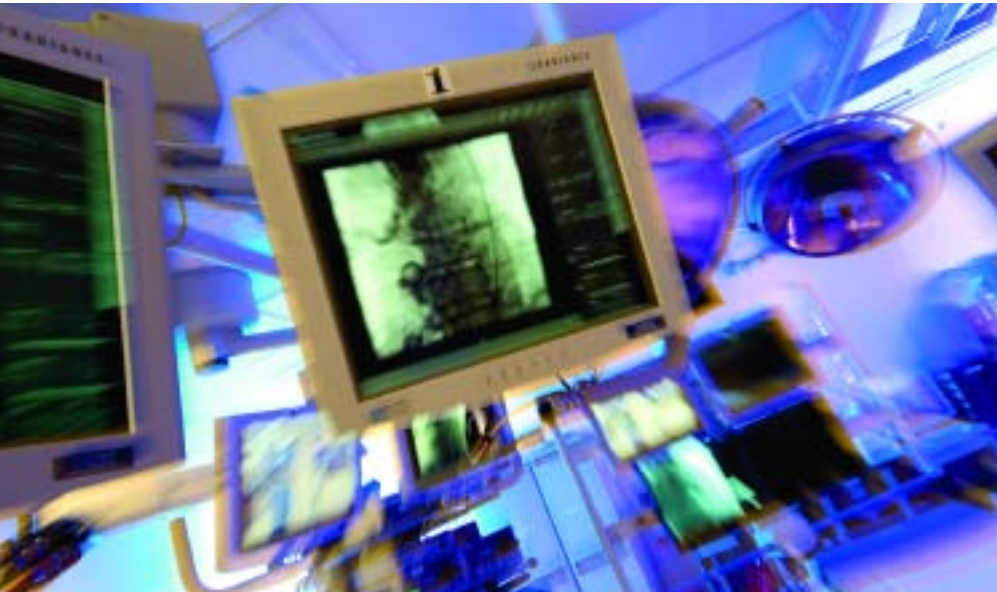
“But for coronary artery surgery there is no “after” picture,” he said. “Placing the left internal mammary artery to the left anterior descending coronary artery is perhaps the most important reconstructive procedure any human will ever have in their entire life, yet we don’t image the quality of the result. We don’t measure it. We’ve never measured it. This has all changed at Vanderbilt.”

The first patient to utilize the new operating suite was Robert Metry, a 66-year-old health care attorney from Franklin, Tenn.

Metry was not hesitant to become a hybrid pioneer. His triple bypass surgery, on April 4, was done in the new operating suite.

“The first thing that interested me was the pure science of having the image done in real time,” he said. “They knew that everything was OK when they closed me up. I was also excited that I was getting the A-team.”

Metry, who has a family history of heart disease, was pleased with the entire experience.



DEAN DIXON

VANDERBILT HAS CREATED A NEW MODEL FOR TREATING PATIENTS WITH THE OPENING OF THE HYBRID OR SUITE, A “ONE-STOP SHOP.”

“If anyone asked me about the Hybrid OR, I would tell them to do it. You’d want to know as much as possible about the outcome. The doctors can use these outcomes as benchmarks. Measuring outcomes is so important. This is the new direction of medicine.”

And what has been the delay in introducing this medical breakthrough?

Byrne points to the geography of the operating room suites and the Cath Labs. In most hospitals these facilities are located in separate areas of the hospital. At Vanderbilt, the OR suites are on the third floor, while the Cath Labs are on the first floor. Orchestrating the transport of patients requiring both open-heart surgery and interventional procedures is cumbersome and often inefficient with lag times of up to seven hours. And the need for an X-ray of the procedure would also require transporting patients from the third to the first floor. Finally, if any surgical intervention is needed after an X-ray is obtained, the patient would be transported back to the OR.

Previously at Vanderbilt and still done elsewhere, physicians use what are labeled as soft measurements to check a patient’s recovery status. These tools include flow probes, EKGs, Echos and ultrasounds which all help determine blood flow. They are not effective when

looking at the anatomy of the heart, which is vital when checking for successful grafting and other cardiac procedures, Byrne said.

In another familiar scenario prior to the Hybrid OR, a patient with aortic stenosis or a blockage of the aortic valve with blockage in the right coronary artery could have the right coronary artery stented in the Cath Lab and then be transported to the OR for a minimally invasive valve surgery. It required procedures in two separate locations within the hospital.

Vanderbilt has created a new model for treating patients with the opening of the Hybrid OR suite, a “one-stop shop,” Byrne said.

“The key barrier-to-entry into this new realm has not been equipment or the space. The real barrier-to-entry is collaboration and teamwork between cardiology and cardiac surgery not just among physicians but also among the OR team and the Cath Lab team. Dan Brinkman, R.N., director of the Cath Lab, has been instrumental in building the team.”

At Vanderbilt the walls have come down. The teams have been combined to provide a new standard of care, Byrne said. Hybrid procedures will become more common as medical centers begin to see an increase in more complex heart disease patients. The need to image results to

measure outcomes will become necessary in order to be more efficient, effective and safe.

“I know this is right,” Byrne said. “I would want it for me or a family member. When you know it’s right for the patients, you never lose. This will offer patients, families and referring physicians not only image-guided surgery, but also the ability to provide minimally invasive cardiac surgery combined with percutaneous coronary interventions.”

Zhao agrees.

“First and foremost it provides better care for the patient,” he said. “Patients receive the best of both worlds through the collaboration of interventional cardiology and cardiac surgery.”

Zhao lauds the new technology stating that the use of angiography has already proven worthwhile. During a recent bypass, the “after” picture was able to show surgeons that the clip, placed on the graft to stop bleeding, was actually too close to the artery, which compromised the graft and could potentially harm the patient’s health.

“The mammary artery has a lot of branches and is the only revascularization conduit that prolongs life,” Zhao said. “In time, that graft would have become occluded and it would not have been discovered for several months or even years if it was not for the Hybrid OR. By doing the post-bypass angiography, you are 100 percent sure the patient has perfect grafts.

“My main point is that this is a new standard of care and we are raising the bar ... in providing patients with the maximum benefit with minimal invasiveness.”

Metrey echoes that point:

“I am delighted with my quality of care and the technology,” he said. “But I feel more blessed about having this opportunity because I probably got the best chance of a full recovery.” **VM**

President's Corner

The CRS has been busy over the last few months prioritizing, planning and implementing some of the ideas that resulted from the planning retreat that was held in January. The purpose of the retreat was to look at ways to enhance what we are currently doing well and to demonstrate more value to our members. We would like to share with you what some of those plans are:

- CRS Web site
- membership e-mail database
- regional dinners in conjunction with the Medical Alumni Affairs office
- expanded Outreach Tours/Educational Opportunities
- annual new member function
- new members will receive a Physician Directory; Current members can access this online
- communication concerning the opportunities for members (see directory for details)

- educate members and non-members that CRS is the umbrella donor society for the entire Medical Center
- ensure the most effective use of our events

Our membership continues to grow and your support plays a vital role in strengthening our leadership in education, research and patient care. At the CRS level, the unrestricted dollars raised provide full tuition medical school scholarships and the restricted dollars are designated by the donor to benefit ANY area within the Medical Center.

We are looking forward to the many new opportunities that the retreat generated and hope that you will find them beneficial as we move forward. Your continuing support benefits us all. Thank you. **CRS**

Fran Hardcastle
President,
Canby Robinson Society



Fran Hardcastle

Missy Eason
Director of Donor Relations,
VUMC



Missy Eason

Experience with Heart Failure Leads to Wellness Gift

In 1996, Jan Chastain of Big Sandy, Tenn., suffered a nearly fatal heart attack. She underwent successful bypass surgery in Jackson, Tenn., recuperated, and got on with her life. Then, in November 2001, her heart began to deteriorate. Her physician in Jackson said there was nothing more he could do and told Jan and her husband, Ken, that Jan may need a heart transplant. He sent them to Vanderbilt.

"Believe me, being told you need a heart transplant is not something you want to hear," Jan said.

After being cared for by a team of specialists with the heart failure program, Jan received some good news. Although she was experiencing congestive heart failure, they felt they could treat her with medication and avoid a transplant. Jan was referred to Mark Wathen, M.D., who implanted an internal defibrillator to regulate her heart rate. Jan comes to Vanderbilt every few months to see Wathen, but all in all, she is doing great.

"You can imagine that I have a great appreciation for their heart failure program," she said.

"All the doctors think she is a walking miracle. They don't see how, with her heart condition, she can do what she does, but she does just about anything she wants," Ken added.

Out of appreciation for the care they received at Vanderbilt, the Chastains have agreed to endow the JKL Wellness Fund through their estate plans. Their gift will provide research support for doctoral and postdoctoral students conducting preventive research in the areas of cardiovascular disease, Alzheimer's disease, Parkinson's disease and prostate cancer. The Chastains, who for years have maintained an organic garden and believe in promoting the natural order of things, feel strongly that their gift go toward preventing disease.

"I grew up on a farm, and during my academic career, I didn't have much time for farming, but I've always been interested in organic gardening," said Ken, who is a Professor Emeritus of Language at the University of Virginia. "When I retired, we came to Tennessee and had more time to devote to

(continued on page 40)

Ideal Physician Award

Each year, the Canby Robinson Society presents the Ideal Physician Award, a prestigious award with a cash prize, to the member of the fourth-year class who is voted by their classmates as having the intangible qualities of common sense, knowledge, thoughtfulness, personal warmth, gentleness and confidence that combine to make the "Ideal Physician," the person fellow classmates would most like to have as their own personal physician.

Lesley French, left, who begins her residency in Otolaryngology at Vanderbilt University Medical Center this fall, poses for a Class Day photograph with Canby Robinson Society president Fran Hardcastle after receiving the "Ideal Physician" award.



TOMMY LAWSON

2005 CRS graduates, left to right, are Cassie Gyuricza, Stephen Settle and Lola Blackwell.



TOMMY LAWSON

Jay Deshpande, M.D., leads a CRS outreach tour of the Human Patient Simulator.



TOMMY LAWSON

CRS scholars coming to a hospital near you

Lola Blackwell, M.D.

VUMC, Neurological Surgery

Cassie Gyuricza, M.D.

Hospital for Special Surgery/Cornell, Orthopaedic Surgery, New York, N.Y.

Stephen Settle, M.D.

VUMC, Medicine-Preliminary; University of Texas M.D. Anderson Cancer Center, Radiation-Oncology, Houston

Dr. and Mrs. Harry Page Establish Cardiology Chair

Renowned Nashville cardiologist Harry L. Page, M.D., and his wife, Shelley, have established the Harry L. Page Chair in Interventional Cardiology. Dr. Page is known among his peers for introducing interventional cardiology, specifically cardiac catheterization, to the Nashville medical community, so it seems particularly fitting that he and Shelley chose to establish a chair in this specialty.

The Pages, members of the Canby Robinson Society, sought an opportunity to give back to the school that gave them so much.

“Shelley and I are both from small rural communities, and the opportunity to graduate from such a prestigious school as Vanderbilt has afforded us many cultural, social and economic advantages that we might otherwise have missed,” Page said.

The Pages both graduated from Vanderbilt University, he in 1956 and she in 1959. They met while Page was attending Vanderbilt University School of Medicine. He was a member of the class of 1959 and was a house officer from 1959 to 1962. Page is a founding member of the Society for Cardiovascular Angiography and Interventions [SCAI]. He began his career in Nashville at Saint Thomas Hospital and happily affiliated his practice with Vanderbilt at the invitation of Harry Jacobson, M.D., vice chancellor for Health Affairs. He considers these milestones to be the highlights of his medical career.

“Founding the cardiac catheterization lab at Saint Thomas, accepting Dr. Jacobson’s invitation to affiliate our professional corporation (Page-Campbell Cardiology Group) with Vanderbilt,

and my nearly 30-year involvement in SCAI have been the focal points of my career,” he said.

When Saint Thomas Hospital decided to develop a cardiac program in 1966, Page was given the responsibility to turn an empty room and untrained personnel into a cardiac cath lab to support the new cardiac surgery program. He sought help from and visited several pioneers in the field including Goffredo Gensini, M.D., in Syracuse, Mason Sones, M.D., at the Cleveland Clinic and Melvin Judkins, M.D., at the University of Oregon.

“We all became good friends and would subsequently become founding board members of the SCAI,” he said.

SCAI is composed of more than 3,000 academicians and private practitioners of diagnostic and interventional cardiology representing more than 40 countries worldwide.

“I would hope to honor many people who helped afford me such a rewarding career in cardiology while

encouraging Vanderbilt to continue to improve its status in the field of interventional cardiology,” Page said. **CRS**

– KATHY WHITNEY

Shelley and Harry L. Page, M.D.



Tim Lautz, a third-year medical student and Canby Robinson Scholar, was one of four members of the third-year Vanderbilt University School of Medicine class inducted into Alpha Omega Alpha in March. AOA is the national medical honor society that elects members based on distinguished achievement.



Kristina Ishihara

Born and raised in sunny California, Kristina Ishihara, M.D., MD '97, decided to return there after graduation. She did her internship and residency at UCLA Medical Center and has worked for The Permanente Medical Group (Kaiser Permanente) in Elk Grove, Calif., as a staff physician in internal medicine for almost five years.

She is currently helping Northern California Kaiser implement a comprehensive, electronic medical record computer program. Her facility in Elk Grove is the pilot site and the very first site to implement the program. The process has had its share of challenges and obstacles, but Ishihara said the negotiating skills she learned at Vanderbilt are helping her address the problems.

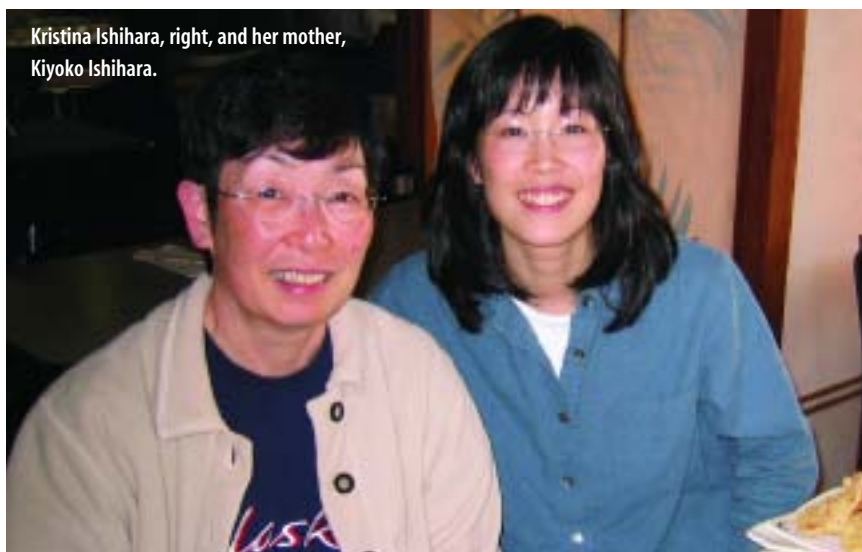
"Now, after our little facility is speaking up, led primarily by me, we are going to get some of these problems fixed," she said. "I have no particular influence. I am just someone who has learned that it's okay to speak up when things aren't right. And I owe that to my experience at Vanderbilt."

Ishihara said she is grateful to the Canby Robinson Society for providing her with a scholarship to attend Vanderbilt, because it was there that she learned many valuable life lessons that are coming in handy today.

"I would not have attended Vandy if I had not received the scholarship," she said. "As much as I appreciate where my education at Vandy has gotten me, I equally appreciate the fond memories I have of my experience there – the wonderful people, the incredibly supportive and nurturing atmosphere. It was a place where you could complain, and the administration would try to address your concerns and make improvements. Also, when you asked for help, you could count on getting it."

CRS

- KATHY WHITNEY



Kristina Ishihara, right, and her mother, Kiyoko Ishihara.

Chastains . . .

it. We try to do it with no fertilizers, chemicals, pesticides or herbicides.

"We felt very grateful to the Vanderbilt doctors and all the people who have been very friendly and helpful. We felt we were blessed to be where we were. We are also very aware of what progress has been made in medicine because our first son died with kidney failure and now they have kidney transplants and can do so much, so research is important to us. It would have helped our son had he been born a little later, and it helped my wife because she happened to be born early enough that all of these advances had been made in medicine before she needed them.

"It seems to me that so much of what is done today in medicine is done with drugs. What we wanted to do is something to promote research in medicine, but I wanted to do it from the point of view of prevention and natural remedies." CRS

- KATHY WHITNEY



Jan and Ken Chastain

For more information about the Canby Robinson Society, contact Missy Eason, Director of Donor Relations, Vanderbilt University Medical Center, D-8223, Medical Center North, Nashville, Tenn. 37232-2106, (615) 343-8676 or 8677, fax (615) 343-0809, e-mail: missy.eason@vanderbilt.edu

ANN H. PRICE, M.D.
Executive Director
for Medical Alumni Affairs



"Worthy of Note" News

Vanderbilt medical alumni consistently request that *Vanderbilt Medicine* dedicate more space to alumni news. Medical alumni definitely want to hear from classmates and those they trained with during house staff or fellowship years. With this issue, you will notice a marked increase in the number of alumni submissions. For the fall issue, our goal is to devote even more pages to

alumni news. Please set aside your modesty and help us attain this goal by sending your professional, family and personal news items. Your photographs (prints or digital files) are also welcomed and will be included in the *Vanderbilt Medicine* alumni news section as space is available.

Vanderbilt Medical Quinq Society Fall Gathering to be in San Francisco, Sept. 9-14

The Vanderbilt Medical Alumni Association invites all Medical Quinq Society members to gather in San Francisco, Sept. 9-14, for the first ever Medical Quinq Society Fall Gathering. The Fall Gathering balances interesting touring with plenty of free time for independent exploration. Highlights of the Fall Gathering include a visit to San Francisco's newly opened Asian Art Museum, Muir Woods, and Sausalito. The day spent exploring Napa Valley with a tour of Dr. Garland Stroup's (MD, '54, HO, '55) Frog's Leap Winery with lunch at the famed Culinary Institute of America should not be missed. There is even time for a round of golf or attending a stage play by San Francisco's renowned American Conservatory Theater. Since our medical reunion schedule is on an every two-year basis on "even years," we hope to establish the Fall Gathering as a biannual tradition on "odd years." Invite your Quinq Society classmates to join you in San Francisco. If you need more information please call (615) 322-0310 or e-mail ann.price@vanderbilt.edu.

Vanderbilt Medical Alumni Association Board Welcomes New Members

In June 2004, the Vanderbilt Medical Alumni Association Board revised its bylaws to include representatives from all of Vanderbilt's departmental/divisional medical specialty societies.

The VMAA welcomes the following new specialty society representatives installed at the June 2005 VMAA Board meeting: Sam S. Chang, M.D., (M.D. '92, HO Gen. Surgery/Urology '92-'98), Vanderbilt Urology Society, Eric M. Chazen, M.D., (BA '52; HO Pediatrics '57-'58), Christie Society, Benjamin P. Folk III, M.D., (BA '75; HO Medicine '81-'84/ FE Cardiology '84-'86), Gottlieb C. Friesinger Society, Robert E. Finelli, M.D. (HO Gen. Surgery/ Neurological Surgery, '74-'81), Vanderbilt Meacham Neurosurgical Society, H. Newton Lovvorn, Jr. M.D., (MD '63/ HO OB/GYN '64-'67), Lonnie S. Burnett Society, Gray C. Stahlman, M.D., (MD

'90; HO Gen. Surgery/Orthopaedics '90-'95), Vanderbilt Orthopaedics Society.

In addition, Lesley French, M.D. (MD '05); outgoing VMS IV President for the Class of 2005 was thanked for her contributions to the Board as Tracey Wilkinson, VMS IV President for the Class of 2006, stepped into the student representative VMAA Board position. For a complete listing of all VMAA Board members, please visit: www.mc.vanderbilt.edu/alum-affairs.

VMAA-Sponsored Events

It has been a busy spring for VMAA-sponsored events. Over 150 alumni and students gathered for the March reception for VMS Is and their Nashville area white coat sponsors. Our on-campus broadcast featuring Dr. Andrew Shinar, assistant professor of Orthopaedics and director of the Division of Joint Replacement performing a minimally invasive hip replacement proved to be an excellent educational experience as well as an opportunity for over 30 alumni and friends to gather in our high-tech Monroe Carell Jr. Children's Hospital at Vanderbilt Board Room. Our VMAA dinner co-hosted with Dr. George Allen, William F. Meacham Professor of Neurological Surgery and Chair, Department of Neurological Surgery, in honor of Vanderbilt's Meacham Society members attending the April meeting of the AANS in New Orleans, assembled Neurological Surgery alumni spanning four decades of Vanderbilt training excellence for a festive gathering at Commander's Palace. In addition, the VMAA-sponsored breakfast and break for the April 2005 Friesinger Society Annual Meeting was well received. Sixty Vanderbilt-trained cardiologists gathered for an educational program capped by an excellent lecture entitled "The Epidemic of Obesity and Type 2 Diabetes: Implications for Society and Cardiology" delivered by Dr. Robert L. Frye, (MD '56), current Director, Center for Patient Oriented Research and the Research Subject Advocate Office of the General Clinical Research Center at the Mayo Clinic. In May, the VMAA honored our 91 2005 Medical School graduates at a luncheon. The class selected Dr. Bonnie Miller, Associate Dean for Undergraduate Medical Education (HO Gen.Surgery,'80-'86) to deliver the medical alumni address. Visit www.mc.vanderbilt.edu/alum-affairs to view photos from our recent VMAA events.

Ann H. Price

worthy of note



Matthew Harris, MD'02, shown here aboard the USS Kearsarge aircraft carrier in December, is the flight surgeon for VMX-22, the Marine Corps' test squadron for evaluating the V-22 Osprey. Assigned since July 2004, he is responsible for the health of the pilots, aircrew and mechanics and is the only physician in the military with regular flight time aboard the V-22.

Photo courtesy of Matthew Harris

Reproductive Endocrinology at Marshall University School of Medicine in Huntington, W.Va.

Roy C. Campbell, M.D., MD'47, has suffered a serious stroke, but remains at home with Robin, his wife of 56 years.

William R. DeLoache, M.D., MD'43, HS'44-'47, lives in Greenville, S.C., with his wife, Bond. They have six grandsons – three in South Carolina and three in Nashville.

Franklin T. Fowler, M.D., MD'43, lives with his wife at a retirement community in Richmond, Va. since his retirement from the Foreign Mission Board of the Southern Baptist Convention. He was instrumental in building and organizing the Batiste Medical Center in Auncion, Paraguay in 1952.

James R. Hamilton, M.D., MD'46, CF '58-'00, FA'96-'00, retired at the end of 2004 after practicing dermatology for 48 years – in private practice, with the Miller Medical Group and at Vanderbilt.

M. Beckett Howorth Jr., M.D., MD'46, has retired from his administrative duties at Baptist Memorial Hospital in Oxford, Miss. Mary, his wife of 60 years, died last October. Their five sons now live in Oxford.

Thomas H. Williams Jr., M.D., MD'43, still continues his "after medicine" career as a minister, teaching bible studies in retirement homes and the church. He's as busy as before retirement, he reports, and is looking forward to the next Class of '43 reunion. His wife, Julie, died in 2004.

30s

Elbert-Sylvester Caldwell Ford, M.D., MD'39, now 90, has retired after 53 years of practice. He enjoys raising roses and playing golf. He practiced psychiatry and psychoanalysis in the Army Air Corps during WW II in Europe, North Africa and Italy from 1942-1945 and in Philadelphia and Seattle until May 1992.

40s

Otis Gene Austin, M.D., MD'43, lives with his wife, Betty, in Fort Myers, Fla., in a golf community. They spend their summers in Virginia, W.Va., N.C. and Ohio. His grandson, John Loomis, just received his M.B.A. from the

Owen Graduate School of Management at Vanderbilt.

Henry B. Brackin Jr., MD'47, CF '54-'00, retired in 1999 from 45 years of psychiatry practice in Nashville. He lives at a retirement center in Nashville and is enjoying watching the accomplishments of his six grandchildren, four of whom have finished college. His oldest granddaughter is a neonatal critical care nurse at the Monroe Carell Jr. Children's Hospital at Vanderbilt.

Dixon N. Burns, M.D., MD'45, HS'49-'51, continues to teach bioethics at the University of Oklahoma School of Medicine in Tulsa. His second son, William N. Burns, MD'78, is chief of

50s

Joseph E. Johnson III, M.D., MD'54, recently gave the invited lecture on "Emerging Infectious Diseases in the 21st Century" at the First National Congress of Internal Medicine in the Ukraine. The event was sponsored by the International Society of Internal

* Indicates CRS member

Medicine. Johnson served as president from 2000-2002.

Neville M. Lefcoe, M.D., MD'50, HS'50, lives in London, Ontario, has eight grandchildren and is trying his best to convince one or more of them to attend Vanderbilt.

Richard L. Marks, M.D., MD'51, lives in Park Ridge, Ill., and reports that he's a goodwill ambassador for Vanderbilt, having successfully encouraged a grandson's friend to attend VUSM. The young man, unnamed, is a member of the Class of 2008.

Clifton K. Meador, M.D., MD'55, HS'59, F'60, CF'63-, has written a new book, "*Symptoms of Unknown Origin; A Medical Odyssey*," published by Vanderbilt University Press. The book traces his clinical experiences with patients who had multiple symptoms but no readily identifiable medical disease. Meador is also the author of "*Med School – a collection of stories about Medical School, 1951-1955*," published in 2003, and several other books. Visit www.cliftonkmeador.com for details.

Robert H. Moore, M.D., MD'51, lives in San Diego where he practiced occupational medicine with the U.S. Navy in San Diego from 1989-2002. In 1998 he received the President's Award from the American College of Occupational and Environmental Medicine.

W. G. Rhea Jr., M.D., MD'58, HS'58-'64, FA'77-'78, retired from the LSU School of Medicine Department of Surgery in December 2004. From 1978-1990 he was director of the surgical residency training program for the Greenville Hospital System in Greenville, S.C. He and his wife, Joan, who have six grandchildren, moved to the Newland, N.C., area after his retirement where he plans to maintain a relationship with the health care industry.

Frank Riddick, M.D., MD'54, is CEO Emeritus of the Ochsner Clinic Foundation where he



Alex S. Moffett, MD'32
Retired general surgeon,
Grinnell, Iowa

Night Nurse
by Alex Moffett, MD'32

worthy of note

Late in the eleven to seven
Long halls gleam.
The light is dim, and faint blurred shadows
Lie still on silent walls.
A cry of fright or pain
Or loneliness,
A buzzer's urgent call,
Or child's insistent cough
Breaks momentarily the night.
Hushed footfalls drop behind the Nurse.
Her uniform, no longer crisp and rustling
But limp and wrinkled from uncounted ministrings
Makes no more sound than whirring of owl wings.

Then Ah, soft hands,
Adjustment of a pillow
A touch, a word:
All is quiet again.

continues a small practice of endocrinology, devoting time to the philanthropy division. He was called out of retirement in late 2003 and spent all of 2004 serving as CEO/Medical Director of South Louisiana Medical Association, a group of 40 physicians that staffs LJ Chabert Medical Center in Houma, La. He was also chief of medicine there.

Harold H. Sandstead, M.D., MD'58, HS'60-'61, HS'64, FA'51-'71, is professor, Division of Human Nutrition in the Department of Preventive Medicine and Community Health at the University of Texas Medical Branch in Galveston.

George E. Scott, M.D., MD'52, retired 10 years ago from the practice of internal medicine and gastroenterology. He and his wife, Alice, have four children and eight grandchildren. Despite a few health problems along the way, Scott travels, plays tennis five days a week and reports he spends most of his time trying to fix his computer.

Gerald E. Stone, M.D., MD'57, HS'57-'58, is retired from private practice but does Locum Tenens

for the University of Rochester's Strong Health. He has been married to Lois Greene Stone since 1956. The oldest of his 13 grandchildren, David Clay, who has wanted to follow in his grandfather's footsteps since the age of 6, will begin pre-med at Vanderbilt this fall and hopes to eventually enroll in VUSM.

60s
Robert W. Ikard, M.D., MD'63, CF'87-'89, is working part-time on the surgery staff at the Nashville VA. He is enjoying the continued practice of medicine and also meeting the "high quality" students and residents at Vanderbilt, he says. He is the author of three books, "Just for Fun, the Story of AAU Women's Basketball," "No More Social Lynchings" and "Near You: Francis Craig, Dean of Southern Maestros."

Fremont P. Wirth, M.D., MD'66, assistant clinical professor of the Department of Surgery at the Medical College of Georgia, has been named president of the American Association of Neurological Surgeons. He has been a member of the AANS since 1980.

70s
Deaver Collins, M.D., MD'78, reports that his daughter, Caldwell Gwendolyn, is engaged to marry Bill McKinney Israel, the son of Lillian Lyle Israel, M.D., MD'78. Deaver and Lillian, who will now be co in-laws, were gross anatomy partners at VUSM.

Dwight McKinney, M.D., MD'73, is living in Indianapolis. He and his wife, Debbie, are keeping up with Vanderbilt through their youngest son, Jared McKinney, M.D., MD'03, a second-year emergency medicine resident at Vanderbilt.

William David Payne, M.D., HS'76-'79, of Madison, Miss., has been re-elected president of the Mississippi Chapter of the American Academy of Pediatrics.

J. Rush Pierce Jr., M.D., HS'77-'80, is currently with the Department of Internal Medicine at Texas Tech University Health Sciences Center in Amarillo where he serves as co-clerkship director. He's also the Health Authority with the local health department and was recently elected a fellow in the American College of Preventive Medicine. He and his wife, Diana, celebrated their 30th



William N. Watson, M.D., MD'73, Mendocino, Calif.

anniversary with a hiking trip to the Swiss Alps last summer. Two of their four children are in medical school.

Tom Wright, M.D., MD'73, is planning retirement from his clinical practice at Douglas Neurology Associates, PC, in Atlanta, where he has been since 1977. He plans to pursue several interests including fly-fishing, novel writing and playing with his two grandchildren. His has written two novels, "The Mampoo Tree" and "The Kimberlite Conspiracy." A third, completing the trilogy, is in the works.

80s

Michael Blood, M.D., MD'81, of Crawfordsville, Ind., has become very involved in medical mission work in Les Cayes, Haiti, and is finding it very rewarding.

Dan Diekema, M.D., MD'89, and his wife, **Janet Andrews, M.D., MD'90,** are both on the faculty at the University of Iowa College of Medicine in Iowa City. He is a clinical professor of Internal Medicine and Pathology and hospital epidemiologist at the Iowa City VAMC. Janet just joined the faculty in Maternal Fetal Medicine and recently received a three-

year research award to study the pathogenesis of CMV infection in the placenta. Their son, Scott, is a third-grader.

George Whitfield Holcomb III, M.D., MD'80, HS'80-'86, FA'88-'2000, is one of the editors of the new edition of "Pediatric Surgery." Holcomb is the Katharine B. Richardson Endowed Professor of Pediatric Surgery at the University of Missouri-Kansas City, and Surgeon-in-Chief and director of the Center for Minimally Invasive Surgery at Children's Mercy Hospital in Kansas City, Mo.

Roy A. Jensen, M.D., MD'84, HS'84-'86, F'87-'88, FA'91-'00, was appointed director of the Kansas Masonic Cancer Research Institute at the University of Kansas Medical Center in Kansas City, Kansas where he is responsible for all research and clinical activities in oncology. Roy and Linda's son, Andrew, will enroll at Vanderbilt in August.

Jeffrey Prinsell, DMD, M.D., MD'86, HS'83-'87, a board-certified oral and maxillofacial surgeon, is in private practice in Marietta, Ga., and has been named founding president of the American Board of Dental Sleep Medicine.

John Van Savage, M.D., MD'89, has lived in Shreveport, La. since 2001 and is the only full-time pediatric urologist in the area. Prior to that he was director of Pediatric Urology at Kosair Children's Hospital in Louisville and assistant professor at the University of Louisville from 1996-2001. He and his wife, Elizabeth, have three children and enjoy windsurfing, swimming and kayaking.

90s

Neal Abdullah, M.D., MD'94, is board certified in Diagnostic Radiology and Neuroradiology. He and his wife, Elizabeth, have two children, Ellen, 3, and Nate, 1.

Rick Ahmad, M.D., MD'93, and **Mike Robichaux, M.D., MD'93,** are

hand surgeons at the Baton Rouge Orthopaedic Clinic. They both completed fellowships in hand surgery at the Indiana Hand Center.

Kristen Albright, M.D., MD'98, HS'90-'00, lives in Charleston, S.C., and is enlisted with the U.S. Navy. She will be completing her payback time this fall and will be moving to the St. Louis area, near family, to look for a job. She has been married for three years to Justin Terrill; they have an 18-month-old son, Jackson, and one on the way.

Elizabeth Cartwright, M.D., MD'99, is a second-year Medical Oncology fellow at the National Cancer Institute at the National Institutes of Health in Bethesda, Md. She is doing preclinical lab work, as well as Phase I clinical trials.

Katherine Clarke Haney, M.D., MD'97, HS'97-'01, and her husband, Mike, welcomed a baby boy in November 2004, Hunter Michael Haney.

Chris Iorio, M.D., MD'98, HS'98-'00, and **Tami Stone Iorio, M.D., MD'98, HS'98-'00,** welcomed their third child, Lukas, in March. He joins siblings Julia, 4, and Colvin, 2.

Jim Johnson, M.D., MD'93, served as the assistant team physician for the USA Swimming Olympic Team at the 2004 Olympic Games in Athens, Greece, and also was head team physician for USA Swimming at the World Championships held in Indianapolis in October 2004. He practices at Southern Sports Medicine in Nashville and is a clinical instructor at Vanderbilt.

Kurt Lark, M.D., MD'94, and **Rebecca Lark, M.D., MD'94,** recently had their second child, Steven, born in January. He joins older brother, Henry, 2.

Wynne Morrison, M.D., MD'94, will be moving to Philadelphia in July where her husband, Brian Dunham will be a pediatric otolaryngology fellow at the Children's Hospital of

Philadelphia and she will be a pediatric critical care attending physician. They have two children, Ellie, 2, and Anna, 1.

Joe Naoum, M.D., MD'98, is on the faculty at the University of Texas Medical Branch in Galveston. In July he will continue training as a Vascular Surgery Fellow at Baylor in Houston. He has also started an online company that sells only premium quality Angus beef, Berkshire pork and natural lamb. He and his wife have a baby girl.

Thomas Quinn, M.D., MD'94, HS'94-'98, will be finishing a critical care medicine fellowship at the University of California, San Francisco in June. He and his wife, Anna, have three children and hope to move back to Tennessee soon.

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Todd A. Michener, M.D., MD'01, lives in Philadelphia and will marry Jessica Clark on Sept. 25.

Carlos L. Arteaga, M.D., professor of Medicine, Ingram Professor of Cancer Research and director of the Breast Cancer SPORE; **Gordon R. Bernard, M.D.**, assistant vice chancellor for Research, Melinda Owen Bass Professor of Medicine and director of the Division of Allergy, Pulmonary and Critical Care Medicine; and **Terence S. Dermody, M.D.**, professor of Pediatric Infectious Diseases and director of the LAMB Center, have been elected into the Association of American Physicians.

Nancy J. Brown, M.D., Robert H. Williams Professor of Medicine and professor of Pharmacology and **Thomas A. Hazinski, M.D.**, professor of Pediatrics, received a 2005 VUSM Faculty Award for Medical Education and Administration Innovation and Educational Programming that has Proven to be Effective. Brown and Hazinski are recognized for developing and directing Vanderbilt's Master of Science in Clinical Investigation (MSCI) program.

Robert D. Beauchamp, M.D., John Clinton Foshee Distinguished Professor and chair of the Section of Surgical Sciences, was recently named a Life Member of the Fellows Leadership Society of the American College of Surgeons.

Jordan D. Berlin, M.D., assistant professor of Medicine, has received the Young Investigator Award from the Eastern Cooperative Oncology Group (ECOG), a network of researchers and clinicians that conduct multi-center cancer clinical trials. ECOG presents the award each year to recognize outstanding contributions to research in the cooperative group, which is one of the largest clinical research organizations. In conjunction with the award, Berlin presented on pancreatic cancer at ECOG's meeting in Tampa, Fla.

Javed Butler, M.D., has been recognized for two studies in the field of heart failure and transplantation by *The Journal of American College of Cardiology*, which highlighted a few research studies that it considers likely to have the highest impact on changing medical care.

Jorge H. Capdevila, Ph.D., professor of Medicine and Biochemistry, received the 2004 Novartis Award for Hypertension Research from the American Heart Association. The award recognizes Capdevila's discovery of a biological pathway involved in the regulation of blood pressure.

Nancy C. Chescheir, M.D., from the University of North Carolina at Chapel Hill, has been named chair of Obstetrics and Gynecology at

Vanderbilt University School of Medicine. She is the first woman to chair a clinical department in the medical school's 129 years.

Kevin Churchwell, M.D., has been named the first chief of staff/associate medical director for the Monroe Carell Jr. Children's Hospital at Vanderbilt. Churchwell will work to build physician relations both inside VCH and between community physicians and the hospital.

Robert Collins, M.D., John L. Shapiro Professor of Pathology, received the Distinguished Pathologist Award at the United States and Canadian Academy of Pathology's annual meeting in March. The award recognizes Collins for distinguished service and major contributions to the discipline of pathology.

Reginald W. Coopwood, M.D., has been named CEO of the Metro Hospital Authority, which includes Nashville General Hospital at Meharry, Bordeaux Long Term Care and Knowles Assisted Living Facility and Adult Day Care. Since 2000, he has served as the hospital's Chief Medical Officer. Coopwood, assistant professor of Surgery at Meharry and an assistant clinical professor of Surgery at VUMC, replaces Roxane Spitzer, Ph.D., who is retiring as chief executive officer of the Hospital Authority.

Pran Datta, Ph.D., assistant professor of Cancer Biology and Surgery, has received the Clinical Innovator Award from the Flight Attendant Medical Research Institute (FAMRI). The award recognizes and supports Datta's research that may impact the development of strategies to treat human lung cancers. FAMRI sponsors scientific medical research into the early detection, treatment, prevention and cure of diseases and medical conditions caused from exposure to second-hand tobacco smoke.

Sean Donahue, M.D., has been named chief of Ophthalmology at the Monroe Carell Jr. Children's Hospital at Vanderbilt. Donahue, associate professor of Ophthalmology and Visual Sciences, Pediatrics and Neurology at VUMC, will be creating the first Division of Ophthalmology for the pediatric population at Children's Hospital. Donahue was instrumental in the creation of the Tennessee Lions Eye Center, which opened in October 1997.

Kathryn Edwards, M.D., professor of Pediatric Infectious Diseases and vice chair of clinical research in the Department of Pediatrics, received the Alexander Heard Distinguished Service Professor Award from Vanderbilt University at the Spring Faculty Assembly.

Arthur C. Fleischer, M.D., professor of Radiology and Radiological Sciences, Obstetrics and Gynecology received the Frank H. Boehm Award for Excellence in Teaching; Contributions to Continuing Medical Education at the Spring 2005 VUSM Faculty Awards.

Mark Frisse, M.D., has been named the Accenture Professor of Biomedical Informatics. The chair acknowledges Frisse's research efforts, as well as those of the Vanderbilt Center for Better Health and the Department of Biomedical Informatics, to solve pressing health care problems through information technology and biomedical informatics.

Steven G. Gabbe, M.D., dean of VUSM, presided over the 52nd annual meeting of the Society for Gynecologic Investigation in Los Angeles in March.

Joseph Gigante, M.D., associate professor of Pediatrics, clinical assistant professor of Nursing and **Walter E. Smalley Jr., M.D.**, associate professor of Medicine, Preventive Medicine and Surgery, received a 2005 VUSM Faculty Award for Teaching Medical Students, Residents and/or Fellows in a Clinical Setting.

David Gregory, Pharm.D., has been named an administrative director at the Monroe Carell Jr. Children's Hospital at Vanderbilt. Gregory will oversee the dietary, pharmacy, rehabilitation, biomedical and laboratory departments at the hospital.

F. Peter Guengerich, Ph.D., professor of Biochemistry and director of the Center for Molecular Toxicology, received the American Society for Biochemistry and Molecular Biology's William C. Rose Award in April, recognizing outstanding contributions to biochemical and molecular biological research and a demonstrated commitment to the training of young scientists.

Heidi Hamm, Ph.D., Earl W. Sutherland Jr. Professor of Pharmacology and chair of the department, was named president-elect of the American Society for Biochemistry and Molecular Biology at the society's annual meeting in San Diego in April. Hamm will serve as president-elect for one year, followed by a two-year term as president.

Richard M. Heller, M.D., professor of Radiology and Radiological Sciences and Pediatrics, has been recognized by the American Board of Radiology with its Distinguished Service Award. The honor is

bestowed to those who have given years of service and dedication to the board.

T. Alp Ikizler, M.D., associate professor of Medicine and director of Outpatient Dialysis, has been elected into The American Society for Clinical Investigation (ASCI).

Harry R. Jacobson, M.D., vice chancellor for Health Affairs at VUMC, has been named president of the Society of Medical Administrators (SOMA). Jacobson's two-year term will run until 2007.

Gordon L. Jensen, M.D., Ph.D., director of Vanderbilt's Center for Human Nutrition and professor of Medicine, has been chosen to lead The American Society for Parenteral and Enteral Nutrition (A.S.P.E.N.), an interdisciplinary nutrition society dedicated to patient-centered clinical practice through advocacy, education and research in specialized nutrition support.

Arnold Malcolm, M.D., has returned to the Vanderbilt-Ingram Cancer Center as associate professor of Radiation Oncology. As a member of Vanderbilt's faculty from 1981-87, Malcolm served as director and residency director of the Vanderbilt Center for Radiation Oncology, medical director for Radiation Technology, and co-director for the Breast Diagnostic Center.

Herbert Y. Meltzer, M.D., Bixler/May/Johnson Professor of Psychiatry, director of the Division of Psychopharmacology and professor of Pharmacology, has been named the co-recipient of the American Psychiatric Association's Award for Research in Psychiatry. He received the award on May 23 at the organization's 2005 meeting in Atlanta. Because of the APA award, Meltzer has been invited to present an honorary lecture in October at the 2005 meeting of the Institute for Psychiatric Services in San Diego.

Harold Moses, M.D., Hortense B. Ingram Professor of Molecular Oncology and former director of the Vanderbilt-Ingram Cancer Center, received the Harvie Branscomb Distinguished Professor Award at Vanderbilt University's Spring Faculty Awards.

Lillian B. Nanney, Ph.D., professor of Plastic Surgery, professor of Cell and Developmental Biology, received a 2005 VUSM Faculty Award for Teaching Medical or Graduate Students in the Small Group Setting.

David Page, M.D., professor of Pathology and Preventive Medicine, presented the 48th Maude Abbott Lecture at the United States

and Canadian Academy of Pathology's annual meeting.

John S. Penn, Ph.D., professor and vice chairman of the Department of Ophthalmology and Visual Sciences, has received a Senior Scientific Investigator Award from the New York-based Research to Prevent Blindness Inc. (RPB). The award, Penn's third from RPB, provides a stipend to support his research efforts. Penn also received the RPB Dolly Green Scholars Award recognizing young scientists of unusual promise in 1992, as well as their Lew R. Wasserman Merit Award aimed at mid-career investigators in 1997.

Ann Richmond, Ph.D., professor of Cancer Biology, has been named assistant dean for Biomedical Research, Education and Training (BRET) at VUMC. Richmond will help determine ways to strengthen the postdoctoral program and enrich the postdoctoral experience at Vanderbilt.

William Russell Ries, M.D., associate professor and director of the Division of Facial Plastic and Reconstructive Surgery in the Department of Otolaryngology at VUMC, was recently elected the national director-at-large of the Board of Directors for the American Academy of Facial Plastic and Reconstructive Surgery (AAFPRS). Ries will serve in this capacity until Fall 2007.

David Robertson, M.D., Elton Yates Professor of Autonomic Disorders, professor of Medicine, Pharmacology and Neurology, received a Spring 2005 VUSM Faculty Award for Mentoring Postdoctoral Fellows in the Research Setting.

Elaine Sanders-Bush, Ph.D., professor of Pharmacology, Psychiatry, and director of the Vanderbilt Brain Institute, was named president-elect of the American Society for Pharmacology and Experimental Therapeutics at the association's annual meeting in San Diego in April. She will serve a one-year term as president-elect, followed by one year as president. She will be the fourth Vanderbilt faculty member to lead the organization. Sanders-Bush also received a Spring 2005 VUSM Faculty Award for Mentoring Graduate and/or Medical Students in the Research Setting.

Richard S. Stein, M.D., professor of Medicine, received a Spring 2005 VUSM Faculty Award for Teaching Medical or Graduate Students in the Lecture Setting.

Sten Vermund, M.D., Ph.D., has been named the first Amos Christie Professor of Global Health and director of VUSM's Institute for Global Health. He will assume the role effective July 1. Vermund comes to Vanderbilt from the University of Alabama at Birmingham, where he served as director of the Sparkman Center for Global Health as well as professor of Epidemiology, Medicine, Pediatrics and Nutrition Sciences, and director of the Division of Geographic Medicine in the Department of Medicine.

Grant R. Wilkinson, Ph.D., D.Sc., was honored in January with the establishment of a Distinguished Lectureship in Clinical Pharmacology in his name.

Alastair Wood, M.D., professor of Pharmacology and Medicine, received the 2005 Rawls-Palmer Progress in Medicine Award from the American Society for Clinical Pharmacology and Therapeutics for his achievements related to drug discovery and research.



DANA JOHNSON

From left, Marie-Claire Orgebin-Crist, Ph.D., J. Kenneth Jacobs, M.D., and John Johnson, M.D., were honored with emeritus titles at the 2005 Commencement. Frank R. Freeman, M.D., Ph.D., not present, was also named emeritus.

Allan D. Bass, M.D., an outstanding administrator, scientist and educator, credited by many as being the architect for Vanderbilt's international reputation in pharmacology, died Jan. 14. He was 94. Dr. Bass was professor and chairman of the Department of Pharmacology at Vanderbilt for two decades. By the early 1990s, the Department of Pharmacology was ranked among the top five departments nationally in research dollars. He is survived by two children and a granddaughter.

Howard A. Black, M.D., MD'36, died in Sacramento, Calif., in December 2004, of complications of Alzheimer's disease. He was 92. He practiced his entire career in Sacramento and retired in 1983. He is survived by his wife, Flora, a son and two grandsons.

Joe Hamilton Cannon, M.D., MD'45, HS'45-'51, died Nov. 5, 2004. He was 82. He was a pediatrician in chief at Mary Imogene Bassett Hospital in Cooperstown, N.Y. from 1967 until 1986. He is survived by his wife, Frances, three children and five grandchildren.

William J. Cheatham, M.D., MD'50, HS'50-'52, FA'57-'77, died Jan. 5 in Nashville. He practiced medicine in Marion, Va., from 1977 until 1990. He is survived by his wife of 56 years, Jean, and two sons.

Richard K. Cole Jr., M.D., MD'48, HS'50-'52-'54, died Feb. 15 in Clearwater, Fla., He was 82. He established a private practice in St. Petersburg and became a founding physician for Horizon Hospital in Clearwater where he served as psychiatrist and chief of staff. He was also an associate professor at the University of South Florida, Tampa. He is survived by his wife of 55 years, Kathryn, four sons and eight grandchildren.

Irwin B. Eskind, M.D., MD'48, HS'51, CF'57-'00, a retired Nashville physician and philanthropist and a strong supporter of Vanderbilt University and VUSM for more than a half century, died of complications of diabetes on

March 28. He was 80. Through his generosity, the Annette and Irwin B. Eskind Biomedical Library, which houses VUMC's information services and resources, opened in 1994, and the Vanderbilt-Eskind Diabetes Clinic, an integrated diabetes care service that will allow patients with diabetes to have all their care in one geographic location, will open this summer. He is survived by his wife, Annette, and two sons.

Donald M. Gass, M.D., MD'57, FA'95-'00, professor of Ophthalmology and Visual Sciences, Emeritus, and one of the world's most respected experts on diseases of the retina, macula and uvea, died on Feb. 26. He was 76. In 1999, he was named one of the 10 most influential ophthalmologists of the 20th century by the American Society of Cataract and Refractive Surgery. The designation came from a poll of nearly 33,000 ophthalmologists around the world. He is survived by his wife of 54 years, Margo Ann, and four children.

H. David Hall, D.M.D., M.D., FA'68-'00, professor of Oral and Maxillofacial Surgery, Emeritus, died Feb. 24 in an accident at his vacation home in Seawanee. He was 73. He was chair of the department from 1968 until 1996 and established one of the most respected training programs in the country. He is survived by his wife, Katherine "Kay," three sons and three grandchildren.

Robert M. Hall, M.D., MD'49, of Benicia, Calif., died Dec. 22, 2004. He is survived by his wife, Deanna.

Henry S. Harris, M.D., MD'40, died Feb. 11. At the age of 27 he was assigned to a field hospital on Guadalcanal, directing a 200-bed trauma, surgery and burn ward. During First Lady Eleanor Roosevelt's tour of army hospitals, Harris escorted her through his ward. In 1950, he began a urology and general surgery practice in Bowling Green, Ky., and continued for 35 years. He is survived by his longtime companion,

Emma Joiner, three children and two grandchildren.

Aubrey B. Harwell, M.D., MD'40, CF'53-'88, died March 7. He was on the staffs of Saint Thomas, Baptist, General and Vanderbilt Hospitals for more than 50 years. He is survived by two sons and five grandchildren.

Peter A. Kolodziej, Ph.D., assistant professor of Cell and Developmental Biology and Kennedy Center Investigator, died on March 3. He was 42. His research focused on the genetic factors involved in the development of neurons and the trachea. He is survived by his wife, Caroline Mullaney and two sons.

Richard C. Nailling, M.D., MD'40, died March 1 in Asheville, N.C. He was 90. His career as a physician and surgeon in Buncombe County spanned 58 years. He is survived by his wife, Marie, nine children and 11 grandchildren.

Richard Franklin Riley, M.D., MD'48, of Meridian, Miss., died Jan. 10. He practiced medicine in Meridian beginning in 1956 until his retirement, and was chairman of the Riley Foundation, a grant-making charitable foundation serving Meridian and Lauderdale County. He is survived by his wife, Mary Ann, two children and four grandchildren.

B.V. Rama Sastry, Ph.D., professor of Pharmacology, Emeritus, died Wednesday, Feb. 23. He was 77. He is survived by his wife, Annette, and two children.

William Edmonds Weems, M.D., MD'43, died Dec. 29, 2004, in Madison, Miss. He was 85. He practiced medicine in Laurel, Miss. from 1949 until his retirement in 1990. He is survived by his wife, Evelyn, four children, eight grandchildren and two great-grandsons.

H.L. "Hody" Wineland, M.D., MD'52, HS'52-'53, died Jan. 15 in Little Rock, Ark. He was 85. He practiced internal medicine in

Pine Bluff, Ark., from 1956 until his retirement in 1987. He is survived by his wife of 59 years, Selma, seven children, 19 grandchildren and two great-grandchildren.

Frank A. Wood, M.D., MD'35, died Dec. 17, 2004, in Jackson, Miss. He was 93. After one year of practice in Louisiana, Wood entered the U.S. Army from 1939-1945 working as a general surgeon in France and England during the war. He practiced general surgery, obstetrics and gynecology and family medicine in Jackson from 1945 until 1988. He is survived by his wife of 54 years, Jane, three children and four grandchildren.

Walter H. "Bud" Yeider, M.D., MD'44, died Jan. 6 in Billings, Mont. He was 88. He practiced in California, Florida, New Mexico, and Colorado. In 1976 he moved to St. Helena, Calif., where he was staff radiologist at the California Veterans Home in Yountville until his retirement in 1983. He is survived by his wife, Margaret, nine children, 13 grandchildren and six great-grandchildren.

Joesph Zuckerman, M.D., MD'50, HS'50, died Nov. 9, 2004. He was 77. He had a pediatric practice in Chattanooga since 1950. He is survived by his wife, Sylvia, two children and three grandchildren.

Commencement 2005

Photography by Dana Johnson

Pictured here:

1. Jacob Hathaway shared the receiving of his diploma from Dean Steven Gabbe, M.D., with his daughter Solana.
2. Dean Steven Gabbe, M.D., poses with the School of Medicine Class of 2005 after they received their diplomas. This was the first class Gabbe saw through all four years of medical school.
3. Jennifer Cannon celebrates with her father, left, Richard Cannon III, MD'76, and her grandfather, Richard Cannon II, MD'43.
4. Lola Blackwell takes photos during the commencement ceremony.
5. Julie Alonso-Katzowitz, the VUSM Class of 2005 secretary/treasurer, smiles during commencement.
6. Left to right, Lesley French, VUSM Class of 2005 president, poses with classmates Jill Guelich and Purnima Patel.
7. VUSM Founder's Medalist Travis Henry poses with Dean Steven Gabbe, M.D.



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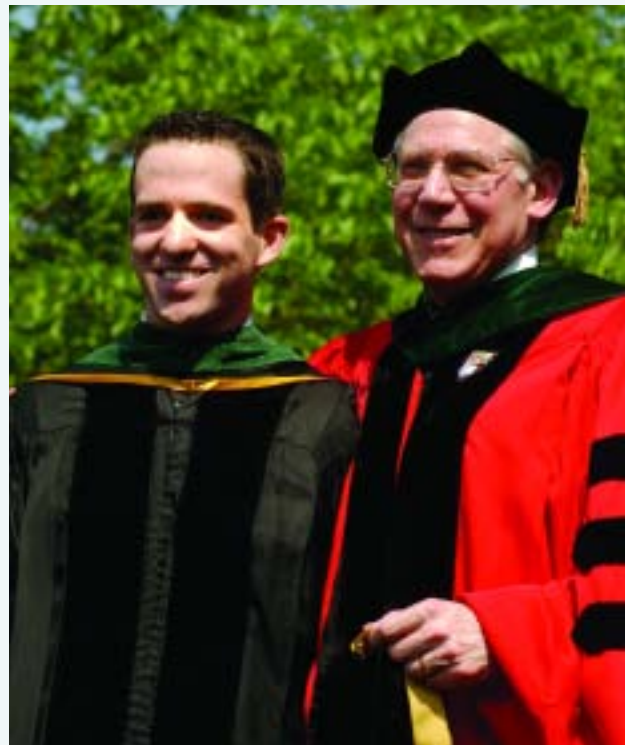
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