Campaign for Washington University
The investment, the promise
Chess, anyone? Second-year medical students Eugenia Garvin, left, and Louise Yeung examine a bronze work by Arts & Sciences anthropology student Blaine Maley. The piece was among 30 on display at an art show held November 18, 2004, at the Bernard Becker Medical Library's King Center. Garvin and Yeung, along with fellow second-year student Yamini Virkud, coordinated the show, which also included poetry readings, photography, painting, drawing, quilting, pottery and calligraphy by Washington University students, faculty and staff.
Outlook
Aiming High!

Construction continues, fleshing out the skeleton of the Farrell Learning and Teaching Center.

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, that 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.
For more than 100 years, the School of Medicine has furthered the world's understanding of science and medicine. Through the Campaign for Washington University, thousands of people have made an investment in the School's future—and the future of medical education, research and patient care.

**Features**

- **The Challenge of Change** by Gwen Ericson
  
  Health policy experts from around the country recently convened at the School of Medicine to discuss the complex challenges facing the U.S. health care system.

- **The Way to the Heart** by Gila Z. Reckess
  
  The rapid evolution of interventional cardiology over the past few decades offers patients with heart disease a less invasive alternative to traditional surgery.

- **New Origins for Organs** by Michael Purdy
  
  Could the burgeoning field of organogenesis, in which new organs are grown from animal cells, one day treat human disease?

- **Sunrise!** by Candace O'Connor
  
  The School of Medicine played a major role in the success of the Campaign for Washington University, a nearly decade-long fund-raising effort that surpassed all goals.
Ciechanover shares Nobel Prize

Visiting Professor of Pediatrics

Aaron Ciechanover, MD, DSc, who also is Research Distinguished Professor of Biochemistry at Technion-Israel Institute of Technology, Haifa, Israel, recently was awarded the 2004 Nobel Prize in Chemistry.

Ciechanover has been a visiting professor at Washington University since 1987, spending a portion of each year in the Department of Pediatrics. He is the 23rd Nobel Laureate associated with Washington University.

Ciechanover shares the award with Avram Hershko, MD, PhD, also from Technion-Israel Institute of Technology, and Irwin Rose, MD, from the University of California, Irvine.

The Royal Swedish Academy of Sciences honored the three scientists for their work and groundbreaking discovery in the late 1980s of a process that cells utilize to eliminate unwanted proteins.

Psychiatry researchers cross borders

PREVENTING THE GLOBAL SPREAD OF HIV INFECTION by reducing high-risk behaviors in vulnerable populations, including women and youth, is the aim of several international projects being launched by School of Medicine investigators.

Researchers in the Department of Psychiatry's Epidemiology and Prevention Research Group have received new grants and contracts totaling more than $3.2 million from the World AIDS Foundation, the National Institute on Drug Abuse (NIDA) and the National Institute of Nursing Research to build upon work begun in 1989.

Investigators will use the funding for a series of community-based projects aimed at assessing high-risk behavior in particular groups and intervening to reduce that risk.

Linda B. Cottler, PhD, professor of epidemiology in psychiatry and director of the Epidemiology and Prevention Research Group, is principal investigator of the new projects.

Locally, the Sisters Teaching Options for Prevention project (STOP) will provide peer-led interventions to inner-city women in St. Louis who have been arrested for drug offenses. Because many women who use drugs also tend to engage in other risky behaviors, including the commission of crimes to support their drug use, the research team will work with the City Drug Court in St. Louis to tailor programs aimed at reducing these behaviors.

In other parts of the world, Cottler's group will work in India with the wives of men who engage in high-risk substance abuse and sex behaviors.

The team also will study the use of club drugs — including Ecstasy, ketamine, methamphetamine and others — among young people in Taiwan.

All of the studies involve community-based programs that specifically target users out of treatment who may be at risk for HIV, sexually transmitted diseases, drug and alcohol dependence and other problems.
Morris garners lifetime achievement award for Alzheimer’s research, leadership

**ALZHEIMER’S RESEARCHER** John C. Morris, MD, has received one of his field’s most prestigious honors: the Alzheimer’s Association Lifetime Achievement Award.

As principal investigator of Washington University’s Alzheimer’s Disease Research Center (ADRC) and the program project “Healthy Aging and Senile Dementia,” Morris leads an interdisciplinary, investigative team comparing normal aging and mild Alzheimer’s disease.

The ADRC is widely regarded for its broad spectrum of research, including investigations of the molecular basis of the disease, clinical studies of dementia compared with healthy aging, investigating effects of dementia on driving, and experimental trials of anti-dementia therapies.

Morris, who also directs the university-wide Center for Aging, is most recognized for his contributions to Alzheimer’s research in the area of early diagnosis. His team is known for developing and refining the Clinical Dementia Rating (CDR) system, now the standard clinical measure in the diagnosis and staging of dementia.

He also has led several landmark studies identifying the earliest stages of the disease and the pathologic presence of Alzheimer’s before clinical symptoms arise.

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**CARDIOLOGY**

Regular exercise helps to decrease size, mass of enlarged hearts

Exercise may reduce more than waist size—it also may help to shrink thickened and enlarged hearts.

Researchers at the School of Medicine have found that a moderate exercise regimen is just as effective as a common blood pressure drug in reducing the heart’s mass and the thickness of the heart wall in elderly individuals with mild to moderately elevated blood pressure.

Exercise also provides benefits that the heart drugs do not, such as lowering an individual’s risk of developing diabetes. However, drugs still appear to be the best way to significantly lower blood pressure.

“Our study confirmed that medications are more effective than exercise in lowering blood pressure,” says principal investigator Ali A. Ehsani, MD, a Washington University cardiologist at Barnes-Jewish Hospital, “but our main objective was to determine the effect of exercise on other important health factors such as heart size.”

The study was published in the August 2004 issue of the *American Journal of Physiology: Regulatory, Integrative and Comparative Physiology*.

Ehsani’s team randomly assigned elderly men and women to either medication or an exercise group. Those in the medication group received one dose of the common blood pressure drug hydrochlorothiazide once a day for six months.

Those in the exercise group underwent a two-phase training program. For one month, they participated in 40-minute flexibility classes three times per week. For the following five months, they did endurance exercises that incorporated brisk walking, jogging and/or cycling for 40 to 60 minutes three times a week.

As expected based on previous studies, the medication was about twice as effective in lowering systolic blood pressure. But the team found that exercise was just as effective in reducing other key health factors.

“One of the most dangerous effects of high blood pressure is its effect on heart mass,” says Ehsani. “When you have high blood pressure, the heart has to work harder to pump blood to the rest of the body, which in turn results in a condition called hypertrophy, or an increase in the heart’s mass. Hypertrophy itself predisposes patients to conditions like heart rhythm abnormalities and can lead to heart failure.”

Ehsani’s team also evaluated the effect of the two treatments on metabolic conditions, such as resistance to insulin, which is a precursor to diabetes. Exercise significantly reduced insulin resistance and improved aerobic capacity, but hydrochlorothiazide had no effect on either.
Eberlein named to Institute of Medicine

One of the highest honors medical scientists in the United States can receive, election to the National Academy of Sciences' Institute of Medicine, was recently bestowed on Timothy J. Eberlein, MD, chairman of the Department of Surgery, Spencer T. and Ann W. Olin Distinguished Professor and director of the Alvin J. Siteman Cancer Center, and surgeon-in-chief at Barnes-Jewish Hospital.

Selected in recognition of his many professional achievements in medical science and health care and for his leadership in issues affecting public health, Eberlein will, as an Institute of Medicine member, make a commitment to devote a significant amount of volunteer time on committees engaged in a broad range of health policy issues.

Eberlein also is active in the American College of Surgeons, contributing to many committees, and is a member of the National Cancer Institute Advisory Board. He has served on several Institute of Medicine committees and is on the National Cancer Policy Board.

American Association for the Advancement of Science adds fellows to its ranks

Four school of medicine researchers have been named fellows of the American Association for the Advancement of Science (AAAS), the world's largest general scientific society. AAAS awards the rank of fellow — the highest honor it confers — to researchers who have made scientifically or socially distinguished efforts to advance science.

Elliot L. Elson, PhD, Alumni Endowed Professor of Biochemistry and Molecular Biophysics, was honored for developing theoretical and experimental approaches to the use of novel fluorescent methods, for studying viscoelastic properties of cells, and for the investigation of tissue mechanics. He studies the molecular structures that determine the characteristics of the body's tissue. A key area of his research involves analysis of the mechanical properties and functions of the cytoskeleton.

Timothy M. Lohman, PhD, Marvin A. Brennecke Professor of Biological Chemistry and professor of biochemistry and molecular biophysics, was honored for fundamental studies of the thermodynamics and kinetic mechanisms of interaction between protein and DNA, particularly SSB and helicase-unwinding of the DNA double helix. He investigates how double-stranded, helical DNA becomes unwound during DNA replication, recombination and repair.

Jane E. Phillips-Conroy, PhD, professor of anatomy and neurobiology and also professor of anthropology in the College of Arts and Sciences, was honored for distinguished contributions to the study of primate social behavior and species diversity, especially in wild anubis, hamadryas and hybrid baboon populations in Africa. She studies free-ranging primates, focusing on how behavioral, demographic and ecological variables influence population structure.

Herbert W. Virgin, MD, PhD, professor of pathology and immunology and of molecular microbiology, was honored for his distinguished and numerous contributions to the understanding of viral pathogenesis, latency, immunity and immune evasion of gamma herpes viruses and for identification of new pathogens. He studies issues at the interface between virology and immunology, working from the hypothesis that viruses manipulate the immune response as the immune response attempts to eradicate the virus.
Outstanding professors take honors
Medical students from the Classes of 2005, 2006 and 2007 honored faculty at the Distinguished Service Teaching Awards ceremony on November 16, 2004: Barry Sleckman, MD, PhD, 2006 Professor of the Year; Martin I. Boyer, MD, 2005 Clinical Lecturer of the Year; Jeffrey E. Saffitz, MD, PhD, 2007 Professor of the Year; Thomas M. Defer, MD, 2005 Clerkship Director of the Year; Marc J. Bernstein, MD, 2007 Stanley J. Lang Lecturer of the Year; Allyson R. Zazulia, MD, 2006 Coursemaster of the Year; and Robert S. Wilkinson, PhD, 2007 Coursemaster of the Year. Sanjeev Bhalla, MD, 2006 Lecturer of the Year, is not shown.

NUTRITIONAL SCIENCE
Diabetes, heart disease remain unchanged after liposuction

Liposuction is no substitute for dieting when it comes to preventing diabetes, hypertension and heart disease, according to researchers at the School of Medicine.

Reporting in the June 17, 2004 issue of The New England Journal of Medicine, the Washington University team found that removing abdominal fat by using modern liposuction techniques did not provide the metabolic benefits normally associated with similar amounts of fat loss induced by dieting.

Excess abdominal fat is associated with a defect in insulin’s ability to regulate sugar and fat metabolism, which can lead to metabolic diseases such as type 2 diabetes, abnormal blood lipids, hypertension and heart disease.

“Despite removing large amounts of subcutaneous fat—about 20 percent of our subject’s total body fat mass—there were no beneficial medical effects,” says principal investigator Samuel Klein, MD, the Danforth Professor of Medicine and Nutritional Science and member of Barnes-Jewish Hospital’s medical staff. “Had these subjects lost this much fat by dieting, we would have expected to see marked improvements in insulin sensitivity and other risk factors for heart disease.”

Klein and colleagues studied 15 obese women with excessive abdominal fat—eight with normal glucose tolerance and seven with type 2 diabetes—before abdominal liposuction and again 10 to 12 weeks after surgery.

The sensitivity of the liver, muscle and fat tissue to insulin was measured by performing an insulin clamp procedure. The clamp technique allows scientists to measure insulin’s major metabolic effects, such as how well insulin suppresses liver glucose production and fat breakdown and how well insulin stimulates glucose uptake by muscle tissue. The researchers also measured triglyceride and cholesterol levels, blood pressure and other risk factors for heart disease.

“It was remarkable how similar the results were before and after the procedure,” Klein says. “There were no changes in insulin sensitivity, blood lipids, blood pressure or inflammatory markers associated with coronary heart disease in any of our study subjects.”

On the plus side, the study did demonstrate it was possible to safely remove large amounts of fat.

“We confirmed that it is possible to do large-volume liposuction safely,” says co-investigator V. Leroy Young, MD, a private practice physician and former professor of plastic and reconstructive surgery. “In the past, we usually removed no more than about five liters of fat, but in this study we showed you can safely remove four times that amount.”
Clinical trials testing treatments for neurological disorders such as Parkinson’s disease and epilepsy soon will be conducted under one roof at the School of Medicine, adding critical mass to the neuroclinical research program and convenience for patients enrolled in clinical trials.

The medical school has begun renovating 14,000 square feet on the ground floor of the McMillan and Irene Walter Johnson buildings for the neuroclinical research unit (NCRU). The project is funded by a $1.6 million grant from the National Institutes of Health and $1.8 million from the School of Medicine.

Among similar programs, Washington University’s neurology program is the second-largest recipient of federal research funds in the nation, and more than half of those resources support clinical research.

In addition to patient examination rooms and state-of-the-art clinical and research equipment, the NCRU will house offices and workstations for junior faculty, medical trainees, nurses, study coordinators and other support staff. Bringing these resources together will foster collaboration among scientific teams and provide a convenient location for clinical study participants.

New center to study neurological diseases

Two St. Louis organizations have teamed up to create the Hope Center for Neurological Disorders, a unique collaboration dedicated to basic science research on a broad spectrum of nervous system conditions.

By pooling the two institutions’ intellectual and financial resources, the School of Medicine and ALS Hope—The Chris Hobler/James Maritz Foundation will generate funds and conduct basic research to advance the understanding and treatment of neurological disorders.

“The strength of the Hope Center lies in its approach to investigating neurological disease,” says David M. Holtzman, MD, Charlotte and Paul Hagemann Professor of Neurology. “It’s focus on collaboration capitalizes on the existence of mechanisms and concepts shared by many neurological disorders.”

The center will be housed at the Department of Neurology under the scientific directorship of Mark P. Goldberg, MD, professor of neurology and of anatomy and neurobiology. Center members will include faculty in neurology and several other School of Medicine departments.
An immune system cell can "remember" a parasite's attack and help the body mount a more effective defense against subsequent invasions by the same parasite, according to researchers at the School of Medicine and the University of Pennsylvania.

The finding, published in the October 2004 issue of *Nature Medicine*, will aid efforts to develop a vaccine for *Leishmania major*, a parasite that infects approximately 12 million people worldwide, causing significant death and disfigurement. It also may help efforts to develop vaccines for other pathogens, including AIDS and tuberculosis.

Scientists knew that recovery from *Leishmania* infection immunizes humans and animals against subsequent infection. But previous experiments led researchers to suspect the immunity resulted from the presence of a very small population of parasites that remained in the host. Loss of this minimal parasite remnant seemed in some studies to result in loss of immunity.

For the new study, immunologists at the University of Pennsylvania infected mice with a genetically modified form of *Leishmania* created by microbiologists at Washington University. The modified *Leishmania* lacks an enzyme required for DNA synthesis and can be completely wiped out by the mouse immune system.

Researchers found that after the mice had cleared the *Leishmania* parasite, a type of T cell (the CD4+ central memory T cell) still reacted to the parasite in the test tube. Mice that never had *Leishmania* and were given injections of these T cells fought off the parasite more effectively than mice that didn't get the T cells.

"This partial immunization suggests that we may need to look at generating large populations of these memory T cells at the time of vaccination," says study coauthor Stephen H. Beverley, PhD, the Marvin A. Brennecke Professor and head of the Department of Molecular Microbiology. Researchers also found evidence that another class of T cells may stay primed to fight a new infection when a small remnant population of parasites persists. Beverley speculates that the presence of this second type of T cell, along with the central memory T cell, may be key to providing full protection.

Senior investigator Phillip Scott, PhD, professor of microbiology and immunology at the University of Pennsylvania's School of Veterinary Medicine, has conducted additional experiments that showed central memory T cells can maintain their "memory" of *Leishmania* and respond to new infections at least five months after initial infection.

Because T cells orchestrate the immune system's fight against other diseases, including tuberculosis and AIDS, scientists believe the new insights will support efforts to develop other vaccines.
HEALTH CARE RESEMBLES AN OVERSIZED TEENAGER who keeps popping the financial seams on his clothing. He's already the largest kid in the room, and he threatens to grow until there's no space in it left for anybody else." — Henry Aaron, Senior Fellow of Economic Studies, Brookings Institution.

Aaron, among a group of health care professionals who convened at the School of Medicine on October 7, 2004, to discuss the state of American health care, is not alone in his assessment. Others on the panel of experts at the conference, Health Care Challenges Facing the Nation, reiterated Aaron's implication that health care costs are out of control.

In fact, the cost of health care is one of the largest components of the U.S. economy and is rising faster than the rate of inflation.

Increases in health care spending have been attributed in part to an aging population. But some experts have pointed to a period of biomedical research and development that has brought technological innovations that drive up costs.
"The economic costs of medical advances are going to pose enormously difficult financial and political problems," Aaron says. Yet, the "mortality benefits" of medical advances are significantly greater than the monetary costs, according to David Cutler, professor of economics at Harvard University.

"The average 45-year-old spends about $30,000 more than he or she did 40 years ago to treat cardiovascular disease, adding about three years of life," says Cutler. When he asked the audience how many of them would be willing to spend $10,000 to obtain those extra years, a sea of hands went up.

Cutler maintains that research and development account for only about 5 percent of all medical spending. "But," he adds, "research and development do create more spending by leading to new, expensive treatments."

Aaron believes that Americans will be forced to choose between two unpopular options: "We can ration care in some explicit fashion. If we don't, that will require unprecedented tax increases by a tax-phobic nation."

Although some degree of health care rationing has been successful in other countries, most U.S. citizens strongly oppose it. "It is unlikely the United States will use rationing," says Gail Wilensky, senior fellow at Project Hope, an international health foundation.

Wilensky asserts that the current fragmented and wasteful system can be made less expensive through streamlining. Mark McClellan, president of Medicare and Medicaid, agrees: "Inappropriate, unwanted or unnecessary treatment decreases the quality of care and drives up costs."

Solutions that could increase efficiency include establishing an independent standard for selecting appropriate care, relating reimbursement to the quality of service, and reducing administrative waste. "The difficulty is," says Wilensky, "this is going to require an investment of billions and not millions."

There are other roadblocks as well. Former U.S. Surgeon General David Satcher says, "Politics raises barriers to solving health care problems. It took six years after the surgeon general's report detailing the health consequences of smoking for Congress to pass the law requiring a warning on packs of cigarettes."

Satcher acknowledges that a tremendous gap exists between knowledge about health care and action taken based on that knowledge. Still, he and others emphasize the importance of scientific advances.

"Research must continue," says Satcher, "but we have to be sure that the results of research get transferred to policies and practices and are universally available." 

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**Disparities in black and white: measuring the cost of unequal access**

A less visible problem is the disparity in care provided to well-insured people as compared to the uninsured or underinsured, many of whom belong to racial and ethnic minorities.

"Public health service is underfunded and unevenly distributed. This results in substantial gaps in health status and emerging illness among some groups within the population," says James Kimmey, president and CEO of the Missouri Foundation for Health.

Disparity arises from segregation, poverty, lack of access and poorer care.

"Financial reform is not the solution," Kimmey says. "And the political process is not engaging even one of the problems of disparity in an effective fashion."

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**Emergency room visits** African Americans are less likely than whites to have primary care. Treatment delays exacerbate problems, leading to heavy use of emergency rooms for common health concerns (above).
Catheterization offers less invasive treatments for heart disease.

CARDIAC CATH CAN:

- Expand and clear clogged passages
- Insert a tube to hold an artery open
A PHYSICIAN skillfully threads a thin catheter over a wire and through an artery, inching toward the heart of a patient whose health hinges on the procedure’s outcome. Following the catheter’s tip via an X-ray monitor, the cardiologist wields tiny tools to forestall life-threatening coronary disease. The journey, from a small puncture site in the thigh through the body’s inner recesses to the vital heart, has taken modern cardiology 50 years to envision, refine and put to effective use.

BY GILA Z. RECKESS

Place long-acting drugs for continued treatment
Attack a little tissue to rescue the heart
Plug a hole in the heart
The Washington University cardiology team at Barnes-Jewish Hospital has one of the lowest restenosis rates in the country, with an average of just 16 percent of all patients returning for further treatment.

Left: Metal mesh stent.

Roots of intervention
In 1929, a German surgical trainee named Werner Forssmann inserted a catheter into a vein in his arm and guided it into the right side of his heart. He then walked to the X-ray room and became the first person to prove, using imaging, that catheters could be used to study the living human heart. His intrepid experiment got him fired; later, in 1956, it earned him a Nobel Prize.

By that time, the use of catheters was revolutionizing the state of cardiac diagnosis by measuring the amount of oxygen in the blood and locating clogged arteries. Two decades later, Dr. Andreas Grunzig went a step further, using balloon catheters to treat heart patients. With that, the non-surgical treatment of heart conditions — interventional cardiology — was born.

Opening the way
The rapid evolution of interventional cardiology over the past 30 years can be traced by the progression of treatment for coronary artery disease (CAD), a condition in which the heart’s main blood vessels become narrowed or clogged by the buildup of plaque. According to the American Heart Association, more than 13 million Americans have CAD, and it remains the leading cause of death in this country.

Before the use of catheters, patients whose conditions did not improve with drugs typically underwent surgery in which the diseased artery is bypassed by a blood vessel from the leg, arm or chest. The operation not only harvests a blood vessel from another part of the patient’s body, it also necessitates making a 12- to 18-inch incision in the chest — both of which result in scarring and postoperative pain.

The most dangerous aspects of bypass surgery, however, are the use of general anesthetic and a heart-lung bypass machine to divert blood away from the heart during the operation, temporarily stopping the heart from beating.

The advent of this less invasive approach has revolutionized both the treatment and prognosis of CAD. More than 1 million PTCA’s will be performed in the United States in 2004, surpassing the number of bypass operations by more than 50 percent.

And while the essence of balloon angioplasty, as PTCA is also called, is the same as when it debuted in 1977, what has changed are the balloon’s accessories — and, as a result, the procedure’s effectiveness.
Keeping it open

In 1989, John M. Lasala, MD, medical director of the School of Medicine's cardiac catheterization laboratory, witnessed a seminal moment in the history of heart care.

Then a cardiology fellow at Yale University, Lasala observed as his mentor Henry Cabin, MD, used a small metal cylinder to prop open a patient's clogged artery — one of the first times the device, called a stent, was used in the United States.

"There was silence in the room," recalls Lasala, who also is director of interventional cardiology at Barnes-Jewish Hospital. "Henry said, 'You're looking at the future.' It literally sent a shiver up my spine."

His mentor was right.

While balloon angioplasty generally succeeds in opening arteries, about 30 to 50 percent of blood vessels become reclogged, or restenosed, within months of the procedure. Furthermore, balloon results were acutely unstable, requiring urgent bypass surgery in 3 to 7 percent of cases. As Lasala witnessed firsthand in 1989, the addition of stents — short narrow metal tubes often in the form of mesh — significantly alleviates both problems. These small cylinders fit around the balloon and expand as it inflates. The stent then remains in place after the balloon and catheter are removed, serving as scaffolding and holding plaque buildup at bay.

"It is absolutely astounding how much progress we've made in such a short period of time."

JOHN M. LASALA, MD

Since the Food and Drug Administration (FDA) approved the first stents in 1994, the number of patients whose arteries become reclogged is about half the rate of traditional balloon angioplasty. The Washington University cardiology team at Barnes-Jewish Hospital has one of the lowest restenosis rates in the country, with an average of just 16 percent of all patients returning for further treatment.

But Lasala still isn't satisfied. That's why he's been at the forefront of the most recent innovation in catheter-based CAD treatment: drug-coated stents. Lacing the mesh cylinders with low doses of drugs designed to slowly diffuse into the artery appears to further decrease the risk of restenosis. Lasala's team was one of the key participants in research that led to the FDA's landmark approval of a Johnson & Johnson stent in April 2003, the first federally approved drug-coated stent.

"It is absolutely astounding how much progress we've made in such a short period of time," Lasala says. "Our early results with drug-coated stents are almost too good to be true — restenosis rates have dropped to less than 5 percent, and we expect them to be even lower as we continue to smooth out the wrinkles. This may be the most important advancement in interventional cardiology this decade."
Tiny heart attack
Along with such impressive results in treating conditions like CAD, catheter-based interventions have gone beyond clogged arteries to treat other serious heart conditions.

One of the newer procedures, developed in the early 1990s by a European scientist named Ulrich Sigwart, relies on an unlikely ally: a heart attack.

Richard G. Bach, MD, associate professor of medicine and director of the cardiac intensive care unit at Barnes-Jewish Hospital, helped to introduce the procedure, called septal ablation, in the St. Louis region. Then a faculty member at Saint Louis University, Bach was part of a team that was among the first centers in the United States to use septal ablation in the treatment of patients with hypertrophic obstructive cardiomyopathy (HOCM).

Patients with HOCM have abnormally thick heart muscles, particularly between the two lower chambers of the heart. The thickened muscle makes it more difficult for the heart to pump blood to the rest of the body, and its enlarged size obstructs the passageway through which blood normally flows. HOCM often affects very young individuals and is the leading cause of sudden death in athletes.

Previously, the only option for treating HOCM patients who didn't improve with drug therapy was to surgically remove a portion of the enlarged heart muscle.

Using septal ablation, cardiologists inject 200-proof alcohol through a catheter into the branch of the artery that feeds the section of muscle obstructing blood flow. The alcohol causes a localized heart attack, killing an area of tissue about the size of a grape.

Bach found it hard to imagine that this less invasive approach would help a patient so severely afflicted by HOCM that he could barely get out of bed. But it did.

"The result was beyond what I ever expected," Bach recalls. "Our patient's condition was so extreme that I didn't know if we could help him. But we did the procedure and the next day he was up and walking, feeling dramatically better. I've now seen that remarkable outcome reiterated over and over again in many other patients."

Washington University cardiologists at Barnes-Jewish Hospital are evaluating a catheter alternative for plugging a hole in the heart caused by a common birth defect.

Though septal ablation doesn't actually cure the underlying condition, it does substantially relieve symptoms more than 90 percent of the time. For this reason, Bach's team proceeds with cautious optimism and is investigating the long-term benefits of the procedure, as well as studying ways to improve the technique.

In collaboration with Bruce D. Lindsay, MD, associate professor of medicine, Bach recently performed the first septal ablation for HOCM using a magnetically guided catheter. Instead of a wire, catheters used in the Magnetic Navigation System contain a magnetic tip, which is directed by a computer-controlled magnetic chamber positioned around the patient. The system, which was developed by St. Louis-based Stereotaxis, Inc., in collaboration with School of Medicine researchers, enables cardiologists to maneuver the catheter around particularly sharp twists in the arteries that are difficult to navigate with a traditional, wire-threaded catheter.

On the horizon
Washington University cardiologists also have been selected to test three catheter-based approaches to fixing leaky valves in the heart and are evaluating a catheter alternative to surgical treatment of a common birth defect called patent foramen ovale (PFO), a type of hole in the heart that is one of the main causes of strokes in people under age 55.

"For the foreseeable future, there will always be complex cases in which open-heart surgery is the best option for patients with heart or blood vessel diseases," Bach says. "But what's truly exciting — and the reason I went into interventional cardiology — is that angioplasty allowed us to begin radically altering someone's condition without surgery. Now we're extending that to a wider range of diseases, like HOCM and treatment of valvular disease and PFOs. It just keeps getting better."
New Origins for Organs

Organs grown from animal cells offer new hope

BY MICHAEL PURDY
ROWING NEW ORGANS INSIDE THE BODY

to take the place of damaged or diseased organs might seem like science fiction, but researchers at Washington University School of Medicine recently pushed it into the realm of science fact.

Marc R. Hammerman, MD, the Chromalloy Professor of Renal Diseases in Medicine and head of the renal division at Barnes-Jewish Hospital, and Sharon A. Rogers, MS, research instructor in medicine, had previously shown that they can transplant embryonic rat tissue into adult rats and coax the tissue’s growth into fully functional kidneys.

In a groundbreaking experiment reported this past summer, Hammerman and Rogers put the technology to a crucial test: Could the new kidneys sustain life in the absence of the rats’ original kidneys?

In a test of a potential new treatment for diabetes, a transplant of pig pancreas cells begins producing globules of insulin (highlighted by arrows).

Preceding page: Scientists surgically removed one of this rat’s kidneys and replaced it with a transplant of embryonic kidney precursors, called primordia, now growing into a new kidney inside the rat.

As Hammerman and Rogers had planned, the new kidneys kept the rats alive for seven to eight days. Experts in organogenesis, a new discipline focused on growing replacement organs inside the body, are likely to one day look back on the accomplishment as one of their field’s Kitty Hawk moments.

“Seven to eight days may not seem like very long,” Hammerman notes, “but I hope what we have done is akin to the Wright brothers achieving heavier-than-air flight for just 59 seconds on their first try, long enough to change the course of history. I believe it’s just as significant to show that life can be preserved by a newly grown kidney for several days. We think that our finding will change the course of medical history.”

If successful in the years of animal and human trials to come, the new approach could ease two of the greatest obstacles doctors regularly confront in treating patients with failed organs: the drastic shortage of human donor organs and the relentless threat of immune system rejection of transplanted organs.

The need for kidney transplants is so great — and the supply of human replacement organs so limited — that, on average, seven U.S. patients die every day while waiting for a transplant. Organs from animals such as pigs could provide an almost limitless alternative. However, their use in humans is prevented by severe humoral rejection, an immune response humans mount against transplanted mature pig organs.

Hammerman theorized that the use of embryonic precursors of animal organs, rather than the mature organs themselves, would avoid the problem of humoral
rejection. In addition, he speculated that such transplants might require less use of immune suppression drugs, an essential step in human organ transplants that makes patients vulnerable to infections.

His hunch about reduced need for immune suppression paid off early this year in his second major line of organogenesis research, focused on treating diabetes.

Hammerman's animal tissue donor of choice is the pig. Pig kidney size and function are similar to human kidneys, and human diabetes has long been successfully treated with pig insulin.

The tissues Hammerman works with are groups of embryonic cells known as primordia. Unlike stem cells, organ primordia cannot develop into just any cell type — they are locked into becoming a particular cell type or one of a set of cell types that make up an organ.

"For our kidney research program, being locked into forming a kidney is very important," Hammerman says. "The kidney is structurally and functionally quite complex; it would be virtually impossible to program cells to grow into a functional kidney if the cells didn't already know how to do it."

Hammerman and Rogers are currently working to perfect pig-to-rat kidney primordia transplants. If they can extend life in rats with newly grown pig kidneys doing all the "kidney work," the next steps are pig-to-primate and then pig-to-human transplants.

Diabetic patients hoping to be treated via insulin-producing islet cell transplants confront an even scarcer supply of available donor tissue than kidney patients, Hammerman notes.

"For one thing, you can't take a pancreas out of a living patient like you can a kidney," he says. "Also, one pancreas doesn't give you enough islets to treat a diabetic patient."

Doctors need to process the pancreas to get to the islets, but that processing batters the cells, lowering the rates at which they can successfully engraft.

Pig pancreas primordia are relatively easy to isolate. As they grow, they "know" how to divide into just the right number of insulin-producing cells to precisely regulate glucose levels in diabetic hosts.

"We have never had a problem with too much insulin being produced," says Hammerman.

In a study published early this year, Hammerman and Rogers had given two groups of diabetic rats pig pancreatic primordia transplants, but they only gave one group drugs to suppress hostile immune system responses. They thought the transplants wouldn't engraft in the rats not given immune suppression.

When the transplants grew and functioned well in both immune-suppressed and non-immune-suppressed groups, the focus of the study changed to the rats that had not received immune suppression. The transplants restored the rats' levels of blood glucose to normal and also restored their ability to gain weight.

"The unusual way the embryonic pancreas develops after transplantation from one species into another appears to make it 'invisible' to the host's immune system," says Hammerman. "Now we have the theoretical possibility of being able to transplant pancreatic primordia and not having to bother with immunosuppression at all."

"That's a long shot, but I have reason to hope it will apply for pig embryonic pancreas transplanted into primates and even into humans."

Hammerman hopes to see human trials for the techniques he's developing.

"By the middle of this century, medical textbooks will have sections devoted to therapies based on growing new organs," he confidently predicts. "I want our work to be the first chapter."
Sunrise!

An unprecedented investment in learning and discovery at Washington University in St. Louis will serve the world

BY CANDACE O'CONNOR

BEHIND THE SUCCESS of the recently concluded “Campaign for Washington University” — which raised a breathtaking $1.55 billion overall, including $621 million for the School of Medicine — are thousands of individual stories that explain why so many donors were ready to be generous. Some had once been patients who received life-saving care from medical faculty; others were faculty or friends of the School of Medicine, wishing to support its outstanding research. Still others were alumni, grateful for the education that had shaped their lives and careers.

SCHOLARSHIPS

Philpott Family Scholarship
Susie Philpott; recipient Thomas S. Shane, Class of 2006; Gordon W. Philpott, MD 61
One such donor was University alumna and long-time glaucoma sufferer, Grace Nelson Lacy, whose gift will create a glaucoma research center at the School of Medicine. "In the twilight of my days, Washington University has offered me an unparalleled opportunity to do something very dear to my heart: help other people escape the misery I have gone through with glaucoma," says Lacy, a retired educator. "I feel that my epitaph will read not just that 'she coped,' but that 'she made a difference.'"

Taken together, the gifts from Lacy and many others have made possible a dazzling array of initiatives — academic and research programs, endowed professorships, student scholarships, state-of-the-art facilities — that are moving the medical school and University forward. Already they are "accelerating Washington University's ascent," a slogan that sums up the aim of this nearly decade-long campaign.

"While the School of Medicine has always been well respected, the success of the campaign, coupled with our tradition of excellence, places us prominently among the best medical schools in the nation," says Dean Larry J. Shapiro, MD 71, who succeeded William A. Peck, MD, in 2003. "It is difficult to describe how truly grateful we are to each individual who makes the choice to support us in our efforts."

The campaign had its roots in a planning process that began in 1993 under Chancellor William H. Danforth, MD, with departments around the University setting priorities for change. University trustees decided to mount an ambitious, $1 billion fund drive in support of this plan. They later increased the goal to $1.3 billion — and the Campaign, which would date from Chancellor Mark Wrighton's arrival in July 1995 to June 30, 2004, was well under way. The medical school's portion of this effort would be a substantial $400 million goal, later raised to $500 million.

Enhancing Learning & Teaching
Donors made remarkable commitments toward furthering the School's academic mission

- 64 endowed professorships and faculty fellowships
- 55 endowed scholarships
- 96 Scholars in Medicine awards since 1999
Leading the medical school's Campaign Committee was trustee Andrew B. Craig III, who agreed to take on this challenge because of its long-term impact. Campaign funds would ensure the best faculty and programs, which would attract the best students, who in turn would become the best graduates and physicians — and continue to support the medical school. "Success breeds success," says Craig, retired chairman of NationsBank and a founding partner of RiverVest Venture Partners. "It sounds trite but it is true. The success of the campaign will continue to build the success of the medical school and its outstanding faculty and leadership."

The School of Medicine's National Council, headed at the time of the campaign planning and launch by Robert J. Glaser, MD, HS 47, also was "very much behind the whole effort," says Glaser, former School of Medicine faculty member who later served as dean of the medical schools at the University of Colorado and Stanford. "As Daniel Burnham, the architect who rebuilt Chicago after its fire, said: 'Make no small plans.' In this case we didn't make a small plan. It was clear that it would take a huge amount of money, but we were optimistic that we would get it because of the quality of the place and of its work."

First, the School developed a strong fund-raising structure with key volunteers as committee heads, among them Emily L. Smith, MD 68, who chaired the School of Medicine's Annual Fund throughout the nine years of the campaign. These volunteers worked with the School's energetic development staff, headed by Randy Farmer. But perhaps the most active participant of all was Peck, who traveled tirelessly to tell the School's story to alumni groups.

"Dr. Peck is a development officer's dream," says Farmer, associate vice chancellor and director of Medical Alumni and Development. "He never passed up an opportunity to talk with a donor and tell them about the outstanding work happening at the School of Medicine."

Many committee chairs and members made major gifts themselves, then asked colleagues to do the same. Robert C. Drews, MD 55, co-chair of the alumni committee with Gordon W. Philpot, MD 61, offered the "Drews Challenge," a gift of $50,000 if 50 new Eliot
Thanks to the hard work of Campaign volunteers, the School of Medicine has realized dreams that would not otherwise have come true.

Society members joined — and 77 actually signed up by making gifts of $1,000 or more. The late psychiatry pioneer Samuel B. Guze, MD 45, realized a long-time dream when he endowed a professorship in his field; then, as an avid volunteer, he regularly had luncheons with classmates and colleagues to ask for their support.

The Annual Fund contributed to every campaign goal, from buildings to scholarships. For example, more than $2.2 million raised by the Annual Fund over the course of the campaign flowed through the University's Medical Center Alumni Association and helped support a range of student projects, including the Forum for International Health and Tropical Medicine, Students Teaching AIDS to Students, and the Saturday Neighborhood Health Clinic. Along with medical alumni, others took part in the Annual Fund, including alumni from the programs in Occupational Therapy, Physical Therapy and Health Administration, as well as the former Washington University School of Nursing.

Students participated as well. Fourth-year class members from recent years pledged $25 or $50, payable over five years, and the 69 percent participation by the Class of 2003 was the highest on record. Foundations and corporations also stepped forward, some with major support. The Danforth Foundation gave an extraordinarily generous $30 million to the medical school and $100 million overall — the single largest foundation gift. Emerson's Charitable Trust and the Anheuser-Busch Foundation provided a vital challenge gift to the Siteman Cancer Center to enable the expansion of cancer research space and programs. Pfizer provided important funds for student community service through the Young Scientist Program.

ENDOWED PROFESSORSHIPS

Ira C. and Judith Gall Professorship in Obstetrics and Gynecology
Judith Gall; professorship holder David G. Mutch, MD 80; Ira C. Gall, MD, HS
As the years ticked by, the campaign total burgeoned. In 1998, the University publicly announced the drive with $541 million in hand from its "quiet phase," and that September held a gala kick-off at America's Center. By 2001 the amount raised had reached $1 billion; two years later, $1.3 billion. The School of Medicine's total also grew significantly, consistently representing about 40 percent of the whole.

The early part of the campaign went quickly, says Floyd E. Bloom, MD '60, chairman of the Department of Neuropharmacology at Scripps Research Institute, who took over leadership of the School of Medicine's National Council from Glaser. Earlier he had headed the San Diego regional cabinet, one of the first regions to meet its goal.

"I would say that 95 percent of the effort was, in retrospect, relatively easy," he says, "but the last five percent was by far the most difficult."
He and others went to great lengths to make the case for the campaign goals. While serving as chair of the School of Medicine's Eliot Society, James E. Marks, MD 65, personally signed hundreds of letters to alumni and former house staff urging them to join the Eliot Society. And they did: In the final year of the campaign, the Society attracted a record 216 new members.

Thanks to everyone’s hard work, the School of Medicine has realized dreams that would not otherwise have come true. Much-needed facilities were built, including the McDonnell Pediatric Research Building; the Farrell Learning and Teaching Center, now under construction, which will allow collaborative education; multidisciplinary centers, such as the Alvin J. Siteman Cancer Center, that make possible exciting research and clinical care.

Endowed professorships and faculty fellowships have increased from 60 to 124 with additions such as the Dr. Robert C. Atkins Professorship in Medicine and Obesity Research held by Nada A. Abumrad, PhD, and the Dr. J. William Campbell Professorship in Medicine, established by John Doerr III and Ann Howland Doerr, held by Victoria Fraser, MD. Many donors regard such giving as a privilege, a chance to further medical science.

One alumnus, suffering from amyotrophic lateral sclerosis (ALS), chose to fund a professorship in neurology as a way of furthering ALS research.

The School’s scholarship support also rose dramatically, with new programs like the $5 million William A. Peck MD Scholars in Medicine fund for medical students. Some donors of endowed scholarships were impelled by their memory of past kindnesses. I. Jerome Fiance, MD 35, a donor and volunteer, recalled the medical giants who taught him and his classmates, including such greats as Mildred Trotter, Carl Cori, Barry Wood, and Evarts Graham.

Another alumnus recalled the welcome he had received long ago when other medical schools turned him away. As a young man, he had escaped from Nazi Germany and arrived in the United States, eager to become a physician. The School of Medicine invited him to attend — and a fellow émigré on the faculty even gave him the entrance exam in German. Throughout his long career, he never forgot what this opportunity had meant to him, and during the campaign he gave it to other students by establishing a scholarship in honor of his parents, who perished in the Holocaust.

“Thanks to the generous support of so many individuals, corporations and foundations, we are able to move quickly into the newest frontier of medicine,” says Shapiro. “Our BioMed 21 initiative is aimed at harnessing the promise of genome science and imaging technology by fostering many interdisciplinary collaborations among University faculty. We believe this interface will result in some of the most health-altering advances in medicine during the decade to come.”

Thank You!

For supporting teaching, patient care and research at Washington University School of Medicine
AFTER BEING ACCEPTED TO THE SCHOOL OF MEDICINE in December of 1999, I quickly began exploring opportunities to do research during the summer before my first year. Though I studied chemical engineering as an undergraduate, I also developed an interest in neuroscience. I was pleased to discover the amount of research being performed at the medical school and found myself particularly drawn toward those laboratories that used imaging to study how the brain functions. Unfortunately, as I got in touch with various investigators, I realized that without any research experience in the field, I was not a particularly desirable candidate.

During my second attempt to contact Dr. Randy Buckner, principal investigator of the university's Cognitive Neuroscience Laboratory, we had a short conversation. He asked if I had any programming experience, and I replied that I had some experience in one particular language. He then informed me that he had a project on which he could use the help of someone familiar with that language. He asked, "Are you industrious?" to which I replied, "I'd like to think so." He finally invited me to meet with him. Ultimately, I spent that summer and the next working under Dr. Buckner on that project.

I was encouraged by the administration of the medical school to apply for a Howard Hughes Medical Institute research fellowship and was fortunate to receive one. After completing my second year of medical school, I was delighted to interrupt my preparations for the board exam with a trip to Japan, where I presented my work at a scientific conference. After taking the exam, I began full-time work in the Cognitive Neuroscience Laboratory. My experience in the lab, like my experience during the first two years of medical school, was both demanding and educational. Compared with my preclinical studies, however, I felt an added level of responsibility. Instead of studying to pass exams, I now had to report regularly to my boss and thesis committee, as well as prepare several formal presentations throughout the year. Though the expectations were high, I now appreciate them for the challenge they provided.
The style of my research was different from that of many fellow medical students working toward graduate degrees. Whereas most of them did their work at the cellular or molecular level, my experiment was done on humans performing a psychological task. Specifically, I examined how visual information is processed in visual cortex with and without the distraction of noise.

While our approaches differed, both methods of research provided the same valuable lessons regarding the proper way to do science: background learning, hypothesis generation, experiment development, data analysis, presentation skills, etc.

My research year also offered me the opportunity to travel and attend conferences. Besides Japan, I went to New Orleans for the annual Society for Neuroscience conference, where I gave a talk to roughly 200 people. Toward the end of the year, I traveled to Bethesda MD to meet with Howard Hughes medical student fellows from other institutions and learn about their experiences.

Later, I was pleasantly surprised to learn that my research, presented at this meeting, would be rewarded with a full-tuition scholarship from Howard Hughes Medical Institute for the remainder of my medical school career.

Returning to clinical work after a year of specialized research was difficult, but not unmanageable. Whenever people ask me whether I would do things similarly now, the answer is “yes.” I took advantage of a wonderful opportunity, and my medical education has been enriched.

Currently, I am interviewing for a spot in a radiology residency, and I know that the skills and approaches gained during my year of research will benefit me during this training. I plan to pursue my research interests to the extent possible during residency, as well as afterward, when I plan to work at an academic medical center.
Alumnae of the School of Nursing gathered this fall at Washington University Medical Center for an all-class reunion.

Jeanne Grigg Mill, NU 45, warmly greets a fellow alumna.

Jane Ann Sawyer, NU 50, Mary Lou Gerhart Childress, NU 51, and Alice Layman Roam, NU 50, catch up after finding each other at the reception.

Dean Larry Shapiro, MD 71, congratulates Jo Carner Boggs, NU 53, on her 50th reunion.

Cora Glauser, NU 47, welcomes classmates Janet Hueckel and Carol Lee Coats back to St. Louis.

Barbara (Bobbie) Thompson, NU 46, chats with classmate Doris Barr Schroer about the changes they'll see on the Medical Center walking tour.

Mary M. Westberg, NU 53, listens to stories of nursing school from more than 50 years ago.

Graduates and guests of the Class of 1945 enjoy the food, the fun, and especially each other's company.
1957 graduates Gennie Mason, Eleanor Schorr McRea and Gwen Hibbits Douglas catch up with each other.

Fifty-year graduates Hazel Worthington Worrell and Mary Jean Sheperd McDonald display the banner that has been part of their regular gatherings for many years.

Nursing alumnae from 1953, pictured, gather to celebrate their 50th reunion. The event also honored the Classes of 1954 and 1955.

Betty Goodman Lang, Trudy Camp Braun and Nadine Hardy marvel at classmate Sue Dutton's "South Kingshighway," which she wrote and performed to recall their 1950s student days.

Maxine Steen Chambers, NU 48, shows classmate Alice Paul Green a little light reading.

Honoring a profession, renewing friendships, remembering times gone by.
Second Century awardees honored

The 2004 Second Century Awards were presented at a dinner at St. Louis' Ritz Carlton Hotel on September 17, 2004. The awards, bestowed annually since 1991, mark the School of Medicine's entry into its second hundred years of leadership in patient care, teaching and research.

George W. Couch III is chairman, president and chief executive officer of Couch Distributing Company, Inc., in Watsonville CA, a wholesale beverage distributor featuring Anheuser-Busch products. He is also a director of Triad Broadcasting Company, LLC, in Monterey, which owns and operates 49 broadcast radio properties in eight U.S. markets.

After graduating from high school in St. Louis, Couch earned an AB degree in economics with great distinction from Stanford University and was elected to Phi Beta Kappa. He then went to the Harvard Graduate School of Business Administration, where he earned a master's in business administration with a concentration on finance.

Active in civic and community affairs, Couch currently serves as president of the Community Foundation of Santa Cruz County. He is a trustee of the Community Hospital Foundation and Community Hospital of the Monterey Peninsula and of the Leon and Sylvia Panetta Institute for Public Policy at California State University, Monterey Bay. Since 1999, Couch has served Washington University as a member of the advisory National Council for the School of Medicine.

Couch is a brother of the late Gregory B. Couch, in whose memory the Couch family established a professorship in psychiatry at the School of Medicine in 1986. George Couch III and his wife, Debra, also have established an endowment to support schizophrenia research and are Life Patrons in the Eliot Society.

Steven L. Teitelbaum, MD 64, is the Wilma and Roswell Messing Professor of Pathology at the School of Medicine. He also is a member of the Division of Biology and Biomedical Sciences, and he serves as a pathologist at Barnes-Jewish Hospital and St. Louis Shriners Hospital for Crippled Children.

Teitelbaum earned his MD at Washington University in 1964 and has been on the faculty since 1968. A leader in studying bone cells and degeneration characteristic of osteoporosis, Teitelbaum and his team have focused on the osteoclast, a cell whose activity is the cause of osteoporosis. They have identified a number of molecules that regulate osteoclast activity and are potential therapeutic targets in the prevention of osteoporosis.

Teitelbaum has published more than 250 articles in major journals, among them the Journal of Clinical Investigation, Nature and Science. He serves on a number of editorial boards and is associate editor of the Journal of Cellular Biochemistry and consulting editor of the Journal of Bone and Joint Surgery.

A member of the International Academy of Pathology as well as other professional organizations, Teitelbaum is currently serving as a member of the National Arthritis and Musculoskeletal and Skin Diseases Advisory Council at the National Institutes of Health.

The Washington University Medical Center Alumni Association named a Distinguished Alumni Scholarship for Teitelbaum in 1997. In 2002–03, he was president of the Federation of American Societies for Experimental Biology.
Optimism fuels Eliot Society membership challenge

The Eliot Society membership committee for the School of Medicine launched this year's efforts at the annual Eliot Society Kickoff in September. Chairman Morton E. Smith, MD, HS 64, hosted the event and outlined the committee's new membership goals to those present.

They face a unique challenge: This year's School of Medicine Eliot Society included a record-setting 216 new members, either making an Eliot gift for the first time or returning to the Eliot Society after an absence. The committee, in response, has set the goal of surpassing this extraordinary mark.

Throughout the year, committee members will be contacting colleagues and classmates, personally inviting them to join the Eliot Society by making an annual fund gift of $1,000 or more to Washington University School of Medicine.

Committee members also heard from executive vice chancellor for medical affairs and dean Larry J. Shapiro, MD 71, who reviewed the past academic year, discussed the school's future and made a point of recognizing the important role the Eliot Society and its members play in the school's continued ascent.

The committee's nearly 30 members include MD alumni, former house staff and faculty, as well as representatives from the Programs in Health Administration, Physical Therapy, Occupational Therapy, and Audiology and Communication Sciences.

MD Reunion 2005

The dates: May 12-14, 2005. The event: MD Reunion 2005. For up-to-the-moment information, please visit the web site: medicine.wustl.edu/alumni.

1945 John C. Herweg, MD, social chair
1950 Maurice J. Lonsway Jr., MD, and Meredith J. Payne, MD, social chairs
        Elmer B. Brown Jr., MD, and Joseph H. Iwano, MD, gift chairs
1955 Miles C. Whitener, MD, social chair
        Robert C. Drews, MD, and Frederick T. Kraus, MD, gift chairs
1960 Gustav Schonfeld, MD, social chair
1965 James E. Marks, MD, social chair
        Margaret C. Telfer, MD, gift chair
1970 Francisco J. Garriga, MD, social chair
        Paul A. Mennes, MD, gift chair
1975 David B. Clifford, MD, social chair
        Jo-Elyn M. Ryall, MD, gift chair
1980 Jeffrey B. Kramer, MD, social chair
        James W. Fleshman Jr., MD, and David G. Mutch, MD, gift chairs
1985 Herluf G. Lund Jr., MD, social chair
        Neville F. Ford, MD, gift chair
1990 Linda R. Peterson, MD, social and gift chair
1995 Ann E. Starr, MD, social chair
        Martha S. Terry, MD, gift chair

Coming soon to the medical center!

Everyone scheduled to celebrate Reunion 2005 will be hearing from classmates about plans for social events, continuing medical education and other activities.

See you there!
20s

Carl A. Rosenbaum, MD 27, was honored October 2, 2004, as the oldest resident and physician in Pulaski County at a dinner marking the 40th anniversary of Presbyterian Village Retirement Community in Little Rock AR, where Rosenbaum, who celebrated his 105th birthday on May 18, has lived since 1994. He retired in 1970, after practicing general surgery since 1929 and teaching at the University of Arkansas for Medical Sciences for 30 years. During World War I, he enlisted in the Army, serving in the Student Army Training Corp at Hendrix College as an orderly for physicians during the 1918 flu epidemic. That experience led him into medicine and, after earning a premed degree from the University of Arkansas, he was accepted at Washington University. A family friend paid his tuition, $400 for all his four years in medical school. A talented musician, he paid his living expenses by singing in the choir of St. Peter’s Episcopal Church, waiting tables and, eventually, by working as an orderly in a hospital. After graduation he did further training in surgery, performed at Barnard Free Skin and Cancer Hospital, before returning to Arkansas. He was instrumental in the creation of a State Cancer Commission by an Act of the General Assembly in 1945, which resulted in the establishment of clinics to provide early detection and treatment of cancer to those who could not otherwise have afforded such medical costs.

Out of Mind, was published in 2004 by Nova Science Publishers. In it, he explores an overlooked aspect of the “Greatest Generation” — the psychological effect of war on an army of enlisted soldiers who often faced gunfire and death for the first time. Gottschalk chronicles his days as a military psychiatrist at the United States Public Health Service Hospital from 1944 to 1946, where he diagnosed and treated more than 1,500 patients. He is internationally known for developing a computerized content analysis method applicable to verbal samples and written texts as well as basic and clinical research in neuropsychopharmacology and psychotherapy.

50s

Jules A. Kernen, MD 55, writes that he is “becoming progressively incapacitated by Parkinson’s and associated postural instability. My activities are severely curtailed and travel is impossible, but I am still hanging in there with the help of my wife, Rita, to avoid invalidism.” Kernen lives in Glendale CA and is a retired pathologist.

Roger J. Meyer, MD 55, reports that his 150th publication, Poulsbo Past Times, has sold all its edition. Proceeds sponsored a college scholarship and contributed to five local museums. It chronicles the early days of North Kitsap county and its medical, farming, lumber and maritime history. Meyer is clinical professor of pediatrics and public health at the University of Washington. He lives in Poulsbo WA.

60s

Melvin C. Dace, MD 62, writes “In 1996 I was appointed assistant chief medical officer of the 1996 Olympic Games. I had to move to Atlanta for six months to perform this duty. Since then I have been the chief of stadium medical operations for the University of Florida Gators. My responsibility includes setting up medical care for fans and athletes, writing disaster plans and medical operation plans. I have written several articles (disaster planning, lighting detection system, EMS for student athletes) for the athletic journals.” A cardiologist, Dace lives in Gainesville.

80s

Karen Lewis, MD 80, recently authored a book of humorous verse, Pestilent Poetry, subtitled How to Be Well-Versed in Infectious Diseases or From AIDS to Zits and Some Stuff in Between. The book, published by Hedonja & Baer Publishers, includes 43 poems with such titles as “Antibiotic Angst,” “Hookworm,” and “Pasteurella multocida.” Lewis is emergency preparedness medical coordinator in the Office of Public Health Emergency Preparedness and Response at the Arizona Department of Health Services in Phoenix. Prior to taking that position, she spent 16 years as a pediatric infectious disease specialist. She also serves as immunization chairman for the Arizona chapter of the American Academy of Pediatrics.

Keith L. Parker, MD, PhD 81, recently received the 2004 Research Award from the Society for the Study of Reproduction. This annual award recognizes active society members for outstanding research published during the previous six years. Parker is professor of internal medicine and pharmacology at the University of Texas Southwestern Medical Center at Dallas. His research is dedicated to...
understanding the mechanisms that control the development and function of the adrenal glands, ovaries and testes. One major focus is a molecule called steriodogenic factor 1 (SF-1).

He is the son of Charles W. Parker, MD 53, and Mary L. Parker, MD 53, of St. Louis.

Patrick Meehan, MD 82, has accepted the position of medical director for the Santa Cruz (CA) Women's Health Center. Bilingual in Spanish, he has extensive experience in public health and was formerly deputy director for program at the National Center for Environmental Health at the Centers for Disease Control and Prevention in Atlanta. Meehan is married to pediatrician Diana Wells, MD.

William H. Julien, MD 66, was featured in a recent article on Diagnostic Imaging Online that describes his independent practice as a new model for interventional radiology practitioners who traditionally practiced within diagnostic radiology groups or within vascular surgery or interventional cardiology groups. Interviewed at the annual meeting of the Society of Interventional Radiology in Phoenix in March 2004, Julien describes himself as "a board-certified interventional radiologist who performs full-time endovascular surgery." Julien left his position with a radiology group in 2001, opening South Florida Vascular Associates outside Ft. Lauderdale to develop a clinical practice. He has developed programs for in-office treatment of varicose veins and carotid artery stenting and also does renal, visceral and lower extremity arterial revascularization.

Charles F. Chandler, MD 88, writes that he has survived (and enjoyed) his first year as chief of general surgery at the Santa Monica-UCLA Medical Center, where he maintains a busy practice and coordinates resident education. He says, "I'm fortunate to work with great residents, superb young faculty, all within a mile of the beach. Thanks to the great launch Wash U. provided me."

90s

Susan Rous O'Bryan, PT 90, and her husband, Scott, announce the birth of son Ethan Scott on May 28, 2004. O'Bryan is a pediatric physical therapist at Clarian Health in Indianapolis, working on the pediatric rehab unit.

Jennifer Wilfong, PT 95, married Ronald Druien on September 18, 2004. They live in Byron IL with her 7-year-old son, Alex.

Melissa Curtis, PT 96, writes, "Brian and I would like to announce the arrival of Mathieu Foster on August 24, 2004. He joins big brother Nicolas, 2 1/2. I would love to hear from classmates." Curtis lives in Saginaw MI.

00s

Armand H. Matheny, Antommaria, MD 00, PhD, was recently promoted to assistant professor in the division of pediatric inpatient medicine and adjunct assistant professor in the division of medical ethics at the University of Utah School of Medicine. He also recently published in the Hastings Center Report and the American Journal of Bioethics. Antommaria lives in Salt Lake City.

IN MEMORY

Sol Londe, MD 27, died October 21, 2004, of pneumonia at his home in Reseda CA at the age of 100. A pediatrician, Londe pioneered research in childhood hypertension and was known for helping develop the methods used to accurately measure blood pressure in children. He served in the Army Air Force medical unit during World War II before going into private practice in St. Louis and becoming a clinical professor of pediatrics at Washington University. His interest in social issues related to science and medicine led him to become politically active, and he was a founding member of Physicians for Social Responsibility, an international group committed to ending nuclear arms that won a Nobel Peace Prize in 1985. After retiring from his practice, he moved to Los Angeles in 1979, joined the volunteer faculty at the UCLA medical school, worked as a doctor at a juvenile hall detention center and continued his peace activism. He worked until his medical license expired at age 95. Among his survivors are his wife, Jeanne, whom he married when he was 80; a son, Stephen Londe, MD 63; a daughter, Helen Londe, MD; and several grandchildren. His first wife, Rose Sanel, died in the 1970s.

Mary Neal Meinberg, NU 27, died of pneumonia and respiratory failure on January 6, 2004, in Mission Hills CA at the age of 97. Among her survivors is a brother, Leon Driskill.

Ruth D. McCune, NU 30, died August 28, 2004. She lived in Iowa City IA.

Joseph B. Kendis, MD 33, died September 27, 2004, in St. Louis at the age of 96. At age 13, he was diagnosed with cancer and was sent to Barnes Hospital, where he had surgery to remove his leg. That experience led him to decide to become a doctor. After graduation from the School of Medicine, he engaged in general medical practice for 20 years, then attended Yale University to study the treatment of alcohol and substance abuse. He became a pioneer in this treatment and in 1966 became medical director of a 30-bed detoxification center at the former St. Mary's Infirmary in St. Louis. He also held classes at the police academy, teaching officers how to distinguish between drunkenness, epileptic seizures and diabetic comas. In 1974, Kendis became the first medical director of the Hyland Center at St. Anthony's Medical Center, the first
private center for alcoholism and drug abuse in the area. After retiring from that position in 1988, he continued a part-time practice in St. Louis County.

Kendis was an avid photographer and winner of a number of photography contests. His survivors include his wife of 68 years, Lois Erber Kendis, a daughter, Margie Horowitz, three grandchildren and three great-grandchildren.

**William Coleman Pratt, MD 38,** died April 12, 2004, in Tulsa OK, where he had a distinguished career as a surgeon. Following graduation from medical school, he interned at Geisinger Memorial Hospital in Pennsylvania, where he met his wife, Elva, a nursing student. He interrupted his surgical residency to serve five years in the U.S. Army during World War II, for which he was awarded the European African Middle Eastern Service Medal with three battle stars and a Bronze Star. After completing residency, he did a fellowship at the Mayo Clinic, earning a master of science degree in surgery from the University of Minnesota. Pratt practiced surgery at the Springer Clinic in Tulsa for 29 years. He was a Fellow of the American College of Surgeons and of the Southwestern Surgical Congress. An accomplished artist, Pratt appreciated the beauty of nature and the fine arts and was proud of his Cherokee heritage. His wife of 63 years survives, along with three daughters and three sons.

**Harold K. Roberts, MD, HS 41,** died of heart disease on October 7, 2004, in University City MO. He was 93. A native of Ohio, he came to Barnes Hospital for his residency after graduation from medical school at Ohio State University, then practiced internal medicine in St. Louis for 45 years and was on the clinical staff at Washington University School of Medicine. For 28 years, he supervised the diabetes clinic at St. Luke's Hospital, and he was a past president of the Missouri State Diabetic Association. His survivors include his wife of 65 years, Martha Jane, a son and a daughter, three grandchildren and four great-grandchildren.

**William D. Seybold, MD, HS 41,** died September 13, 2004. He had been a cardiothoracic surgeon in Texas.

**Ruth Schreiber Freedman, MD 42,** died after a long illness in Colorado on August 23, 2004, at age 88. She was the first woman ophthalmologist to graduate from Washington University. She practiced and taught residents in St. Louis until her retirement at age 70 and was emeritus instructor in clinical ophthalmology and visual sciences at the School of Medicine. Her husband, Harold Freedman, MD, died in 1977. They had two sons, Philip of Edwards CO and Howard of Sammamish WA, both physicians who survive her, as does a sister, Helen Unterberger of St. Louis. Like his mother, Howard Freedman, MD, HS 77, did his ophthalmology residency at Washington University. She was a Life Master level bridge player and had traveled extensively, taking her last cruise in the spring of 2004. It was her wish that donations in her memory be made to Washington University's Department of Ophthalmology.

**Donald L. Meamber, MD 42,** died October 6, 2004. He practiced family medicine in California.

**Virgil "Bud" Loeb Jr., MD 44,** professor emeritus of clinical medicine at Washington University School of Medicine, died at his home in St. Louis on October 26, 2004, from complications of congestive heart failure. He was 83. After his graduation in 1944, Loeb served overseas as a captain in the U.S. Army Medical Corps, then began his distinguished career in hematology and medical oncology. In addition to teaching, he was an attending physician and/or consultant at Barnes Hospital, The Jewish Hospital of St. Louis, St. Luke's Hospital, St. John's Mercy Medical Center and the Veterans Administration Medical Center. He also was a founding member of the community advisory board for the Alvin J. Siteman Cancer Center at Washington University and Barnes-Jewish Hospital. Loeb was a past president of the American Cancer Society and had served on a number of advisory and study groups for the National Cancer Institute. Between 1970 and 1983, he was appointed a liaison member of the National Cancer Advisory Board from the American Association for Cancer Research and the American Society of Clinical Oncology. He also served as a liaison member from the American College of Physicians to the Commission on Cancer of the American College of Surgeons and the American Joint Committee on Cancer. Among his survivors are his wife, Elizabeth, two daughters and two sons, two stepdaughters and two stepsons, and other relatives. His first wife, Lenore Harlow Loeb, died in 1987. Tributes may be made to the research department in hematology and oncology at Washington University School of Medicine or to John Burroughs School, 755 S. Price Road, St. Louis, MO 63124.

**Martin M. Calodney, MD, HS 47,** died of congestive heart failure and pneumonia in Aventura FL on July 27, 2004, at the age of 93. He served in the armed services during World War II and then spent his entire medical career in St. Louis, maintaining a private practice and serving as a member of the clinical faculty of the Department of Pediatrics at Washington University School of Medicine for many years. His survivors include two physician sons, Aaron Calodney, MD, and Leonard Calodney, MD 69, and two daughters, Ellen Calodney and Dede Berg, 10 grandchildren and other relatives. His wife, Rose, preceded him in death. Memorials may be made to the Rose Calodney Yiddish Cultural Fund or Planned Parenthood.
Barbara Wagggener Hinson, NU 47, died September 12, 2004. She lived in Maryville MO.

Annadelle Steffen Sweiger, NU 47, died August 6, 2004, after a lengthy illness. She lived in Plattsburg MO for many years before moving to Maple Valley WA. In Plattsburg, she was very active in the youth department of the First Christian Church. For many years, she and her husband, James Sweiger, MD 48, raised and showed horses. He survives her. Other survivors include three children, grandchildren and other relatives.

Helen Ackerman Stokinger, MD 48, a pulmonary disease specialist and former faculty member at the University of Cincinnati School of Medicine, died September 7, 2004, in Cincinnati.

Edward L. Pinney Jr., MD 49, died of non-Hodgkins lymphoma on September 27, 2004, at his home in Falling Waters WV, at the age of 78. After serving in the U.S. Navy, he completed his psychiatry residency at Brooklyn State Hospital and subsequently practiced in West Virginia until he retired. He was a Life Fellow of the American Psychiatric Association and a Fellow of the New York Academy of Medicine. Survivors include his wife of 15 years, Frances, three children from a previous marriage, and two grandchildren.

Fred T. Caldwell Jr., MD 50, died of congestive heart failure on April 26, 2004, in Little Rock AR at the age of 79. He retired in 1999 from his position as professor of surgery at the University of Arkansas for Medical Sciences and director of the Burn Center at Arkansas Children’s Hospital. Caldwell interrupted his surgery residency at Washington University to serve in the U.S. Army. After completing his training, he spent 10 years at the Upstate Medical Center of the State University of New York in Syracuse before moving to Arkansas, where he served for 32 years. There he conducted research on the healing of burn wounds (he authored more than 100 articles) and taught surgery residents in addition to his clinical work. He was a past president of the American Burn Association. In his leisure time, Caldwell was an avid fly fisherman and birder. Among his survivors are his wife of 57 years, Bettye McDonald Caldwell, twin children, Paul and Elizabeth, and their families. The Fred T. Caldwell, Jr., MD, Symposium, held at the University of Arkansas on June 12, 2004, honored his memory. Memorials may be made to the Bettye and Fred Caldwell Scholarship or to the Department of General Surgery there.

Lucille Emmons Walter, NU 53, GN 66, died August 7, 2004, in St. Louis, MO.

Mary Oglesby Finley, NU 53, died December 3, 2003, in Huntsville AL.


Donald L. Oetter, MD 53, died of gastric cancer on August 19, 2004, at the age of 80. He studied electrical engineering before serving in the U.S. Air Force, eventually overseeing a radar unit in France, where he met Joana D’Arancha, who became his wife. After his military service he earned both bachelor’s and medical degrees at Washington University, and engaged in family practice for 10 years. In 1982, he became board-certified in allergy and immunology and became an assistant professor of allergy at Saint Louis University Hospital. Away from medicine, his interests included scuba diving, tennis and ham radio. He won fame in his boyhood as the yo-yo champion of St. Louis. His wife survives, along with a daughter, two sons and other relatives. Memorial contributions may be made to the Hospice Foundation of Greater St. Louis.

Gregory J. Gurtner, MD, HS 97, died in St. Louis MO on August 11, 2004, from complications of melanoma. He was 36. Before joining the faculty at Washington University, he did his residency in internal medicine and a fellowship in gastroenterology here. He practiced at the Siteman Cancer Center, specializing in gastrointestinal oncology, inflammatory bowel disease and gastroenterology. He was working on the development of new treatments for immune mediated intestinal disorders and worked until several days before his death. Gurtner, who held an undergraduate degree in anthropology and music, was an accomplished musician as well as a physician and scientist. He earned his medical degree from New York Medical College. Survivors include his mother, Nancy Gurtner of Ridgefield CT, and a brother, Dr. Geoffrey Gurtner of Manhattan. Memorials are suggested to the American Cancer Society or the Crohn’s and Colitis Foundation of America.

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Jackson Johnson, Edward Mallinckrodt Jr., Spencer T. Olin... The list goes on.

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The Alvin J. Siteman Cancer Center at Washington University and Barnes-Jewish Hospital, with the School of Medicine's Department of Surgery Premier Billing Network, recently broke the Guinness world record for group tire rolling. More than 140 university students, staff and faculty joined with community members to simultaneously roll tires around the Hilltop campus' Francis Field on September 20, 2004. Participants at the Roll Over Cancer event decorated the tires, donated by Dobbs Tire & Auto, with colored ribbons to signify specific types of cancer in an effort to increase public awareness about cancer prevention, detection, diagnosis and treatment.
Immunity remembers Immune system cells can “remember” a parasite’s attack and help the body mount a more effective defense against subsequent invasions. The *Leishmania major* parasite, visible here as green glowing bodies, has helped researchers learn more about the immune system’s memory. For more on this story, please turn to page 7.