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staph 34

Vanderbilt+Medicine

FALL 2006



MONSTER BUGS

When bacteria and
hospitals collide





MARY DONALDSON

the rite of white

The traditional donning of the signature white coat marked the official entrance of the 105-member Class of 2010 into Vanderbilt University School of Medicine in August. Held in the Judy Jean and John E. Chapman Quadrangle, the ceremony for the 130th medical school class was attended by family members, friends and future colleagues.

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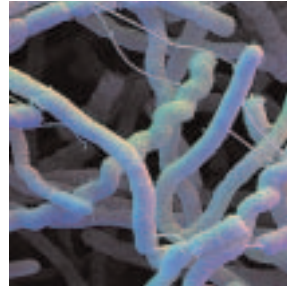
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:: on the cover

Hospital-acquired infections are the fourth largest cause of death in America, killing as many people as AIDS, breast cancer and auto accidents combined.



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

The battle we wage with infectious disease



DEAN DIXON

is a struggle between two approaches to evolution – Darwinian evolution versus intellectual evolution. Bacteria and viruses, for their part, evolve through random variation and natural selection. A little mutation here, a little mutation there and something clicks and makes them better able to adapt to their environment. And we keep trying to make their environment more and more difficult to live in. We douse them with antiseptics and poison them with antibiotics. Faced with the intolerably toxic environment we create for them, these bugs struggle to survive. A small, random mutation in their proto-genetic makeup occurs and they are able to survive in the face of an onslaught of vancomycin or some other “poison” we’ve devised. Their brethren die off, but this new strain survives; it multiplies and its progeny exhibit a strange new characteristic – drug resistance.

Pitted against the Darwinian evolution so elegantly displayed by these bacteria, is what Sydney Brenner, the Nobel Laureate, described as cultural evolution, during his recent visit to Nashville. Humans began to evolve through two separate mechanisms about 100,000 or so years ago when our intelligence and creativity began to allow us to mold and shape our world. Ideas

began to substitute for random genetic variation, allowing us to adapt to our world in an entirely new way. Instead of growing hair to cope with an Ice Age, we have learned the socially adaptive behaviors of the hunt. The fur that results as a byproduct of the hunt allowed us to stay warm without developing the actual biologic skills needed to grow a protective undercoat.

But we still continued to evolve in a Darwinian fashion as well. Just as bacteria and viruses relentlessly adapt, our immune systems evolve, too. The bugs in our body change and gain an advantage over our immune systems and for a while that new bug wreaks havoc. But then our own inventive immune system gains the advantage, wired as it is to ferreting out new pathogens and drafting molecular solutions on the fly.

A fascinating battle unfolds in our nation’s hospitals every day. Bacteria continue to evolve to avoid the toxicity of modern medicine. We keep working to tweak and change our tools to confound their genetic changes. What makes this particular battleground even more important is that we are fighting these new bugs with one hand literally tied behind our backs. For many people in the hospital, their own immune system is so compromised they can no longer join the battle. This is where it gets interesting and the stakes become much higher.

This edition of *Vanderbilt Medicine* explores the problem and the people who are working every day to solve it. **VM**

Study stokes passive smoking's risks

The dangers of breathing another person's smoke are well known — but not universally accepted.

In 2003, researchers reported finding no "causal relation" between environmental tobacco smoke and tobacco-related mortality among 118,000 California residents who had enrolled in a cancer prevention study four decades earlier.

In the August issue of the *British Medical Journal*, however, researchers at Vanderbilt University Medical Center report that passive smoking significantly increased the risk of death among more than 72,000 participants in the Shanghai Women's Health Study who had never smoked themselves.

The mortality analysis showed that women whose husbands smoked had a significantly increased risk of dying from cardiovascular disease and stroke, while women exposed to smoke in the workplace had a significantly increased risk of dying from cancer, particularly lung cancer.

This paper confirmed findings reported by the Vanderbilt group last year from an analysis of more than 60,000 non-smokers who participated in the Shanghai Women's Health Study. In that study, women whose husbands smoked 20 cigarettes or more a day had a 62 percent greater chance of suffering a stroke than did those whose husbands had never smoked.

The Shanghai Women's Health Study was launched in 1996 to explore the role of diet, exercise and other environmental factors in the development of cancer and other chronic diseases.

"This population is very unique," said the lead author, Wanqing Wen, M.D., research assistant professor of Medicine in the Vanderbilt Center for Health Services Research.

While 60 percent to 70 percent of Chinese men smoke, the rate among women in the Shanghai cohort is less than 3 percent, Wen said. Smoking also is allowed in most workplaces in China. "It's ubiquitous," he said. **VM**

—BILL SNYDER

News and happenings at Vanderbilt Medical Center

Newly approved drug may help combat eye disorder

Vanderbilt University Medical Center recently began offering a new treatment for wet age-related macular degeneration (AMD) that may improve, and in some cases restore, patients' vision.

Lucentis, also known by the generic name ranibizumab, was approved by the Food and Drug Administration in June. The drug is administered by injection directly into the eyeball of patients suffering from wet AMD, a chronic condition caused by abnormal growth of blood vessels behind the retina. The disorder leads to leaking and/or bleeding within the eye, causing central vision loss and often blindness.

Nearly 6 million Americans 55 and older suffer from AMD, with 1.5 million suffering from some vision loss. It is estimated that 100,000 people develop wet AMD each year.

This is the first drug to show promise of significantly improving visual acuity for these patients, said Paul Sternberg, M.D., George W. Hale Professor and Chair of Ophthalmology and Visual Sciences and director of the Vanderbilt Eye Institute. While other treatments slowed the progression of the disease, Lucentis helped improve vision by inhibiting the growth of blood vessels.

"This represents a tremendous step forward for patients with wet AMD," said Sternberg.

"In the past we have told them that there is nothing we can do. Now, we are hopeful and excited that we can tell them there are drugs that might be able to help slow down the deterioration." **VM**

—JESSICA PASLEY



Paul Sternberg with patient Boggs Huff.



Supplement may thwart pulmonary hypertension in children

Researchers at the Monroe Carell Jr. Children's Hospital at Vanderbilt are finding that a simple dietary supplement may have the ability to save the lives of pediatric heart patients.

The supplement is an amino acid called citrulline, from the Latin word for watermelon, the fruit that contains large amounts of it.

Marshall Summar, M.D., pairing his biophysics and genetic research with clinical investigation led by Rick Barr, M.D., and his team in the Pediatric Critical Care Unit, has found that dangerously high blood pressures in the lungs, or pulmonary hypertension, might be avoided by administering citrulline.

Barr has a \$2.3 million National Institutes of Health

grant to pursue the research in children undergoing cardiac surgery for congenital heart defects.

"One of the advantages and, I think, one of the reasons why the NIH and FDA have been so supportive of this research is that this is a naturally occurring amino acid, one our bodies make under normal circumstances, and if you can help the body do what it does best — especially under stress — intuitively, that's a simple way to solve a problem," Barr said.

Summar and Barr said there is a small population of children citrulline might work very well for, but because it appears — so far — to be safe and effective, it could be given to all patients, avoiding the expensive genetic tests necessary to identify the children at highest risk for developing pulmonary hypertension.

"We have coined a name for this. We call it environmentally determined genetic expression or EDGE." Summar said. "These are variations in humans that would never turn up or cause any problems, except when the body is under incredible stress.

"What we learned in our research early on is that there is a spectrum of genetic variation related to the development of pulmonary hypertension," Summar said. "Children with certain genotypes are at very low risk to develop pulmonary hypertension, while other genotypes lead to much higher risk."

Something about the extraordinary stress of bypass can trigger dangerously high

blood pressure in the lungs.

The theory is that a genetic predisposition keeps some children from maintaining the body's natural cycle of vessel relaxation, which is aided by the chemical nitric oxide.

Reversing this 'clampdown' of blood vessels is difficult. Citrulline is a key precursor to making nitric oxide, and is one of two amino acids previously found to be associated with the onset of pulmonary hypertension. It was targeted for study because it's safer and easier for the body to process.

"Some children cannot maintain high enough citrulline levels, so their nitric oxide levels drop dramatically during open heart surgery," Summar said.

The question was: If lower levels of citrulline are associated with an increased risk of pulmonary hypertension, can keeping blood levels of citrulline artificially high in children undergoing bypass ward off pulmonary hypertension?

Barr pulled together a team of cardiologists, surgeons, nurses and geneticists to test the theory.

Over the course of the last three years, the team has been finding increasingly exciting results.

"We began with a previously proven safe oral dose of citrulline," Barr said. "Dr. Heidi Smith did a small study with 40 patients, and the lab work kept building on our theory. Her work showed that there is a threshold of citrulline in the blood above which children don't get pulmonary hypertension." VM

—CAROLE BARTOO

Lewis Flick, a Children's Hospital patient, has participated in a study of citrulline.



DANA JOHNSON



Juice may help reduce Alzheimer's risk

Juice every other day could keep Alzheimer's disease at bay, new research suggests.

In a large epidemiological study, researchers found that people who drank three or more servings of fruit and vegetable juices per week had a 76 percent lower risk of developing Alzheimer's disease than those who drank juice less than once per week.

The study by Vanderbilt's Qi Dai, M.D., Ph.D., assistant professor of Medicine, and colleagues appeared in the September issue of *The American Journal of Medicine*.

The researchers followed a subset of subjects from a large cross-cultural study of dementia, called the Ni-Hon-Sea Project, which investigated Alzheimer's disease and vascular dementia in older Japanese populations living in Japan, Hawaii and Seattle, Wash.

For the current study, called the Kame Project, the researchers identified 1,836 dementia-free subjects in the Seattle population and collected information on their dietary consumption of fruit and vegetable juices. They then assessed cognitive function every two years for up to 10 years.

After controlling for possible confounding factors like smoking, education, physical activity and fat intake, the researchers found that those who reported drinking juices three or more times per week were 76 percent less likely to develop signs of Alzheimer's disease than those who drank less than one serving per week.

The benefit appeared particularly enhanced in subjects that carry the apolipoprotein E epsilon-4 allele, a genetic marker linked to late-onset Alzheimer's disease — the most common form of the disease, which typically occurs after the age of 65.

The researchers chose to study this group because of the low incidence rate of Alzheimer's disease in the Japanese population. However, the incidence of Alzheimer's in Japanese people living in the United States is higher, approaching the incidence rates in Americans. This pointed to environmental factors like diet and lifestyle as important contributors to disease risk.

Originally, researchers suspected that high intakes of antioxidant vitamins (vitamins C, E and β -carotene) might provide some protection against Alzheimer's disease, but recent clinical studies have not supported this hypothesis.

"We thought that the underlying component may not be vitamins, that there was maybe something else," Dai said.

Dai began to suspect that another class of antioxidant chemicals, known as polyphenols, could play a role. Polyphenols are non-vitamin antioxidants common in the diet and particularly abundant in teas, juices and wines. Most polyphenols exist primarily in the skins and peels of fruits and vegetables.

Recent studies have shown that polyphenols (like resveratrol in wine) extend maximum lifespan by 59 percent and delay age-dependent decay of cognitive performance in animal models. **VM**

—MELISSA MARINO



Third bed tower planned for VUH

Vanderbilt University Medical Center is moving forward with long-standing plans to add a third bed tower to the main hospital.

The \$234 million, 11-story tower will be built atop Vanderbilt University Hospital's Emergency Department, and will add a net of 141 additional acute-care beds as well as several new operating suites. VUH currently has 501 adult beds and is the largest hospital in Middle Tennessee. Construction could begin this fall and is expected to be done in phases, with completion targeted for 2012.

- In other construction updates:
- The \$110 million Medical Research Building IV is expected to be completed this winter and features a 364,000-square-foot addition atop Light Hall and Langford Auditorium.
 - The \$26 million Institute of Imaging Science, expected to be completed this fall, is a 41,000-square-foot facility located between the A and B wings of Medical Center North. It will house a 7 tesla magnet.
 - The first major overhaul in 30 years of the interior of the Vanderbilt University School of Nursing Godchaux Hall was recently completed. It features completely renovated office, research and clinical space.
 - A new, six-level, \$25.5 million parking garage, being built in the location of the former Medical Center South, is expected to be completed in fall 2007. **VM**

—DOUG CAMPBELL

Sarcoidosis studies aim to curb inflammatory disease's march

A Vanderbilt physician is spearheading two studies of sarcoidosis, an inflammatory disease that can attack any organ of the body.

The disorder is characterized by granulomas — small collections of inflamed cells — which can be either inside or on an exterior surface of the body, appearing as plaque on the face or legs. Most often — about 90 percent of the time — it is found in the lungs, and in those cases, 20 percent to 30 percent of patients are left with permanent lung damage.

Symptoms range from cough, shortness of breath and mild chest pain in patients with pulmonary sarcoidosis to a scaly rash, fever, pain and swelling in those who have the disorder on the outside of the body. Patients can also suffer from fatigue, weight loss and fever.

Sarcoidosis prefers people 20-50, affects both sexes, and is found four times more often in African-Americans than Caucasians.

"Sarcoidosis is considered a rare disease — affecting 30 to 50 people per 100,000, but it's one of the more common rare diseases," said Wonder Drake, M.D., assistant professor of Medicine and a 1994 graduate of the Vanderbilt University School of Medicine. No cause is known, although it is believed to be a disorder of the immune system, and it is also frequently misdiagnosed since there is no test to definitively make the diagnosis. On average, it takes six to nine months from the time symptoms present to get a diagnosis, Drake said.

One of the Vanderbilt studies involves assessing for the presence of microbial nucleic acids in tissue samples from patients with sarcoidosis, investigating for the presence of mycobacteria, similar to that in tuberculosis. The second study is more translational, determining the way the immune systems of patients respond. **VM**

—NANCY HUMPHREY



PHOTO COURTESY OF LARRY ZWEIBEL, PH.D./COLORIZATION BY DOMINIC DOYLE

VUMC testing new vaccine to combat West Nile virus

Vanderbilt University Medical Center researchers, in collaboration with investigators at Johns Hopkins University,

are beginning a Phase I trial to test a new vaccine against the West Nile virus.

The mosquito-borne virus, which can cause serious illness, is making its yearly appearance in Middle Tennessee. While no human cases of West Nile have been reported in the state so far this season, mosquitoes collected from around Nashville have tested positive for the virus.

"When West Nile virus first appeared in the United States five or six years ago, it spread remarkably quickly across the country," said Peter Wright, M.D., professor of Pediatrics, Microbiology and Immunology, and Pathology, who is heading up Vanderbilt's efforts in the trial. "There's no part of the country that has not experienced human and bird cases of West Nile."

Although around 80 percent of people infected by West Nile virus show no symptoms, up to 20 percent can experience moderate or severe symptoms ranging from fever, headaches and neck stiffness to neurological problems, paralysis and coma. About one in 150 people infected develop severe illness. People over 50 are at the highest risk, but even healthy people can experience debilitating symptoms lasting several weeks.

There are currently no specific treatments or vaccines to combat West Nile infection, so those infected are consigned to letting the illness run its natural course.

While it is not clear who would most benefit from a West Nile vaccine, Wright suggests that it could be beneficial to certain high-risk populations, such as the elderly, people who work outside and have frequent exposure to mosquitoes, or those in specific geographic regions where West Nile cases are detected.

Finding an effective vaccine against West Nile could also open doors to developing vaccines for other insect-borne illnesses like Dengue fever, which are a priority for vaccine development because of their considerable global impact.

"We would love to get a vaccine developed for viruses in this class, called arthropod-borne, or as they are commonly called, arboviruses," Wright said. "If we could get one for West Nile, it could be a model for other vaccines."

The vaccine under investigation is built on a backbone of the Dengue virus with bits of the West Nile virus inserted. This method, called a chimeric vaccine, is a relatively new way to engineer a vaccine, Wright said.

"It's conceptually a very interesting vaccine," he said. "It's live but weakened, which has recently been postulated to be the ideal form of immunization...in terms of its broad stimulation of the immune response."

The researchers will test the safety of this vaccine as well as its ability to induce an immune response in healthy volunteers age 18 to 50. The study will also help identify an optimal dosage of the vaccine. **VM**

—MELISSA MARINO



A grapefruit a day keeps the pounds away?

BY JOHN HOWSER

It might remind some of the diet fads of the 70s – eating grapefruit with every meal to lose weight, and oftentimes only grapefruit several days in a row.

But the fruit might just have something to do with weight loss, and Vanderbilt University Medical Center investigators have launched a two-year study to see how consumption of grapefruit and grapefruit juice affects appetite, dietary intake, weight loss and body composition.

The use of grapefruit to lose weight was described by some nutrition professionals as a mysterious urban dieting legend – that grapefruit contained enzymes that burned fat away or sped up metabolism. Despite the notion by many people that eating grapefruit leads to significant weight loss, to date there exists only one or two modest scientific studies supporting the theory.

“The myth of the grapefruit diet has been around for

decades,” said Heidi Silver, Ph.D., research assistant professor at Vanderbilt’s Center for Human Nutrition and the study’s principal investigator. “If you search the Internet, you will find diet-related Web sites that offer menu plans focused on eating grapefruit for weight loss.

“But in all this time there has never really been any solid science to support this assumption, other than one study conducted by the Scripps Clinic in California which was completed in 2004. Notably, the Scripps study did show greater weight loss in the groups of participants who ate grapefruit or drank grapefruit juice for 12 weeks.”

Silver said the grapefruit diet became popular because the fruit is tasty, low in calories (between 66 and 84 calories per serving), inexpensive and grows in many varieties. It also is low in concentrated sugars but high in fiber, vitamins and minerals, making it a nutrient dense food.

“The concept of nutrient density is very important in nutrition research now. It indicates how much of a nutritional impact a particular food item has by volume or per gram weight of the food,” Silver said. “Other studies have found that people consistently eat the same volume of food day after day. It may be true that eating grapefruit or drinking grapefruit juice offers an early sensation of satiation, that feeling of fullness early into eating a meal that curbs the amount of food intake at meals.”

Silver’s study consists of two separate phases. In phase I, the focus is on weight loss intervention, to determine

whether eating grapefruit or drinking grapefruit juice can result in greater weight loss compared to placebo.

Participants will meet with registered dietitians weekly for individualized weight loss plans. Both dietary intake and physical activity will be measured carefully.

“In the animal studies that have been done, investigators observed that the animals had increased activity in their cages after they ate or smelled grapefruit, which increased their daily energy expenditure,” Silver said.

Phase II of the study will examine whether grapefruit and grapefruit juice actually play a role in curbing appetite through satiation or satiety. About 90 participants will be recruited in phase I. About half of this original cohort is expected to move on to the study’s second phase.

Silver explained, “The individuals who progress along to phase II will have their food and fluid intake weighed before and after meals and snacks to see if the consumption of grapefruit really can curb appetite.”

Funded by the Florida Department of Citrus, the study will use a total of 4,158 white marsh grapefruits and 893 bottles of grapefruit juice that are being shipped each month from Florida.

“For the purpose of this study, it is important that the grapefruit is all from the same growers’ lot. This is for size and weight consistency, and also to make sure that if there turns out to be a metabolic effect, that it will be from the same maturity of fruit,” Silver said. **VM**

When your patient is the world

AS A VANDERBILT MEDICAL student in the late 1970s, Robert Tauxe, M.D., learned medical detective work from the legendary Thomas E. Brittingham, M.D., a beloved faculty member who taught his students to follow their instincts and really get to know their patients.

On Saturdays, students would present difficult patients to Brittingham, who would have already interviewed the same patient or a member of the patient's family, asking the right question in the right way to come up with a "remarkable bit of diagnostic detail" that nobody else had picked up, Tauxe said.

"He treated really complicated patients as sort of a mix of human issues and detective stories – something a whole generation of Vanderbilt students and residents learned from him."

Brittingham's quest for knowledge particularly rubbed off on Tauxe, who was permitted to take a year's leave of absence – something unheard of at that time – to get a Master's of Public Health at Yale. Then, at the recommendation of his medical school adviser, William Schaffner, M.D., he served a Centers for Disease Control and Prevention epidemiology elective during his fourth year, assigned to the viral diseases division.

"I wanted to know how to prevent disease as much as how to diagnose and treat it," he said.

A native of Oak Ridge, Tenn., raised in Rochester, Minn., Tauxe received his undergraduate degree from Yale, then his Vanderbilt medical degree in 1980. He spent his residency years at the University of Washington in Seattle, then returned to the CDC in 1983 where he is now deputy director of the Foodborne, Bacterial and Mycotic Diseases Division, overseeing five branches – enteric diseases epidemiology, laboratory preparedness, laboratory response branches, bacteria zoonosis, and mycotic diseases.

Tauxe's first assignment at the CDC was a two-year training program in field epidemiology with the Epidemic Intelligence Service (EIS), a program that puts clinicians and other doctoral-level scientists into the field to learn epidemiology. The two-year assignment stretched into three when he stayed to complete a preventive medicine residency, a job that turned into an invitation to become a staff epidemiologist at the CDC.

This fall, Tauxe has been "up to my earlobes in spinach," leading part of the investigation of an *E. coli* outbreak from fresh spinach. He and the bacteria are no strangers.

WRITTEN BY **NANCY HUMPHREY**
PHOTOGRAPHY BY **STAN KAADY**



ISTOCK PHOTO



Shortly before Tauxe joined the CDC, his branch identified a strain of *E. coli* – *E. coli* O157 – that by 1993 would become a household word.

This strain caused an outbreak of illness in customers who ate hamburgers at Jack-in-the-Box fast-food restaurants in four Western states. More than 700 became ill, some seriously, and four died. Most of the cases were linked to undercooked hamburgers from multiple outlets of the fast-food chain, and from 1994 to 1999, reported infections from *E. coli* O157 increased to a peak of more than 4,000 cases reported a year. Although the incidence has declined sharply since 2002, there are still dozens of outbreaks each year; this year's spinach scare, one of the most notable.

Tauxe calls the 1993 outbreak “one of the formative events in food safety,” rocking the core of the food safety system and shaking consumer confidence. It became quickly apparent that changes were needed throughout the system. If the American public couldn't have confidence in going out for a hamburger – one of the most All-American activities there is – what could they have confidence in?

“It's been a major focus – grappling with it; determining how much of it is out there; how it can best be diagnosed; where it's coming from; and what can be done to reduce the number of infections a year,” Tauxe said.

Tauxe credits much of the success in battling *E. coli* O157 to the FoodNet (Foodborne Diseases Active Surveillance



EMIN OZKAN/FOTOLIA

Network) – the principal foodborne disease component of the CDC's Emerging Infections Program (EIP). FoodNet is a collaborative project of the CDC, 10 EIP sites (one of which is in Tennessee), the U.S. Department of Agriculture and the Food and Drug Administration. The group tracks diseases locally, and spearheads research projects about those diseases. Largely because of the efforts of FoodNet, the meat supply is becoming safer, he said.

Another effort Tauxe was involved with early on at the CDC, was an outbreak of *Salmonella* that got into the nation's egg-laying chicken flock. By 1990 there were an astounding number of outbreaks, and the CDC suggested that the *Salmonella* might be on the inside of the egg, because the eggs in question had been disinfected on the outside – standard procedure for Grade A eggs.

In one large early outbreak, the CDC traced the eggs to a farm in the Northeast. “It turns out, just like *E. coli* has its home in a cow, this particular type of *Salmonella* has a home in the ovaries of chickens. The chickens would be perfectly happy and laying perfectly normal eggs, but inside the eggs was *Salmonella*. It was already there. And nobody knew that could happen,” Tauxe said.

Then it had to be determined how to remove *Salmonella* from chicken flocks – work outside the realm of the CDC. The problem accelerated through the 1980s into 1990, then slowly receded as practices like controlling rodent infestation on

Part of Tauxe's work for the CDC has centered on making food, such as spinach and eggs, safer for the public.

farms, refrigerating eggs, sending eggs from infected flocks to pasteurization, and increasing the use of pasteurized eggs in hospitals and nursing homes became commonplace. The incidence has decreased 50 percent over the last decade, Tauxe said.

A third major focus was the explosion of cholera in 1991 in Latin America, 30 years after the beginning of a cholera pandemic in Indonesia, Asia and Africa.

When cholera reached Peru, Tauxe and others at the CDC dropped most of what they were doing, and for about two years grappled with the cholera epidemic as it marched across Latin America.

“We learned Spanish for starters, collected every Spanish-speaking and Portugese-speaking EIS officer we could find, formed them into teams and rushed them off,” Tauxe said.

At the same time, the disease was moving rapidly up through South and Central America, and physicians were even beginning to see cases in the United States – in people returning from Latin America.

“We had to educate the average physician in this country, ‘here's what cholera looks like. You've never seen a

“I think in public health, we’re practicing a kind of medicine that draws on everything that we learned in our clinical training, but the patient is often a town, a city, a state, a nation, or at the highest level, the population of a world.”

case, but you might tomorrow because it’s returning in travelers.’ We never thought it was going to spread in this country because cholera disappeared a long time ago –the last epidemic was in 1873 – and ever since then our sewage and water treatment plants have been sufficient to keep it from spreading,” he said.

At the same time, EIS officers in Latin America were not surprised to find that the disease was spread through the water systems in many of the big cities, and also through undercooked shellfish, raw fish and foods sold by street vendors.

So the thoughts of the investigators turned to prevention.

With colleagues in the Pan-American Health Organization, the CDC estimated it would cost \$200 billion to bring all of the water and sewage systems in Latin America up to par. “Nobody was writing that check,” Tauxe said.

A Peruvian woman provided a simple answer to the problem. Homeowners in Peru had access to water every third day or so, so they collected the water and stored it in their homes. The woman, from a local women’s association, wondered why the American investigators didn’t worry that they would get cholera while working in Peru.

“We told her that we were just careful with what we ate, and added that we treated our own water by adding a little iodine tablet to our water every day,” Tauxe said. “She looked at us, thought a minute, and said ‘we can do that,’ and we said, ‘you know, she’s right. They could

do that.’ And we began to grope our way toward a new strategy, helping people treat the water they stored in their homes. It was a marvelous moment.”

That began the CDC’s Safe Water system, where residents were taught that by adding a few drops of chlorine bleach, they could chlorinate the water in their home. The program is now in 19 countries in Africa, Asia and Latin America.

Tauxe, who received a Charles C. Shepard Award for lifetime achievement this year from the CDC, said being able to participate in endeavors, like bringing safe water to part of the world where it wasn’t even a possibility, have made his career rewarding.

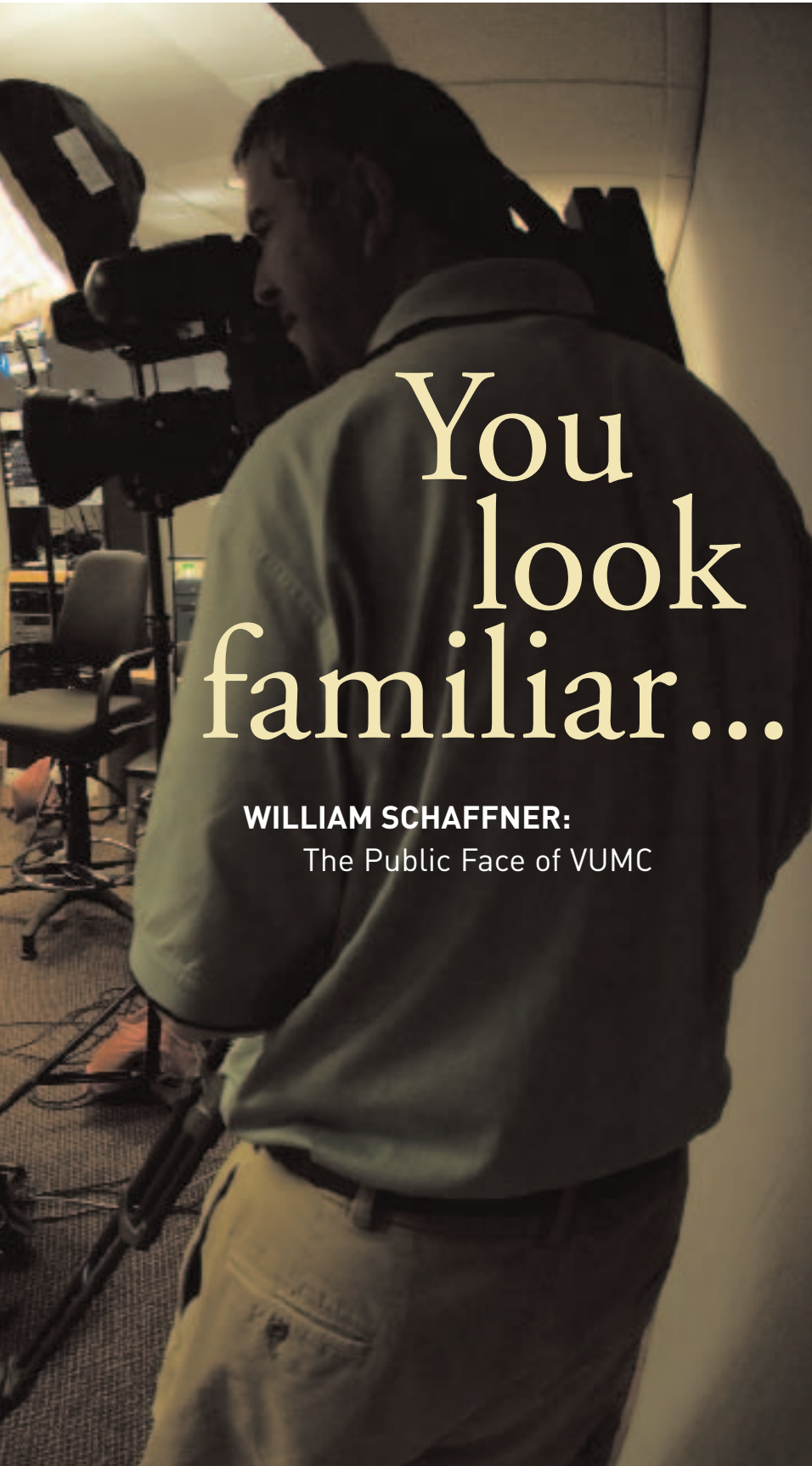
“I think in public health, we’re practicing a kind of medicine that draws on everything that we learned in our clinical training, but the patient is often a town, a city, a state, a nation, or at the highest level, the population of a world,” Tauxe said. “The disease is an epidemic or a whole group of people who are infected or who have a condition. We make a diagnosis and do the tests that are needed to understand how it’s treated or how to prevent it. It’s a very satisfying kind of medicine to practice.” **VM**

STAN KAADY



Tauxe at work at the Centers for Disease Control and Prevention in Atlanta.





You look familiar...

WILLIAM SCHAFFNER:
The Public Face of VUMC

I

MAGINE WALKING

straight off the street out of a bright, bustling day into a small, cold, dark, soundproof room. You sit down on a tall, awkward stool facing a large TV camera positioned three feet from your face. The only other person in this cave-like room is a man standing silently behind the camera. Through a transmitter crammed tightly into your ear canal you hear a voice, from somewhere out there in the world. But there are no other visual or auditory cues. Instantly your face, voice and thoughts are beamed around the world. You have to be succinct, clear, calm.

If the thought of appearing live on global television while fielding difficult and pointed questions you have not rehearsed, or perhaps haven't even had the chance to consider, seems utterly terrifying, you're not alone.

However, if you're William Schaffner, M.D., professor and chairman of Vanderbilt's Department of Preventive Medicine, responding to such a daunting task is just another day (or evening, or weekend) at the office.

WRITTEN BY **JOHN HOWSER**
PHOTOGRAPH BY **DEAN DIXON**



DANA JOHNSON

Schaffner and VUMC's chief publicist John Howser.

I have been Vanderbilt University Medical Center's media director for over a decade now. In my role as VUMC's chief publicist I've had the pleasure of working with hundreds of the Medical Center's highly-talented faculty and staff to help get their discoveries or expertise featured on TV, radio and in print.

Because of the high press volume we handle each year, I often think of working in VUMC's Office of News and Public Affairs in equivalent terms of dog-years. One year working with the news media here at Vanderbilt is probably equal to about a decade's worth of activity at many other academic institutions. Working with the news media is an interesting, challenging, and sometimes frustrating job that I love.

Dr. Schaffner and I share the same sentiment. Illness is an unfortunate occurrence, but it happens, and if someone is going to be talking to the media about it, it might as well be a Vanderbilt physician.

Of the more than 1,000 interviews arranged by News and Public Affairs media relations officers during the 2006

fiscal year, we were able to track 14,847 positive mentions of VUMC in the press. Much of this success was the result of Dr. Schaffner's constant participation with our media relations process. In fact, 3,281 placements, or 22 percent of the year's total positive news placements included Dr. Schaffner.

I'm not alone in this assessment of Dr. Schaffner's value to the institution.

"It would be difficult to place a dollar amount on the positive PR value to Vanderbilt resulting from Bill Schaffner's work with the news media. But if we were to perform that calculation, it would be millions of dollars each year," said Joel Lee, associate vice chancellor for Medical Center Communications. "Beyond his responsibilities as a department leader, Bill has a gift for working with the press. Everyone associated with the University should appreciate the high value this brings to our institution's reputation."

Only in the rarest of occurrences does an individual's education, training and years of professional expertise mesh with a chronometer-like ability to calmly, rationally and smoothly express his thoughts and convey complex and frequently politically sensitive public health issues on TV or in newspapers around the world.

Then factor in doing all of this with an audience, which includes your professional peers, who can and will be your sharpest critics.

For the great benefit of Vanderbilt and a concerned public worried about such health concerns as avian flu, smallpox, anthrax, whooping cough, measles, influenza, rabies or myriad other transmissible diseases, Dr. Schaffner volunteers himself for the task of educating the public through the press hundreds of times each year.

"Bill Schaffner is an excellent source for us on infectious disease topics. He is also exceptional explaining complex medical information in a simple, clear way on the air," said Roger Sergel, Managing Editor for Medical Coverage at ABC News. "We have used him regularly to speak with Tim Johnson (ABC News' Medical Editor) and others at ABC News

about topics including bird flu, immunizations and staph infections.”

It’s not always national or international news organizations like ABC, CNN, NBC, CBS, *USA Today* or *The New York Times*. Typically, Dr. Schaffner can be found working with Nashville’s news media or myriad other magazines, newspapers, radio or TV stations on an almost daily basis to educate people about public health concerns in their communities.

Teaching without seeing students

“I consider myself a representative of Vanderbilt. It’s not me, but I am a vehicle. I represent Vanderbilt to the community, and sometimes the community is quite large. It’s the nation. I think of this activity as a form of teaching, but I can’t see my students,” Dr. Schaffner said. “You have to take every media opportunity as the occasion to provide some small coherent bit of information. My style is to do this in a reasonable and reassuring fashion, not to be alarmist, but to put the matter into some perspective and to give people the general impression – and it’s true most of the time – that public health and clinical medicine are capable of dealing with whatever the problem may be.”

Out of a deep sense of commitment to educate the public about matters of public health, and a very competitive desire to see Vanderbilt’s reputation and visibility on par with other high-profile academic medical centers, Dr. Schaffner makes himself available virtually every time he’s called upon for an interview request, whether he’s in the office or not.

Once, while on vacation at a winery in Sonoma, Calif., with his wife, Lois, he used her cell phone to do a radio interview about anthrax. He has done numerous radio and print interviews from their vacation home in Captiva Island, Fla. And his off-hours media interviews have ranged from the routine (from taxis and airplanes) to the quirky (from the front seat of a tow truck after his car broke down on the highway).

He also serves an active role on the national stage working with distinguished

infectious diseases prevention organizations such as the Centers for Disease Control and Prevention (CDC) and the National Foundation for Infectious Diseases (NFID).

“Dr. Schaffner has played a key role over the past several years in defining and articulating for NFID the most important public health messages on immunization and prevention of infectious diseases,” said Len Novick, executive director of the NFID.

In fact, it seems as if Dr. Schaffner was destined for a career where his medical expertise and work with the news media would intersect.

“The first time I appeared in the news media happened as a Vanderbilt resident in 1963 or 1964,” he said. “The reporter was writing about dying patients. What is it like to extend care to a patient and then have the patient die? Obviously, this is an aspect of a physician’s job. So I was asked a number of questions about how I manage this; what’s the emotional aspect; does it affect treatment plans; and several other questions.”

Even though this was decades, and literally thousands of interviews ago, Dr. Schaffner has vivid memories when describing this experience.

“We were doing morning report with Dr. David Rogers (chairman of the Department of Medicine from 1957-1968), and the reporter was obviously on hand to interview him about this topic as he was the senior faculty member. On the spot the reporter got the idea to interview a junior physician. I got fished out of the group and was interviewed. And it was OK,” he said.

He won’t describe his first physician experience with the news media as Zen-like, but it had to be close.

Prior to attending medical school at Cornell, Dr. Schaffner worked in the theater while in college at Yale. This experience would lay a solid foundation.

“I was attracted to the notion of communicating with an audience the way people on stage communicate with an audience, bringing the audience into a narrative structure or an emotional moment the people on stage create that



Schaffner on the air in Vanderbilt’s VU Star Studio.

can be meaningful,” he said. “I enjoyed doing that and I think that’s why I was attracted to working with the reporter because I saw it as something similar.”

Practicing his craft

Dr. Schaffner fulfilled his selective-service obligation in the mid-1960s by spending two years as a commissioned officer in the United States Public Health Service assigned to the Communicable Disease Center in Atlanta (now known as the Centers for Disease Control and Prevention) and the State Health Department in Rhode Island.

“Through a series of events I found myself within a few months in charge of communicable disease control in that state. It’s not a large state, but at the time it had a population of almost 1 million,” he said. “Because I was the acting state epidemiologist, from time to time television and print reporters asked me about the kinds of things one gets asked about



For the great benefit of Vanderbilt and a concerned public worried about such health concerns as avian flu, smallpox, anthrax, whooping cough, measles, influenza, rabies or myriad other transmissible diseases, Dr. Schaffner volunteers himself for the task of educating the public through the press hundreds of times each year.

in public health: influenza, Rocky Mountain spotted fever, and one communicable disease issue or another. I realized working with the news media was part of my responsibilities and I liked it.”

There is both art and skill necessary for working with reporters to ensure they get what they need to effectively communicate the frequently complex messages about medicine and health. These early experiences proved the perfect opportunity for Dr. Schaffner to practice his craft.

In the 1960s and early 1970s TV news editing technology wasn't what it is today. Intuitively, he learned one of the most important points of working with the news media – if you can make a reporter's job easier, he or she will want to work with you again.

“I would ask the reporter how much time they had committed to tell the story. They would already know this before they came to meet with me. I learned that if I

could do my narrative in one take, with no cuts, that's exactly what would air on the news that night,” he said. “So I developed a clock in my head to count off the time the reporter told me they had. I would try to time my answers, knowing the reporter would have several questions. The reporters liked this because I tried to understand how it is they do their job and tried to help make it easier, and at the same time communicate the essential message.”

And then came AIDS

His sporadic experiences with the news media in the 1960s and 1970s provided the necessary tools for the rigors of what lay ahead in the 1980s, when public hysteria erupted following the discovery of AIDS.

“At the time of the discovery of the virus we now know as AIDS, I had two positions at Vanderbilt. I was the chair of the Department of Preventive Medicine,

and I was head of the Infectious Diseases division within the Department of Medicine,” he said. “I also work closely with the Tennessee Department of Health, and was the person at Vanderbilt with the best links to the CDC.”

There was much confusion and fear in the early days of the AIDS epidemic. A terrified nation was in need of timely and accurate information about a deadly, mysterious virus that was slowly spreading across the land.

“All of a sudden I was in everyone's crosshairs for all of those reasons,” Dr. Schaffner recalls. “I got a lot of information because of those contacts. I knew about the latest recommendations, the latest data, and not only did Vanderbilt University Medical Center designate me as their official spokesperson for AIDS, so did the Nashville Academy of Medicine. So when they received media requests they would send reporters over here. And frankly, at that time my colleague at the Tennessee Department of Health was media-shy. I was at the center of what I call public AIDS education.”

The fear over AIDS was similar to the level of alarm over avian influenza, except with AIDS the virus was already here among us.

“I take quiet pride that in the decade of the 1980s and well into the 1990s, I was a person who locally was able to be a voice of education and reasonableness about HIV,” he said.

“There were people who were much more radical in one direction, and many other people who were more radical in another direction. I was always the middle focal point. I had friends from all over. I tried to take issues and opinions from the extremes and go to the middle and make them work, and in the process make people understand that fear and panic, as well as isolation and rejection, were unacceptable, that we in public health could take care of this problem. All of that came to pass and I'd like to think we represented Vanderbilt pretty well.”

Dr. Schaffner, after participating in thousands of media interviews over the

course of his career, has his technique down to a science. He says he is no longer nervous when speaking with members of the press. However, he takes each encounter seriously and also as a great opportunity to educate the public while simultaneously promoting Vanderbilt. He's taken his responsibility one step further by conducting mini media training sessions with some of the younger infectious diseases faculty, so that they, too, will be available to handle the volumes of media calls we get each day.

Good publicity: Priceless

Many of Dr. Schaffner's physician colleagues here at Vanderbilt and elsewhere have a high degree of respect for his seemingly effortless interactions with members of the press. He makes it look easy even though frequently it is anything but, and like the consummate teammate, makes all of his colleagues at VUMC look better in the process. Perhaps he is more modest about all this than he should be,

WILLIAM SCHAFFNER'S POINTERS FOR WORKING WITH THE MEDIA

- :: Before agreeing to be interviewed, chat with the reporter to be sure you are comfortable with the thrust of the story.
- :: Get your own message clearly in mind before the interview starts. What is your "SOCO" – single overriding communications objective?
- :: Be succinct: less is more.
- :: Keep it very simple.
- :: Return to your SOCO often.

because the value to the public and to VUMC is priceless.

"Some reporting out there can be sensational when it comes to matters like SARS, bird flu, bioterrorism events or smallpox vaccine and its threat. When people hear things like that they feel helpless or out of control," he said.

"But if you can tell people there is a public health and clinical structure in place; the hospital is open; the clinic is open; the doctors and nurses are

informed. If you get sick we can take care of you. There are many things we can do to help prevent the problem. Listen to us and we'll give you good information.

"All of these things, which are reasonable and true, help put things in perspective and lower the collective temperature that some people are trying to turn up. I'm given to understand this is useful. People tell me on a fairly regular basis that they get a sense of reassurance there is a degree of control out there."

In addition to dialing down a reporter's fear about a potentially alarming health topic while adding significant understanding so the reporter can put a serious public health matter in proper perspective, Dr. Schaffner has also had some fun with the press.

"It was fun sitting in the Vanderbilt studio early in the morning and conversing with Katie Couric on the set of the Today Show. She's famously perky, but I think I matched her in perkiness," he said with a laugh.

During one of Pope John Paul II's bouts with pneumonia just before his death, *The New York Times*, the nation's newspaper of record, quoted only one United States physician about the disease and the Pope's struggle – Dr. Schaffner. As he said about the placement, "That isn't so shabby."

So the next time you turn on your local or network TV news, or pick up a newspaper and see Dr. Schaffner's comments, you'll know the rest of the story on his journey to this position – one of the most visible faces of Vanderbilt. **vm**



DEAN DIXON



★ BUGBUSTERS

Outsmarting some pretty smart bugs

Every day in hospitals across America, a battle is taking place. It may not be obvious to the casual observer, and some of the adversaries are invisible to the naked eye.

Even so, the fight is on between health care workers and nasty pathogens bent on keeping their ground. Their names, often shortened to quippy acronyms and initials – MRSA, VRE, C-diff – belie the riotous trouble they can cause.

But infection-control experts know the truth, and they'll tell you without flinching – these are some pretty smart bugs. Some disquieting evidence of this: Several have developed a resistance to the potent antibiotics that once were the best weapons against them.



WRITTEN BY ELIZABETH OLDER
ILLUSTRATION BY TRAVIS FOSTER

Bug busting gets the spotlight

“For those of us in infection control, it’s exciting,” says Thomas R. Talbot, M.D., M.P.H., who became Vanderbilt’s chief epidemiologist in July. Physicians in his field have been accustomed to going about their jobs without much fanfare or notice, more or less out-of-sight, out-of-mind. “It’s something that, now – in the last two or three years – from the highest level of the hospital, it’s of supreme interest.”

And with good reason. The increased interest has been sparked by some pretty startling statistics about the rate of illness

and death caused by hospital-acquired infections, and by the outcry those figures have prompted in a bevy of circles.

The first painful volley to hit the health care system may have been a 1999 report by the Institute of Medicine, which tagged medical errors as the eighth leading cause of death in the United States. Then hospital-acquired infections took center stage. A 2005 report by the nonprofit Committee to Reduce Infection Deaths (RID) revealed that hospital-acquired infections – HAIs – are the fourth largest cause of death in America, killing as many people as AIDS, breast cancer and auto accidents combined.

Until recently, these traditionally were called “nosocomial infections.”

While many who had toiled tirelessly to serve and protect patients may have felt unfairly maligned by these negative assessments, statistics on the government’s Centers for Disease Control and Prevention Web site, put it into perspective: “In hospitals alone, HAIs account for an estimated 2 million infections, 90,000 deaths, and \$4.5 billion in excess health care costs annually.”

Maybe that’s one reason why Talbot and his renowned mentor, William Schaffner, M.D., now probably are recog-



Members of VUMC’s infection control team – Tom Talbot, M.D., M.P.H., Jake Nania, M.D., Vicki Brinsko, R.N., and William Schaffner, M.D.



Saving lives one pop-up at a time

Post-it notes might have done the job, but Vanderbilt's perioperative informatics specialists took it one step further. They programmed computers in the operating rooms to remind doctors with a pop-up screen prompt about dosing patients with prophylactic antibiotics before and during surgery.

The result, says Paul St. Jacques, M.D., was an increase in compliance of administering antibiotics in the suggested time period of an hour or less before surgery, and re-dosing during long procedures based on the half-life of the specific antibiotic.

After a staff education campaign and the addition of the pop-up prompt, compliance with initial antibiotic

dosing recommendations more than doubled. After adding a pop-up screen reminder for re-dosing during long procedures, compliance with that step nearly tripled.

And while what happened after these changes can't be called a cause-and-effect since some other factors might have intervened, St. Jacques still is sharing the results with colleagues from across the country. After all, it is really good news: after six months, the Medical Center's surgical site infection rate was cut in half.

"With infection rates below the national average, we were doing well beforehand," observes St. Jacques, director of Perioperative Informatics and an associate

professor of Anesthesiology. "We felt we could, nevertheless, do better."

Surgical site infections, estimated to account for about a quarter of the hospital-acquired infections that occur, are serious business.

"There's a very high cost financially, and a very high morbidity to the patient," says St. Jacques.

Administering prophylactic antibiotics before and during surgery for selected patients has been shown to protect against surgical site infections. In addition to the proper administration of these infection-fighting drugs, the Institute for Healthcare Improvement lists these actions as key for preventing surgical site infections: using a clipper or depilatory – not a razor – to remove hair; monitoring and maintaining the

patient's glucose levels after surgery; and keeping the body temperature at normal levels, both during and after an operation.

St. Jacques sees computer tracking, already common and budgeted for in much of corporate America, as a next step in medicine. He recalls how, at a professional meeting, a speaker compared the ability of the global shipper Federal Express to locate any package 24 hours a day to the ability of the doctors in the audience to locate all of a patient's medical records – quite a challenging process.

"We realize that medical information management is going to be a key to making medicine more efficient, and more cost effective," he said.

— ELIZABETH OLDER

nized by many more people on a daily basis. They, and a number of their colleagues, have examined procedures and promoted programs that are involving staff at all levels in a "zero tolerance" assault on HAIs at Vanderbilt University Medical Center.

And while Talbot thinks that "zero" goal may not be attainable, he's committed to working toward it. That includes handing out movie coupons to reward hand washing and heaping awards on staff members who show leadership in infection control practices.

Shooting for the moon

"I've often gotten nervous at the idea of zero tolerance because there are uncontrollable patient factors – such as obesity, diabetes or smoking history that can increase a patient's risk for infections," explains Talbot. "But I'm saying it and making a case for exceptions."

The reality is that patients carry bugs that can cause threatening infections into the hospital on and in their bodies. And pathogens – while they don't necessarily cause illness – lurk everywhere, and even more so where sick people come together. They're on bed rails and stethoscopes, in the air when someone sneezes, transferred at the touch of a mother's hands. With a certain synergy of circumstances – say a bug happens upon a patient with a suppressed immune system, a chronic disease or a surgical incision – these pathogens can stop simply hanging out and cause an infection, sometimes with very serious, even fatal, results.

The most successful way to prevent that in hospitals is for every person who serves patients to understand how different pathogens do their dirty work, and how humans can beat them at that game. And, just as your mother told you, hand

washing – performed every time in the proper manner – has been shown to be the biggest stick out there.

A hand hygiene campaign has increased adherence by 40 percent at the Vanderbilt University Hospital and 60 percent at the Monroe Carell Jr. Children's Hospital at Vanderbilt. Revised procedures for inserting central venous catheters in the intensive care units have significantly reduced the number of associated bloodstream infections, saving lives and somewhere between \$1.3 million and \$3.9 million in health care costs. Other targeted efforts have helped push down the incidence of ventilator-associated pneumonia and stopped the spread of an aggressive antibiotic-resistant pathogen.

Vanderbilt has been sharing its successful programs and procedures with other professionals to help promote positive change in hospitals across the nation.

“We want to become a national leader in this area,” says Talbot, and praise from inspecting agencies and national recognition from colleagues has already proven that to be true. The Medical Center continues to benchmark its infection rates against national data provided by the CDC, which are derived from voluntary reports from more than 300 hospitals around the country.

Vanderbilt’s emphasis on infection control has shown up in staffing, as well. The Medical Center now has six spots for infection-control practitioners – the nurses Talbot calls the unsung heroes of this story –

up from three in 2002. Two epidemiologist positions also have been added since then, including one now held at the children’s hospital by Jake Nania, M.D. Talbot says more infection experts probably will be needed when Vanderbilt opens its planned third bed tower, targeted for 2012.

But it is a never-ending, day-in-and-day-out battle, when the smallest break in the infection-control chain can create a pathway for pathogens to cause trouble.

“Everything we as caregivers are doing, we have to do at 100 percent, all the time,” Talbot observes. “We have to

rely on everybody in the institution to do the right thing.”

“The control of infection is everybody’s business,” says Schaffner, who switched jobs with Talbot this year and now serves as associate hospital epidemiologist as well as chair of the Department of Preventive Medicine. But, he adds, the infection-control specialist has to keep an eye on all the potential trouble spots, from the hospital kitchen to the intensive care units.

“We have to be the most comprehensive – remain alert to everything everyone is doing,” says Schaffner, who thinks

New guidelines cut bloodstream infections

The success of any hospital infection control program may finally depend on one single thing: buy-in.

“If you don’t have buy-in from the leadership of a unit, then it’s not going to work because it involves folks making a conscious effort to do the right thing,” says Vanderbilt infection control practitioner Kathie Wilkerson, R.N.

And she should know. Wilkerson has been part of a team who established a program in Vanderbilt’s Medical Intensive Care Unit (MICU) to combat bloodstream infections in patients by standardizing the insertion of central venous catheters (CVCs). Three years after the implementation of that program in 2002, the infection rate in those patients had declined by 75 percent.

And now, some four years after that effort first began, the program has been put in place in other ICUs throughout the hospital with great success.

In dollars and cents, the outcome of the program has quickly added up. Chief Hospital Epidemiologist Thomas R. Talbot, M.D., M.P.H., has estimated the cost savings of using the program in all the ICUs at \$1.3 million to \$3.9 million, based on

the prevention of 114 CVC bloodstream infections. And some of Vanderbilt’s general care units have expressed an interest in instituting the program.

Bloodstream infections from CVC catheters are one of the major infection problems in hospitals around the country. These larger catheters, which typically are placed in one of the body’s main veins, put patients at more infection risk than smaller, peripheral intravenous lines. The threat of infection is a particular concern in ICUs, which tend to have sicker, more vulnerable patients.

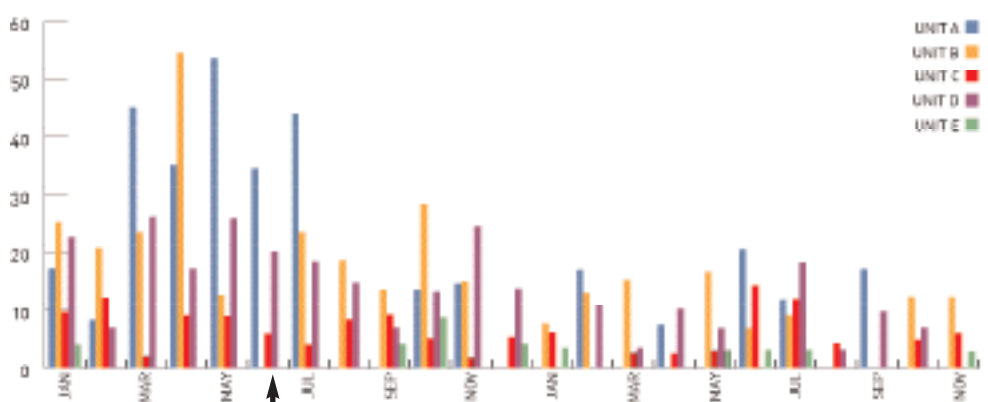
Vanderbilt’s CVC insertion program aims to arm caregivers, who insert and

take care of these catheters, with the information they need to do that as safely as possible every time. The Department of Infection Control & Prevention Web site tutorial addresses hygiene issues, insertion locations, patient positioning, skin cleansing and sterile barrier precautions. The guidelines also discuss caring for, removing and replacing CVC catheters, and include current information on issues related to the procedure.

Getting all involved parties on board to implement a new program sometimes is a challenge. And for those who work in ICUs, it’s just one more thing on their plate,” Wilkerson observes.

**CVC-BSI Rates, VUH ICUs
January 2004 - December 2005**

RATE PER 1,000 CVC DAYS



↑ Use of Insertion Checklist Rolled Out to all ICUs

Vanderbilt has a top reputation in the infection-control field.

“We’re really trying to partner with the front line,” explains Talbot, who admits infection-control specialists – often appearing when things get messy – sometimes have been considered the “bad guys.” He sees himself as a “benevolent meddler,” keeping a watchful eye over the infection-control practices of a dedicated staff that cares for patients every day with the very best intentions.

“The epidemiologist is always looking at the bigger picture; the physician is

Continuing education is a hallmark of any successful infection control effort, and the CVC insertion project has built that in with online training for doctors and nurses who are newly assigned to the ICUs. A checklist that nurses use to track the step-by-step CVC insertion process also serves as a record of what was done, alleviating additional record-keeping while also providing real-time performance feedback.

“It’s not a magic bullet,” Wilkerson says of the checklist. “It just makes sure people are following the guidelines.”

The next step, Wilkerson says, is to develop a similar program for maintaining CVCs, which some patients can have for years. That may be an even bigger challenge.

Wilkerson and several of her colleagues – including Richard Wall, M.D., M.P.H., who pioneered the catheter project – were recognized with a national award in 2005 by their infection-control colleagues. Wilkerson, with 30 years in health care, was also recognized by the Centers for Disease Control and Prevention for her efforts to reduce hospital-acquired infections. “There’s never a dull moment in infection control,” Wilkerson says. “It’s always so interesting.”

– ELIZABETH OLDER

These pressures to make a bigger dent in the HAI problem will no doubt be heightened by the reality that some of the pathogens that threaten patients have become resistant to the antibiotics that used to knock them out.

looking at the front line,” he says.

Interventions like those at Vanderbilt are making a dent locally in the number and severity of HAIs. But even with the heightened attention on the issue nationwide, the overall HAI rate has remained much the same for the past few decades. This has drawn the ire of consumer groups, public officials and others who think the system isn’t working well enough.

Schaffner, who for well over three decades manned the Medical Center’s front lines against infection, sees a more positive side to this statistic. Hospital patients today are much sicker and receive treatments that are much more invasive, he explains. Considering those factors, the flat 5 percent to 6 percent overall HAI rate may be laudable, he says.

“That’s not a sign of failure; that’s a sign of success,” he says. Infection rates would be “through the roof,” he explains, if procedures to prevent them had not significantly improved as the patient population and treatments have changed.

Talbot sees the same paradox, but he admits some criticism may be justified.

“We do have a sense we can get the rates lower,” he says.

The outside’s looking in

That expectation – that hospitals could be doing better at controlling infections that cause illness and death – is being voiced not only in many medical circles, but also in state capitals across the country. More than a dozen states have mandated reporting of HAIs, and Tennessee joined that group this year with a law that was in large part crafted by Vicki Brinsko, R.N., infection control coordinator at Vanderbilt. Some of the

laws have mandated the publication of hospital infection “report cards,” which some consumer groups say will protect patients and exert more pressure for improvement. Tennessee’s law requires public reporting of HAIs by hospital, but the specifics of that are not yet in place.

Talbot sees some pitfalls with these public numbers.

“We’ve got to make sure everyone uses the same definition,” he says, which seems easy, but if you read the CDC guidelines about identifying various infections you quickly realize it isn’t. Differences among hospitals have to be accounted for, since some treat patients who are much sicker and perform many more invasive procedures, Talbot explains. And, of course, every hospital has to be equally diligent in identifying and reporting infection outbreaks, he says.

“One of my biggest concerns is that we have transparency of data,” Talbot explains. “We could do a disservice with misinformation.”

It may be more effective to compare “process measures,” he explains, since these activities and procedures – meant to stop pathogens in their tracks – are the key to success in infection control.

And looming in the shadows is the threat that private insurers and other health care payers may begin to more closely scrutinize costs associated with patient infections, and perhaps refuse to pay if they believe the hospital didn’t take proper steps to prevent them.

Pathogens playing hide-and-peek

These pressures to make a bigger dent in the HAI problem will no doubt



A bad houseguest

Like some house-guests, this bug just doesn't know when to pack up and go away. "It's a germ that, once it becomes endemic in your population, is extremely difficult to get rid of," explains Jake Nania, M.D., chief epidemiologist of the Monroe Carell Jr. Children's Hospital at Vanderbilt.

The germ he's talking about is VRE – vancomycin-resistant *enterococcus* – and the children's hospital has been waging an all-out assault against it for more than a year.

Enterococcus, a bacterium that commonly lives in the intestine, can cause trouble under the right conditions, primarily urinary tract, surgical site and bloodstream infections. VRE, once on the list of pathogens that infection control specialists didn't lose much sleep over, is its nasty cousin once removed. This form of the germ has developed a hearty resistance to vancomycin, one of the drugs commonly used to treat *enterococcus*-related infections.

"For so long, we thought it [VRE] was wimpy bacteria," explains Thomas R. Talbot, M.D., M.P.H., chief epidemiologist for Vanderbilt University Medical Center.

But some newer studies have painted a different picture, linking VRE with a high rate of patient morbidity and mortality.

And, at the same time, this new, non-wimpy view of VRE hasn't settled all the questions.

"We don't know exactly why it leads to greater mortality," Nania said. It's a big missing link, but one the VCH is responding to by aiming to stop this pathogen in its tracks. That means testing the most vulnerable of its young patients to determine if they're carrying the germ – called colonization when it hasn't caused illness. Patients fighting cancer, or who have had bone marrow transplants, can be particularly susceptible to VRE, Nania adds.

"We basically have to isolate the person who is even just colonized," he explains. That's because VRE is a determined pathogen, attaching itself to people and objects to travel to a new residence, where it can live a long time – resisting antibiotic treatment – then move on again.

And the really sticky question, Talbot says, is if you decide to isolate a patient, when do you decide to stop? While medical best practices are outlined for this – for VRE that's negative cultures from two different body sites taken three weeks apart – it's still a problematic issue, especially since some bugs can hang out with patients for months, just waiting to cause trouble.

"The problem is, there really are no national guidelines," explains Talbot.

VRE occurs mainly in hospitals – where it was first reported in the United States in 1989 – and it can still be treated successfully with other antibiotics. In addition, newer drugs not well known to today's resistant pathogens are being thrown into play, even though some have not been tested on young patients, and therefore, are considered "experimental" or "investigational" for use in children.

The small patients at the VCH create a fertile playground for VRE, Nania explains. Many have had frequent and sometimes long hospital stays for chronic illnesses; they may require antibiotics a number of times, or cancer chemotherapy that can injure the bowel, where *enterococcus* live – in pop culture lingo, Nania observes – "a perfect storm."

"I describe it as a seed falling on fertile ground," he says.

But the proper mindset, Nania says, is not to be paranoid, just always attentive. That's a challenge when somewhere out there at this very moment, for reasons not entirely clear to modern science, some pathogens are becoming resistant to the drugs that used to knock them flat.

"The bugs are always one step ahead of us," Nania says.

– ELIZABETH OLDER

be heightened by the reality that some of the pathogens that threaten patients have become resistant to the antibiotics that used to knock them out. Schaffner remembers the decades after World War II, when people thought antibiotics had made infection a trivial aspect of the practice of medicine. Even though microbiology experts warned then that the pathogens would adjust if antibiotics were used too often or too long, in many cases, that's exactly what happened, he says.

And still today, in many developing countries, antibiotics are available over the counter, so people can use them whenever and however they choose.

"That's an ideal way to promote resistance," Schaffner explains.

And lest we think these morphing menaces are the only threat: "We recognize how, thinking globally, we are in an era of continuously emerging infections," he explains. One obvious example is HIV and AIDS, first recognized in the 1970s.

Talbot tries not to lose sleep over potential superbugs, putting his faith in continual education, staff collaboration and the willingness of those who serve patients to adopt the behaviors – both small and large – that keep infection contained. He says he probably is more bothered by the need for a nationwide hand washing campaign and by the reluctance of some health care workers to get an influenza vaccination.

The bugs just aren't going away, he says.

"Viruses and bacteria are smart. They'll survive," he observes ruefully.

The public conception that new drugs certainly will be developed to fix the problem is ill-placed when it comes to antibiotics, say these infection experts, because drug companies are interested in bigger sellers.

"Antibiotic development is not very lucrative," explains Talbot. "Right now there are not many antibiotics in development." Because of this, the Infectious Diseases Society of America is promoting an urgent "Bad Bugs, No Drugs"

campaign to raise awareness and encourage policymakers to take steps to spur pharmaceutical research and development of new antibiotics.

Schaffner, whose office wall holds old quarantine signs that warned folks away from houses where diphtheria, typhoid fever and polio were present, worries on a more global level. He cautions that the deadly diseases that vaccines have eradicated in much of the world

must be kept in the box and given no toe-hold back in by people who didn't live through the injury and death they caused.

"These diseases and these infectious agents are still out there in the world," he warns. "This barrier of protection must be maintained."

Both Talbot and Schaffner hold the hope that the commitment of medical professionals and the knowledge being gained every day will help humans win

this battle, and even see us through the pandemics and bioterrorism attacks that many predict for the future. The key is to keep an eye on what comes next, Schaffner says.

"The question is what's going to happen next year," he advises. "That's what we don't know." **VM**

Driving the train

Vicki Brinsko, R.N., remembers when she first looked through the microscope in her microbiology course. "I fell in love with the whole world I was looking at through the lens."

Her passion turned into a career dedicated to infection control. Brinsko is a registered nurse who has worked at Vanderbilt University Medical Center for 20 years, most of that in infection control.

But there's no way Brinsko could have foreseen the state and national impact she would have on the important issue. In 2003, she was selected for the Healthcare Infection Control Practices Advisory Committee (HICPAC), a federal committee associated with the Centers for Disease Control and Prevention. Faced with statistics such as 2 million cases of health-care-acquired infection of which an estimated one-third are preventable,

HICPAC published a guideline of mandatory public reporting of health-care-acquired infections in 2005.

"The train was leaving the station, and we in Tennessee didn't want to be climbing on board. We wanted to be driving the train," said Brinsko.

Working with the Tennesseans for Improving Patient Safety (TIPS) group, Brinsko helped pull together a multidisciplinary team, incorporating large and small hospitals, insurance groups, consumers and other stakeholders spanning from Memphis to Bristol.

Then Brinsko and others headed to the state health department and Capitol Hill with the evidence supporting public reporting of infections. Brinsko was there each week of the Tennessee General Assembly's 2006 legislative session to testify in front of committees or to meet with various legislators.

When State Sen. David Fowler's bill gained momentum, she helped flesh out portions of the legislation, which became law. As a result, hospitals with 25 or

more inpatients and outpatients are required to report central line bloodstream infections and surgical site infections via the CDC's National Nosocomial Infection Surveillance/ National Healthcare Safety Network.

While she's helped accomplish so much, she's

really just getting started as she prepares her approach for the 2007 legislative session. "I want consumers to be informed and educated about infection control," said Brinsko. "It's about making sure all citizens of Tennessee have excellent health care."

- KATHY RIVERS



Vicki Brinsko, R.N., at Tennessee's State Capitol.

ANNE RAYNER

Preying on the sick

Chasing Acinetobacter infections



Titus Daniels, M.D.

TO A HEALTHY PERSON, *Acinetobacter* (ass-in-ee-toe-back-ter) poses little threat. It's a group of bacteria commonly found in soil and water, on the skin of healthy people, and particularly in the GI tract. But for very ill patients on ventilators or those with a prolonged hospital stay, weakened immune systems, chronic lung disease, diabetes or open wounds, the bacteria can be deadly – especially since it's becoming resistant to many of the commonly prescribed antibiotics used to treat these infections.

Outbreaks of *Acinetobacter* infections typically occur in intensive care units and health care settings housing very ill patients. The infections are rarely found outside of the health care setting.

Acinetobacter causes a variety of diseases, ranging from pneumonia to serious blood or wound infections. The symptoms vary depending on the disease. The bacteria are colonized on some people's skin, but don't really seem to cause any problems that way. And it's been shown to be in some people's intestinal tracts. But trying to determine the impact the bacteria have on patients is a major focus of research, some of which is occurring at Vanderbilt University Medical Center.

"The patients we see with *Acinetobacter* infections are frequently in the hospital for extended periods of time, often more than a couple of weeks," says Titus Daniels, M.D., a third-year fellow in infectious diseases. "Many are burn and trauma patients who have had prior surgical procedures – open surgical procedures, in-dwelling central catheters or tracheostomies."

Daniels said the infections caused by *Acinetobacter* are frequently resistant to the common types of antibiotics used to treat the infections – piperacillin, ampicillin and the cephalosporins.

And now even reserve antibiotics that have a known success for treating these infections – in this case imipenem and meropenem – aren't working, and new antibiotics to treat resistant bacteria won't be available for years.

Daniels says that although infections from the bacteria are increasing, the CDC doesn't have official numbers on the frequency of the occurrence. "It hasn't crossed the threshold to be routinely reported, but it will probably be in a CDC future report since it's increasing and interest in *Acinetobacter* has also increased."

There is some evidence that patients with *Acinetobacter* infections have an increased rate of mortality, but more study is needed, Daniels says. A retrospective Vanderbilt study is looking into various aspects of what happens in patients with *Acinetobacter* infections: the epidemiology – what types of patients get the infections, what the risk factors are, and how long they were in the hospital before acquiring the infection; the outcomes – if patients with pneumonia and *Acinetobacter* infection fare worse than patients with pneumonia only; and the cost of caring for these patients.

The study involves about 200 patients who have been treated at Vanderbilt in the SICU and trauma and burn units, and a group of uninfected patients as well. It utilizes data obtained through the Medical Center's financial database, about the types of procedures and costs associated with those procedures.

Preventing *Acinetobacter* infections is still the key focus. "As with other health care-associated infections the most important things we can do are those things we know reduce infections – good hand hygiene practices, minimizing procedures, and removing devices such as breathing tubes, intravenous and bladder catheters as soon as possible. Basic infection-control and prevention practices remain the most effective tools for preventing health care-associated infections." **VM**

A scanning electron micrograph (SEM) showing a dense population of rod-shaped bacteria. The bacteria are illuminated with a blue and purple light, highlighting their textured, cylindrical forms and some flagella. The background is dark, making the bacteria stand out.

**The prehistoric
problem of
antibiotic resistance**

LONG BEFORE HOSPITALS, BEFORE HUMANS, EVEN BEFORE THE DAWN OF MULTICELLULAR LIFE, BACTERIA WERE COMING UP WITH WAYS TO OUTSMART ANTIBIOTICS.

SOME OF EARTH'S EARLIEST infection-control practitioners didn't wear starched white coats and carry stethoscopes. They didn't even have lungs or an internal skeleton.

Scuttling about on six legs in a moist and balmy Eocene rainforest, their "chests" emblazoned with fuzzy white patches of antibiotic-producing bacteria, attine (fungus-farming) ants long ago learned how to exploit this natural antibiotic producer to keep their fungus farms free of a pesky "weed" fungus – some 50 million years ago.

While these ants are among the earliest examples of land animals using antibiotics, antibiotic production itself is even more ancient – stretching back to the dawn of bacterial life on Earth, about three billion years ago.

The ants probably don't worry much about antibiotic resistance – because the antibiotics in their pharmacy evolve in tandem with any resistance that arises.

Humans, on the other hand, have had a bit more trouble keeping up with the ever-evolving microbes that cause our human diseases.

:: ANTIBIOTICS, THE EARLY YEARS

Antibiotics are chemicals that either kill or limit the growth of bacteria and fungi. By exploiting the innate differences between human and microbial cells, antibiotics specifically target bacterial cells without harming the human host. Thus they were some of medicine's first "magic bullets."

Ironically, more than half of the antibiotics in use clinically have been isolated from the very life forms we use them against – bacteria and fungi. Only a few classes are completely synthetic. The soil bacterium *Streptomyces* is perhaps the most prolific of nature's antibiotic factories – responsible for roughly 55 percent of clinically significant antibiotics.

"Bacteria have been fighting each other with antibiotics for eons," says Charles Stratton, M.D., associate professor of Medicine and Pathology. "We've simply hijacked some of the different agents they've been using against each other."

Ancient Egyptians, Greeks and Chinese used antibiotic-producing molds and plants to treat infection. But only within the last century have humans been able to isolate the active compounds from these natural sources for use against our own modern scourges. Penicillin, the quintessential "natural" antibiotic, was first described by Alexander Fleming in 1928 and first used clinically in 1943.

In the early years, antibiotics appeared to be miracle drugs. Decreases in infection-related deaths and subsequent increases in life expectancy after their use became widespread underscored their "miraculous" powers. But the miracle was short-lived.

Resistance to penicillin was observed just three years after its introduction. Methicillin, the promising sequel to penicillin, barely made it out of the gate before resistance was noted just a year after its first use.

WRITTEN BY MELISSA MARINO
PHOTOGRAPH OF STREPTOMYCES © DAVID SCHARF PHOTOGRAPHY

A similar trend can be seen for all of the other major antibiotic classes. The sulfonamides – the first synthetic antibiotics, which actually were in use before penicillin – lasted about one decade between their first use (1930s) and the first report of resistance (1940s).

And despite a nice run of 30 effective years, vancomycin, long considered the “last resort” treatment for many highly resistant bugs, is being overpowered by several bugs, most notably vancomycin-resistant *Enterococcus*, which was first reported in 1987.

Some bacteria are well on their way to becoming resistant to all available drugs. Dubbed “superbugs,” currently the only course of action is heavy bombardment with multiple drugs in hopes of subduing – if not eliminating – the infection.

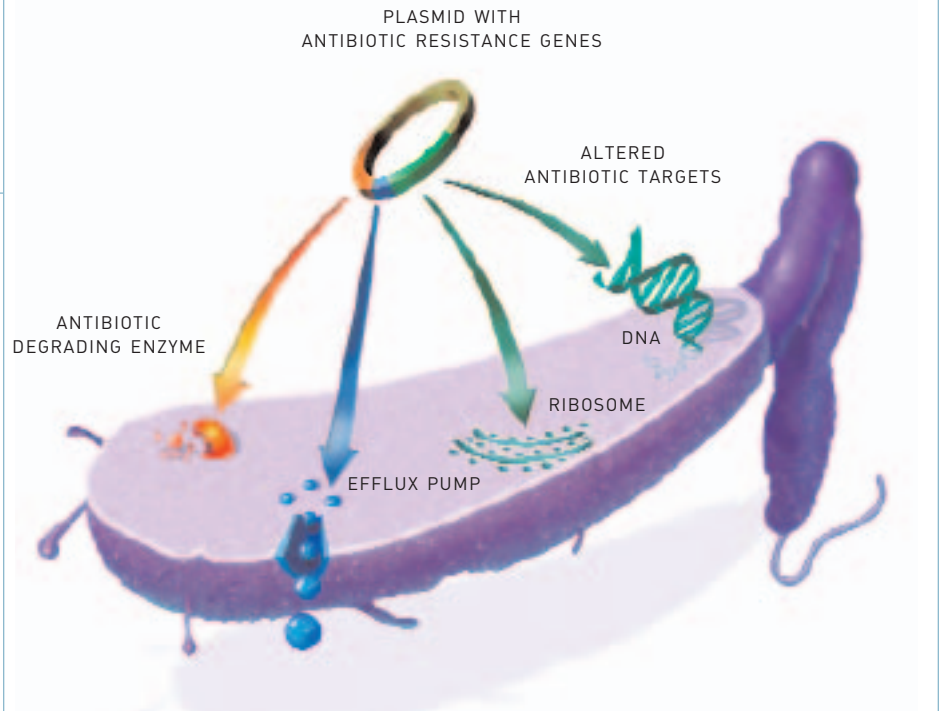
While infection-control strategies may limit the transmission of these resistant microbes, hopes for treatment now rest on the development of new antibiotics.

ANTIBIOTICS 101

To develop new antibiotics, it is crucial to understand the basic mechanisms of antibiotic resistance, which not surprisingly go hand-in-hand with the mechanisms of antibiotic action.

Antibiotics generally work by attacking three major targets critical to the life cycle of the bacterium – the cell wall, protein synthesis and nucleic acids (DNA or RNA).

The first class of antibiotics, which includes the penicillins and cephalosporins, inhibit the formation of the bacterium’s outer coat, the cell wall. Although the walls of Gram positive (e.g., *Staphylococcus*) and Gram negative (e.g., *E. coli*) bacteria differ in their thickness and organization, both depend on the synthesis of a sugar-protein compound called peptidoglycan. Formation of this peptidoglycan layer has multiple steps, providing ample targets for antibiotic action. Importantly, mammalian cells lack a cell wall, so this also offers an exclusively bacterial target. Many of the most clinically successful antibiotics exploit this cellular component.



Newly acquired resistance genes can encode: modified cellular targets upon which the antibiotic is ineffective (green arrows); protein pumps that prevent the antibiotic from entering the cell or actively pump out any antibiotic that does get in (blue arrow); or enzymes that inactivate or degrade the antibiotic once it enters the cell (orange arrow).

The second class includes those antibiotics that interfere with the bacterium’s ability to make proteins. This class includes the tetracyclines, another example of “natural” antibiotics discovered in 1948 from *Streptomyces*. Drugs of this class can inhibit any number of steps involved in the translation of RNA into proteins by the bacterial ribosomes – machinery that performs the translation process.

Finally, antibiotics can kill or inhibit bacterial growth by inhibiting the bacterium’s genetic machinery. The fluoroquinolone antibiotics (e.g., ciprofloxacin, the well-publicized anthrax remedy) interfere with the winding and unwinding of DNA necessary for replication and transcription of the genetic material. Halting these processes effectively kills the bacterium.

THE SCHOOL OF RESISTANCE

Some bacteria are innately resistant to some antibiotics due to natural, random mutations they carry. In the presence of antibiotics, the naturally resistant ones will survive and reproduce.

But for an otherwise vulnerable bacterium to avert the antibiotic threat, it

must acquire resistance by taking up resistance genes from the environment or from other bacteria. These new genes come in the form of small circular bits of DNA (plasmids) or small free fragments of DNA (transposons), which bacteria can trade like baseball cards.

“Bacteria are pretty adept at countering antibiotics,” Stratton says. “They pass plasmids or transposons around to each other and trade resistance genes.”

If a bacterium can acquire a great “hand” containing several different resistance genes, it will be able to resist a wide variety of drugs. The newly-acquired genetic material integrates into the bacterial genome and can confer resistance via three main mechanisms (see illustration, this page).

These aversion tactics have probably been around as long as bacteria themselves. But when bacteria are repeatedly exposed to an antibiotic – as in a medical situation – this puts tremendous pressure on the organisms to become resistant.

“If you use antibiotics, the bacteria aren’t just going to sit there and ignore it,” says Stratton. “For bacteria, resistance is a matter of life and death – if they don’t become resistant, they’re done for.”

DOMINIC DOYLE

:: WHAT THE FUTURE HOLDS

With the increase of infections resistant to multiple drugs, we are now faced with the challenge of fighting back against antibiotic resistance.

The development of new antibiotics could offer us a reprieve, but there has only been one truly “new” type of antibiotic introduced in the past 40 years – the oxazolidinones which became available in 2000.

Another strategy is to try and block the resistance mechanism itself. Richard Armstrong, Ph.D., professor of Biochemistry and Chemistry, is looking for the molecular keys to counter resistance to fosfomycin and molecules that may restore the effectiveness of the drug.

Resistance to fosfomycin, a broad-spectrum antibiotic currently used to treat only a limited number of infections (e.g., uncomplicated lower urinary tract infections), was thought to be due to a bacterial enzyme that degrades the antibiotic.

Armstrong’s approach is to use the information about structure and function

of these antibiotic-degrading enzymes as a basis for pharmaceutical strategies to combat resistance.

This strategy has worked before with resistance to beta-lactam antibiotics, the largest class of antibiotics that includes penicillin. For example, the drug Augmentin is actually a combination of the antibiotic amoxicillin and the b-lactamase inhibitor clavulanate, which destroys the bacterial enzyme that deactivates the antibiotic. The addition of the inhibitor restores the bacteria-killing capacity of the antibiotic.

Armstrong and colleagues have identified and characterized three fosfomycin resistance proteins, with the hopes of using that information to design inhibitors that would allow the antibiotic to work again.

“It’s conceivable that one could build a molecule that would inhibit all three of these proteins,” Armstrong says. “But I haven’t figured out how to do it just yet.”

Another Vanderbilt researcher, Hassane Mchaourab, Ph.D., is studying

efflux pumps, which are a key mechanism in resistance to antibiotics and some chemotherapy drugs. Mchaourab recently published a mechanism for an efflux pump essential for the survival of *E. coli*, called MsbA.

“The motivation for this work is to start thinking about designing inhibitors of these molecules,” says Mchaourab, professor of Molecular Physiology and Biophysics. “The goal is to silence these proteins by designing inhibitors that bind tighter than the drug.”

Perhaps, like the fungus-farming ants of the tropics, we’ll eventually find a way to keep pace with the microbes that cause human disease. But, until then, the prospects for new antibiotics look bleak.

“I am concerned about the future of my grandchildren in terms of the resistance problem,” says Stratton. “I don’t see it getting better in the near future. I don’t know what it will take to correct it.” **VM**

The evolution of resistance

From an evolutionary standpoint, entirely novel genes and proteins don’t just “appear.” So where did the genes and proteins that confer resistance come from?

Biochemist Richard Armstrong is probing the evolutionary history of enzymes that underlie resistance to the antibiotic fosfomycin, one of the many antibiotics isolated from the prolific soil bacterium *Streptomyces*.

“We set out to simply understand the enzyme,” Armstrong said. He characterized that enzyme, called FosA, using X-ray crystallography to

derive its structure and biochemical methods to determine its mode of action.

“Then we started thinking about the evolution of this resistance protein,” Armstrong said. “We reasoned that since *Streptomyces* was a soil microorganism, other soil microorganisms might have resistance genes in their genomes so that they could survive in the presence of *Streptomyces*,” he said.

By surveying the genomes of other bacteria, his group identified two additional fosfomycin resistance proteins that degrade fosfomycin in a similar – but not identical – manner as FosA.

“There has to be a way that perhaps these proteins

evolved from something else. Our best guess at this point is that these genes have evolved from proteins doing other things in a cell’s metabolism.”

Fosfomycin is a unique kind of compound called a phosphonate, a molecule that contains a carbon-phosphorous bond. Phosphonates are relatively rare in nature, but microbes can use them as a source of phosphate, a biologically critical molecule. One of the fosfomycin resistance enzymes Armstrong found was in an operon (a group of enzymes) that cleaves carbon-phosphorous bonds. Although the activity of this enzyme was not sufficient to confer resistance, it suggested that resistance

proteins might have originally arisen to perform basic metabolic functions, not simply to squelch antibiotics.

“You can imagine that this gene – something that doesn’t work very well – can be ‘tweaked.’ It doesn’t require a huge change in genetics to get this protein to do something that might actually be useful for this microorganism in a completely different context.”

“Nature has developed a ‘twist’ on the same enzyme, making it operate in a slightly different fashion,” Armstrong explained. “That’s sort of the way we’re thinking about the evolution of a lot of these proteins.”

– MELISSA MARINO

Wet. Lather. Rinse. Dry.

HAND WASHING - A BASIC BATHROOM etiquette once thought to be a simple and mindless task – actually requires a step-by-step regimen for success.

A lesson in Hand washing 101 would read like this:

Pull the paper towel from the holder. Turn on the faucet. Wet hands.

Soap and scrub hands up to wrists for 15-20 seconds or the length of the “Happy Birthday” or “ABC” tunes. Rinse. Dry hands. Turn off the faucet with towel used to dry hands. Exit restroom.

Since the 2001 release of Centers for Disease Control and Prevention guidelines on hand hygiene, hospitals nationwide have highlighted the importance of hand washing and use of alcohol-based gels in the prevention and control of infections.

Vanderbilt created its own hand washing/hand hygiene campaign in 2004 to educate and raise awareness among its staff and visitors about the regimen that many people take for granted. Staff and visitors are instructed in the why, when, where and how-to of hand hygiene.

“No one maliciously doesn’t wash their hands,” said Thomas R. Talbot, M.D., M.P.H., assistant professor of Medicine, chief hospital epidemiologist and chair of the Hand Hygiene Task Force. “People are busy and often forget. But that is not acceptable; thus we have found we need to hardwire proper hand washing so that it’s an automatic thing, a reflex. We want people to get in the habit and do it with every patient encounter.

“People really have seemed to appreciate the campaign. Now our biggest focus is rolling it out to every area of the hospital and getting feedback on the adherence data. This is a very basic practice that is also really important for patient quality and safety.”

The campaign has been quite effective. Since the start of the program, there has been a 30 percent increase in compliance. The move to educate and increase adherence is not just in medical facilities, Talbot said.

“It’s everywhere,” he said. “Washing your hands is the No. 1 way to prevent infection whether you are in an office and preventing the flu, or with patients.”

WRITTEN BY JESSICA PASLEY
PHOTOGRAPH BY ISTOCK

The hand washing campaign was launched at the Monroe Carell Jr. Children's Hospital, and soon after, the adult hospital joined the effort. Posters and awareness days are known throughout the Medical Center as effective ways to educate the staff about hand hygiene. As part of the Medical Center training, all staff members must complete the VandySafe teaching on hand hygiene.

Traditionally, the rate of hand washing among the nation's medical staff has been low with the national average between 35 percent and 40 percent. Talbot reports that Vanderbilt was above the national average, but there's room for improvement.

"This has been a multi-disciplinary project," Talbot said. "It has taken the entire institution to make this work.

Something that has worked is an incentive called Reward Rounds in which members of the Hand Hygiene Task Force award prizes to Medical Center staff caught in the act of adhering to correct hand washing techniques. We are emphasizing that hand hygiene is important. It is a basic practice that must stay on people's radar to enhance visibility and protection."

Lauran Allen, manager for Performance Management and Improvement at Children's Hospital, started the program and has been happy with the results.

"The campaign has definitely contributed to the overall attitude about hand washing and hand hygiene," she said. "When we first began, people were washing their hands, but they were not doing it correctly.

"Now we have a lot more people doing it the right way and the numbers are increasing. The education piece has really helped. The number of people washing their hands incorrectly has almost been eliminated.

"The program is not just for our staff," she said. "We have events that involve anyone who wants to learn proper hand hygiene. We encourage our patients, especially the children, to participate. We have worked to make this as interesting and fun as possible so that hand washing won't be just another mundane and routine task."

The use of alcohol-based hand sanitizers has proven to be more effective than soap and water in killing bacteria. The task force has dispersed wall-mounted dispensers throughout the Medical Center as another tactic of its campaign.

Although many people have preconceived notions about hand hygiene and hand washing, the task force points out some interesting CDC facts, including that the temperature of water does not prevent infections. There is no way you can get the water hot enough to sterilize your

hands. Friction is what is important and disrupts bacteria on the skin.

According to the CDC, a typical person's hands contain millions of microbes. Most of them are naturally occurring and harmless, but some may be disease-causing germs. Every time a person moves from one task to another, touches a surface, rubs his nose or eyes, and interacts with another person, germs spread.

Nearly 22 million school days are missed each year due to the common cold. It has been proven that when children practice healthy hand washing habits, they miss fewer days of school.

Observations in public restrooms show that only about 68 percent of Americans wash their hands before exiting.

Repeated use of reusable cloth towels is not recommended and should be avoided. Recommended drying methods and times: single-use paper towels – dry hands 10 seconds on each towel. The first towel removes the bulk of the water while the second one completes the drying; air dryer – rub hands together under warm air for 30-45 seconds; single-use cloth towel – rub hands for 10 seconds on sections of the towel for a total of 20 seconds.

"This is all something our mothers and grandmothers taught us for good reason," Talbot said. **VM**



C. Buddy Creech, M.D., M.P.H., left, and Eric Skaar, Ph.D., against a background of *Staphylococcus aureus*.



BACKGROUND COURTESY OF CENTERS FOR DISEASE CONTROL AND PREVENTION

a new twist from an old foe

DRUG- RESISTANT STAPH KEEPS SCIENTISTS, PHYSICIANS GUESSING

IN THE LATE 1990s, four children in the upper Midwest suddenly and unexpectedly died. Their cases sent a chill through the ranks of infectious disease specialists – an antibiotic-resistant strain of “staph” bacteria had killed all four. The culprit was methicillin-resistant *Staphylococcus aureus*, MRSA.

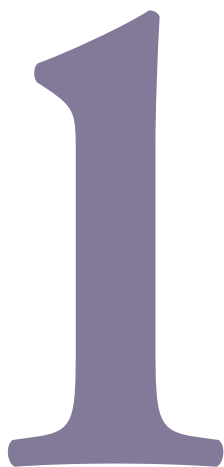
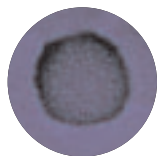
MRSA had been around since the 1960s, with climbing numbers of infections through the 1980s and 90s, but it was a germ essentially confined to the hospital or health care setting.

“You didn’t get MRSA if you were at home; you got it if you were in the hospital frequently, having surgery, had a dialysis catheter, or were always on antibiotics,” says C. Buddy Creech, M.D., M.P.H., assistant professor of Pediatric Infectious Diseases.

“These children who died in Minnesota and North Dakota had none of the risk factors for MRSA. They were healthy kids; they’d never really been in the hospital; they’d never really been sick at all. And they had a very fulminant course of staph infection.

“From their cases came the fear – has hospital-acquired MRSA gotten loose? Do we have a feral isolate running around in our communities?”

WRITTEN BY LEIGH MACMILLAN
PHOTOGRAPHY BY DEAN DIXON



It was quickly appreciated by infectious disease investigators that the MRSA that killed these children – “community-associated” MRSA – was not the same “strain” as the hospital-associated bug.

But it was something potentially more worrisome.

While the hospital-associated MRSA is somewhat clunky and slow-growing, the community-associated bug is a “trimmed down, more svelte version of MRSA,” Creech says. This would theoretically allow it to spread rapidly and out-compete the antibiotic-sensitive, “regular” staph that have long lived with and infected us.

PROBING STAPH’S BATTLE PLANS

Under the microscope, staph bacteria look like tiny clusters of grapes. But innocuous fruit staph is not.

It is the leading cause of pus-forming skin and soft tissue infections, the leading cause of infectious heart disease, one of four leading causes of foodborne illness, and the number one hospital-acquired infection.

Antibiotic-resistant forms like MRSA make it all the more difficult to treat.

“Staph’s just out there, and every decade or so, it seems to raise its head in an interesting way,” Creech says. In the 1960s, a highly virulent form of staph circulated in newborn nurseries; in the mid-to-late 1970s, toxic shock syndrome associated with tampon use claimed lives; in the 1980s and 90s, hospital-associated MRSA became firmly entrenched; and since the late 1990s, community-associated MRSA infections have been climbing.

Staph is “arguably the most important bacterial pathogen in the United States,” says Eric Skaar, Ph.D., M.P.H., assistant professor of Microbiology and Immunology.

Skaar and his team are studying the basics of how staph infects its human hosts and causes disease.

The primary immune system cells that respond to staph infections are neutrophils, which “basically gobble up bacteria,” Skaar says.

“In its simplest form, a staph infection is a fight between the staph and the neutrophil.”

Skaar is taking advantage of cutting-edge proteomics technologies available at Vanderbilt to identify proteins that are part of that battle. Those proteins might make good targets for new antibiotic therapeutics, he says.

In pilot studies, Skaar and his colleagues compared staph infections in normal mice and in mice lacking neutrophils. Using mass spectrometry to study kidney abscesses in these mice, the investigators identified up to 70 proteins in the staph-containing abscesses that are present in a neutrophil-dependent manner, suggesting that they are part of the staph vs. neutrophil battle.

One of these proteins, when purified and added to staph, kills the bacteria.

“We’re following up on the preliminary data with that one protein, and it’s pretty exciting to think about what the other 69 proteins might be,” Skaar says.

BLOCKING IRON-STEALING TO THWART INFECTION

Skaar’s team is also after the mechanisms staph uses to acquire iron, a key nutrient that it and all other bacteria require to successfully cause infection.

Iron is the only nutrient which is difficult for bacteria to come by inside the human body, an environment that may be “the most iron-starved place on Earth from the standpoint of iron availability,” Skaar says.

Iron is “hidden” inside human cells by iron-binding proteins – mostly heme-containing proteins like hemoglobin. This iron-hiding strategy is one of the most

A rising tide of drug-resistant staph infections

Spider bites and pimples that just won’t heal.

That’s how parents are describing their children’s skin infections that turn out to be caused by a deadly strain of drug-resistant “staph” bacteria, says C. Buddy Creech, M.D., M.P.H., assistant professor of Pediatric Infectious Diseases.

Creech has been following the rising tide of cases of community-associated methicillin-resistant *Staphylococcus aureus*, MRSA, and he’s concerned.

He describes deaths of children, particularly adolescents, who are healthy and then develop sudden, devastating disease.

“These are cases where a child has a fever on Saturday night, feels bad on Sunday, collapses in the pediatrician’s office on Monday, and then dies. It’s horrible.”

Skin abscesses are the most common presentation, and recent MRSA outbreaks

important first lines of defense against bacterial pathogens – a process known as “nutritional immunity.”

Skaar and his colleagues are studying how staph “steals” iron away from its binding proteins.

“We found that staph gets iron by popping open your red blood cells – during a blood-borne infection – pulling out the hemoglobin, removing the heme, sucking that up and eating it,” Skaar says.

The team has identified a heme transport system, present in a number of Gram-positive pathogens including staph and *Bacillus anthracis* (anthrax), that recognizes human hemoglobin, removes heme from hemoglobin, transports heme through the bacterial cell wall, and degrades the heme to release free iron.

But heme-eating is a little tricky for staph: The right amount is required, but too much is toxic.

“We figured that staph must have

Staph infecting a hair follicle



VISUALS UNLIMITED

have occurred among athletes, prisoners and tattoo recipients, with the germ spreading through skin contact or shared items like towels.

Of the skin abscesses treated in the adult and pediatric emergency departments at Vanderbilt from Nov. 1, 2004 to Oct. 31, 2005, about 70 percent were positive for MRSA, according to a study conducted by Thomas Talbot, M.D., assistant professor of Medicine.

These findings mirror the national scene. A study published this summer in the *New England Journal of Medicine* reported that 59 percent of all skin infections among adults treated in emergency rooms in 11 U.S. cities in August 2004 were caused by MRSA.

“We culture every abscess now,” Creech says. “Not only do we want to know if it’s MRSA, we want to keep tabs on what MRSA is doing – is it becoming resistant to the drugs that we think still work?”

Physicians have been able to turn to some “old” antibiotics to treat community-associated MRSA, sulfa-type drugs like Bactrim that were not being routinely used because other germs had developed resistance to them, Creech says.

“There are two MRSA treatment arms right now – we still have a small number of drugs that are easy to give to people at home for uncomplicated MRSA infections, and we have several intravenous drugs, such as vancomycin, that we reserve for the critically ill patients.”

With any of these antibiotics, Creech warns, “it’s the finger in the proverbial dike. We will inevitably see resistance – it’s just a matter of time.”

Wendy Inman, a 30-year-old mother of three from Waynesboro, Tenn., knows about resistance firsthand.

She has battled skin abscesses caused by MRSA for the past three years. Because of repeated boils in her

underarm area, both wearing clothing and letting her arms hang at her side have been painful.

Bactrim would help for only about six weeks, then the pus-filled cysts would return. She was referred to Vanderbilt’s Patty Wright, M.D., assistant professor of Medicine, in June, and prescribed Bactrim and a decontaminating-cleansing regimen that has kept the skin abscesses at bay.

Twice a day, for the first week of each month, Inman cleanses with a surgical-type scrub and uses an antibiotic nasal ointment. She also takes diluted bleach baths twice a week during that week, and takes a daily dose of Vitamin C. “People who have never had this don’t realize how bad this is,” she said. “It’s like living with a toothache, a constant pain. But, now, it’s such a blessing to be free of pain,” she says.

– LEIGH MACMILLAN AND NANCY HUMPHREY

A nosy bacteria

Staphylococcus aureus, “staph,” loves the warm, moist lining of our noses. About a third of us host staph colonies at any given time, and nasal colonization can be a risk factor for infection.

When infectious disease researchers began seeing cases of methicillin-resistant *S. aureus* (MRSA) in the community, they wondered: was there a reservoir of MRSA lurking in people’s noses, says C. Buddy Creech, M.D., M.P.H., a pediatric infectious disease specialist at Vanderbilt.

In 2001, Mari Nakamura, M.D., a resident at the time, and Kathryn Edwards, M.D., professor of Pediatrics, swabbed the noses of 500 healthy children in the Vanderbilt Pediatric Primary Care Clinic and at the private offices of Old Harding Pediatrics in Nashville, to look for staph and particularly MRSA. In the group of 500, 145 children (29 percent) were colonized with *S. aureus*, and four of those had MRSA.

“There wasn’t a terrific amount of MRSA in kids’ noses, but it was out there,” Creech says.

After what he calls “a barrage of MRSA cases,” Creech and Edwards decided to repeat the study in 2004 – they swabbed the same number of children at the same two pediatrics practices. This time around, they found that 46 children had MRSA in their noses, more than a tenfold increase in just three years.

“This was really remarkable,” Creech says. “I wouldn’t be surprised if five years from now most of the staph we carry happens to be methicillin-resistant.”

It is unclear if individuals carrying MRSA are at increased risk for infections, Creech says. He points to evidence from a military study suggesting that may be the case – soldiers who started basic training with MRSA nasal colonization were 10 times more likely to get an infection compared to trainees with “old-fashioned” staph.

More MRSA lurking about in our communities is particularly worrisome in the setting of a potential flu epidemic, Creech says. It’s known that staph prefers to infect flu-altered lung linings – the resulting bacterial pneumonia might be especially deadly if the bacteria are MRSA. **VM**

– LEIGH MACMILLAN

some mechanism to monitor heme levels so that it doesn’t eat too much but eats enough to satisfy its iron requirement,” Skaar says.

In recently published studies, Skaar and colleagues again turned to proteomics technologies to examine the proteins produced by staph exposed to iron-rich and iron-poor conditions. The investigators found that staph coordinates a change in its central metabolism to alter the end products it pumps out.

When iron is scarce, it produces chemicals that make the environment more acidic, which causes iron to pop off the proteins that are hiding it.

Understanding the mechanisms staph uses to get iron could point to novel antimicrobial targets. And because all bacteria

need iron, the targets may be common to many types of bugs, Skaar says.

“It’s a simple idea: this is the food they need; this is how they get it. If you could inhibit iron acquisition, they don’t get food, and you don’t get sick.”

MOVING TOWARD A STAPH VACCINE

New antibiotics are desperately needed against a bug that “can be resistant to just about every antibiotic that we have,” Skaar says. Some investigators have suggested that we are returning to a pre-penicillin-like era, when systemic staph infections had an approximately 80 percent fatality rate, he adds.

“Staph adapts quickly to whatever we do to it,” Creech says. When methicillin – a penicillin-type antibiotic with a component

that was supposed to block bacterial resistance to penicillins – was introduced, it took less than a year for physicians to see staph infections resistant to the new drug, he notes.

“This pattern that staph shows of rapid adaptation and drug-resistance is inevitable with most antibiotics, it seems,” Creech says.

“What we need are new strategies for treatment and new strategies for prevention of staph infections.”

A vaccine against staph may be the best bet for preventing infections. Several companies are in various stages of developing staph vaccines.

Farthest along is a product called StaphVAX, which showed early promise in preventing staph infections in dialysis patients. A larger phase 3 trial of the vaccine, also in dialysis patients, failed to reduce the number of staph infections in the vaccinated group. The company that produces StaphVAX is continuing to study how best to make the vaccine and test it in patient populations at risk for staph infections, Creech says.

The perfect vaccine for staph will need to have several components that hit staph at multiple pathways, Creech believes.

“Staph’s been with us for a long time, and it knows how to be redundant to evade our defenses,” he says.

As part of its battle plan, staph coats itself in sugars and proteins that keep our immune system from “seeing” it, pumps out toxins that poke holes in our cells, and produces proteins that help it avoid being killed if it gets taken prisoner by an enemy neutrophil.

“If we can figure out how to hit all those things, we can potentially outsmart it,” Creech says.

Staph is “one of the more challenging pathogens we face,” he adds, “and it’s going to take the continued collaboration of basic scientists, epidemiologists, immunologists, vaccine developers and clinicians to make an impact in preventing and treating infections from this bug.” **VM**

President's Corner

I am very pleased and excited to be a member of the Canby Robinson Society (CRS), an organization that was created in 1978 to honor and encourage those who give financial support to the education, research and patient care programs of the Medical Center. I view the CRS as a part of my family and feel fortunate to have served as your president since January 2006.

As mentioned in a previous issue of *Vanderbilt Medicine*, my major goal during my term is to increase the number of faculty members in the CRS. Currently, about one-third of the Vanderbilt clinical faculty are members of the CRS, but membership is variable in our clinical departments. For example, some departments have memberships as low as 10 percent, while membership in the Department of Ophthalmology, under the leadership of Dr. Paul Sternberg, is about 80 percent. It is my hope that all clinical departments will promote membership in a similar fashion with the approval

and help of the VUMC development team. We are initiating a program to educate our entire faculty about how vital their support is to the Vanderbilt Medical Center, to our patients and to our students. With the help of Vanderbilt department chairs we are designing "giving brochures" that make it easier for our faculty to begin a giving program that can support areas of their choice including their own department, scholarships, resident education, research and other areas.

Another important goal is to increase Vanderbilt Medical School scholarships. We are fortunate to have approximately 135 full scholarships that provide both full tuition and a stipend for four years, and they include: 34 CRS scholars (19 M.D. and 15 M.D./Ph.D. of which CRS provides support for the M.D. portion of their training), eight named scholarships, 38 medical school scholarships for the M.D./Ph.D. students, and 53 scholarships in support of diversity. We also have about 98 partial scholarships based on students' needs.

While we can be very proud of the

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; www.mc.vanderbilt.edu/crs/

overall scholarships provided to our medical students, a major goal is to increase this number so that every student at Vanderbilt may receive a full or partial scholarship. This would reduce the overall debt of each student upon completion of medical school. At this time Robert Collins, M.D., John L. Shapiro Professor of Pathology and a member of the CRS Board of Directors, is a major leader in the efforts to increase scholarships; he is assisted by Judson Randolph, M.D., and Robert McNeilly Jr., both of whom were previous presidents of the CRS.



Lonnie Burnett, M.D.
President, Canby Robinson Society

Generosity helps create legacy to shape future

Through generous gifts, three prominent physicians are continuing Vanderbilt University Medical Center's reputation in delivering excellent health care while molding the future leaders of the medical community.

George W. Holcomb Jr., M.D., MD '46, has dedicated his adult life to Vanderbilt and the School of Medicine. Now, after a

(Left to right) Edward Fody, M.D., George Holcomb, Jr., M.D., and William Snyder, M.D., with Dean Steven Gabbe, M.D.



30-year career in Pediatric Surgery and 60-plus year connection with Vanderbilt, Holcomb's legacy and love for the school will continue with the George W. Holcomb Jr., M.D., Chair in Pediatric Surgery, documented through a bequest in his will.

"I made this contribution because of an existing need and with the hope that it will assist the Monroe Carell Jr. Children's Hospital Surgical Department to advance to the excellence nationally that this outstanding hospital rightfully deserves," said Holcomb.

Holcomb received his undergraduate degree in 1943 and his medical degree in 1946, both from Vanderbilt. During his general surgery residency at Vanderbilt, he became interested in pediatric surgery, and he later accepted a residency at Harvard University Medical School with Robert Gross, M.D.

After completing his surgical residency in 1952, Holcomb served in the U.S. Army during the Korean War, sta-

tioned in Japan as a thoracic surgeon. After the war, in 1954, he and his late wife, Alice Ingram Holcomb, and their son, George W. "Whit" Holcomb III, returned to the United States; and shortly after, their daughter, Virginia, was born. The family relocated to Nashville where Holcomb opened his private practice in pediatric surgery, which he operated until retiring in 1989.

In 1993, the late Roscoe R. "Ike" Robinson, M.D., then vice chancellor for Health Affairs, asked Holcomb to return to Vanderbilt to be the Executive Director of Medical Alumni Affairs. Holcomb accepted and remained in the position until 2003.

"Although the surgical care is excellent at Vanderbilt Children's Hospital now," he added, "I'm hopeful that this gift will help Children's continue to advance in national prominence as we recruit world-class pediatric surgeons to

(continued on page 40)

Newest group of scholars joins CRS community

John Phillips knew that Vanderbilt University School of Medicine was the place for him from his first visit. "VUSM really has it all," said the Decatur, Ala., native who graduated from the University of Alabama with a B.S. degree in chemistry. "They have brilliant faculty who are also very committed to students. They have a unique research experience through the Emphasis program. More than anything, students here are genuinely happy, and the CRS scholarship made it possible for me to be here."

Phillips pointed out that the Canby Robinson Society is more than just financial assistance. "It is a community," he said. "The development and career guidance available through the Canby Robinson Society and the intellectual diversity of its members made my decision very simple. I feel honored to be a part of the program and am very grateful for the opportunity."

During his undergraduate years, he researched the protein interactions involved

in certain cancer formations as well as new biochemical methods to clean up industrial pollution. This past summer, Phillips worked on a research project with a non-profit organization and the National Cancer Institute to discover ways to improve accrual rates for adult cancer clinical trials.

Courtney Harrison also chose Vanderbilt for the excellent faculty and caring student body. "I was especially attracted to Vanderbilt because it seemed to place a great deal of importance on the quality of student life," said the Richmond, Va., native who attended Washington and Lee University, earning a B.S. in neuroscience.

Harrison sees her involvement with the CRS as a way to enhance her medical education and her connection with people. "I expect involvement in the society to be an opportunity to meet more people, both in the medical community and in the community at large," she said. "It is very important to have mentors, and I hope the Canby Robinson Society will be another place to look to for guidance over the next few years as I begin exploring all the opportunities and deciding on a career path."

Fluent in Spanish and having spent considerable time in several Spanish-



ANNE RAYNER

Left to right, front: Courtney Harrison, Amy Dickey, Beth Brenner, Indriati Hood; **Left to right, back:** John Phillips, Evan Silverstein.

speaking countries, Harrison is also excited about the opportunity to get involved with Medicos Para la Familia, a Spanish-speaking clinic in Nashville.

Indriati Hood, an M.D./Ph.D. student, was impressed by the collegial and collaborative atmosphere at Vanderbilt. After graduating from Houghton College with a major in biology, the Yarmouth, Nova Scotia, native began looking for institutions that shared her values as they related to medical and scientific training.

"The focus on training future leaders in medicine – communicated clearly by the directors and reinforced by the obvious investment they and other faculty and administrators make in advising and mentoring their students – was enticing," she said.

Being chosen as a CRS scholar was a tremendous honor and gift that Hood believes will help shape her contribution

(continued from page 39)

care for the children of Middle Tennessee and beyond."

William B. Snyder, M.D., MD '57, is a founding member of Texas Retina Associates, a 12-office practice in North Texas, Waco and Lubbock, that focuses on the diagnosis, treatment and surgery of the retina and vitreous. He is also a clinical professor of Ophthalmology at the University of Texas Southwestern Medical School in Dallas.

Before moving to Dallas, Snyder taught at Tulane University's Department of Ophthalmology and the University of Iowa Medical Center in Iowa City, where he served his internship, residency in Ophthalmology and a fellowship in Retina.

Snyder and his wife, Phyllis, funded the Phyllis and William Snyder Chair in

Ophthalmology at Vanderbilt, and have a warm place in their hearts for Vanderbilt.

"I always felt fortunate to be at Vanderbilt and appreciated the opportunity to learn from the dedicated faculty," Snyder said.

The Snyders have long been supporters of Vanderbilt. Mrs. Snyder was a medical social worker at Vanderbilt University Hospital. Their first gift honored Snyder's parents with a named lectureship for invited ophthalmology speakers to come to Vanderbilt. Snyder hopes their most recent gift will help advance the field of ophthalmology, aiding in the fight against age-related, hereditary and metabolic disorders of the retina. "As the population ages, we are seeing an explosion of cases in diabetic retinopathy and macular degeneration," he said. "I want to see Vanderbilt's

continued excellence in these areas of molecular and metabolic disorders."

Paul Sternberg, M.D., chairman of the Department of Ophthalmology and Visual Sciences, recently announced that The Phyllis G. & William B. Snyder, M.D. Chair will be held by John Penn, Ph.D., Director of Research and Vice Chairman of the Department of Ophthalmology and Visual Sciences.

Edward Fody, M.D., MD '75, HS '75-'78, and his wife, Nancy, have funded the Edward and Nancy Fody Chair in the Department of Pathology at Vanderbilt University Medical Center. The gift by the Fodys was highlighted in the Spring 2006 issue of *Vanderbilt Medicine*. Fody, who is currently chief of Pathology at Holland Hospital in Holland, Mich., served his residency from 1975 to 1978 at VUMC.

- JON COOMER

to science. "From my current vantage point, as I am only beginning this endeavor, I can hardly fathom how I might fit into this picture, but to know of the investment that has been made in my training and my future, to know of the support and trust I am offered, is to me a tremendous blessing and encouragement."

Hood, who has not decided on a specialty, is interested in pediatrics, specifically in infectious diseases and vaccine development.

Evan Silverstein graduated from the University of Pennsylvania in 2006 with a B.A. in biology, and a B.A.S. in biomedical science. While a student at Penn, the certified emergency medical technician co-founded the University's bicycle emergency response team. He chose to attend VUSM for the atmosphere and reputation. "Vanderbilt is an extremely happy place," said the Great Falls, Va., native. "Vanderbilt prides itself on the cooperation, friendliness, and happiness of its students. On top of this wonderful atmosphere, Vanderbilt is one of the top medical schools in the country."

Like Harrison, Silverstein is excited about meeting people through the CRS. "The Canby Robinson scholars I have met so far are some of the most involved students at Vanderbilt," he said. "Also, the society members I met at the CRS dinner on Second Look Weekend were very accomplished doctors and members of the Nashville community, and I look forward to working with them in my time at Vanderbilt."

Silverstein is interested in pediatric surgery.

Amy Dickey has a long history with Vanderbilt. Her maternal grandfather graduated from Vanderbilt School of Law and her great-grandfather graduated from VUSM in 1892. She is proud to continue the tradition in her family.

"I was impressed by the school's exciting research, supportive faculty, and happy, well-rounded students," said Dickey, who graduated from the University of Oklahoma with a B.S. in biochemistry, and is a member of

Kathryn P. Celauro, M.D., shown here with Lonnie Burnett, M.D., received the 2006 CRS "Ideal Physician" award in May. She is currently an Ob/Gyn resident at University of North Carolina Hospitals, Chapel Hill. The award is presented to a member of the graduating class who possesses the intangible qualities of common sense, knowledge, thoughtfulness, personal warmth, gentleness and confidence that combine to make the "ideal physician."



TOMMY LAWSON

Vanderbilt's MSTP program. "I am extremely honored to be a Canby Robinson Scholar," she said. "Knowing that others believe so highly in me encourages me even more to work hard, to aim high, and to contribute to the world around me."

Born in Oklahoma, she spent 16 years in China and Taiwan, often volunteering at clinics and hospitals, before returning to Oklahoma for college.

Beth Brenner also noticed Vanderbilt's focus on students and their happiness.

"One of the main things that attracted me to Vanderbilt was the focus on its students' happiness," she said. "This really came through during my interview."

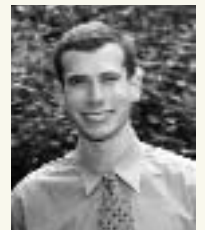
She added that the VUSM interviewer was the only medical school representative who made a point of explaining why a school was right for her instead of focusing solely on whether or not she was right for that school.

The Richmond, Va., native received her BA in Biology at the University of Virginia in Charlottesville. Since coming to Nashville, she is even more confident in her decision to attend Vanderbilt. "In my experience, it seems like a positive learning environment is something that every medical school says it offers but that few actively encourage; Vanderbilt is definitely the exception to that rule. The faculty and administration of Vanderbilt have clearly made their students' well-being

a priority, and that is what made it stand out to me."

- JON COOMER

Kevin Elias joins elite researchers at HHMI



Fourth-year VUSM student Kevin Elias is drawn to a research and academic community. So when the opportunity arose to join the nation's elite researchers at the Howard Hughes Medical Institute (HHMI) and the National Institutes of Health (NIH), Elias put his fourth year of medical school on hold and jumped at the chance.

Elias, a CRS scholar, is part of the HHMI-NIH Research Scholars program, which is designed for medical and dental students with a strong interest in making scientific research a part of their careers.

Students are selected through a rigorous application and interview process by a panel of senior scientists affiliated with HHMI and NIH. About 40 students are chosen for the program, and they are brought to the NIH campus in Bethesda, Md., without a specific research project.

(continued on page 42)

WHERE ARE THEY NOW? TIM KUO, M.D.

Tim Kuo, M.D., experienced two transitions while at Vanderbilt – student to physician and boyfriend to husband. Entering his second year at VUSM, he married his wife, Laura. After graduating in 2000, Tim and Laura moved to Stanford, Calif., for his Internal Medicine residency at Stanford University from 2000 to 2003. He then completed a Medical Oncology fellowship at Stanford University from 2003 to 2006. The couple's daughter, Sarah, now 4, was born during their time at Stanford.

Earlier this year, after the fellowship at Stanford, Tim joined a group practice, Lake Norman Hematology Oncology Specialists, in Mooresville, N.C., near Charlotte. His wife has relatives in North Carolina, so the move was enticing for the family. Also, the senior partner of the practice, Richard Krumdieck, M.D., completed his Internal Medicine residency at Vanderbilt.

"When I was searching for practices, the fact that the senior partner was a Vanderbilt alum caught my eye," Tim said. "When we met, we found that we had a lot in common and this turned out to be a wonderful practice to join."

The CRS scholar is grateful for his experience at Vanderbilt and his participation in the scholarship program. "I am indebted to the Canby Robinson Society for allowing me to pursue a wonderful academic training at Vanderbilt Medical School," Tim said. "Without the Society, I would not have been able to attend Vanderbilt. And I credit the Vanderbilt education for putting me in a great position to succeed in residency, fellowship, and ultimately, my career."

- JON COOMER

Tim Kuo with wife, Laura, and daughter, Sarah.



(continued from page 41)

After arriving at NIH, students are given free reign to choose a laboratory from among the 1,200-plus principal investigators at NIH.

"The sense of creative freedom afforded us is remarkable," Elias says. "Rather than defining my research before I arrived here, I was able to visit as many laboratories as I wanted, listen to senior scientists explain their work to me one-on-one, and receive mentoring from a scientific adviser."

Elias is working in the laboratory of John O'Shea, M.D., at the National Institute of Arthritis, Musculoskeletal, and Skin Diseases (NIAMS), where he studies T cell development and signaling pathways in immunology.

"Working in such an established lab has given me the opportunity for rich mentoring in cell biology research," he says. "I chose this experience because of my interest in tumor immunology. Ultimately, I plan to enter the field of gynecologic oncology, and I want to investigate the mechanisms by which the immune system inhibits or allows the development of ovarian and uterine cancers."

Elias said his training at VUSM has prepared him well to work at NIH.

"Having just finished my third year, I have both the basic science knowledge from the first two years of medical school and the fresh clinical knowledge from the past year to inform my work. The superb immunology and pathology courses from my first two years have certainly fed my interest for understanding the relationship between cancer and inflammatory diseases."

His selection to the Canby Robinson Society Scholarship program was the single most important factor in his decision to come to Vanderbilt for medical school, and ultimately, what allowed him to pursue his passion for research.

"The Canby Robinson Society's help removed the pressure to finish medical school as quickly as possible," he says. "Instead, I am now enjoying the chance to pursue interesting research questions at the largest biomedical research campus in the world."

- JON COOMER

save this date



TOMMY LAWSON

CRS Dinner
May 19, 2007

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



In case you couldn't attend Reunion 2006, look for our photo journal at the end of the following alumni class notes section. A very special thank you goes out to our Reunion class social chairs and class party hosts for their excellent leadership.

Quinq Plus	William S. Stoney Jr., M.D.	1976	John P. Greer, M.D.
1956	Jack M. Miller, M.D.	1980	Deborah M. Bryant, M.D.
1957	John P. Fields, M.D.	1981	Howard A. Fuchs, M.D.
	William B. Snyder, M.D.	1985	William H. Polk Jr., M.D.
1960	Lawrence K. Wolfe, M.D.	1986	Whitson Lowe, M.D.
1961	Robert H. Alford, M.D.	1990	P. David Charles, M.D.
1965	John C. Brothers, M.D.	1991	John David Rosdeutscher, M.D.
1966	Gary W. Duncan, M.D.	1995	Michael Zenni, M.D.
	John S. Sergent, M.D.	1996	S. Trent Rosenbloom, M.D., MPH
1970	John L. Tarpley, M.D.	2000	Barron L. Patterson, M.D.
1971	L. Edwards Settle, M.D.	2001	Tyler W. Barrett, M.D.
1975	Robert S. Quinn, M.D.		
	Alfred S. Callahan III, M.D.		

VMAA Board of Directors

Dr. John B. Neeld Jr. (BA '62, MD '66, HS '66), VMAA President 2004-2006, presided over Reunion 2006 and welcomed the following medical alumni to the VMAA Board: W. Bedford Waters, M.D., Tennessee Region, Knoxville; Robert T. Snowden, M.D., Southeast Region, Pensacola; John T. Cobb, M.D., Southeast Region, Atlanta; Catherine Coolidge Lastavica, M.D., Northeast Region, Manchester; Robert E. L. Gotcher, M.D., Far West Region, Hillsborough; Anne-Marie Amies Oelschlager, M.D., Far West Region, Seattle; Alan S. Rosenthal, M.D., Far West Region, La Jolla; Allan F. Moore, M.D., Young Alum Representative, Boston.

Dr. Neeld introduced Dr. Warren F. McPherson (HO '66-'72), the next president of the VMAA, who is serving a term from Reunion 2006 to Reunion 2008 in tandem with the newly elected VMAA President-Elect, Dr. Wyatt E. Rousseau (BA '65, MD '69).

The VMAA owes a deep debt of gratitude to Dr. Neeld for his excellent leadership throughout his VMAA presidency. Under Dr. Neeld's guidance, the board completed a restructuring process that began in June 2004. The board now includes representatives from all medical alumni constituencies, including a graduate student representative, the president of the post-doctoral organization, and nine specialty society representatives.

In addition to overseeing the completion of the VMAA's Board expansion, Dr. Neeld led an examination of the association's formal awards structure, culminating in the creation of a VMAA Award for Alumni Achievement. This award recognizes outstanding personal achievement and/or professional accomplishments by a VUSM alumnus/alumna. Both exceptional academic or non-academic achievements/professional accomplishments are considered.

Reunion 2006 VMAA Alumni Awards

A highlight of each Medical Reunion is the naming of the VMAA Distinguished Alumni Award winners, VUSM's highest alumni honor. For 2006, Dr. Robert D. Collins Sr. (MD '51; HS '51-'53; HS '53-'55; FA '57- present) and Dr. Bert O'Malley (FA '69-'73), became the 28th and 29th recipients of this prestigious award, first bestowed in 1983. Dr. Sarah H. Sell (MS '38; MD '48; HS '48-'49) and Dr. William B. Wadlington (BA '48, MD '52, HS '52-'53) were the worthy recipients of the first VMAA Alumni Achievement Awards. Mrs. Frances K. Hardcastle (BA '59), a past CRS President and current VMAA Board member, received the VMAA Service Award, which honors an individual of exceptional merit whose dedicated and distinguished volunteer service has furthered the aims and goals of Vanderbilt University Medical Center.

VMAA Web site

Please take a moment to visit our new and improved VMAA Web site at:
<http://www.mc.vanderbilt.edu/medschool/alumni/>

On our site, you will find helpful links to Dore2Dore, Vanderbilt's online alumni community, the Eskin Biomedical Digital Library site, and this magazine. Our colleagues at Eskin continue to add new content. The new link to the various custom libraries is particularly worthy of perusing.

Ann H. Price

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KEY

- MD - Medical School Graduate
- HS - House staff
- FE - Fellow
- FA - Faculty
- CF - Clinical Faculty



Alice H. Altstatt, M.D., MD'56, retired in 1998 and is living in Finksburg, Md., on a 75-acre farm with three horses, five dogs, a tractor and a thousand groundhogs. She was on staff for 24 years at George Washington University Hospital, and worked for another decade, part-time, at the Doctors Community Hospital in Lanham, Md. Along the way, she also worked two, two-year stints in military hospitals, and two, three-month tours for the Red Cross in Thailand. She has six children, including two sets of twins. The youngest, Robin, graduated from veterinary school in June.

* Indicates CRS member

30s

***Richard R. Crutcher, M.D.**, MD'37, HS'37-'40, '45-'46, retired in 1978 after practicing surgery since 1947. He and his wife, Dot, are enjoying retirement and their five children, nine grandchildren and seven great-grandchildren.

***William W. Davis, M.D.**, MD'37, provides this update on his children – who have three Ph.D.s, but no M.D.s, among them. Don is a math professor at Lehigh University, and has established a program for talented young math students from the eastern Pennsylvania region. Bill is a statistician, working on probability statistics at the NIH. Richard has his doctorate in South Asian Studies and teaches at Bard College in New York. Debby is in charge of the Science library at Ursuline College and has raised four children. One of Davis's granddaughters, a statistician with the Department of Energy, recently gave him a great gift – his first great-grandchild.

40s

***Blair E. Batson, M.D.**, MD'44, HS'44-'45, '48-'50, served as chairman of the Department of Pediatrics at the University of Mississippi School of Medicine from its opening in 1955 until he retired. The University of Mississippi Medical Center's Blair E. Batson Hospital for Children is named for him.

Henry M. Gewin, M.D., MD'45, retired in 1994. He has two sons, internists, who received their undergraduate degrees from Vanderbilt, and a grandson, also a Vanderbilt graduate, who is a third-year resident in Psychiatry at the University of Alabama at Birmingham.

Sam H. Hay Sr., M.D., MD'40, reports he is living well and loving life in Huntsville, Ala. He retired 10 years ago from his Murfreesboro, Tenn., practice.

William (Mack) Hibbitts, M.D., MD'48, has lived in Midland, Texas, with his wife, Edna, since 1970 and was recently recognized by the Midland Exchange Club for his many years of community service with a Book of Golden Deeds Award. He helped start Hospice of Midland during the 1980s and served as its first medical director.

***George W. Holcomb Jr., M.D.**,

MD'46, HS'46-'48, CF'57-'00, is retired and reports that his son,

***George W. Holcomb III, M.D.**, MD'80, HS'80-'85, FA '88-'98, is the Katherine B. Richardson Chair in Pediatric Surgery at the University of Missouri – Kansas City, where he is also surgeon-in-chief and director of the Center for Minimally Invasive Surgery at Children's Mercy Hospital. Holcomb III has also edited a textbook in pediatric surgery with two other authors, published by Elsevier-Saunders in 2005.

Howard H. Nichols, M.D., MD'45, HS'50-'51, retired in 1990 after 45 years in Pediatrics. He is still participating in several volunteer jobs, none of which are in the field of medicine.

Clifford Tillman, M.D., MD'44, HS'44-'49, '50-'51, is still practicing medicine at the age of 85. He and his wife, Sarah, a graduate of the Vanderbilt University School of Nursing, have four children, all Vanderbilt graduates, including one son who graduated from Vanderbilt University School of Medicine.

50s

***John Wesley Boldt, M.D.**, MD'54, HS'54-'59, is being honored by the University of Texas Health Science Center in San Antonio by an endowed chair established in his name for excellence in gynecology. He traveled to Guatemala in July on a medical mission trip, and in September, will welcome his 22nd grandchild.

James Callaway, M.D., MD'56, HS'60-'64, retired from private practice in Maryville, Tenn., in 1995. He and his wife, Van, who he married in June, are living in Maryville.

Eugene T. Davidson, M.D., MD'56, FE'59-'60, is living in Mars Hill, N.C., completed a six-month term as medical director of Lakeland (Fla.) Volunteers in Medicine in May, and is working one day a week at the Asheville Free Clinic. His daughter, Anne, one of four children, continues a job in advertising. He has five grandchildren and a new golden retriever named Sparkle.

Marshall A. Diamond, M.D., MD'57, lives in West Columbia, S.C., and enjoys traveling the world with his wife, Ann, and playing tennis two or three times a week. He also enjoys golf and yard work. The Diamonds have two sons and three grandchildren.

Cecil B. Howard, M.D., MD'53, retired from the practice of

book focus



G. B. Hodge, M.D., MD'42, a retired Spartanburg surgeon, helped found the University of South Carolina Upstate in 1967, and has chronicled the history of the campus and the leadership in his memoir, "Reflections on Building an Institution, The University of South Carolina Spartanburg." He began his career in 1948 at Spartanburg General Hospital and later served as chief of surgery at Mary Black Memorial Hospital.

Pediatrics in Maryville, Tenn., Aug. 1. Shortly before that, he was commended by Tennessee State Senate Resolution #282 for his 50 years of exceptional medical service to the people of Blount County. In February, the *Maryville-Alcoa Daily Times* selected him as one of the "people who matter" for his community service.

***Joanne Linn, M.D., MD'50**, retired in 1991 and is living in Nashville.

***Joseph C. Ross, M.D., MD'54**, HS'54-'55, FA'79-, has spent much of the past few years occupied with family. His brother, Jeff, a Sparta, Tenn., dentist, was diagnosed with multiple myeloma; his daughter, Jennifer, with breast cancer; and his grandson, Jonathan Schaub, is still recovering from a near-fatal accident in New York.

60s

Edward E. Anderson, M.D., MD'61, HS'61-'63, retired in 1998 after 30 years of practicing invasive and interventional cardiology. He has built a home on a hill and has turned to the important things in life – "children, grandchildren, travel, hunting and fishing, plus returning to my roots in West Tennessee." He has four children and three grandchildren nearby, and last year, at the age of 68, gave up his motorcycle. "I thought I'd quit while I was ahead," he reports.

Robert M. Carey, M.D., MACP, MD'65, FE'70-'72, is chair of the Council for High Blood Pressure Research.

***Thomas Chesney, M.D., MD'69**, HS'70, was featured in a March issue of the Baptist Hospital Memphis newsletter, *Baptist Leader*, about his decade-long work as chairman of the Metro Performance Improvement Committee of the Medical Staff. Chesney and others helped develop new advances and ways to enhance patient care quality.

***Frank Gluck, M.D., HS'65-'71**, was named an American College of Physicians (ACP) laureate in 2004 and was inducted into the Seton Society (Saint Thomas-Baptist Hospital Hall of Fame) in 2005. He is currently working half time, teaching at Baptist Hospital's residency program.

***Antonio Gotto Jr., M.D., MD'65**, has joined the board of directors of the scientific advisory board of Arisaph Pharmaceuticals, where he is expected to bring his considerable knowledge in basic and clinical research to the product development programs of the privately held drug discovery and design biopharmaceutical company. Gotto is the Stephen and Suzanne Weiss Dean of Weill Medical College of Cornell University in New York City.

David Gregory, M.D., MD'67, HS'67-'71, FE'80-'81, FA'73-, was featured in an article in the June

worthy of note

"October 2006. The medical school classes of 1956 and 1957 will have a special reunion ceremony together to celebrate 49/50 years. Are too few left from the original classes to hold such individually? Will I begin to accept so many, many decades have piled up behind us? Might I feel as if I'm fitting-in with the aged; probably not.

This reunion on Vanderbilt's campus will be an extension of our lives because our oldest grandson is a sophomore pre-med now, walking the sidewalks his grandpa walked, sitting under a tree his grandpa sat under, shouting 'go Vandy' as we shouted so long ago. It seems Vanderbilt is giving us an unbroken circle of life. Knowing this grandson will not only be waiting to see us but will show us the newest buildings while we point out the 'once that building was', and compare student life circa 2006 to the 1950's, immediately has given us an enthusiasm for the upcoming event. Perhaps, with him, we'll toss autumn leaves on one-another and stop time."

Editor's note: An addition to a personal essay originally published a decade ago and updated for Reunion 2006 by Lois (Dr. Gerald E., MD'57) Stone, Pittsford, N.Y.



VUSM alumni and spouses celebrated with undergraduate Vanderbilt alumni on a recent trip to the Greek Isles. The Vanderbilt flag was flown from the mast of the *Corinthian II* during the entire Mediterranean Cruise. Pictured in the front row, second from left, is Bobbi Graves; second row, center is Herschel Graves, M.D., with Susan Farris on his left; third row, third from left, is Kent Farris, M.D., with Barney Malloy, M.D., and Patty Malloy at the end of that row.

worthy of note



Joao V. Vitola, M.D., FE'91, HS'93-'94, is editor of "Nuclear Cardiology and Correlative Imaging," published by Springer Verlag. He and his wife, Lilian, have two daughters, Stephanie, 11, and Natalia, 9. Living in Brazil for the past decade, he is currently president of the nuclear cardiology group in Brazil and associate professor of Medicine at Federal University in Curitiba. He also runs an international case discussion in nuclear cardiology on the Internet, involving 55 countries. The Web site is www.quantanuclear.com.

American College of Physicians Observer. "Doctor follows Golden Rule to overcome cultural divide," talks about Gregory's volunteer work in caring for Nashville's growing immigrant population. Gregory, an associate professor of Medicine, founded the Siloam Family Health Center, a faith-based primary care clinic in Nashville. Gregory was honored this year with the ACP's Oscar E. Edwards Memorial Award for exceptional volunteerism and community service.

***John D. Hutcherson, M.D., MD'60, HS'64-'66**, lives in Englewood, Colo., and was named a fellow of the American College of Cardiology in February.

Richard M. Hutson, M.D., MD'66, retired from private practice in Paducah, Ky., in 2000. He and his wife, Jane, moved to Fort Collins, Colo., in 2004 and are busy enjoying all that a lifestyle in the Rocky Mountains offers – majestic scenery, rafting, wildlife, hiking and fly fishing.

***Richard B. Johnston Jr., M.D., MD'61, HS'61-'63**, is professor of Pediatrics and associate dean for Research Development at the University of Colorado School of Medicine and executive vice president for Academic Affairs at National Jewish Medical and Research Center in Denver, a respiratory and immunology center.

***Verne Lanier Jr., M.D., MD'66, HS'66-'71**, retired in July 2005. He and his wife, Dean, have three married daughters and five grandchildren.

***John B. Neeld Jr., M.D., MD'66, HS'66-'67**, lives in Atlanta with his wife, Gail, and is the immediate past president of the Vanderbilt Medical Alumni Association (VMAA). He is completing his 20th year as chair of the anesthesiology department of Northside Hospital in Atlanta where he is a member and past chair of the hospital's board of directors. He is a past chair of the American

Society of Anesthesiologists, and chairs the society's delegation to the American Medical Association house of delegates. He is also a member of the board of directors of the American Medical Association Political Action Committee, serves as vice-chair of the council on legislation of the Medical Association of Georgia, and was a recipient of the distinguished service award from the Medical Association of Atlanta.

Preston Russell, M.D., MD'66, had a spring art show at Stanford Fine Art in Nashville. Retired in Savannah, Ga., Russell continues the painting he studied while attending Tulane University. In 1976, he was among artists chosen by the French government for the American Artists in Paris bicentennial celebration. Russell's works are in private collections across the country as well as in southern museums. He is the author of "The Low Country: From Savannah to Charleston," "Savannah: A History of Her People Since 1733," and the recently released "Lights of Madness: In Search of Joan of Arc."

Andrew W. Walker, M.D., MD'60, is retired from his plastic surgery practice in Charlotte, N.C., where he performed the first total hand implant in Charlotte in 1972. He married Brenda Cotter in June, and his son, Bruce, a Vanderbilt graduate, now works for Lending Tree.

Robert H. White Jr., M.D., MD'65, is retiring in December from his pediatric ophthalmology and oculoplastics practice. His daughter and son are both married, living in California, each with one daughter.

Fremont Wirth, M.D., MD'66, president of the American Association of Neurological Surgeons (AANS), presided over the group's annual meeting in April in San Francisco. He is assistant clinical professor in the Department of Surgery (Neurosurgery) at the Medical College of Georgia and practices neurosurgery at the Neurological Institute of Savannah. A member

ZELL MCGEE



Zell McGee, M.D., HS'66-'67, FE'67-'70, is an emeritus professor of Internal Medicine and Infectious Diseases at the University of Utah School of Medicine in Salt Lake City. He gives occasional grand rounds and still teaches in the clinical setting. He is also a member of various medical or environmental groups, travels internationally – most recently teaching in Thailand – and enjoys cross-country skiing and snowshoeing. McGee's darkroom serves as a laboratory surrogate, and he enjoys photographing flowers, especially in black and white.

of the AANS since 1980, he is a member of five committees and of the new AANSPAC Board of Directors. Wirth has served as president of the Georgia Medical Society, the Southern Neurological Society, vice president of the Congress of Neurological Surgeons, governor of the American College of Surgeons and director and vice chairman of the American Board of Neurological Surgeons.

G. Wallace Wood, M.D., MD'66, HS'66-'68, has been in private pediatrics practice at Green Hills Pediatrics Associates in Nashville since 1971. He and his wife, Patty, a 1963 Vanderbilt University graduate, have a son, Michael, daughter, Katie, and four grandchildren. In his spare time, he has season tickets to Vanderbilt football and basketball, Nashville Predators hockey, and Tennessee Titans football.

70s

Alan Birnbaum, M.D., MD'75, has relocated his neurology practice to Spruce Multispecialty Group in North Fresno, Calif. In addition to his practice related to the management and evaluation of work injuries, his predominant activity for 25 years, he has added to his weekly schedule an interesting group of patients with a wide array of general neurological problems. He also continues as the editor of the local cycling club newsletter – www.fresnocycling.com – and has become active in forming a new community service-oriented group, tentatively called Valley Cycling Foundation, which promotes safe and sociable Central Valley riding.

Kendall T. Blake, M.D., MD'71, retired in 2004 after 25 years of private practice of orthopaedic surgery at the Jackson (Miss.) Bone and Joint Clinic. He is now employed by Mississippi Baptist Medical Center in Quality Assurance. He still sees consults, and operates six to eight times a week. His wife, Kathleen, died in 2001, and he married Rebecca Wilcox in April 2004. A daughter,

Barbara, lives in Nashville and is expecting her first child in November. A son, Thomas, teaches at Auburn.

***John Cobb, M.D., MD'78,** spent much of July climbing the Alps. He and a guide took a train to the start of their rock climb of the Riffelhorn and reported incredible views of all the peaks around Zermatt, Switzerland. He successfully climbed Mt. Blanc (4,808 meters).

James L. Fletcher Jr., M.D., MD'76, has become the functioning president of Alta Pete Inc., a southeast Missouri agribusiness named for the Latin phrase, "Aim High."

***Edwin Grogan, M.D., MD'71,** has a busy general surgery practice in Paducah, Ky., and serves as an elder at Lone Oak Church of Christ. He reports that his son, **Eric Grogan, M.D., MD'99, HS'99-'06,** his wife, Melanie, and three children now live in Charlottesville, Va., where he is doing a thoracic fellowship at the University of Virginia. A daughter, Julie, lives with her husband and two children in Memphis.

Douglas C. Heimburger III, M.D., MD'78, was given two awards by the Class of 2008 at the University of Alabama at Birmingham – best small group leader and best course director. Heimburger was also awarded a Fulbright

Scholarship to study, for six months, the nutritional needs of those with AIDS in Zambia, Sub Saharan Africa.

Lawrence Judy, M.D., MD'77, HS'77-'80, is marking his 25th year in a multi-specialty group practice in Southern Indiana. His wife, Marion, works part-time at a community-supported clinic and their middle child looks forward to starting a pediatrics residency in July. As a senior aviation medical examiner, Judy examines pilots for their aviation medical exams, and flies a Cessna 210L. He flew to Estes Park, Colo., for the internal medicine review course, returning via South Dakota and Mount Rushmore, and also landed his small airplane at Chicago's O'Hare, where he went to visit friends at the Elmhurst Clinic.

Patrick Meacham, M.D., MD'76, HS'76-'82, has opened a private, solo, vascular surgery practice in Hendersonville, Tenn. He operates mostly at Hendersonville Hospital, but some at Baptist Hospital in Nashville. For the past two years, he has been working on a minimally invasive technique for aortic repair using videoscopic guidance. He has been married to Gwen for seven years, and has two daughters – Molly, 26, in graduate school at Northwestern, and Alice, 23, who is finishing college at St. Benedict in Minnesota. Meacham's father, **W.F. Meacham, M.D., MD'40, HS'40-**



***Newton Allen, M.D., MD'86, HS'86-'89,** continues his musical endeavors with the release of his third instrumental CD, "Christmas Morning." Piano, cello, violin, woodwinds and percussion highlight this album. This independent musical project follows "Yesterday's Dream" from 2000 and "Hope" in 2003. His Web site, www.opusmusic.com, contains more information as well as samples of his music.

worthy of note

Alfred Callahan, M.D., MD'75, HS'75-'77, known internationally as a leader in stroke and heart attack prevention, has opened the Stroke and Heart Attack Prevention Center in Green Hills in Nashville. The center conducts complete personal risk assessments and utilizes integrated programs for stroke and heart attack risks when found. Callahan is the co-creator of the SPARCL (Stroke Prevention by Aggressive Reduction of Cholesterol Levels) study, which was an international clinical trial of the drug Lipitor and provided important evidence about the link between stroke and heart attack, which are often treated as separate health issues. The study also proved the integrity and health of blood vessels is perhaps even more important than the health of any individual organ. Callahan also authored the book, "The Next Medical Revolution: Angiology," and created the Muhlenberg Vascular Project which provides vascular health care delivery in rural Kentucky. Callahan says the impact of the project has reduced the rate of stroke by 47 percent in Muhlenberg County, Ky. Callahan also began a church-based clinic inside Mt. Zion Baptist Church – a program he calls "Health care where you least expect it."



Michael Citak, M.D., MD'86, is currently a surgeon at Lake Cumberland Regional Hospital in Somerset, Ky., with a diverse practice encompassing general and thoracic surgery and endoscopy. He completed an MBA at the University of Tennessee in 2005, and in July, the hospital hired him as their Chief Medical Officer. He is currently practicing medicine half time while administrative duties occupy the other half of his time. He and his wife, Robin, have three children who are 16, 13 and 11. The family, shown above, helped with Gulf Coast clean up and re-construction after Hurricane Katrina.



***Jeffrey R. Prinsell, M.D., D.M.D., MD'86, HS'83-'88**, a board certified oral and maxillofacial surgeon, has been named president of the American Academy of Dental Sleep Medicine. The AADSM is a national professional organization involved with research, education and training of dentists in the treatment of sleep-related breathing disorders such as snoring and obstructive sleep apnea. Prinsell has a private practice in Marietta, Ga., and is a faculty instructor at the Atlanta School of Sleep Medicine and a surgical consultant with several metropolitan Atlanta area sleep centers.

'44, FA '51-'88, a clinical professor emeritus of Neurological Surgery at Vanderbilt, died in 1999 at age 85; his mother, four years later on the same day.

Susie Merwin, M.D., MD'76, has moved to a new office in a northern suburb of Cincinnati.

Harry Stanley Morehead Jr., M.D., MD'71, reports that after 20 years of a neurology practice in the Boston area and four years in the Middle East, he and his wife, Betty, have moved to Phoenix where he works at a neurology and pain treatment clinic. After 38 years of marriage, the couple has a son, daughter and two grandchildren with another on the way. Morehead is an elder at the Phoenix Valley Church of Christ, and Betty does some counseling and dabbles in real estate.

***Philip M. Rosenbloom, M.D., MD'70, HS'72-'73**, became a Bar Mitzvah at The Temple in Louisville, Ky., at the age of 64, before about 200 friends, family, associates and beloved patients. Medical school classmates in attendance included **John Fitts,**

M.D., Stephan Sweitzer, M.D., and John Tarpley, M.D.

Wally Schlech, M.D., FE'78-'80, has been living and working in Nova Scotia since 1982. He's currently professor of Medicine at Dalhousie University Faculty of Medicine, and has been a visiting professor at the Infectious Diseases Institute in Kampala, Uganda, for two to three months a year doing HIV clinical care, teaching and research. His wife, Mary, is involved in Ark Outreach, a program ministering to homeless and youth in Halifax, and their five children are all educated and "scattered to the winds," including eldest AJ, now a C-130 pilot in the U.S. Air Force.

David Slater, M.D., MD'75, is a professor of Surgery at the University of Louisville and has also been in the private practice of thoracic and cardiovascular surgery since 1985. He and his wife, Gail, a 1972 graduate of Vanderbilt University, have a son, Billy, currently a junior at Vanderbilt.

Peter Stacpoole, M.D., Ph.D., MD'76, HS'76-'78, FE'78-'80, has been at the University of Florida for the past 18 years as its GCRC Program director, and more recently, as associate dean. He's heading UF's response to the NIH Roadmap initiative, entitled, "Clinical and Translational Research Award." His own research focuses on the causes and treatment of genetic mitochondrial diseases and on the pharmacotoxicology of xenobiotics relevant to environmental health. Stacpoole and his wife, Sara, a neurocognitive psychologist and professor of Psychiatry at UF, have two children, Sarah, a Sewanee graduate who plans to attend graduate school, and Daniel, 11.

Daniel K. Winstead, M.D., MD'70, currently serves as the director and president of the American Board of Psychiatry and Neurology, and also director for the American Board of Family Medicine. He and his wife, Jenny, live in New

Orleans and had five feet of water in their home from Hurricane Katrina. They are living in an apartment while it is being rebuilt.

Steven Wolff, M.D., HS'74-'77, is back at Nashville General Hospital, serving as chairman of the Department of Internal Medicine at Meharry Medical College.

Charles Woodrow, M.D., MD'78, HS'78-'79, his wife, Julie, and children, Kent, Grace Anne, Sarah Beth, Andrew and Benaiah, have been on a whirlwind tour of American churches recruiting missionary laborers for work in Mozambique.

80s

***Katherine A. Bertram, M.D., MD'86, HS'86-'90**, continues her private, internal medicine and geriatrics practice in Cookeville, Tenn., and also serves as chairman of the Department of Medicine at Cookeville Regional Hospital and medical director of NHC Healthcare, Bethesda Healthcare and Caris Hospice. Her daughter, Amy, is recently engaged and is working toward her Ph.D. in French.

Chris Cates, M.D., MD'82, HS'82-'86, FE'86, had an article published in the May 2 issue of the *Journal of the American College of Cardiology*, demonstrating that training on virtual patients improves carotid angiography skills.

Raymond Dufresne Jr., M.D., MD'80, HS'80-'87, was promoted to professor at Brown University Medical School, where he is a dermatologist. He was also selected as the 2006 Teacher of the Year.

***Richard Gray, M.D., MD'86**, is chief of the Division of Surgical Services at University Community Hospital in Carrollwood, Fla., and is currently developing an orthopaedic surgery residency program in conjunction with the University of South Florida. He is also hand surgeon for the Tampa



Ovidio Bermudez, M.D., FA'99-'03, has been elected chair of the National Eating Disorders Association (NEDA) and will lead the organization for a year. He is clinical professor of Psychiatry and Pediatrics at the University of Oklahoma College of Medicine and medical director of the Eating Disorders program at Laureate Psychiatric Clinic and Hospital in Tulsa.

Bay Lightning NHL hockey team. **Barbara Greco, M.D., FE'87**, is a partner in Western New England Renal and Transplant Associates in Springfield, Mass.

C. Wayne Holley, M.D., MD'85, lives in Albany, Ga., with his wife, Lori, and daughter, Caroline, 12.

Stephen Jones, M.D., HS'86-'92, directed a recent Cleveland Clinic study that found that most vasectomy patients fail to verify their sterility. The study was published in the April issue of the *British Journal of Urology*. The study found that of 436 men who participated, a mere 21 percent complied with post-vasectomy instructions, which include submitting two consecutive semen samples declared free of sperm to determine the procedure's success.

Michael Wein, M.D., HS'89-'92, is president of the Florida Allergy, Asthma and Immunology Society and is writing a chapter on allergy for the medical textbook "Conn's Current Therapy 2006." He and his wife, Deborah, have

Yi-Wei Tang, M.D., Ph.D., Ph.D.'95, FE'91, and **Charles Stratton, M.D.**, both associate professors of Medicine and Pathology at Vanderbilt, have recently edited and published a Springer book, titled "Advanced Techniques in Diagnostic Microbiology." During the past two decades, technical advances in the field of diagnostic microbiology have made constant and enormous progress in various areas, including bacteriology, mycology, mycobacteriology, parasitology and virology. The book provides a comprehensive and up-to-date description of advanced methods that have evolved for the diagnosis of infectious diseases in the routine clinical microbiology laboratory.

book focus

two children, Matt and Samantha. **Frederick White, M.D., FE'86-'89**, has recently been named senior vice president of Risk Management for the Louisiana Medical Mutual Insurance Company, a physician-led mutual insurance company providing professional liability products and services to physicians and other health care practitioners in Louisiana. The company provides medical liability insurance for more Louisiana health care providers than any other company.

Joe Wilson, M.D., FE'81-'83, has been elected from Georgia to serve on the American College of Cardiology Board of Governors from 2007-2010.

90s

Bond Almand III, M.D., MD'99, recently completed otolaryngology training at the University of Washington and has joined a private practice in Maryville, Tenn. He and his wife have one son, Bond IV, and are expecting their second child in November.

David M. Arehart, M.D., HS'98-'01, traveled to Indonesia in 2004 after the tsunami with a Christian missions group.

Beth Baxter, M.D., MD'90, has a full-time psychiatry practice and continues to write and speak about her story of recovering from serious mental illness.

Suzy Humphreys Bradshaw, M.D., MD'99, HS'99-'02, is practicing general pediatrics in Ithaca, N.Y. She and her husband, **John Bradshaw, M.D., FE'93-'95, '98-'02**, have three children – Zachary, 5, Helen, 3, and Joshua, born in March. John is practicing

pediatrics and pediatric infectious disease in Ithaca, and is on the rotating faculty in Syracuse.

Reuben Bueno Jr., M.D., MD'97, is assistant professor of Plastic Surgery at Southern Illinois University School of Medicine. His practice includes pediatric and general plastic surgery with a special interest in adult and pediatric hand and face anomalies, microsurgery, brachial plexus reconstruction and facial reanimation surgery. Prior to his appointment, Bueno completed two, one-year fellowships – in pediatric plastic surgery at the Hospital for Sick Children in Toronto; and in hand and upper extremity surgery at the Hospital for Special Surgery in New York City.

Leslie Stark Doherty, M.D., MD'95, married Cameron Doherty in November 2005.



Anne Finney Anderson, M.D., MD'96, HS'96-'00, and her husband, Sustin, welcomed twins on Dec. 1, 2005 – Mary Kate and Evan, shown above. She is in a private Ob/Gyn practice in Nashville.



Nels Gunnarsen, M.D., MD'90, retired from the U.S. Air Force as Lt. Colonel on June 1, and has joined a single-specialty radiology group in Chico, Calif. He recently toured his former floating home, the USS Midway – from which he flew fighter jets from 1981-1984 – with his girlfriend, Dilista.



Cari Levy, M.D., HS'97-'00, wearing black hat, has received a VA Career Development Award to study the quality of nursing home care at the end of life. She will become the director of palliative care at the Denver VA. She recently spent six weeks in Norway studying palliative care practices with five other health care providers from the United States. She mixed work with group hiking.



Astrid Jain, M.D., MD'93, welcomed her daughter, Alexa Kate, shown above, on June 25. She weighed 7 pounds, 9 ounces, and was 19 inches long. Astrid is in a private Ob/Gyn practice, holds administrative and academic responsibilities as vice chief of the Ob/Gyn department at Carolinas Medical Center, and serves as chair of their quality assurance committee. She and Alexa share their home with their pug, Rudy, in Charlotte, N.C.

Lisa Gangarosa, M.D., FE'94-'97, is clinical associate professor of Medicine at the University of North Carolina-Chapel Hill in the Division of Gastroenterology and Hepatology. She and her husband, Jim Harrison, who works in the Raleigh radio market, have two daughters who are 7 and 12.

***Katrina Gwinn-Hardy, M.D., MD'91, HS'91-'92**, received an NIH director's award for neuroimaging atlas and received a National Institute of Neurological Disorders and Stroke Merit Award for her work in neurogenetics.

Anne V. E. Hansen, M.D., MD'90, HS'90-'93, is working part time with the Lexington, Va., Health Department and is happy to be back in medicine after 13 years in "retirement" raising her four children.

***Louise Hanson, M.D., MD'90, HS'90-'94**, is chief of Clinical Services at Vanderbilt's Student Health Center. She and her husband, **Walter Smalley, M.D., FE'90, FA'91**-, a gastroenterologist at VUMC, have two children – Hannah, 8, and John, 5.

Alan S. Hillibrand, M.D., FA'96-'98, is vice-chair of the communications cabinet of the American Academy of Orthopaedic Surgeons (AAOS). He will serve a two-year term on the cabinet charged with communicating the Academy's activities to members, patients and the public. He is associate professor of Orthopaedic Surgery and Neurosurgery, and director of Medical Education in the Department of Orthopaedic Surgery at Jefferson Medical College and the Rothman Institute in Philadelphia.

Christopher Hudson, M.D., MD'98, and his wife, Christiana, welcomed George Brooks Hudson on April 28. He weighed 9 pounds, 8 ounces, and was 22 inches long. The family lives in Albuquerque, N.M., where Chris is a flight surgeon in the U.S. Air Force.

***Ahad Mahootchi, M.D., MD'92, HS'92-'96**, married Carole Jahns, a clinical pharmacist at H. Lee Moffitt Cancer Center and Research Institute, on April 15 at Ca'd'Zan Mansion at Ringling Museum of Art in Sarasota, Fla. He is employed by the Eye Clinic of Florida. The couple lives in Tampa, Fla.

Jobe Coy Metts III, M.D., HS'91-'97, and **Peggy Cabell Metts, M.D., MD'97**, live in Wilson, N.C. They are in private practice in urology and radiation oncology, respectively. They have three children – Carrington, 6; McGuire, 4; and Cabell, 3.

Thomas R. Repine, M.D., MD'98, is assistant chief of Hematology/Oncology in the Department of Medicine at William Beaumont Army Medical Center in El Paso, Texas. He was in Baghdad, Iraq, in 2004 with the 31st Combat Support

Hospital. He and his wife, Stephanie, have two daughters, Taylor, 6, and Whitney, 2.

Leopoldo Rodriguez, M.D., HS'96-00, is medical director and chief of Anesthesiology of a Surgery Center in Miami, Fla. He has two children – Alexander, 6, and Nicholas, 4.

Thomas Samuel, M.D., HS'98-'01, completed a hematology/oncology fellowship at Fox Chase Cancer Center in Philadelphia in 2004 and joined the faculty at Temple University in the Division of Medical Oncology as assistant professor and assistant director of the hematology/oncology fellowship. In January, he was appointed to the faculty of the Medical College of Georgia in Augusta, as assistant professor in the Department of Medicine, Division of Hematology/Oncology. His wife has also joined the internal medicine residency program as a first-year intern.

Harry L. Schroeder, M.D., MD'90, and his wife, Darcy, have a son, Braeden Lowell, 5.

David J. Stallard Jr., M.D., MD'91, married his wife, Tina, in July 2005. They moved into a new home on Lake Murray in Lexington, S.C., in April.

Kathryn Teng, M.D., MD'97, HS'97-'99, is leaving her internal medicine practice at Massachusetts General Hospital to take a clinician educator position at The Cleveland Clinic, where she and her husband, **Derek Abbott, M.D., Ph.D.,** MD'00, an assistant professor of Pathology at Case Western University, will be moving in October.

Jasminka Vukanovic-Criley, M.D., MD'95, HS'95-'98, is at Stanford University and this spring helped design the course on cardiovascular examination and created a cardiovascular exam test, using virtual patient examinations, for first-year students as part of their SP final exam. Criley, an adjunct clinical instructor, received the Society of General Internal Medicine's

2006 award for best precourse, "Virtual Patient Examinations: Improving Cardiac Clinical Skills Teaching for Clerkships and Residency Programs."

Blake Weathersby, M.D., HS'98-'01, and his wife, Ashlea, former Housestaff Alliance President, welcomed twins, Mary Phares and Rowan James, on Sept. 20, 2005. Weathersby is a partner with Charleston Nephrology Associates in Charleston, S.C.

2000-

Yasmine Subhi Ali, M.D., MD'01, was in the inaugural class to achieve board certification in clinical lipidology, becoming one of the first diplomats of the American Board of Clinical Lipidology.

Sarah Bixby, M.D., MD'01, lives in Belmont, Mass. She and her husband, Kevin, are expecting their first child, a girl, in October.

Michael Edward Bowen, M.D., M.P.H., MD/MPH'05, HS'05-'09, married Lizza Connor in April in Nashville. While Michael finishes his residency in internal medicine and pediatrics, Lizza continues to pursue a career in the music industry.

S. R. Evans III, M.D., MD'01, is in solo Ob/Gyn practice in Morganton, N.C., with his wife, Amy, who graduated from the FNP/CNM program at Vanderbilt in 2001. They have a daughter, Ella, 2, and are expecting their second child in February 2007.

Austin Garza, M.D., MD'00, HS'00-'01, has joined Associates in Gastroenterology in Colorado Springs, Colo. He and his wife, Sarah, who received her undergraduate and Master's of Nursing degrees from Vanderbilt, have a son, Will, and are expecting a daughter in December.

Robert "Beaver" Garza, M.D., MD'01, HS'01-'02, has started a plastic surgery fellowship at the University of Alabama at Birmingham. He has a 9-month-old daughter, Camilla Marguerite.

Scott Hande, M.D., MD'00, has finished his residency in internal medicine and a fellowship in gastroenterology at Brigham and Women's Hospital in Boston. In July, he joined a GI practice near New Haven, Conn. He and his wife, Karen, live in Guilford, Conn., have a daughter, Olivia, and are expecting a baby boy in September.

Neil Harris, M.D., MD'01, HS'01, and his wife, **Brenda Harris, M.D.,** MD'04, have a new baby, Colby Allen Harris. He joins big brother, Zach.

Cameron Johnson, M.D., MD'01, HS'02-'05, has just completed a cornea fellowship at the University of Florida. He is starting practice in Phoenix, Ariz. He has two sons – Hayden, 4, and Reese, 2.

Michelle Koo, M.D., FE'00-'01, won the Outstanding Publication Award for Young Electrophysiologists for her publication, "Calmodulin kinase II activity is required for normal atrioventricular nodal conduction," at the Heart Rhythm Society meeting in May.

Timothy Kuo, M.D., MD'00, has joined a hematology/oncology practice in Mooresville, N.C., after completing fellowship training at Stanford University. *(see page 42)*



Terri Vital Riutcel, M.D., MD'95, has adopted a daughter, Olivia, above, from China. She and her sister traveled to Guangzhou, Guangdong Province in August 2005, where caretakers placed Olivia, then 22 months old, in her arms. Mother and daughter reside in Belleville, Ill., where Riutcel is a forensic psychiatrist in the U.S. Air Force.



Yazdan Mirzanejad, M.D., FE'96-'97, is chief of infectious diseases in Fraser Health Canada in Vancouver, B.C. He is also a faculty member in the Division of Infectious Diseases at the University of British Columbia. He and his wife, Darla Jane, have an 8-month-old daughter, Savannah, shown above.



Bridget Mikysa Lauro, M.D., MD'01, married **Joe Lauro, M.D.**, on Aug. 5, 2005, in Whistler, B.C. Some of her VUSM classmates attended, including **Kristina Storck, M.D.**, and **Matt Hassan, M.D.** Bridget finished her radiology residency at the University of Washington in Seattle in June, and the couple is living in Evergreen, Colo., while she finishes a six-month fellowship/junior faculty position at the University of Colorado in Musculoskeletal Imaging. She will begin private practice with Rocky Mountain Radiology in February 2007.

Vipul Lakhani, M.D., MD'01, and **Carmel Lakhani, M.D.**, MD'01, have moved back to Nashville with their son, Kavi, 1. Vipul joined Vanderbilt's faculty in the Division of Diabetes, Endocrinology and Metabolism on Sept. 1.

Judy C. Liu, M.D., MD'00, is joining an all-retina practice in Phoenix this fall – the Retinal Specialists of Arizona.

Amy Lo, M.D., MD'01, and **Samir Parikh, M.D.**, MD'01, married in May 2002. Amy is in her last year of a gastroenterology fellowship and Samir finished his nephrology fellowship and is an attending at Beth Israel Deaconess Hospital in

Boston. The couple plans a fall trip to Provence, France.

Sovana R. Moore, M.D., MD'00, HS'04, practices Ob/Gyn in Murfreesboro, Tenn., and recently became a partner at Women's Health Specialists.

Kate Dixon Ness, M.D., MD'00, HS'00-'01, FE'00-'06, and her husband, **Erik Ness, M.D.**, HS'98-'01, FE'01-'04, have moved to Santa Fe, N.M. Kate has joined Presbyterian Health Services in Albuquerque as a pediatric endocrinologist, and Erik, Northern New Mexico Gastroenterology in Santa Fe. Their first child, Caroline, was born in July.



***Shannon Snyder, M.D., MD'00, HS'00-'01**, is an assistant professor in the Department of Emergency Medicine at Vanderbilt. **Liam Jacob Aaronson**, son of Snyder and ***Oran S. Aaronson, M.D., HS '98-'00**, was born Jan. 20.

David Pearson, M.D., MD'02, recently completed his four-year emergency medicine residency at Denver Health Medical Center.

Brent Pennington, M.D. MD'00 HS'01-'02, has established a new dermatology practice, Nashville Skin and Cancer, in conjunction with **Jason Robbins, M.D.**, MD'99. Pennington married Kathleen Emerson of Rock Hill, S.C., on Aug. 5. She's a registered nurse at Vanderbilt Children's Hospital.

Patrick H. Pun, M.D., MD'01, is completing his third year of a nephrology fellowship at Duke University. He recently received an NIH/institutional grant to continue clinical research in cardiovascular disease in chronic kidney patients, and will transition to clinical faculty at Duke later this year. He is married to Brenda Truman Pun, VUSN MSN'99, a clinical instructor for the UNC School of Nursing.

Tyson Thomas, M.D., MD'00, HS'00-'06, has begun practice with The Surgical Clinic, PLLC, and is based at Saint Thomas Hospital in Nashville. He and his wife, Amy, have a 16-month-old son and are expecting their second son in November.

Don Udall, M.D., MD'01, found Navy life interesting for awhile, but has come full circle – moving back to San Diego, where he was an

intern, to take a clinical research fellowship at the University of California San Diego to prepare for applying to a residency program. His wife, Amber, works full-time taking care of 7-month-old twins, Nick and Luke, and Jayden, 2.

Ron Wells, M.D., MD'00, finished a residency in pediatrics at Madigan Army Medical Center in Fort Lewis, Wash. He spent two years as a general pediatrician at Bassett Army Community Hospital at Fort Wainwright, Alaska, and is currently a fellow in pediatric cardiology at the Oregon Health and Science University in Portland. He and his wife, Elizabeth, welcomed their first child, Caroline, in May.



Brent Snader, M.D., MD'00, HS'00-'04, is working at **Christ Community Health Services in Memphis, Tenn.** The organization has three clinics throughout Memphis providing medical care to the underserved. He is the father of two daughters, shown above: **Anna Lu**, left, adopted from China, and **Asha Marie**, adopted from India at the age of 15 months.

David Bichell, M.D., a nationally regarded pediatric cardiac surgeon, has joined the Monroe Carell Jr. Children's Hospital at Vanderbilt as chief of Pediatric Cardiac Surgery and co-director of the Pediatric Heart Institute. Bichell hails from Comer Children's Hospital at the University of Chicago, where he served as the director of Pediatric Cardiac Surgery and associate professor of Surgery. He has also previously served as the director of Cardiovascular Surgery and director of the Children's Heart Institute at San Diego Children's Hospital.

Richard Breyer, Ph.D., has been named to hold a professorship in the Division of Nephrology and Hypertension. The John B. Youmans Professor of Medicine honors Youmans, a faculty member in the Department of Medicine at Vanderbilt from 1927 to 1946 who served as dean and director of Medical Affairs from 1950-1958. He died in 1979. Breyer's lab specializes in basic pharmacology and works in collaboration with physician scientists in medicine to determine how prostaglandin receptors interact with a number of disease systems. Breyer is celebrating his 15th year at Vanderbilt.

***Nancy Brown, M.D.**, has been named to the new position of associate dean for Clinical and Translational Scientist Development in the Vanderbilt University School of Medicine. The new position replaces the former associate dean for Physician Scientist Development position, with a goal to expand and enhance educational programs for physician scientists and translational and clinical investigators of all types, including physicians, nurses and degree candidates with backgrounds varying from business to science and engineering.

Michael Cookson, M.D., associate professor of Urologic Surgery, was recently selected as a section editor for *Cancer*, the interdisciplinary, international journal of the American Cancer Society. Cookson will serve a three-year term as editor for the journal in the area of genitourinary disease.

Bryan Cotton, M.D., assistant professor of Surgery in the Division of Trauma and Critical Care, was recently chosen by Vanderbilt University School of Medicine to receive the CANDLE (Caring, Advocating, Nurturing, Determination, Leadership and Empathy) Award. The honor is given to individuals who have devoted themselves to teaching and mentoring.

***Richard D'Aquila, M.D.**, director of the Division of Infectious Diseases, has been named a fellow of the Infectious Diseases

Society of America (ISDA). This year the ISDA, the nation's leading professional society in infectious disease, is honoring 49 distinguished physicians and scientists from the United States and abroad who were elected to be fellows. Fellowship in the ISDA honors individuals who have achieved professional excellence and have provided significant service to their profession.

Robert Dittus, M.D., M.P.H., has been named director of the new Institute for Medicine and Public Health at Vanderbilt University Medical Center. The mission of the institute is to improve personal and public health through discovery, training and service programs designed to protect against threats to health, promote healthier living, improve the quality of health services and prepare leaders to advance health and health care.

Wes Ely, M.D., associate professor of Medicine, Division of Allergy, Pulmonary and Critical Care, has been inducted into the American society for Clinical Investigation, a 2,600-physician-scientist member society. Members are chosen based on their records of scholarly achievement in biomedical research.

Randy Farmer has been named executive associate vice chancellor for Vanderbilt University Medical Center Development. He comes to VUMC from Washington University in St. Louis, where he was associate vice chancellor and director of Medical Alumni and Development. Farmer brings a proven track record of development success to VUMC. During its last capital campaign (1995-2003) Washington University raised more than \$1.5 billion — \$637 million of which came from the medical school.

***Arthur Fleischer, M.D.**, professor of Radiology and Radiological Sciences, has been honored for his longstanding commitment and dedication to continuing medical education. He was given a plaque commemorating his 30 years as course director of the Diagnostic Sonography Symposium. Last year, Fleischer was honored with the Frank H. Boehm Award for Excellence in Teaching; Contributions to Continuing Medical Education.

***Steven Gabbe, M.D.**, dean of the Vanderbilt University School of Medicine, has been elected to co-chair the Liaison Committee for Medical Education (LCME), which is the body charged by the U.S. Department of Education with accrediting all medical schools in the United States and Canada that award the doctor of medicine degree. Gabbe, a committee

member for the past three years, became the co-chair on July 1 along with Ronald Franks, M.D., dean of Medicine and vice president for Health Affairs at East Tennessee State University. The 18-member committee includes six members from the Association of American Medical Colleges (AAMC), six from the American Medical Association (AMA), two from the Committee on Accreditation of Canadian Medical Schools, two senior medical students and two members of the public.

Peter Giammalvo, Ph.D., a health care organizational learning and leadership development expert, has been appointed to the newly created position of chief learning officer at Vanderbilt University Medical Center. Giammalvo, formerly vice president for leadership formation at Catholic Health East in Pennsylvania, will provide overall leadership for organizational development and workplace learning.

Lynette Gillis, M.D., assistant professor of Pediatrics, has been selected to receive a 2006 Liver Scholar Award from the American Liver Foundation and the American Association for the Study of Liver Disease. The three-year, \$225,000 award will support Gillis's efforts to understand the role of fatty acid oxidation in insulin signaling/dysregulation and fatty liver disease.

Jonathan Haines, Ph.D., has received a grant from the Michael J. Fox Foundation for Parkinson's Research to search for genes that play a role in Parkinson's disease. Haines, director of the Center for Human Genetics Research, is studying a population of Ohio Amish with more than 15 individuals affected with Parkinson's. In preliminary work, he and his collaborators have identified three novel genomic areas that are linked to the disease. Now, with the support of the \$740,000, three-year grant, they will go after the genes in those regions.

George Hill, Ph.D., is ending his two-year term as vice president of the National Foundation for Infectious Diseases (NFID) and will assume the role of president-elect for two years before becoming president.

***William Schaffner, M.D.**, was elected in May by members of the NFID board and board of trust to succeed Hill as vice president. He will transition in two years from that role to president-elect, followed by president. This is the first time in the organization's history that two successive board presidents will come from the same institution.

Michael Holzman, M.D., has been appointed to hold the newly established Lester and Sara

Sarah Sell receives VMAA's Achievement Award

When *Sarah Sell was a young pediatrician at Vanderbilt, some of her sickest patients suffered from meningitis caused by *Haemophilus influenzae* type b (Hib). Most of the patients were under 5, and many would suffer long-lasting effects – blindness, deafness, mental retardation, learning disabilities or even death – no matter how quickly they were diagnosed and treated.

“By the time we got them, they’d be burned already,” said Sell, affectionately called “Sally” by friends and colleagues. “I like to compare them to young trees growing in a forest, and a forest fire goes through and you put out the fire but you still have all that charred stuff left on those young trees. And that’s what we had left, what the fire had left behind.”

So Sell, professor of Pediatrics, Emerita, “set about trying to work on that,” and was one of the key players in the development of the childhood vaccine to protect against Hib. Her initiatives led to the licensure of several conjugated Hib vaccines in the late 1980s and early 1990s. These vaccines have been so effective that they have virtually eliminated this devastating disease in young children in the United States.

In 1972, Sell, who graduated from Vanderbilt University School of Medicine in 1948 and joined the faculty in 1954, organized a gathering of 38 investigators on the cutting edge of Hib research, in order to gain a better understanding of the Hib bacteria.

The meeting, held at Vanderbilt, was paid for with a \$10,000 donation from one of Sell’s former roommates, and was the stimulus for the development of the vaccines. Sell recalls addressing the group about their mission. “A lot of these people were pretty ego-centric, and I said, ‘we’re all here together for a purpose, to find a way to prevent this meningitis. I beg you while you’re here, put your egos aside, and instead of trying to outdo each other, let’s really try to find a way to prevent this thing.’”

In a 1986 study, Hib was found to be the most common cause of meningitis, responsible for 45 percent of meningitis cases. Before the widespread use of Hib vaccine – which children currently receive four times between 2 months and 15 months of age – about 20,000 children under 5 in the U.S. got severe Hib disease each year, and nearly 1,000 died.

Sell, who is also known for her work with the bacteria associated with otitis media (middle ear infections), recalls sleepless nights when the Hib vaccine was being developed. “I just lived with it. It’s great having something larger than you to think about.”

She was honored by VUSM in October with the Vanderbilt Medical Alumni Association Achievement Award, one of many honors she has received in her career. Last year, she was awarded with a lifetime achievement award by Vanderbilt’s Department of Pediatrics.

The awards are nice, she says, but she doesn’t understand why she’s been chosen. “Why? I haven’t done anything except what I wanted to do,” she said. “I never felt like a pioneer. I was just doing what there was to be done. Everybody would do something like this if they had the opportunity. I never felt that special.”

But there are many who would argue that point.

Kathryn Edwards, M.D., professor of Pediatrics, and director of the Pediatric Clinical Research office, has worked with Sell since she came to Vanderbilt 26 years ago. She says Sell has an ability to see good in everyone, to see the positive aspects of all people. “I found through the years that her counsel was enormously important, as well as her insight and her untiring optimism.”

This summer, Edwards attended a meeting that included annual data about the various infectious diseases in the United States. There were only 32 cases of meningitis from Hib in the United States last year, compared to the 20,000 before the Hib vaccine.

“I used to teach medical students about the bad effects of *Haemophilus influenzae b*, but it’s virtually gone,” Edwards said. “That’s in large measure to Sally’s work, her ability to bring people together and to collaborate in a selfless way that made everyone a winner. And certainly children were the greatest winners of all.”

– NANCY HUMPHREY



Jayne Williams Chair in Academic Surgery. Williams, professor of Surgery at Vanderbilt and Chief of Surgery at Saint Thomas Hospital, died in 2002. Holzman, associate professor of Surgery in the General Surgery division, said he hopes the generous gift will serve not only as a memorial but also as a way to foster Williams’ lessons and passion for the training of young academic surgeons.

Adrian Jarquin-Valdivia, M.D., is the 2006 recipient of the Grant W. Liddle Award for “exemplary leadership in the promotion of scientific research” at VUMC. Jarquin-Valdivia, assistant professor of Neurology, Anesthesiology and Medicine, received the award from the House Staff Advisory Council during its 24th Annual Research Forum. He also was presented the Thomas E. Brittingham Award for excellence in clinical teaching by the third- and fourth-year medical students.

***Jeremy Kaye, M.D.**, has been appointed interim chair of the Department of Radiology and Radiological Sciences. He succeeds ***Martin Sandler, M.B., Ch.B.**, who was recently named to the new role of associate vice chancellor for Hospital Affairs. Kaye has been vice-chair of the department since 2000. He previously headed two different departments in New York while serving as director of the department of Radiology at the Hospital for Special Surgery, which is part of the Cornell University complex, and also as chairman of Radiology for St. Vincent’s Hospital in Manhattan, which is affiliated with New York Medical College.

***Herbert Meltzer, M.D.**, former president of the Congress of the Collegium Internationale Neuro-Psychopharmacologicum (CINP), joined six other Vanderbilt scientists in July in discussing their research at the biennial meeting of the world’s largest neuropsychopharmacology organization. An estimated 4,000 psychiatrists, scientists and mental health officials from 30 countries attended. Meltzer chairs the national organizing committee for the meeting. Meltzer discussed the latest research on the action of antipsychotic drugs and guidelines for schizophrenia treatment. He was joined by ***P. Jeffrey Conn, Ph.D.**, professor of Pharmacology, director of that department’s Program in Translational Neuropharmacology, and director of the Vanderbilt Institute of Chemical Biology’s drug discovery program; **Robert Kessler, M.D.**, Roentgen Professor of Radiology and Radiological Sciences and director of the Center for Molecular Imaging at Vanderbilt; **Patrizia Riccardi, M.D.**, research assistant professor of Radiology and Radiological

Sciences; **Ronald Salomon, M.D.**, associate professor of Psychiatry; **Richard Shelton, M.D.**, professor of Psychiatry and Pharmacology and director of the Division of Adult Psychiatry; and **Monsheel Sodhi, Ph.D.**, research assistant professor of Psychiatry.

***Robert Miller, M.D.**, received the Helping Hands Award for his volunteer medical service at the Shade Tree Family Clinic, which is devoted to providing care to the underserved community of Nashville. Miller was also chosen by Vanderbilt University School of Medicine to receive a recent CANDLE (Caring, Advocating, Nurturing, Determination, Leadership and Empathy) Award. The honor is given to individuals who have devoted themselves to teaching and mentoring.

Katherine Poehling, M.D., assistant professor of Pediatrics, was lead author of the CDC-sponsored, multicenter study on pediatric flu practices nationwide which — based on an advance look at the findings — led the U.S. Advisory Committee on Immunization Practices (ACIP) to expand its recommendations for giving flu shots to children to include giving flu shots to all children ages 6 months to 5 years. The study was published in the *New England Journal of Medicine*. Previously the ACIP had recommended vaccinating children 6 to 23 months old.

***David Raiford, M.D.**, professor of Medicine, has been named associate dean for Faculty Affairs in the Vanderbilt University School of Medicine. He succeeds the late **Tom Hazinski, M.D.**, who died in January due to sudden cardiac arrest. The associate dean for Faculty Affairs is responsible for administrative issues associated with faculty appointments and promotions, conflicts of interest, orientation and training, special individual faculty issues and faculty development.

***Charles Ross, M.D.**, has been named director of Endovascular Surgery, and began seeing patients at the Vascular Surgery Clinic in the Vanderbilt Heart and Vascular Institute in July. He was previously medical director of the Lourdes Vascular Center in Paducah, Ky., part of Lourdes Medical Center and Western Baptist Hospital. Ross brings to Vanderbilt extensive clinical experience as well as expertise in treating adult patients with vascular disorders of all types. He is a regionally recognized expert in the use of endovascular techniques to manage cerebrovascular, peripheral and aneurysmal disease.

William Richards, M.D., has been named the Ingram Professor of Surgical Sciences, a newly endowed chair in VUMC's Section of

Surgical Sciences, allowing the department to explore futuristic medical procedures such as implanting gastric pacemakers as a treatment for obesity and the possibility of performing endoscopic, incisionless surgeries. Richards said the new funding stream will allow him to devote more time and effort to teaching, research and developing programs rather than concentrating solely on clinical practice and funded research projects.

Eric Skaar, Ph.D., M.P.H., has added a Burroughs Wellcome Fund (BWF) Award to his recent Searle Scholar Award and National Institutes of Health R01 grant. Skaar is one of 14 assistant professors selected from a group of 125 nominees to receive a 2006 BWF Investigators in Pathogenesis of Infectious Disease award. BWF will provide \$400,000 over five years to support Skaar's research, with few strings attached.

***Norman Army**, who over 24 years led Vanderbilt University Hospital and its clinical enterprise successfully through an ever-changing landscape of health care changes, has stepped down from that role. The executive vice president for Clinical Affairs at Vanderbilt University Medical Center took a three-month leave and returned to Vanderbilt in October to work with ***Harry Jacobson, M.D.**, vice chancellor for Health Affairs, in a supporting staff role that will focus on key strategic initiatives. Two longtime Vanderbilt leaders have accepted newly created roles at the University's clinical enterprise.

***Martin Sandler, M.B., Ch.B.**, has been named to the new role of associate vice chancellor for Hospital Affairs. Sandler will oversee all four Vanderbilt hospitals — Vanderbilt University Hospital, the Monroe Carell Jr. Children's Hospital at Vanderbilt, the Psychiatric Hospital at Vanderbilt and Vanderbilt Stallworth Rehabilitation Hospital. He relinquished his chairmanship of Radiology and Radiological Sciences and began the new role in July. ***C. Wright Pinson, M.D., M.B.A.**, leads the Vanderbilt Medical Group and heads up quality improvement efforts across the entire Vanderbilt clinical enterprise. While retaining his current responsibilities as associate vice chancellor for Clinical Affairs and chief medical officer, Pinson assumed a significantly expanded role in July. He will take on oversight of The Vanderbilt Clinic and all off-campus clinical activities, including a growing regional network of physician practices, outpatient treatment centers, Cool Springs Surgery Center and McKendree Village, a retirement community affiliated with VUMC.

***Sten Vermund, M.D., Ph.D.**, director of the Vanderbilt University Institute for Global Health, has been selected to lead one of six new clinical trial units created by the National Institute of Allergy and Infectious Diseases (NIAID) to combat HIV/AIDS around the globe. The NIAID, part of the National Institutes of Health (NIH), announced the roster of principal investigators recently as part of the rollout of its newly restructured clinical trials network. Vermund is also principal investigator of the first-ever grant in Tennessee from the President's Emergency Plan for AIDS Relief (PEPFAR). The \$1.4 million grant is slated to support three clinics in Zambézia, the most populous province in Mozambique, where an estimated 18 percent of the adult population is infected with HIV.

Yajun Andrew Yi, Ph.D., has received a five-year, \$720,000 award from the National Cancer Institute to support his efforts to identify genes that suppress metastasis in prostate cancer. The Howard Temin Awards, named for the 1975 Nobel laureate who made discoveries related to tumor viruses, aim to bridge the transition from a mentored research environment to an independent research career for outstanding junior scientists. Yi is research assistant professor of Medicine in the Division of Genetic Medicine.

***John Zic, M.D.**, succeeds ***Hal Helderman, M.D.**, as associate dean for Admissions. Zic, a 1991 VUSM graduate and one of the school's first Canby Robinson Scholars, is an assistant professor of Medicine and has served on the Admissions Committee since 2000.

***Mary Zutter, M.D.**, director of Hematopathology and Ingram Professor of Cancer Research, has been selected to participate in the 12th class of the Hedwig van Ameringen Executive Leadership in Academic Medicine (ELAM) Program for Women. The ELAM Program brings together women who hold faculty positions around the country at various academic health centers (AHCs).

Edward Stanley Arnold, M.D., MD'77, HS'77-'81, died on Feb. 25. He was 54. Dr. Arnold, a psychiatrist, contracted Lyme disease in June 2000. He is survived by his mother, sister and other family members.

***Leo Max Bashinsky, M.D.,** MD'43, died on July 22. He was 88. After completing military service, he practiced general pediatrics on Birmingham's Southside. In addition to his general practice, he saw patients at the Children's Hospital, the Crippled Children's Clinic, the polio ward at Hillman Hospital and Gateway Children's Home (formerly known as Mercy Home). He is survived by his wife of 61 years, Betty; a son, Leo III; a daughter, Betty; nine grandchildren and five great-grandchildren.

Harry G. Brown, M.D., MD'39, died April 8. He was 91. He was the first urologist in northwest Alabama, where he practiced at the Florence Clinic from 1947 until 1978. He was also known for his medical missionary work in Africa, the Middle East and Central America. He is survived by his sons – William, Harry and Richard – and a granddaughter.

William Daniel Calhoun, M.D., HS'72-'75, died June 7. He was 70. First a family practitioner in

The late ***Tom Hazinski, M.D., FA '84-'06**, has been honored posthumously with several awards and recognitions. Hazinski, who died in January, served as associate dean for Faculty Affairs and was also professor of Pediatrics and Medical Education and Administration, associate chair of the Department of Pediatrics, and director of the Division of Pediatric Pulmonary Medicine.

Hazinski was honored with the Society for Pediatric Research's (SPR) Distinguished Service Award at the Pediatric Academic Societies' annual meeting in San Francisco in May. It was announced at the ceremony that the award would be renamed the Thomas A. Hazinski Distinguished Service Award. The annual award was established to honor an individual who has provided exceptional and dedicated service to the society over an extended period of time. His wife, Mary Fran Hazinski, R.N., M.S.N., clinical nurse specialist in Pediatric Emergency and Critical Care, accepted the award.

Hazinski has also been honored by a Vanderbilt fund, the Steve and Judy Turner Research Fund in Pediatrics, which for the past decade has been providing annual grants to support the research activities of young pediatric faculty members. The Turner Scholars have now taken on a new name which honors Hazinski — the fund is now called the Hazinski Scholars of the Turner Fund for Pediatric Research.

And, The Rose Gala, a fund-raiser for the Cystic Fibrosis Foundation, has been dedicated to the memory of the late Hazinski.

Manchester, Tenn., he ran a private psychiatry practice in Huntsville, Ala., for 29 years. Survivors include his wife, Elaine; daughters Elizabeth and Caroline; a son, Dan; and six grandchildren.



***Richard Cannon II, M.D.,** MD'43/Dec., died June 7 in Tyler, Texas. He was 87. He served as Dean of Allied Health Professions

at Vanderbilt from 1972-1983, when he retired as Professor and Director Emeritus of Vanderbilt University Medical Center. He served as president of the Tennessee Hospital Association, was treasurer and on the board of trustees at the American Hospital Association, and helped establish the Nashville Area Chapter of the American Red Cross, serving as its first board president. He is survived by his daughters, Mary and Anne; sons, Richard and James; and seven grandchildren.

Russell D. Cunningham, M.D., MD'58, HS'58-'59, died July 29

after battling lung cancer for a year. He was 73. In 1964, after completing a fellowship in pediatric endocrinology at Boston Children's Hospital, he joined the faculty at UAB School of Medicine where he remained until he retired in 1997. Dr. Cunningham is survived by Shirley, his wife of 51 years; a son, Stanley; a daughter, Beth; and four grandchildren.

James Robert Glassner, M.D., MD'81, HS'81-'84, died in December 2001 when a truck collided with his bicycle. He was practicing ophthalmology in Montgomery, Ala., at the time. He is survived by his wife of 20 years, Rebecca, and daughters, Kristen and Sarah.

***Oliver H. Graves, M.D.,** MD'43/March, died Jan. 28 in Jackson, Tenn. He was 88. In 1955 he founded The Urological Clinic of Jackson, where he practiced medicine for 36 years. He is survived by his wife, Bettie; three daughters, Pat, Francie and Ruth; five grandchildren and a great granddaughter.



***Ben Alper, M.D.,** MD'49, HS'49-'50, CF'61-06, who established the first rheumatology clinic at Vanderbilt in the basement of Medical Center North, died May 30 of a heart attack at his home. He was 79. Dr. Alper, a clinical professor emeritus of Medicine at Vanderbilt, directed the rheumatology clinic for more than 20 years, and was responsible for training a number of rheumatologists. He and his wife, Phyllis, established the Ben J. Alper Chair in

Rheumatology at Vanderbilt in 1995 for the support of research and clinical care in rheumatology. In addition to Dr. Alper's affiliation with Vanderbilt, he also had a longstanding partnership with Saint Thomas Hospital — where the emergency services department was named in his honor in 1996 — Baptist, and several other local hospitals. He also helped bring the Arthritis Foundation to the area, and served as the founding president of the Middle Tennessee chapter where he was recognized in 2002 as a special honoree. In addition to his wife, he is survived by two daughters and four grandchildren.

William "Bill" Gregory, M.D., MD'81, HS'81, died June 24 in Ellijay, Ga., from injuries from a bicycling accident. The Dalton, Ga., internist volunteered weekly at the local health department seeing uninsured patients. He is survived by his wife, Laura, and two daughters – Virginia and Elizabeth.

William Hartmann, M.D., FA'71-'88, died April 30.

Sam W. Huddleston III, M.D., MD'51, HS'53-'56, died March 21. Dr. Huddleston moved to Johnson City in 1956 and joined with another physician to form the Ellis-Huddleston Clinic. He retired from Appalachian Orthopaedic Associations after 49 years of practice. He is survived by his wife, June; children, Donnan, Sam and Tom; and six grandchildren.

Ilpo Kaariainen, MD'94, died July 5. He was 37. He was double board certified in internal medicine and psychiatry, and served on the faculty of the University of Chicago while running a private practice in Northwest Indiana. He was also chairman and medical director of the Behavioral Health Services at LaPorte Hospital. He is survived by his wife, Cindy, and three children – Alex, Isabel and Abby.

Harold Lasker, M.D., MD'65, died Feb. 20, 2005. He worked for two decades as medical director of Brunswick Hospital, for 11 years as staff psychiatrist at South Oaks Hospital, and was a member of the staff of New Island Hospital in the Department of Medicine in Rockville Center, N.Y., for 14 years. He is survived by his wife, Margo; son, James; and daughter, Alexandra.

Henry E. Malcom, M.D., MD'51, died Aug. 24 after complications from surgery. He was 81. He practiced Ob/Gyn in Lansing, Mich., where he became chief of staff at Edward W. Sparrow Hospital. He is survived by his wife, Barbara; three daughters;

two stepdaughters; and 11 grandchildren.

Joseph H. Patterson, M.D., MD'38, HS'39-'42, died April 27. He was 91. After serving in the U.S. Army Medical Corps during World War II, he moved to Atlanta and started a private practice. He created a residency program and neonatal intensive care unit at Crawford Long Hospital in Atlanta where he served as chief of service and director of pediatric education from 1947-1959. He was assistant clinical professor of Pediatric Medicine at Emory, from 1948-1957, and in 1959, he left his private practice to become chief physician at Henrietta Eggleston Hospital for Children at Emory, where he served for 35 years and became a professor of Pediatrics. In 1984 he became an administrative medical consultant on child health advocacy issues and professor of Pediatrics, Emeritus. His clinical research focused on juvenile arthritis and human growth disorders. In 1999, he received the *Atlanta Business Chronicle* Healthcare Hero Award for his contributions to health care and the community. He is survived by his three children, Jeffrey, Paul and Ellen, and six grandchildren.

***Harold Wright Priddle, M.D.,** MD'43/Dec., died Sept. 7 in Paducah, Ky. He was 87. He was in private practice in Paducah, and after he retired, headed the Purchase District Health Department until his second retirement at the age of 80. He is survived by his children, Janet, Laurence, Sandra, Brian and Vincent, 15 grandchildren and eight great-grandchildren.

Robert W. Scott, M.D., MD'78, died June 4 in Indianapolis after a long battle with cancer. He was 55. He worked for Eli Lilly as medical director from 1988 until 2002, was president of Miravant Cardiovascular Medical Technologies, in Santa Barbara, Calif., from 2002 until 2005, and then chief medical officer at Anaclim, LLC, in Indianapolis



ANNE RAYNER

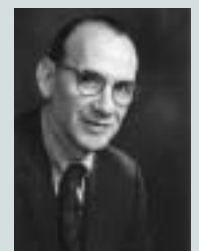
***Grant R. Wilkinson, M.D., Ph.D., D.Sc.,** FA'71-'06, died June 13. He was 64. He is survived by his wife, Merrily, four children, three stepchildren, two grandchildren and five step-grandchildren. He was professor of Pharmacology Emeritus at Vanderbilt and an internationally recognized researcher in clinical pharmacology. His research was among the most highly cited work in pharmacology over the past 25 years. He came to the United States from London in 1966 and held positions at the University of California, San Francisco and the University of Kentucky before coming to Vanderbilt.

from 2005 until he died. Before his death, he was named associate dean and director for Diversity Programs at the Indiana University School of Medicine. He is survived by his wife, Marta, and three children – Matthew, Simone and Sarah Ann.

Samuel Edward Stephenson Jr., M.D., MD'50, HS'53-'57, died May 14. He was 79. He was board certified in general, thoracic and vascular surgery and was professor of Surgery at the University of Florida. He is survived by his wife, Janet; two daughters, Maria and Dortha; sons, Steve, and Doug, and 10 grandchildren.

John B. Wilkes, M.D., MD'39, died May 7. He was 90. He served 31 years in the U.S. Army, retiring as colonel, practiced as a general surgeon in Grand Rapids, Mich., for more than 30 years, and served as chief of staff at Butterworth Hospital. He is survived by two children, John and C. Benjamin; five grandchildren and one great-grandchild.

***Sol A. Rosenblum, M.D.,** CF'60-'00, a longtime Vanderbilt physician with a reputation for dedication to patient care, died July 30 at his home in Nashville at age 80. Dr. Rosenblum, who opened a clinical practice in the Medical Arts Building in 1955 with older brother Marvin Jonas Rosenblum, M.D., HS'51, made many contributions to the field of medicine while working as a practicing physician at Vanderbilt. He also served as a part-time attending in the outpatient clinics at the Veterans Administration Hospital beginning in 1993. Dr. Rosenblum was preceded in death by his wife, Susan Adler Rosenblum. He is survived by three daughters – Jami, Jill and Jo Anne – and eight grandchildren.



Reunion 2006 Photo Gallery

Pictured here:

1. David Nivers, M.D., center, Class of 1975, talks with classmate Edward Fody, M.D., left, and his wife, Nancy Fody, during the All Alumni Luncheon, part of the Vanderbilt Medical Alumni Reunion.

2. The Vanderbilt Medical Alumni Association honored, left to right, Robert D. Collins Sr., M.D., and Bert W. O'Malley, M.D., (Distinguished Alumnus awards) Frances K. Hardcastle, (Distinguished Service award) and Sarah H. Sell, M.D., and William B. Wadlington, M.D., (Achievement awards).

3. Newton Griffin, M.D., of the Class of 1957, looks at older photos of his class while attending the Vanderbilt Medical Alumni Reunion.

4. Dean Steven Gabbe, M.D., congratulates Marshall Diamond, M.D., Class of 1957, during the Quinq Society induction ceremony.

5. Charles Betts, M.D., of the Class of 1951, and his wife, Mary, VUSN '49, chat with Dean Gabbe before the plenary session.

6. Members of the Class of 2001 (top, left to right) David Park, M.D., Sunita Park, M.D., Patrick Pun, M.D., (bottom, left to right) Carmel Lakhani, M.D., and Gargi Gajendragadkar Gandhi, M.D., gather around Gandhi's son, Shaan, at the Vanderbilt Medical Alumni Reunion.

7. Quinqs from the Class of 1957

8. Quinqs from the Class of 1956



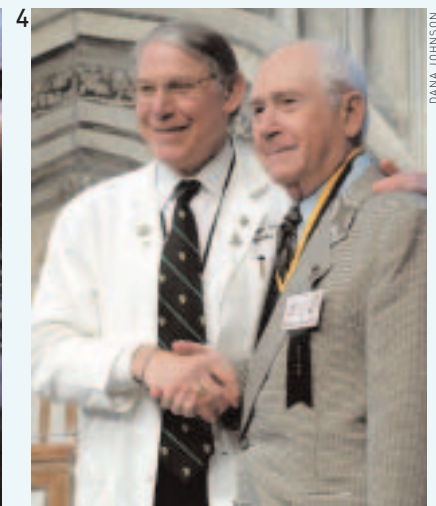
DANA JOHNSON



TOMMY LAWSON



DANA JOHNSON



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DANA JOHNSON



DANA JOHNSON



TOMMY LAWSON



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