Genes and drugs
Making a difference  David B. Gray, PhD, associate professor of neurology and of occupational therapy, maneuvers the new Independence iBOT 3000 Mobility System beneath St. Louis' famous symbol of mobility. Gray is one of the first people in the nation to receive the new device. For more on this story, please turn to page 4.
Outlook

Going Up!

Follow progress on the Farrell Learning and Teaching Center at medicine.wustl.edu/ltc
Farrell Learning and Teaching Center

Located in the heart of the Washington University Medical Center, at the intersection of Euclid and Scott avenues, the Farrell Learning and Teaching Center will serve as the school’s main venue for medical education.

- The first classes are scheduled to be held there in fall 2005.
- The latest technology throughout the building means, for example, every seat in the lecture halls will be wired for personal network access.
- New spaces emphasize small group learning.

Giving opportunities

- Prominent naming opportunities are available throughout the building, starting at $25,000.
- Annual Fund support, at any level, will help enable this important addition to medical education.

Contact the Office of Medical Alumni and Development at (314) 286-0086.
The Siteman Cancer Center pharmacy dispenses chemotherapies tailored to patients' unique requirements. Howard L. McLeod, PharmD, associate professor of genetics, medicine and of molecular biology and pharmacology, researches the use of genetic information to specify these treatments. For more on this story, please turn to page 16.

PHOTO BY ROBERT BOSTON

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Ethics center examines critical issues

A new, multidisciplinary endeavor at Washington University in St. Louis is one of only a few such comprehensive programs in ethics and human values offered at a university in the United States.

The Center for the Study of Ethics and Human Values supports the study, research and teaching of ethics in areas ranging from medicine to business to architecture.

"The power of this endeavor is to create forums at the university and in the community to deal with the most controversial issues of our time," says Ira J. Kodner, MD, center director and the Solon and Bettie Gershman Professor in the Department of Surgery. "We want to bring together people with very different points of view."

Kodner envisions the organization putting together educational programs, developing curricula and providing humanitarian outreach.

The center is planning a seminar on professionalism in medicine, law and business, and it recently sponsored a lecture on health-care reform. Last year, the center issued 15 $5,000 faculty grants for projects such as a one-day symposium on the participation of children in clinical trials.

Stahl honored for research, leadership

The Carl and Gerty Cori Faculty Achievement Award, to be conferred this fall, will go to Philip D. Stahl, PhD, the Edward Mallinckrodt Jr. Professor and head of the Department of Cell Biology and Physiology.

"Professor Philip Stahl has been an exceptionally creative and prolific scientist, and he also has been one of our most effective and distinguished academic leaders," says Chancellor Mark S. Wrighton, who announced the award in April.

As head of cell biology and physiology for the past 20 years, Stahl has successfully recruited and mentored 19 faculty members. Last year, he additionally was named director of the university's Division of Biology and Biomedical Sciences.

An avid supporter of the university's educational mission, Stahl was instrumental in the conception of the School of Medicine's new Farrell Learning and Teaching Center, currently under construction, which will provide state-of-the-art teaching and seminar facilities.

Stahl is recognized for his investigations into the mechanisms involved in endocytosis, the process through which cells absorb external substances such as proteins.

NIH support to U.S. medical schools

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<th>School of Medicine</th>
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<td>Johns Hopkins University</td>
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NIH to WUSM In 2003, the School of Medicine received $368.4 million in support from the National Institutes of Health and achieved second place among all U.S. medical schools in NIH funding. In addition, Barnes-Jewish Hospital received $17.7 million in NIH support and Central Institute for the Deaf received $2.1 million.
Frieden, Gordon elected to American Academy of Arts and Sciences

Two School of Medicine Investigators have been elected to the American Academy of Arts and Sciences: Carl Frieden, PhD, the Raymond H. Witcoff Professor and head of biochemistry and molecular biophysics, and Jeffrey I. Gordon, MD, the Dr. Robert J. Glaser Distinguished University Professor.

Frieden focuses on a major problem in biochemistry — how proteins fold into their correct shapes. He has developed a variety of techniques to examine the structures of intermediates that arise during folding and is exploring a number of different protein systems. His group also has made important discoveries about the mechanism by which bacterial chaperones help certain proteins refold. In addition, he investigates the relationships between protein structure and function and the catalytic mechanisms of certain enzymes.

Gordon, who leads the Department of Molecular Biology and Pharmacology, was the first to raise normal and genetically engineered mice and zebrafish under germ-free conditions to characterize the genomic foundations of symbiotic relationships between these animals and microorganisms living in their intestines (see article, page 7). In addition, his group sequenced and annotated Bacteroides thetaiotaomicron, providing the first view of the genome of a major member of the human intestinal bacterial community.

Neurology

Determination and non-traditional rehabilitation again show results

Most mothers are familiar with the pride and elation that come with watching their children stand for the first time. But few can relate to the emotional thrill Lola Segovia recently felt when she saw her 24-year-old son, Oscar, stand unassisted for the first time in a decade.

Just thinking about his momentous achievement brings tears to her eyes. "I can't express what it was like," she recalls.

In 1995, Oscar Segovia was hit by a car while riding his motorcycle home from work in his hometown of Manresa, Spain. Two weeks later, he awoke from a coma to find he was paralyzed from the waist down.

Although determined to walk again, Segovia and his family began to lose hope after years of grueling, and often frustrating, rehabilitation.

Like many individuals facing a life of paralysis, Segovia became depressed. That changed when a documentary he saw about the partial recovery of actor, director, activist and quadriplegic Christopher Reeve renewed his belief that continued progress is indeed possible.

"This life is not given for free," Segovia says. "You have to fight for what is important and for what you want. Since I want to walk again, I plan to fight for it."

He and his girlfriend, Monica Garcia, immediately contacted John W. McDonald, MD, PhD, medical director of the Spinal Cord Injury Program at the School of Medicine, who had helped design and refine Reeve's rehabilitation program and published a study on Reeve's progress.

Segovia had been undergoing physical therapy since his accident, but the medical community in Spain — similar to most rehabilitation programs in the United States — focuses on learning to compensate for an injury rather than working toward neurological recovery.

Oscar Segovia regains his balance.

When he arrived in St. Louis, Segovia began an intensive therapy regimen with McDonald's team at the Rehabilitation Institute of St. Louis. Though he had only mild sensation in one leg before beginning the new program, Segovia quickly was able to distinguish different types of touch on both of his legs. His feet have even become ticklish.

Within just three weeks, he achieved what was once thought impossible: standing and balancing his weight without human assistance. Now, he is able to walk using braces and a walker.

"Oscar's determination and motivation have paid off," McDonald says. "With his energy and commitment, he should be able to continue to make progress. We look forward to seeing him within the next year to chronicle his improvements and advance his program."
St. Louis debut: stair-climbing wheelchair

IT CAN POWER OVER CURBS, climb up and down stairs, and shuttle across sand, gravel and grass. The Independence iBOT 3000 Mobility System functions much like a power wheelchair, but through innovative technology, it also can help people with disabilities achieve tasks that once were impossible.

David B. Gray, PhD, associate professor of neurology and of occupational therapy, was one of the first people in the country to receive the new device when he completed his training on its use in April.

"I have been honored to provide guidance in the development of the iBOT Mobility System almost from its inception in 1996," Gray says. "To be among the first people to own one is not only a personal achievement, but is also a truly exciting opportunity for me to gain greater independence and accessibility in my daily life."

Gray's training has been conducted at the Enabling Mobility Center (EMC), a collaborative research project between Paraplegic and the medical school's Program in Occupational Therapy. The EMC provides assistive technology resources and demonstrations for people with mobility impairments, their families and health care providers. The center is among the first in the United States to offer and train people to use the iBOT Mobility System.

In addition to traversing various terrains, the device can elevate the user to eye level — a feature that Gray is especially excited about.

"I was able to use the device in one of my lectures this week for the first time. While the students were on break, I went into the balance function and elevated myself," he says. "When they returned, there were a bunch of wide eyes."

In the balance function, the front wheels rotate on top of the back wheels while the user remains seated at a greater height, allowing the user to move around at eye level and to reach high places independently.

Doctors for a Day David J. Murray, MD, professor of anesthesiology and director of that department's Clinical Simulation Center, demonstrates how to shock a simulated patient in cardiac arrest for a visiting group of legislative staff members. The guests, who were given white coats and allowed to "role play" as physicians, went on rounds, interacted with medical students, and learned about bioterrorism safety in an effort to better understand the importance of academic medical centers.

Eberlein to guide surgery journal

A PROMINENT, PEER-REVIEWED JOURNAL that publishes original contributions on all aspects of surgery, the *Journal of the American College of Surgeons* (JACS), has named Timothy J. Eberlein, MD, director of the Alvin J. Siteman Cancer Center at Washington University School of Medicine and Barnes-Jewish Hospital, as its editor-in-chief. JACS is the official scientific publication of the American College of Surgeons and is one of the world's most prestigious surgical journals, with more than 66,000 subscribers.

"It is a tremendous honor to assume the leadership of the *Journal of the American College of Surgeons,*" says Eberlein. "The challenge for JACS is to become even more meaningful for all our members and to do so in the context of the electronic age."

Since 1998, Eberlein has been the Bixby Professor and chairman of the Department of Surgery and the Spencer T. and Ann W. Olin Distinguished Professor and director of the Alvin J. Siteman Cancer Center. He also is surgeon-in-chief at Barnes-Jewish Hospital.
Research organization adds four School of Medicine faculty to its ranks

Four physician-scientists at the School of Medicine were honored recently by the American Society for Clinical Investigation (ASCI), one of the nation's oldest and most respected medical honor societies.

Daniel C. Brennan, MD, associate professor of medicine; David M. Holtzman, MD, Charlotte and Paul Hagemann Professor of Neurology and professor of molecular biology and pharmacology; Barry P. Sleckman, MD, PhD, assistant professor of pathology and immunology; and Dwight A. Towler, MD, PhD, associate professor of molecular biology and pharmacology and of medicine, were inducted as ASCI members at the group's annual meeting, held in Chicago in April.

ASCI comprises more than 2,700 physician-scientists from all medical specialties. The association publishes the Journal of Clinical Investigation and is a member of the Federation of American Societies for Experimental Biology.

Becoming a member of ASCI is an important recognition for young investigators in the area of biomedical research. Individuals nominated for ASCI membership must be under age 45 and have made substantial contributions to biomedical research at a national level.

The four School of Medicine inductees were among 64 new ASCI members named this year. Currently, about 65 School of Medicine faculty are ASCI members.

Doctors seek best treatment as more children develop type 2 diabetes

Once exclusively considered an adult disease, type 2 diabetes is becoming increasingly common in children.

Washington University School of Medicine in St. Louis and Saint Louis University School of Medicine (SLU) are among 12 U.S. sites to participate in the first clinical trial to focus on type 2 diabetes in children and teens. The national, multicenter study, Treatment Options for type 2 Diabetes in Adolescents and Youth (TODAY), is sponsored by the National Institutes of Health.

"Type 2 diabetes historically was not a health problem for children. However, as children have become more sedentary and overweight over the last five years, we've seen them develop type 2 diabetes," says Neil H. White, MD, director of the division of pediatric endocrinology and metabolism at the School of Medicine and principal investigator for the St. Louis study sites.

According to a recent National Health and Nutrition Examination Survey, 15 percent of young people ages 6 to 19 are overweight — nearly triple the rate in 1980.

Type 2 diabetes is closely linked to being overweight, lack of physical activity, unhealthy eating patterns and a family history of the disease.

TODAY is the first clinical study to look at the effects of intensive lifestyle changes aimed at lowering weight by cutting calories and increasing physical activity in youths with type 2 diabetes.

"Finding effective therapies to treat children who have type 2 diabetes as early as possible is critical to delay the complications of the disease," explains Sherida Tollefsen, MD, SLU director of pediatric endocrinology.

The study will compare the effectiveness and safety of three treatment approaches to control blood glucose levels: the use of metformin, the current first-line drug therapy; metformin combined with another drug called rosiglitazone; and metformin combined with intensive lifestyle changes.

Researchers plan to enroll 750 children across the country for the five-year study. Patients at the St. Louis sites will be seen at St. Louis Children's Hospital and SSM Cardinal Glennon Children's Hospital.

"While doctors know how to treat type 2 diabetes in adults, they can't assume those therapies will work as well and as safely in children and teens," says White, who also is professor of medicine and of pediatrics. "This study will answer urgent questions about which therapy is most effective for the early stage of type 2 diabetes in young people."
Emergency medicine 101

From severe burns to bioterrorism, the First Responders program at the School of Medicine offers first-year medical students an opportunity to learn how they can contribute if disaster strikes.

Students begin working with patients early in their first year, but Mark D. Levine, MD, assistant professor of emergency medicine and director of the First Responders program, says that the students feel unprepared if they should encounter an emergency situation.

The events of September 11 reinforced the need for crisis preparation, and that includes the training of medical students, adds Robert J. Rothbaum, MD, professor of pediatrics and course master for The Practice of Medicine, of which First Responders is a part.

"Students need to be prepared to respond to various types of emergencies, whether that's a car accident or bioterrorism, and ready to step in and be of assistance to other medical professionals," he says.

Participants in the annual, one-day course rotate through learning stations that touch on patient contact/immobilization, disaster medicine, environmental emergencies and stabilization techniques.

First-year medical student Megan Denzel says that while most medical students are aware of their abilities — what they can and can't do — people often expect them to intervene when a medical situation arises.

"Our main responsibility is to be aware of available resources," she says. "By learning that, we can be a help, not a hindrance."

Loebs endow professorship and establish teaching fellowships program

With a $2.5 million gift, Mr. and Mrs. Jerome T. Loeb recently established an endowed professorship and a teaching fellows program at the School of Medicine. The Loebs made the commitment to honor and thank local physicians with clinical excellence and to encourage teaching that excellence to residents and students.


The Carol B. and Jerome T. Loeb Professorship will recognize a professor with extraordinary clinical and medical skills. In addition, the gift will establish the Carol B. and Jerome T. Loeb Teaching Fellows Program, which will enable two St. Louis physicians to dedicate a significant amount of their time to teaching clinical medicine to students and residents.

"An endowed professorship is the highest honor a university can bestow upon a member of the faculty, and this is the first to specifically recognize and support a physician for being an outstanding teacher of future physicians. The Loebs have given us an unprecedented and much appreciated opportunity to recognize and foster clinical excellence," says Mark S. Wrighton, chancellor of Washington University, who announced the gift with Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine.

Participants in the Teaching Fellows Program will each be appointed for a three-year term. Faculty physicians in any area of practice will be eligible to be fellows.

"The Carol B. and Jerome T. Loeb Teaching Fellows Program will contribute to the educational experiences of the nation's very best medical students and residents and is an important contribution to advancing our education and patient care goals at the School of Medicine," says Shapiro.

BJC HealthCare and Barnes-Jewish Hospital are recognizing the Loebs' generosity and enhancing the program by committing $2 million for four additional teaching fellowships, bringing the initial number of fellowships to six.
Every animal is home to friendly gut bacteria that help digest food and perform other important functions. Now a tiny, transparent fish is offering biologists a new window into these mutually beneficial symbiotic relationships.

Researchers at the School of Medicine have shown for the first time that zebrafish can be raised in a germ-free environment. Transparent until adulthood, these fish are providing investigators with unique opportunities to watch the gut develop with and without the beneficial effects of symbiotic bacteria.

"To untangle the complex interactions between humans and their friendly gut bacteria, we need simple animal models that can function as living test tubes," explains principal investigator Jeffrey I. Gordon, MD, the Dr. Robert J. Glaser Distinguished University Professor and head of the Department of Molecular Biology and Pharmacology. "These models are key to identifying the genes and chemicals that allow friendly bacteria to enhance our health."

The study's first author is John F. Rawls, PhD, a postdoctoral fellow in Gordon's laboratory. The study, published in the March 30, 2004 issue of Proceedings of the National Academy of Sciences, also is the first to describe which bacteria normally reside in the zebrafish gut.

"Thanks to John's painstaking work, we now have a new model for studying the molecular details of how symbionts affect animal development and physiology," Gordon says.

Germ-free zebrafish arrive 50 years after scientists announced a similar biological feat: a viable strain of mice with no bacteria in their bodies. Gordon's team believes zebrafish provide a nice complement to ongoing mouse research for several reasons. The zebrafish gut is organized in ways similar to the mammalian gut, and an international effort to sequence the zebrafish genome is almost complete. Zebrafish also are small—less than one centimeter long during development—so it's easy to raise large numbers at once. And, unlike mice, it is possible to watch the gut develop and function in transparent zebrafish.

After months of trial and error with various experimental conditions, the team finally succeeded in developing germ-free zebrafish that survived until late juvenile stages.

They discovered that several biological processes were disturbed in germ-free zebrafish. For example, the ability to process nutrients was compromised, as was the zebrafish's immune system. Also, the cells that line the intestine were not renewed as rapidly.

"We wanted to determine which constituents of the microbial community might be responsible for specific biological processes," Rawls says. "To do that, you have to know something about the citizens in the bacterial community, which we didn't. Using a molecular approach, we were able to identify a large number of types of bacteria that exist within the zebrafish digestive tract."

The team plans to use their germ-free zebrafish to characterize the chemicals produced by gut bacteria. According to Gordon, the chemical messengers developed by symbiotic gut bacteria over the course of millions of years of evolution could provide new approaches for supporting and healing the digestive system.

Researchers Jeffrey I. Gordon, MD, and John F. Rawls, PhD, use transparent, germ-free zebrafish to study gut development.
Depression is a risk factor for diabetes

Depressed patients with diabetes are twice as likely to develop serious complications, including heart attacks.

Depressed heart attack patients are more likely to have a second heart attack and to die from their disease.

Findings like these come as no surprise to researchers Ray E. Clouse, MD, and Patrick J. Lustman, PhD, longtime collaborators who have focused their careers on defining the connections between mental and physical health.

"Ten to 15 years ago, we had to sit on the fact that we had already observed that depression, when we took medical histories, preceded the onset of diabetes," says Clouse, professor of medicine and of psychiatry. "At that time, many physicians would say, 'You'd be depressed too if you had diabetes.' We began to write about the issue and eventually, more studies confirmed that depression is indeed a risk for the development of diabetes."

And it's not just diabetes. Ongoing investigations at Washington University are studying how mental health can affect outcomes for patients with heart disease, chronic pain, gastrointestinal disorders, neurologic diseases, and even AIDS and cancer.

The web site will serve as a virtual center advocating biobehavioral research.
To raise awareness about the scope and volume of mind/body research under way at Washington University, Clouse and Lustman, professor of psychiatry, have created and are co-directors of the Center for Mind/Body Research, a new online resource designed to connect scientists involved in this research.

Together with Kenneth E. Freedland, PhD, and Robert M. Carney, PhD, both professors of psychiatry, the investigators form the core of a group that has been studying the interaction of psychiatric and medical disorders for more than two decades.

According to the duo, the idea for the center arose from the need for better interdisciplinary exposure of biobehavioral research. Individual investigators within departments at the School of Medicine are interested in mind/body research, he says, but they often are so involved in their specific departments that they are unaware of the synergy that could occur with other scholars.

"We realized that even in our own area of study, there was research going on at Washington University that was difficult for us to tap into or to share," Clouse says. "We wanted to be able to more fully explore the successes people were having."

The new center will serve its constituents through a web site showcasing ongoing mind/body research and functioning as a communication network between investigators. The site, sponsored by the School of Medicine’s Department of Psychiatry, can be accessed online at mindbody.wustl.edu.

Body of evidence

"When we first started working together, there was an agreement that I would help Ray work on the psychological aspects of functional GI disorders if he would help me with the physician end of depression and diabetes studies," says Lustman. "So we launched a series of investigations in both of these areas, particularly looking at the prevalence and effect of depression on outcomes of medical illness."

Their cumulative research has demonstrated that conditions such as stress, depression and other types of mental problems tend to exacerbate medical illnesses.

"The scientific literature demonstrates that mental health can have a major impact on physical health," says Lustman. "In one study, we showed that depressed patients with diabetes are twice as likely to develop serious complications as those who aren’t depressed. Clearly, there is a relationship between depression and diabetes, an interaction that alters the course of both diseases."

Depression also increases the risk of heart attack and death from heart disease, and in women who are both depressed and diabetic, the risk of heart complications is more than twice that seen in women with diabetes who are not depressed, the researchers say.

"Those women lose the protective effect of their gender," explains Clouse. "Prior to menopause, women tend to have a lower risk for heart attack than men, but in depressed women with diabetes, that protective effect disappears."

Clouse says it appears that although diabetes itself is a risk factor for heart disease, the increased risk they observed in a 10-year study of depressed women with diabetes was related more to depression than to diabetes.

"We looked at the other, traditional risk factors to see whether they also were predictive of poor outcomes, because we know that depression might be associated with the other factors," says Clouse. "But when we examined those — obesity, high blood pressure,}
smoking, high cholesterol — we found that only a woman's age and depression were significant predictors of the increased risk of heart disease that we observed.

Clouse and Lustman wanted to see just how strong a risk depression was, so they analyzed the scientific literature, looking at every available study of diabetes and depression. They found that being depressed doubled the risk of diabetic complications, and in their study of depressed women with diabetes, they found that the risk of heart problems more than doubled.

"It could be that people with complications are just more likely to get depressed," says Lustman. "But by following the depressed, diabetic women and comparing them to women who had diabetes but weren't depressed, we were able to establish that depression was, in fact, predicting an accelerated presentation of coronary heart disease in women with diabetes."

That increased risk is particularly important, because women with diabetes are 1.5 times more likely to be depressed than diabetic men. Clouse says that fact, combined with their findings, demonstrates that it's important to look more closely at how depression and other mental disorders can negatively affect physical health.

Now the researchers are trying to determine whether treatment for depression can reverse some of these physiological factors. "Our research shows that depression is a potentially modifiable risk," says Lustman, "one that, if treated, might improve patient outcomes."

Meeting of minds

This type of inquiry is just what the researchers hope to share with colleagues from both Washington University and other institutions on the Center for Mind/Body Research website. Already, faculty members are exchanging ideas on grant funding, study design and statistical analyses to study biobehavioral issues.

Lustman notes that the new site will be particularly helpful in supporting junior faculty and trainees with an interest in mind/body research. "The center will enable anyone with an interest in biobehavioral research to step in and work with other like-minded researchers," he says.

The site also serves as a point of entry for various funding agencies, showcasing not only the volume of research being done across departments at Washington University, but also the expertise of its faculty.

"The NIH is increasingly emphasizing the dissemination of research findings; it would like to know that there's a plan in place for how these advances will be communicated," Lustman says. "The Center for Mind/Body Research provides a ready vehicle for doing that."

Ultimately, patients have the most to gain. More rapid communication of research findings across disciplines could result in a faster translation of those findings into patient treatment.

More rapid communication of research findings across disciplines could result in a faster translation of those findings into effective treatment. In addition, patients who log on to the site will learn about ongoing clinical trials and perhaps find information about treatment for conditions to which they might not otherwise have access.

Clouse is gratified to see the growing interest in the connection between mental and physical health.

"There's a new excitement about mind/body research because there is a general sense that this is an area that's been undertapped," he says. "Consequently, it holds new promise for research and, ultimately, for patient care."
Nearer Cap-Haitien, Haiti's second-largest city,
Patricia B. Wolff, MD, and the rest of her visiting
American medical team have watched the same tragic story
unfold again and again. Hungry children, enticed by the
luscious-looking fruit of the tropical ackee tree, pick it while
it is still under-ripe — a poisonous stage in its growth cycle.
Then they take a few desperate bites.

“They are taught not to eat it, but hunger can make any
fruit tempting,” says Wolff, associate professor of clinical
pediatrics, who has made volunteer trips to Haiti since 1988.
“The child becomes unremittingly hypoglycemic, begins
convulsing, goes into a coma and dies. Even in the unlikely
event that intravenous glucose is available, permanent brain
damage has already occurred.”

Starvation and sickness are the twin evils of daily life
in Haiti, the poorest country in the Western hemisphere.
At their makeshift clinic, equipped with one solar-powered
microscope and basic medical supplies, Wolff and her
colleagues — including some from Washington University
— routinely treat cases they would never see back home:
cutaneous anthrax, typhoid fever, elephantiasis, parasites
that infest people's abdomens, lungs or brains.
DESCENT INTO HAITI

There are also the mysterious cases that haunt Wolff long after she has returned to the United States and her own private pediatric practice, where asthma and ear infections are the staples of everyday life. Like the young boy who developed a hole in his skull, underneath the scalp. Or the pretty 11-year-old girl with a huge perineal ulcer that did not respond to antibiotics. Wolff and her colleagues took the child to a hospital an hour away and, in the absence of a phone system, never heard what happened to her.

"Over the years, I have gotten used to ambiguity," says Wolff, who travels to Haiti three or four times a year, usually for an intensive week-long stay. "That's hard for American doctors or nurses who go there; we're not used to ambiguity in our own lives. I also have accustomed myself to so much horror — I just have to deal with it and move on."

In addition to her work in the clinic, which is sponsored by a Methodist church group in North Carolina, Wolff has initiated a project of her own that is already an unambiguous success. Last August, with a small grant from the Rotary Club, she established a feeding program that gives starving children 175 calories a day for each kilo of their weight. She uses the same formula — peanut butter, sugar, oil, powdered milk, vitamins and minerals — that Mark J. Manary, MD, associate professor of pediatrics, developed to treat malnutrition in Malawi.

"These are children who are barely alive, very lethargic, with orange hair," she says, recalling some of the 300 patients whom they have fed so far. "Then you see them six weeks later and they are running around with chubby cheeks and new black hair. They look terrific by comparison."

On the medical side, too, are some successes, though these often require a creative approach to care. A year ago, one mother brought in her 2-year-old son, worried that he couldn't walk. Wolff examined him and found little except a mild case of cerebral palsy — so off she went to the Cap-Haitien flea market and found him a used baby walker.

"This January, his mother brought him back and he was walking," Wolff says, jubilant. "Probably he wasn't a good walker before and no one had the time to teach him, then the baby walker helped him do it on his own. His legs got strong enough, and now he is doing fine."

From the personal diary of fourth-year medical student Lindsay Peakman, January 2004

Okay, I surrender. I do not know enough. I should have been studying before this trip — I should have been doing more physical exams. But God has been good in not giving me any really sick children.

My patients this morning had a variety of problems, but for some reason they all seemed to have the same story. I got a sense of dread around 11 a.m. that I was missing the big diagnosis and the big picture. Then lunch came, a welcome break, and then we went to see the orphanage. I lost it. Fifty-one beautiful children came out and sang to us as we arrived, and were so glad to see us. I just couldn't help it any more — tears welled up in my eyes.

They had so little; no parents, no toys, and yet they were so happy. How am I so lucky, Lord? ...

I am glad that there are only two days left. I am ready to go home; I have learned what I came here to learn. I want to come back! Only next time with more training and confidence. But I am also glad I have two more days to help — I am getting the hang of things. I know what I can easily treat and what I need to think about. Maybe I can do more labs in the next few days, get more information. Oh, the lab; with the microscope using only daylight. It astounds me that you can practice medicine even with very few medicines and little technology.

Lord, give me strength for two more days — wisdom and discernment and confidence are what I desire. Keep us safe on our trips back and forth, and safe from any illness. Be with us as we try to help these people in whatever way we can.
Patricia B. Wolff, MD, examines a young Haitian patient on one of her many trips to the impoverished country.

If only all stories ended so happily, she sighs. "It's horrifying to see how so many Haitians live. Imagine mothers who have babies they know are dying because they have no food for them. No one around them has real food security either — except us, when we come. It's pretty clear that we Americans are the people with excess."

As a child, Wolff planned to share her excess with others as a doctor in the developing world. Graduating from the University of Minnesota Medical School, she did a residency and fellowship in pediatric endocrinology at St. Louis Children's Hospital. But she also married, had two children — and "got off the track," away from working in other countries.

When her children were teenagers, the whole family traveled to Haiti with a St. Louis group to spend time as volunteers. They saw abject poverty, bodies left by political killings. Each day, they tended to dying patients at a clinic in Port-au-Prince; many had giant cancers, advanced tuberculosis or HIV/AIDS. "My kids were shocked," she says. "I think it changed their world view." One son, Andrew, MD 02, later returned to Haiti as a college student.

In 1991, Wolff herself wanted to go back and heard of a program initiated by a North Carolina couple who visited Haiti and were shocked by the conditions. Today, their work has grown into two full-time clinics run year-round by nurses, with the periodic help of the American teams. Pediatricians, internists, urologists, dieticians, physical therapists and some non-medical staff participate, squeezing in as many patients as they can during the hot, back-breaking days.

On past visits, Wolff has been joined twice by Washington University pediatrician Matthew I. Goldsmith, MD, instructor in pediatrics, and nurse practitioner Nancy Quigley, then of the University-affiliated Medical Care Group. This January, fourth-year medical student Lindsay Peakman, who began her pediatric residency at St. Louis Children's Hospital in July, also traveled with the group.

"I didn't know much about Haiti before I went," says Peakman, whose French minor in college had prepared her for work in a Francophone country. "But I knew that it doesn't get much worse than Haiti; I knew that what I would be seeing would be some of the worst cases of my career."

From their Cap-Haitien hotel, they rode 15 miles — a one-and-a-half-hour trip because of the deeply rutted roads — out to the clinic where hundreds of people were waiting each day. Peakman quickly learned that the poorest of all were those who wore rags, since even impoverished Haitians tried to dress up for clinic. Under Wolff's mentorship, she found herself treating diseases she had only seen in textbooks: dysentery, Giardia, scabies, fungal diseases of all kinds.

Since the group's departure, the violence and chaos surrounding the overthrow of President Jean-Bertrand Aristide has caused the food and medical situation to deteriorate. Wolff does not know what she will find on her next visit. In 2000–01, she took a sabbatical year off and traveled around the world to work in Malawi, Uganda, Cambodia and other needy places. Still, Haiti ranks as the worst she has ever seen.

"What Haiti needs is a public health infrastructure, clean water, sewage treatment, latrines," she says. "Over time, there wouldn't be so much sickness, and we could provide ongoing care instead of crisis care. I hope someday to work myself out of the business of malnutrition treatment."

For right now, there is still an urgent need for aid. Wolff's food project is in critical need of funding. Children at a nearby orphanage, founded by an American physician, need sponsors to help them go to school. And individual children under Wolff's care, who could benefit from a specific treatment, are in dire need of "adoption" by American families — often for a modest amount.

Meanwhile, the horror and ambiguity remain. "We saw a child who was poisoned last January; six people in his family had died in the previous week and now he had the symptoms. We took him to the hospital, gave them money to take care of him, came back two days later and he wasn't there. Nobody knew where he was," she says. "We just don't know."
Cancer prescriptions are written in genetic code.

BY MICHAEL PURDY
THE WAITING REALLY WAS the hardest part for researcher Howard L. McLeod, PharmD.

As a specialist in pharmacogenetics, the study of interactions between drug treatments and an individual’s genetic code, McLeod could see a day coming when doctors would use their patients’ genes to steer them away from potentially hazardous reactions to medications and toward beneficial outcomes.

But that day didn’t seem to be getting any closer.

“It seemed like the best estimate was always that it would be another 10 years before we could put these kinds of approaches to use,” says McLeod. “Those 10 years just never seemed to end.”

About two years ago, McLeod decided he’d had enough waiting.

With colleagues in several departments at the School of Medicine and Barnes-Jewish Hospital, he put together the first study in the United States that uses patients’ genetic information to modify their treatments.

Now about halfway finished, the study focuses on colorectal cancer patients and a gene that appears to be linked to how positively patients respond to chemotherapy and radiation treatments. Patients with a form of the gene that decreases their chances of having a good response are given added chemotherapy.

“Until now, clinicians treated everyone the same way and then scientists looked back and said, ‘Hey, by the way, this patient population A, with this particular set of genes, has a better response to the treatment; or patient population B, with these genes, has more toxicity,’” says Benjamin R. Tan, MD, a medical oncologist and assistant professor of medicine who is involved in the study.

“In this unique project, though, we’re actually acting on that data prospectively to see if we can individualize treatment.”

What kind of patient are you?
Your individual genetic code may help determine the best treatment options for diseases such as cancer.
When he talks about using pharmacogenetics to modify patient treatment, McLeod, associate professor of medicine, genetics, and molecular biology and pharmacology, sparkles with energy, wit and enthusiasm.

"The basic concepts behind pharmacogenetics have been around forever," says McLeod, who also directs the Pharmacology Core at the Alvin J. Siteman Cancer Center. "I like to say that the quest to find out who's going to get toxicity and who's going to benefit from medicine has been around since we've been chewing bark. But now we have the technology to actually put these ideas to use."

To generate leads for genes that might potentially interact with a drug, a phase of pharmacogenetics that McLeod refers to as "stamp collecting," scientists first assemble a detailed list of the key proteins known to interact with a drug. Researchers can typically put together a list of several proteins that interact with most drugs, including enzymes known to activate or degrade the drug, take it into or out of cells, or help distribute it around the body or speed its exit from the body. Pharmacogeneticists then check if changes in the genes for those proteins seem to correlate with changed treatment outcomes.

"The good side is that it's a very educated guess, and the bad side is that it's still a guess," McLeod says. "But it's still much better than searching all 35,000 genes in the human genome."

McLeod and the researchers in his laboratory follow up on early leads generated by other labs, searching through larger and more tightly controlled pools of patient data to see if the leads check out.

With support from the National Cancer Institute, McLeod's research group recently conducted a review of several genetic markers tentatively linked to effects on colorectal cancer treatment.

"So far, we're finding that the majority of markers that are in the literature do not validate — they have no relationship with toxicity or effectiveness when examined in a larger patient population," McLeod says. "But there are markers that are true, markers where we have very clear data showing they were associated with either risk of severe toxicity or the chance of having a therapeutic response to the medicines."
McLeod is delighted that colorectal cancer is the focus of the first applied pharmacogenetics study. He feels this tumor type has been shortchanged in terms of public attention because it primarily affects older patients and because it occurs in an area of the body no one likes to talk about.

“Results from our studies of colorectal cancer will help us think about how we can begin to apply pharmacogenetics to other tumor types including lung, breast and prostate cancers,” he says.

McLeod notes that more than one gene is known to contribute to colorectal cancer, so a thorough pharmacogenetic approach to managing treatment will inevitably have to consider the potential effects on treatment of several different genes. And in the end, genetics is unlikely to account for all variability in patient responses to treatment. McLeod estimates that as much as 50 percent of that variability may stem from other factors, such as a patient’s diet.

Understanding these contributors to variability becomes a priority as more options for treatment become available. For 40 years, physicians had only one approved chemotherapy drug for colorectal cancers, but in recent years four new drugs have been introduced.

“Now that we have five drugs, how do we decide what to do? We have to find out information from our patients and their DNA to determine which drug will be most likely to give them the best results,” McLeod says.

Treatment for patients with colorectal cancer begins with chemotherapy and radiation.

“Pharmacogenetics lets us individualize this treatment, which is a prelude to surgery,” says Robert S. Malyapa, MD, PhD, assistant professor of radiation oncology. “We hope that this will have a positive effect on both tumor control and long-term survival.

Malyapa, who specializes in radiation treatment for gastrointestinal tumors at the Siteman Cancer Center, explains to patients the treatment recommendations and options, including potential participation in clinical trials. He finds that patients given the option of participating in the pharmacogenetics trial are usually quite eager to do so because it may directly benefit them.

When patients agree to participate, a clinical trial coordinator takes a blood sample scientists use for DNA analysis. They look at a gene in the patient’s DNA that can affect how much the patient’s cells make of a protein, thymidylate synthase (TS), that is the primary target for a major chemotherapy drug, 5-fluorouracil.

Cancerous cell from patient B:
Because of genetic differences, this patient’s tumor cells produce more of the key protein, overwhelming the standard drug. Physicians give this patient a second chemotherapeutic agent to make sure the protein’s fortifying effects are blocked.
Several laboratories earlier found that patients with high levels of the TS protein or of the RNA for making the protein typically did not respond well to chemotherapy.

"Physicians can only give a certain amount of 5-fluorouracil before patients will have adverse reactions," McLeod explains. "We believe that when a tumor makes particularly high levels of the protein, it will have more protein molecules than drug molecules and can shrug off the drug's effects and keep on growing."

When they detect the form of the gene that increases production of TS, clinicians add a second chemotherapy agent to improve their chances of seeing tumors shrink prior to surgery.

"This is pure translational research — really, what everyone is striving to do more of now," comments David W. Dietz, MD, a colorectal surgeon involved in the study and an assistant professor of surgery. "It's taking the latest basic science results and directly applying them to the care of patients."

"This is not a done deal — this is an evolving, new way of practicing," he notes. "But it's where the future is, certainly for colon cancer, and I think it's going to be the future for all cancers."

Though it was conceived before the university officially announced its BioMed 21 initiative, the pharmacogenetics trial includes many of the key elements that BioMed 21 seeks to encourage in research: it brings the latest in basic research to bear on patient care, it makes use of the new wealth of human genetic data now available, and it involves collaboration across several departments.

"This is really an example of multidisciplinary medicine at its best," McLeod says. "We could never do this study if the radiation oncologists, medical oncologists, surgeons, radiologists and pathologists weren't all 100 percent on board."

McLeod anticipates that the study will finish early next spring. He's not making any promises on how far that first step will take pharmacogenetics researchers, but he's extremely glad to have finally set that step in motion.

"This is pure translational research... It's taking the latest basic science results and directly applying them to the care of patients."

DAVID W. DIETZ, MD
Car seats save kids' lives — if parents have them, and use them.

A new program aims to ensure both.

By Kimberly Leydig
As an emergency medicine physician, Randall S. Jotte, MD, sees what are arguably some of life's most preventable tragedies - drug overdoses, suicide attempts, kids riddled with bullets from gang violence.

But the type of case that affects him most is treating the aftermath of a motor vehicle accident in which a small child or infant wasn't restrained in a car safety seat.

After witnessing hundreds of injuries caused by a child not being restrained or being improperly restrained, Jotte and his emergency medicine team decided to take a proactive approach. Earlier this year, the team launched Safe and Secure, a prevention program that provides car and booster seats to Missouri children at the highest risk for motor vehicle injury and death.

"The single greatest threat to a child's health is motor vehicle collision," says Jotte, associate professor of medicine. "The contrast between when small children are restrained in motor vehicle accidents compared to when they're not is devastating. It's often the difference between a child coming in with minor cuts and bruises or suffering major trauma, often resulting in death."

According to the U.S. Centers for Disease Control (CDC) and Prevention, car crashes are the leading cause of death for children. Nearly 2,000 children ages 14 and under are killed in automobile crashes each year; another 280,000 are injured.

Car seats reduce the risk of death significantly - as much as 71 percent for infants and by about 55 percent for toddlers. The CDC estimates that 50,000 serious injuries would be prevented and 455 lives saved each year if all children under age 5 used safety seats.

Unfortunately, 40 percent of American children ages 4 and under routinely ride unrestrained. Furthermore, fewer than 10 percent of 5- to 8-year-olds use booster seats, the recommended safety seat for this age group.

"This is such a fixable problem," Jotte says. "We anticipate that the Safe and Secure program will result in fewer Missouri children dying or being seriously injured from motor vehicle crashes."

With support from the Missouri Foundation for Health and the university, Jotte and his team received a $120,000 grant to fund the distribution of the Safe and Secure program.

Working in cooperation with physicians, nurse practitioners and county health departments, Safe and Secure is offering free car and booster seats to families who live in the Missouri areas with the highest pediatric mortality rates from car accidents. A study by Jotte's team determined that Carter, Reynolds and New Madrid counties in southeast Missouri are the highest risk areas.
Missouri and the 63104 district of Soulard in St. Louis have the worst childhood mortality rates.

The program is providing more than 2,000 free car and booster seats to families from these areas who are living below the poverty level determined by Medicaid.

As a young mother, Tondra Holman couldn’t afford to purchase a car seat for her 1-year-old daughter, Kenisha. When the family needed to go somewhere in the car, the only option she had was to use a standard seat belt. And she admits that made her very nervous.

“I really just tried not to take her anywhere,” Holman says. “Now I know Kenisha will be safe in the car. It’s surprising to me that such a generous programs exists.”

Even at discount stores, a new car seat costs $50 to $140.

AmeriCorps member Felicia Edwards, who works at the Grace Hill Soulard Neighborhood Health Center, says the response to the Safe and Secure program has been incredible.

“There is a serious need for this program in the community because many families just don’t have the extra money to purchase a safety seat,” Edwards says. “The young mothers who receive the free safety seats are so grateful because they know this gift could save their child’s life — and that’s what this safety program is all about.”

Jotte and his staff have teamed up with physicians and other care providers in the eastern Missouri counties and at the Grace Hill center to educate underprivileged families on the lifesaving benefits of safety seats and to provide instructions on how to properly use the seats. Once the educational session is completed, the family is given a voucher for each child who needs a safety seat, which can be picked up at their local community center.

“Parents of children in the regions targeted by Safe and Secure face several barriers to assuring child passenger safety, the most formidable being financial and educational,” explains program director Gerald Banet. “The financial strain makes it impossible for some parents to purchase car seats for their children. They have to spend what money they have on food, clothing and shelter.”

Jotte and his team plan to seek additional funds from state and federal resources and other foundations to expand the Safe and Secure program in additional Missouri communities.

“Our emergency medicine team has a commitment to underinsured and uninsured patients,” Jotte says. “Because we see so many of these patients in the emergency department, we have a special connection with and sense of responsibility to these underserved patients.”

Sit right, sit tight

The first rule of car seat safety is to use one. “The biggest mistake people make is thinking that they can go without a car seat because it’s a short drive,” Jotte says. “It’s so easy to do that.”

Additional car seat safety tips to ensure children ride safely:

- Use rear-facing seats for infants from birth to at least 1 year of age and until the child weighs at least 20 pounds.
- Use forward-facing seats for children who are at least 1 year of age to about age 4 and weigh 20 to 40 pounds.
- Use a child between ages 4 and 8, under 4’9” tall and who has outgrown a child safety seat should use a booster seat with a lap-shoulder belt.
- All children ages 12 and under should always ride in the back seat.
That's the ticket!

MATCH DAY WAS HELD MARCH 18, 2004, and 112 of the 116 graduating medical students took part in the National Resident Matching Program. During the annual ceremony, senior medical students in the United States learn which residency programs they will enter. School of Medicine graduates are highly successful in obtaining competitive training programs. In 2004, 29 percent of the graduating class selected a primary care field and 17 percent matched into highly competitive surgical subspecialty training positions.

Crowning achievement: 2004 MDs Elyse Pine, Jessica Pittman and Annie Lee celebrate in royal style upon receiving their residency notifications.
All smiles: Jason Stephenson, MD 04, with wife Laura.

**MINNESOTA**

**MINNEAPOLIS**
University of Minnesota
- Otolaryngology
  - Vivian Mac Yoo

**MISSOURI**

**COLUMBIA**

University of Missouri-Columbia
- Orthopaedic Surgery
  - Dominic Patrick Patillo

**ST. LOUIS**

Barnes-Jewish Hospital
- Anesthesiology
  - Daniel Robert Sucherman
- Clinical Pathology
  - Brian Todd Edelson

**MICHIGAN**

**ANN ARBOR**

University of Michigan Hospitals
- Dermatology
  - Allen Thomas Bruce
- Orthopaedic Surgery
  - Farhang Rastri
- Pediatrics
  - Jeffrey Alan Knipstein

**NEW JERSEY**

**ALBUQUERQUE**

University of New Mexico
- Diagnostic Radiology
  - Michael Joseph Briggs

**NEW YORK**

**NEW YORK CITY**

Columbia University
- Neurology
  - Elizabeth Haberkfled
- Mt. Sinai Hospital
- Pediatrics
  - Richard Daniel Ander
- Hospital-Columbia
- Anesthesiology
  - Alber Changwon Ju
- General Surgery
  - Robert Paul Moore
- Orthopaedic Surgery
  - Samuel Kung-Wook Cho

**RHODE ISLAND**

**PROVIDENCE**

Rhode Island Hospital/Brown University
- Emergency Medicine
  - Rachel Lyn Fowler
- Internal Medicine
  - Maxine Bome

**TENNESSEE**

**NASHVILLE**

Vanderbilt University Medical Center
- Internal Medicine
  - Alyssa Camille Browning

**TEXAS**

**TEMPLE**

Texas A&M-Scott & White
- Plastic Surgery
  - Paul Anthony Berry

**VERMONT**

**BURLINGTON**

Fletcher Allen Health Care-University of Vermont
- Internal Medicine
  - James Nicholas Peres

**VIRGINIA**

**RICHMOND**

Virginia Commonwealth University
- Ophthalmology
  - Shilpi Pradhan

**WASHINGTON**

**SEATTLE**

University of Washington
- Affiliated Hospitals
  - Diagnostic Radiology
  - Jonathan Hast Chung
- Pediatrics
  - Jessica Erin Pinnin

**Pittsburgh**

Allegheny General Hospital
- Internal Medicine
  - Emergency Medicine
  - Megan Heath
- Emergency Medicine
  - McKinnon

**Pennsylvania**

**Philadelphia**

Drexel (MCP Hahnemann)
University College of Medicine
- Emergency Medicine
  - Christopher Alan Johnson
- Thomas Jefferson University
- Emergency Medicine
  - Laura Ann Shoren
- Wills Eye Hospital
- Ophthalmology
  - Justin Ebers

**University Health Center of Pittsburgh**
- Plastic Surgery
  - Roe Elan Rubinstein

**New Hampshire**

**Lebanon**

Dartmouth-Hitchcock Medical Center
- General Surgery
  - Kenneth Clark Deem
- Psychiatry
  - Allison Patricia Darby

**North Carolina**

**Charlotte**

Carolina Medical Center
- Emergency Medicine
  - Kristin Joy Homes

**Durham**

Duke University Medical Center
- Internal Medicine
  - Cara Louise O'Brien
- Ophthalmology
  - Annie Chia-San Lee

**Ohio**

**Cincinnati**

Cincinnati Children's Hospital
- Pediatrics
  - Tracie Lynette Butler
- University Hospital
- Emergency Medicine
  - Andrew Shine Butler

**Oregon**

**Portland**

Oregon Health & Science University
- Emergency Medicine
  - Karen Ann Zink
- Obstetrics and Gynecology
  - Keren Rosenblum

**Pennsylvania**

**Philadelphia**

Drexel (MCP Hahnemann)
University College of Medicine
- Emergency Medicine
  - Christopher Alan Johnson
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- Internal Medicine
  - Maxine Bome

**Tennessee**

**Nashville**

Vanderbilt University Medical Center
- Internal Medicine
  - Alyssa Camille Browning

**Texas**

**Temple**

Texas A&M-Scott & White
- Plastic Surgery
  - Paul Anthony Berry

**New Mexico**

**Albuquerque**

University of New Mexico
- Diagnostic Radiology
  - Michael Joseph Briggs
Longtime friends
Loyal university supporters strengthen WU connections

At the tender ages of 16 and 17, Sima Kolman and Phil Needleman met through mutual friends on a warm August day on the Atlantic City Boardwalk. He told her within a few weeks that she was the girl he was going to marry.

But their romantic adventure had to wait. Sima went home to Baltimore to complete her last semester of high school before entering the American University in Washington DC, while Phil began his freshman year at the Philadelphia College of Pharmacy and Science. In high school, Phil had actively pursued a good time. He says of those days: “I wouldn’t hesitate to cut school and go to Yankees games.”

But Phil soon changed his ways. “I wanted to impress Sima, who had been a top student in a large high school,” he says. “I bought a tie, gave up card gambling and drinking, and became a serious student due to Sima’s influence.”

They wrote letters to each other daily and were married three years later.

Today, the Needlemans are proud grandparents and grateful for their 45 years together, during which they have shared many successes.

Phil Needleman earned a doctorate in pharmacology from the University of Maryland School of Medicine and spent the next 25 years at Washington University, where he chaired the Department of Pharmacology (now the Edward Mallinckrodt Department of Molecular Biology and Pharmacology) at the School of Medicine from 1976 to 1989. An expert in prostaglandin regulation, his laboratory at Washington University in St. Louis made key discoveries about the COX-1 and COX-2 enzymes.

He left Washington University in 1989, eventually becoming senior executive vice president, chief scientific officer and chairman of research and development at Pharmacia Corp. (formerly Monsanto/Searle), a position he held until 2003. During that time, he led the development of Celebrex, a drug that treats the pain and inflammation of osteoarthritis and adult rheumatoid arthritis, based on COX-2’s unique characteristics. More than 20 million arthritis sufferers now benefit from this drug.
Sima Needleman, who had a teaching degree, went on to complete a master's degree at Washington University's George Warren Brown (GWB) School of Social Work. She became a medical social worker, helping women with obstetrical and infertility problems at Jewish Hospital from 1976 to 1992. She served for 10 years on the GWB Alumni Board, chairing numerous committees and serving as president from 1993 to 1995.

Recently the Needlemans endowed a professorship within the new BioMed 21 Division of Clinical Sciences. BioMed 21 is a university-wide research and training initiative designed to change the way in which illnesses are understood, diagnosed and treated.

They also have established an endowed social work scholarship in Sima Needleman's name.

"Like a kid being turned loose in a candy shop" is how Phil describes his feelings about coming to the School of Medicine as a postdoctoral fellow in pharmacology in 1964. "There was an endless stream of wonderful seminars and good investigators," he says.

That learning took place in an environment he describes as both collegial and extremely productive for scientists. "I came to understand the patterns of science and creativity," he says. "I also learned not to accept dogma and to be willing to do the killer experiment—either it proves the hypothesis or it doesn't."

He was asked as a young professor to chair the Medical Curriculum Committee. On that committee, he met P. Roy Vagelos, MD, then head of the Department of Biochemistry (now the Department of Biochemistry and Molecular Biophysics), who would later have a major influence on Phil's career.

In 1975, the Needlemans took a sabbatical in England. When they returned, 36-year-old Phil was surprised to learn he was a candidate for head of the pharmacology department. After some encouragement from David M. Kipnis, MD, then chairman of the Department of Medicine, he accepted the position.

"Phil had the capacity to identify, stimulate and motivate young scientists and mentor them toward successful independent careers," recalls Kipnis, who now is Distinguished University Professor of Medicine.

By the late 1980s, Needleman knew the COX-2 enzyme he had discovered held great promise for drug development. Believing this could be more effectively accomplished in private industry, he left the university to join Monsanto in 1989. Vagelos, by then chairman and chief executive officer of rival Merck and Co. Inc., influenced his decision. "Prior to Roy and Merck, if a graduate student of mine went into industry, I would mourn and wonder what I did wrong to this person," Phil says. "But Roy really taught me and the world that drugs come from great science."

"Maintaining the reputation of an institution like Washington University takes investment and commitment...we want to support it." Phil and Sima K. Needleman

In their retirement, the Needlemans remain active and integral to the university and the larger community. Phil serves on the medical school's National Council, the University's Board of Trustees and the Barnes-Jewish Hospital Board. He is a member of the National Academy of Sciences and its Council. Sima remains on the GWB School of Social Work's National Council, coordinates a monthly alumni group called Healing Racism, and is involved in a number of other philanthropic organizations, including serving on the Jewish Family and Children's Service Board. Together, they endowed a director position at Ben Gurion University of the Negev in Israel to create an Institute of Biotechnology there.

Phil also is a scientific partner in a venture capital group, Prospect Venture Partners, and recently was named associate dean for special research projects at the School of Medicine, focusing on issues related to BioMed 21.

He believes BioMed 21 will be one of the biggest initiatives the university has launched, comparable to the sequencing of the human genome, and that it will require a cultural change in medicine as scientists begin working together in large, interdisciplinary teams focused on specific disease targets.

"Maintaining the reputation of an institution like Washington University takes investment and commitment," says Phil, who, with Sima, has repeatedly demonstrated that giving back to the university is important to them. "It's a very special place that has done so much for both of us personally and professionally," Sima adds, "and we want to support it."
With springtime comes Reunion.

Briefly untethered by daily responsibilities, medical alumni spent their time at Reunion 2004 reinflating friendships from long ago, floating the idea of visiting the Missouri Historical Society's Lewis and Clark exhibit or perhaps popping into the Dean's Luncheon for a bite to eat.

Physicians who hadn't been to the medical center in a while caught up on some of today's issues — promising research on Alzheimer's disease, a new model for integrated patient care at the Siteman Cancer Center, strategies for addressing the mounting debt load facing new graduates.

Class dinners featured everything from raucous laughter to heartfelt memories of days gone by — even a little friendly hot air. Contributions to class scholarships and other gift efforts soared.
Gerald Behrens, MD '54, Polly Herrmann and Dona Behrens search the crowd for others celebrating 50 years.

Thomas Baranski, MD, PhD '92, and Karen Baranski, MD '92, compare notes with friends from medical school days.

The Dean’s Luncheon keeps alumni coming back for more.

David M. Witten, MD '54, learns a thing or two about today’s medical school from first-year student Meg Fitzpatrick.

Outlook Summer 2004

Classmates Frederic G. Barr, MD, Eric J. Saba, MD, and David B. Wilson, MD, kick back at their 20th reunion—and they’re just getting started.

James Shear, MD, and Ashley Hill, MD '94, with one of the youngest reunion participants.

Helen Catanzaro, Rudolph E. Catanzaro, MD '50, Meredith Payne, MD '50, and Marvin E. Levin, MD '51, greet each other warmly at the Reunion Awards Banquet.

Looking back
Irv Kushner, MD 54, talks with Joanne Nathans about the scholarship established by the Class of 1954 in memory of her husband, Nobel laureate Daniel Nathans, MD 54.

Kelly M. Askins, MD 89, and Joanne Farley Rhodes ponder the application process for the Class of 2028.

Mary Bier before her spouse, Dennis Bier, MD, HS 73, receives the Distinguished Service Award.

Executive Vice Chancellor and Dean Larry Shapiro, MD 71, enjoys a laugh with Mary Bier before her spouse, Dennis Bier, MD, HS 73, receives the Distinguished Service Award.

MD 49s Edward E. Elder Jr. and Robert R. Lyle take a look at the past.

A century's worth of Hermanns: Gilbert Hermann, MD, and Robert E. Hermann, MD, classmates but not relatives, are part of the 50th reunion group.

The future's so bright at the medical center that alums wear sunglasses as they survey campus progress.
The School of Medicine honored six outstanding members of the Washington University Medical Center community at the recent reunion awards banquet.

Alumni Achievement Awards

Danny O. Jacobs, MD 79, is professor and chairman of the Department of Surgery at Duke University Medical Center.

David E. Smith Jr., MD 44, is a voluntary adjunct professor of pathology at the University of Texas Medical Branch in Galveston.

Alumni/Faculty Awards

James P. Crane, MD, HS 74, is the associate vice chancellor for clinical affairs and chief executive officer of the Faculty Practice Plan at Washington University School of Medicine. He is also professor of obstetrics and gynecology and of radiology.

Barry A. Siegel, MD 69, is professor of radiology and medicine and director of the Division of Nuclear Medicine at Washington University School of Medicine and the Mallinckrodt Institute of Radiology.

Distinguished Service Awards

Dennis M. Bier, MD, HS 73, is professor of pediatrics, chief of the Nutrition Section, director of the U.S. Department of Agriculture/Agriculture Research Service Children’s Nutrition Research Center and program director of the NIH General Clinical Research Center at Baylor College of Medicine.

William A. Peck, MD, HS 63, is the Alan A. and Edith L. Wolff Distinguished Professor of Medicine at Washington University School of Medicine and director of the Washington University Center for Health Policy.

Thomas Devine, MD, Haramandeep Singh, MD, and others in the Class of 1994 came from far and wide to catch up on the past 10 years.

St. Louis...or Hawaii? Jack Doyle, MD 44, (pictured at left with wife Jimmie Doyle) and William Sawyer, MD 54, (center, above) spice things up with a touch of color. Pictured with Sawyer are his classmates Andrew McCanse, MD, left, and Robert Ahlvin, MD.

A touch of flair

David E. Smith Jr., MD, and classmate Virgil Laeb Jr., MD, reminisce at their 60th reunion.
The gleam in their eyes says fraternity songs are not far behind for MD 49s Eugene W.J. Pearce, Edwin D. Kadlub, Russell D. Shelden and John R.B. Fischer.


Paul H. DeBruine, MD 59, Joel D. Curran, MD 59, Ruth DeBruine and Phyllis S. Curran check out the skyline.

Allan McCown, MD 64, and Claire (Sunny) McCown, PhD, bask in the spring sunshine.
Robert M. Hardaway III, MD 39, writes that after graduating cum laude from the School of Medicine, he did a surgery residency at New York Hospital, Cornell Medical Center. He served in the U.S. Army from 1940-1975 and treated the first 160 wounded in World War II in Hawaii in 1941. He retired as brigadier general, then became professor of surgery at Texas Tech University, retiring in 2002. He has 417 published papers and 10 books on shock and trauma, with five papers now in publication. He lives in El Paso TX.

Pedro Cuatrecasas, MD 62, has been appointed to the Science Advisory Board of Aet hlon Medical, Inc., a California company pioneering the development of viral filtration devices that reduce the presence of infectious disease and toxins in the body. From 1989 until his retirement in 1997, Cuatrecasas was president of the Pharmaceutical Research Division of Parke-Davis Company and corporate vice president for Warner Lambert Company. Known for the invention and development of affinity chromatography, he is a member of the National Academy of Sciences, the Institute of Medicine, and the American Academy of Arts and Sciences.

John Stone, MD 62, is the author of Music from Apartment 8: New and Selected Poems, published this year by Louisiana State University Press. The new volume features selections from four of his previous books together with 22 new works, including poems about humorous and sometimes tough adventures with Stone's 95-year-old mother (she makes the music that wafts from Apartment 8), a sequence drawn from a trip to the Middle East, and reflections on growing up in Mississippi and Texas. Stone is professor of medicine (cardiology) emeritus at Emory University School of Medicine, where he was for 19 years director of admissions and associate dean. He co-edited On Doctoring, an anthology of literature and medicine that since 1991 has been presented to every student entering a U.S. medical school as a gift from the Robert Wood Johnson Foundation.

Anne B. Fletcher, MD 64, writes, “I retired as chairman of neonatology at Children's National Medical Center in Washington DC in 1996. My husband, William J. McSweeney, MD, died in August 1998. Despite that, I have enjoyed my retirement with children, grandchildren and travel. I have even managed to build a very large Victorian dollhouse.” Fletcher lives in Washington DC.

Hunter Heath III, MD 68, was named a clinical research fellow of Lilly Research Laboratories and executive director, U.S. Medical Division, Eli Lilly and Company, effective January 1, 2004. Heath, who lives in Indianapolis, says, “I always said I didn't want to be department chairman, but I am anyway! Big personal news was our two weeks in Scotland for son's wedding to a lovely Scottish lady in August 2003.”

Larry L. Mathis, HA 72, executive consultant with D. Peterson & Associates in Houston, received the American College of Healthcare Executives (ACHE) highest honor, the 2004 Gold Medal Award, duringACHE's 47th Congress on Healthcare Management in Chicago on March 1, 2004. The medal is given to leaders who have made significant contributions to the health care profession and who go beyond their own organization to continually contribute to the improvement of health care services and community health. In his current position, Mathis counsels clients on issues related to leadership, integrated health systems and governance, and he facilitates management retreats. He is the author of The Mathis Maxims: Lessons in Leadership, published in 2001 by Leadership Press. Mathis is married to Diane Peterson Mathis, who served as ACHE's chairman in 2001.

Linda Wilson Anderson, PT 73, writes, “In addition to working full-time in a pediatric school-based practice, I operate two not-for-profit equipment loan programs that serve children in the two counties where I work.” She lives in Newton IA.

Phillip Zazove, MD 78, is a Democratic candidate for the 52nd District of the Michigan State House of Representatives. He is a clinical professor of family medicine at the University of Michigan Medical School and associate medical director for 11 of the university's health centers. His campaign is emphasizing health care, education, the environment and opportunity for people with disabilities. Zazove, 52, was born with a profound bilateral hearing loss and was among the first five deaf people in the country to graduate from medical school. He recently completed a research sabbatical in England where he studied the application of advances in genetics to family medicine. He is married to Barbara D. Reed, MD 78, also a family physician. The couple has two daughters.

Phillip D. Robinson, HA 80, was appointed president of the Central Atlantic Division of HCA, Inc., effective February 1, 2004. In this position, he has operational responsibility for 18 hospitals in Virginia, West Virginia and New Hampshire. Prior to this appointment, Robinson was chief executive officer of HCA's JFK Medical Center, an acute care hospital in Palm Beach County FL, a position he had held since 1996. Earlier, he was chief administrative officer and director of Alton Ochsner Medical
The course will use WebCT, a university course management website that gives students access to assignments, readings, interactive learning modules and streaming video of patient education vignettes. Musolino's article, "Enhancing Diversity Through Mentorship: The Nurturing Potential of Service Learning," was published in the Spring 2004 issue of the Journal of Physical Therapy Education.

Frank Edward Gilbert, HA 90, writes, "After more than six years as a senior manager with ECG Management Consultants in Seattle, I have accepted the position of executive director of Evergreen Surgical Center in Kirkland WA." His wife, Terry, is resuming her nursing career part-time while raising Emily, 8, and Alexander, 6. The Gilberts continue to reside in Kirkland, where he is looking forward to being able to bike to work.

Christine Wright, OT 93, is now at Eastern Kentucky University. She writes that her e-mail address has changed from cwright@att.net to christine.wright@eku.edu and that she "would still love to hear what my fellow classmates are doing."

David E. Alligood, HA 93, and his wife, Susan, announce the birth of Luke Taylor on July 21, 2003. Luke has two older sisters, Lauren, 6, and Katelyn, 3. Alligood works as director of decision support for Mountain States Health Alliance in Johnson City TN. He had his acting debut in recent television and print ads promoting the services of his employer. You can see him in "What Do You Say?" at www.msha.com/multimedia/.

Ryan Fischer, HA 00, of corporate managed care at Truman Medical Centers, Inc., in Kansas City MO, participated on a five-member panel of leaders in the field of health care finance facilitated by the Journal of Health Care Financial Management. The published version of the discussion can be found in the February 2004 edition of that journal, the publication of the Health Care Financial Management Association. Fischer discussed tactics for hospital revenue cycle improvement, including ways in which to increase reimbursement, manage the hospital supply chain and measure outcomes.

Gary R. Collin, MD 85, of Glastonbury CT, received a Presidential Citation from the Society of Critical Care Medicine at its annual Congress in February. The citation is given for outstanding contribution to critical care medicine during the previous year. Collin also recently received a Letter of Commendation from Chest magazine for similar reasons.

Michael V. Seiden, MD, PhD 86, recently has been appointed an outside clinical advisor to Genentech, LLC, a privately held biotechnology company headquartered in Cambridge MA. Seiden is an assistant professor of medicine at Harvard Medical School and chairs the Massachusetts General Hospital Cancer Center Clinical Protocol Committee, as well as the Dana Farber-Harvard Gynecologic Oncology Research Committee. Currently, he is principal investigator on 16 clinical and basic research projects.

Gina Musolino, PT 87, assistant professor and director of clinical education at the University of Utah's College of Health's Division of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy, recently won a $5,000 grant from the University Technology Assisted Curriculum of Physical Therapy.
and a daughter, Sue Harrison Rodgers. Memorials may be made to the St. Louis Children's Hospital Foundation, One Children's Place, St. Louis MO 63110, for the support of the Pediatric Heart Transplant Program, headed by Dr. Harrison's great nephew, Charles E. Kaiser, MD, HS 84, associate professor of pediatrics.

Dorothy Gill, MD 38, died of Parkinson's disease on February 24, 2004, at her home in Bethesda MD. She was 93 and had practiced internal medicine with Group Health Association in the Washington DC area for 30 years, retiring in the late 1970s. In retirement, she served on the Group Health board and was a volunteer physician at the Spanish Catholic Center in Washington, from which she received a plaque of appreciation. Her husband, Henry Wolfner Edmonds, MD 36, died in 1995.

James Motz Foerster, MD 40, a retired radiologist, died February 10, 2004, at his home in Wausau WI at the age of 88. A native of St. Louis MO, he was the son of Dr. Frank H. Foerster and Ada Motz Foerster. His wife, Marcia Niehaus Foerster, preceded him in death. Survivors include a son, Dr. James Foerster, three daughters, Julie Martin, Susan Symmank, and Sarah Hupy, and other relatives.

Joseph L. Moreland, MD 41, died December 22, 2003, at his home in Salem OR. He was 87. During World War II, he served as a surgeon in the U.S. Army in the Aleutian Islands. He then completed a residency in ophthalmology at Washington University in St. Louis and a fellowship at Cleveland Hospital before beginning private practice in Salem. Moreland was a past president of the Oregon Academy of Ophthalmology, the Marion-Polk Medical Society and other organizations, including the Salem Symphony Board. A lover of music, he played saxophone in the Salem Pops for many years. After he retired, he and his wife, Mary, spent winters in their home in Sun Lakes AZ. She survives him, along with three sons.

I. Woodall R. Rose Jr., MD 43, died December 2, 2003, in the age of 83. During World War II, he served in the U.S. Navy aboard an aircraft carrier; he served as the captain in the Army during the Korean War. Rose practiced general surgery for 27 years in Raleigh NC and was a surgeon at Central Prison for the North Carolina Department of Corrections. He held a faculty appointment at the University of North Carolina at Chapel Hill and was a past-president of the North Carolina Surgical Association. Survivors include his mother, Virginia Finney Rose, one son and two daughters.

Marshall B. Conrad, MD 45, associate clinical professor emeritus of orthopaedic surgery at Washington University in St. Louis, died on January 21, 2004, of carcinoma at the age of 84. Conrad was born in Webster Groves MO, delivered by his grandfather, Dr. Marshall Baker, an 1874 graduate of the St. Louis Medical College which became the Washington University Department of Medicine in 1891. After graduation from the School of Medicine, Conrad served in the U.S. Army Medical Corps, then completed his surgery residency at St. Luke's Hospital and his orthopaedic residency at Washington University before establishing his private practice in St. Louis and joining the clinical faculty at the School of Medicine. He retired from practice in 1991. Conrad served as medical director of the St. Louis Fire Department, as well as the fire departments of Webster Groves and Clayton, and was known for his work to improve the St. Louis City Ambulance Service. His first wife, Lois, preceded him in death. Survivors include his wife, Joan Lucas Conrad, one daughter and one son. Memorials may be made to the Washington University Department of Orthopaedic Surgery, Attention: Richard H. Gelfert, MD, One Barnes Jewish Hospital Plaza, St. Louis MO 63110, or to the Shriners Hospital for Children Memorial Department, 210 S. Lindbergh Blvd., St. Louis MO 63131.

George B. Rader, MD 51, died January 17, 2004, of a sudden illness at age 83. A native of Oklahoma, Rader earned a bachelor's degree in electrical engineering from Washington University in St. Louis, then served as a pilot in the U.S. Navy during World War II. Following the war, he entered the School of Medicine and became a surgeon, practicing in St. Louis until his retirement in 1985. After retiring, he served as the National Surgeon for the Travelers Protective Association. Rader was a past president of the Washington University Medical Center Alumni Association and of the St. Luke's Hospital Medical Staff Association. Among his survivors are his wife of 60 years, Jean M. Rader, and two daughters. Memorials may be made to the Powder Valley Conservation Nature Center, 11715 Craig Road Road, Kirkwood MO 63122, or to St. Luke's Hospital, 232 S. Woods Mill Road, St. Louis MO 63017.

William L. Lacklinder, MD, HS 62, died December 17, 2003, at the age of 70 in Columbus OH, where he had practiced otolaryngology since 1962. He earned his medical degree at Ohio State University School of Medicine before coming to Washington University in St. Louis for his residency. He served in the U.S. Army Medical Corps before beginning his private practice. Lacklinder was a member of the American Board of Otolaryngology, the American Academy of Otolaryngology and the American Academy of Otolaryngologic Allergy, as well as other professional organizations. He was a volunteer and fund-raiser for "Kids-N-Critters," summer camps for inner-city children. His first wife preceded him in death. He is survived by his wife, Mary Ellen, two sons and five daughters.
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Chemical reaction The American Chemical Society has officially recognized Carl and Gerty Cori by naming their former laboratory a National Historic Chemical Landmark. The Coris' lab, which was located on the second floor of the School of Medicine's South Building, not only produced the research for which they were awarded the 1947 Nobel Prize in Physiology or Medicine, but also was the training center where seven subsequent Nobel Prize winners studied.
Looking forward  Class president Jason W. Stephenson addresses fellow graduates at the 2004 Commencement Recognition Ceremony. The School of Medicine conferred 116 degrees on May 21: 95 students received the MD degree, 16 received the MD/PhD degree, and five received the MD/MA degree. During the ceremony, Stephenson presented senior teaching awards to Erika C. Crouch, PhD, MD, (Preclinical Teacher of the Year) and Thomas M. De Fer, MD (Sydney S. Pearl, MD 32 Clinical Teacher of the Year).