

STUDYING SUICIDE

VISIONARY DOCTORS

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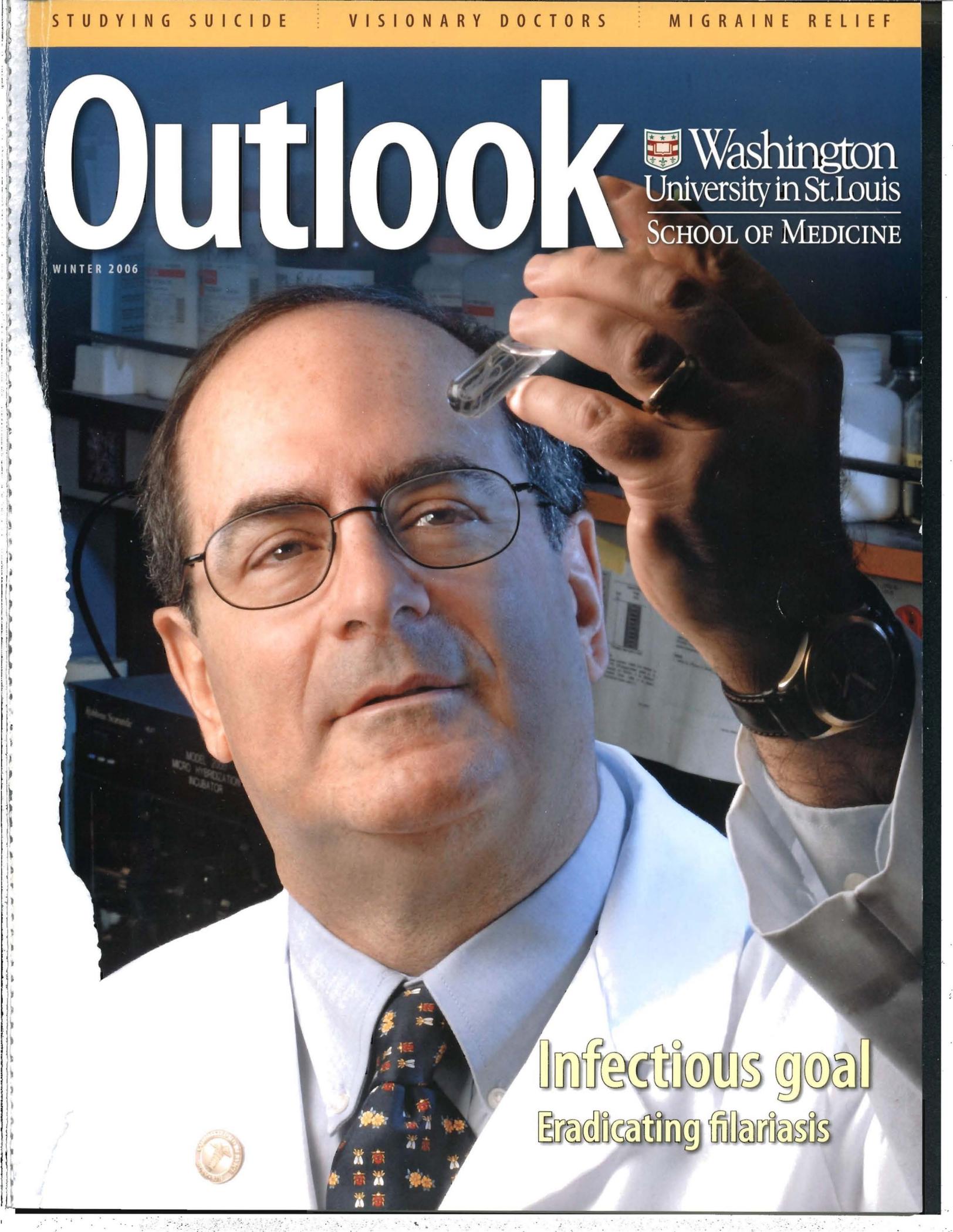
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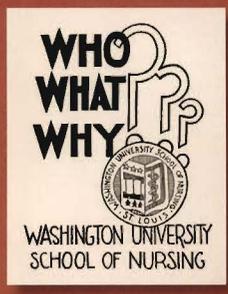
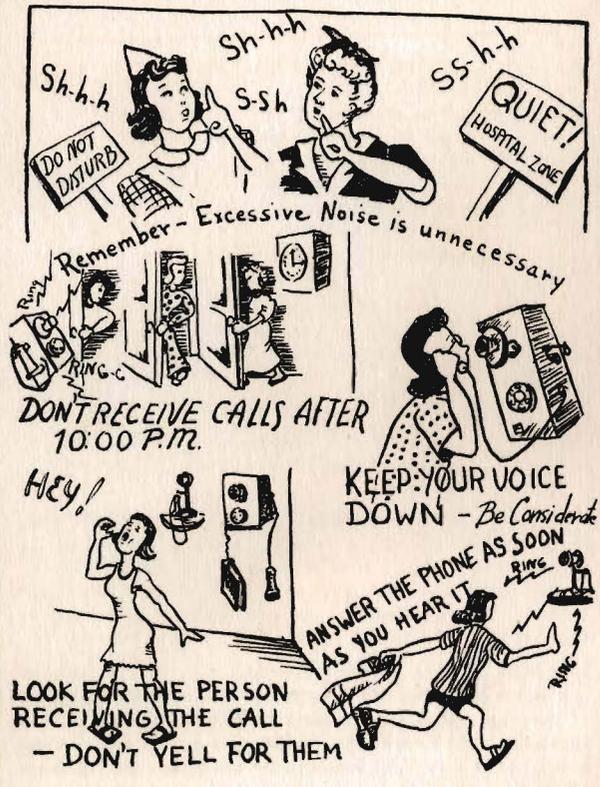
Washington
University in St. Louis

SCHOOL OF MEDICINE

WINTER 2006



Infectious goal
Eradicating filariasis



Quiet time Students who attended Washington University School of Nursing in the 1940s were required to follow a strict code of conduct, as shown in this pamphlet. Alumnae of the school gathered in St. Louis on September 18 to visit and reminisce about days gone by. For more on this year's Nurses Reunion, please turn to page 28.

OUTLOOK • VOLUME XLIII • NUMBER 4 • WINTER 2006 • ISSN 1042-2897
 Published quarterly by Washington University School of Medicine
 Office of Medical Public Affairs, Campus Box 8508, 4444 Forest Park Ave., St. Louis, MO 63108. © 2006
 EDITOR HOLLY EDMISTON ART DIRECTOR ERIC YOUNG PHOTOGRAPHER ROBERT BOSTON
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 Periodical postage paid at St. Louis, MO.
 Address changes: Circulation, Outlook, Campus Box 8508, 4444 Forest Park Ave., St. Louis, MO 63108

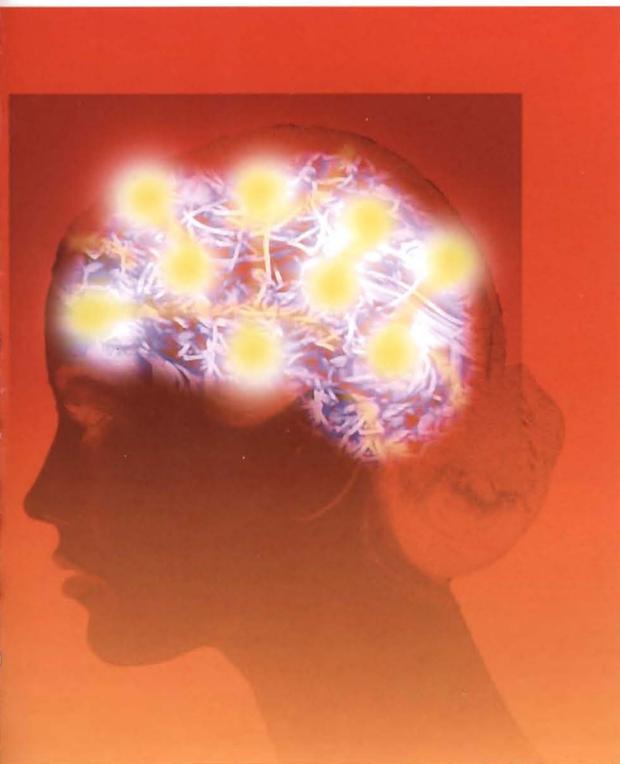
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Outlook

Washington University School of Medicine
VOLUME XLIII • NUMBER 4 • WINTER 2006



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7 Brain wiring

Seeing Things Differently

8 Surgery corrects vision problems in children with severe neurological disorders, allowing them to function better in their lives.

The Question of Suicide

12 Pioneering research on suicide and its prevention continues to benefit the St. Louis community 40 years on.

Making Filariasis History

15 A Washington University researcher plays a major role in the global effort to eradicate a debilitating and disfiguring disease.

When Migraines Start in the Heart

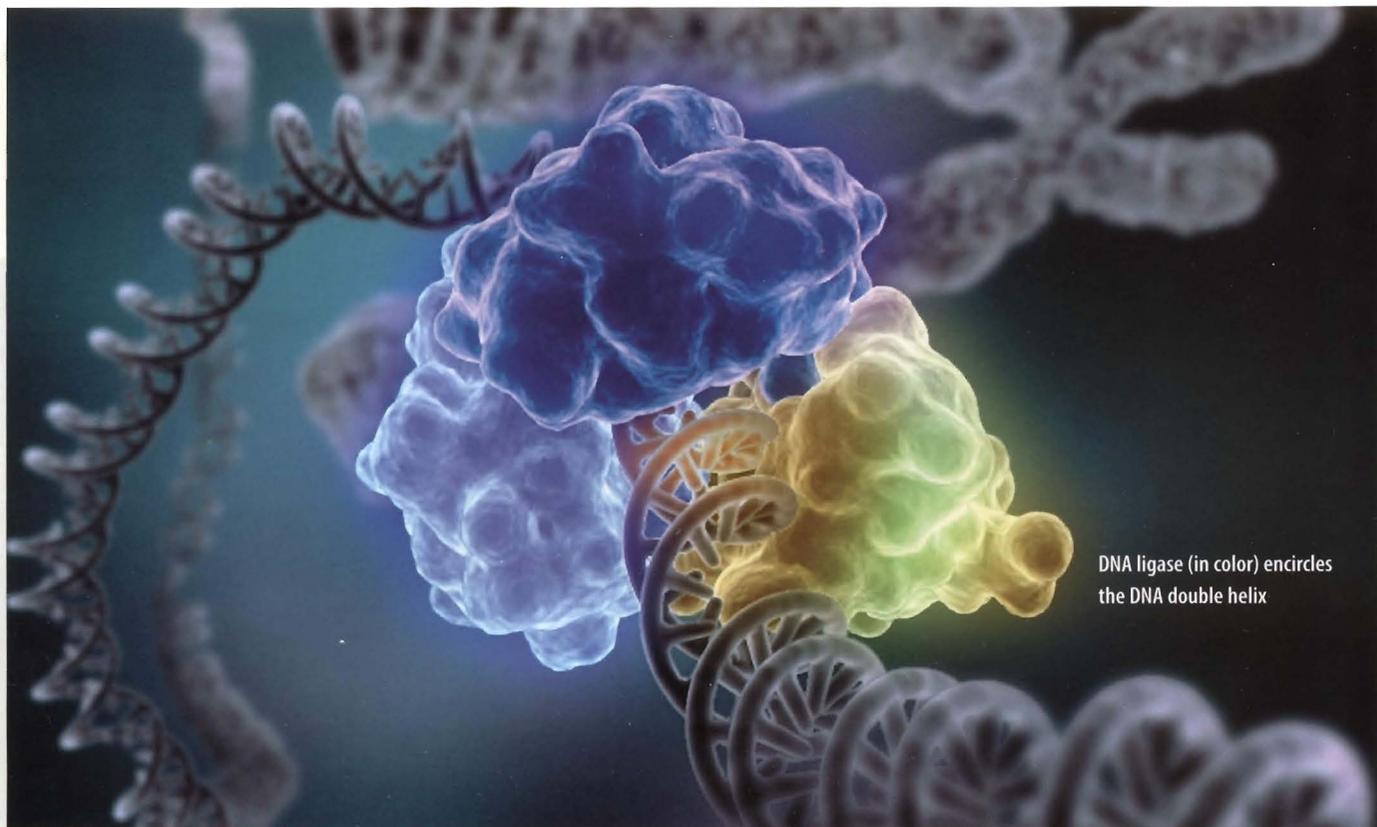
21 Closing a hole in the heart with a non-invasive cardiac catheterization procedure offers benefits for some migraine sufferers.

COVER While many researchers focus on laboratory work close to home, Gary J. Weil, MD, professor of molecular microbiology and of medicine, works in high-tech labs on campus as well as in undeveloped regions around the globe. His research informs a worldwide effort to halt transmission of parasitic worms. For more on this story, please turn to page 15. PHOTO BY TIM PARKER

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26 MASH doc reminisces



DNA ligase (in color) encircles the DNA double helix

Repair mechanism clears the way for sealing DNA breaks

Scientists investigating an important DNA-repair enzyme now have a better picture of the process that glues together, or ligates, the ends of DNA strands to restore the double helix.

The enzyme, DNA ligase, repairs the millions of DNA breaks generated during the normal course of a cell's life.

"Our study shows that DNA ligase switches from an open, extended shape to a closed, circular shape as it joins DNA strands together," says the study's senior author Thomas E. Ellenberger, DVM, PhD, the Raymond H. Wittcoff Professor and head of the Department of Biochemistry and Molecular Biophysics.

DNA is under continuous assault from environmental toxins and reactive cellular compounds. A means of repairing DNA damage is vital to maintaining the integrity of the genetic blueprint.

When these repair processes go awry, cells can malfunction, die or become cancerous, so researchers would like to know how "DNA mechanics" do their jobs. DNA ligases are attractive targets for developing new chemotherapy drugs.

DNA ligase works in concert with a ring-shaped protein known as a sliding clamp. Sliding clamps, such as the human PCNA protein, are master regulators of DNA repair, providing docking sites that recruit repair enzymes to the site of damage.



Researchers would like to know how "DNA mechanics" do their jobs. DNA ligases are attractive targets for developing new chemotherapy drugs.

"When ligase stacks against PCNA and encircles the DNA, we think this interaction ejects other repair proteins from PCNA," says Ellenberger. "In this role, ligase may serve as the final arbiter of DNA repair, certifying that the DNA is in pristine condition and ready for the final step of DNA end joining."

In the study, published in the Oct. 20 issue of *Molecular Cell*, Ellenberger's research group teamed with scientists from The Scripps Research Institute, the University of Maryland School of Medicine and Lawrence Berkeley National Laboratory.

Using X-ray crystallography and small angle X-ray scattering (SAXS), the researchers conducted their studies with a model organism that shares many biochemical characteristics with multicelled organisms, including humans.

"The SAXS experiment clearly shows that ligase remains in an open conformation, enabling other repair proteins to bind PCNA until the DNA is engaged and ligase snaps shut," says Ellenberger.

The future challenge, he says, will be to study the molecular choreography of ligase, PCNA and DNA in the same experiment.

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Orthopaedic center under construction in West County

Facility to offer comprehensive care

The Washington University Department of Orthopaedic Surgery and Barnes-Jewish Hospital have begun construction of a new \$13 million outpatient orthopaedic facility on property in a prime west St. Louis County location.

The 60,000-square-foot facility, located at 14532 South Outer Forty Drive in Chesterfield, will offer comprehensive, one-stop outpatient care — including physician offices, examination rooms, ambulatory surgery suites, diagnostic radiology (including MRI imaging and general diagnostic services) and rehabilitation and hand therapy.

All surgeons, physiatrists, radiologists and anesthesiologists at the new center will be Washington University physi-

The center will be the department's primary facility for sports medicine, hand surgery, shoulder surgery, foot and ankle surgery, and physical medicine and rehabilitation.

cians. Barnes-Jewish Hospital, affiliated with BJC HealthCare, will manage the ambulatory surgery center, including preoperative, operative and postoperative services and radiology services. Barnes-Jewish West County Hospital will manage the rehabilitative service and outpatient physical therapy. Hand services will be provided by physical therapists from

the Rehabilitation Institute of St. Louis' Miliken Hand Rehabilitation Center.

Services offered at the center will complement the department's existing clinical practice at the Center for Advanced Medicine and Barnes-Jewish Hospital at Washington University Medical Center, where spinal, joint replacement, trauma and orthopaedic oncology services are based. Construction is scheduled for completion in 2007.

An architectural rendering of the orthopaedic center in west St. Louis County.



Road show The Siteman Cancer Center unveiled its new mobile mammography van during an October 24 ceremony at the Center for Advanced Medicine. Cast members from "Menopause the Musical," a traveling stage show celebrating women undergoing midlife changes, performed at the event. The new van, one of just 10 in the country with digital mammography equipment, offers convenient screening in community-based settings.

Polonsky elected to Institute

Kenneth S. Polonsky, MD, has been elected to the Institute of Medicine of the National Academy of Sciences, one of the highest honors given to medical scientists in the United States. He was recognized for his professional achievement in the health sciences, specifically in the area of diabetes.

The Adolphus Busch Professor and head of the Department of Medicine, Polonsky also is physician-in-chief at Barnes-Jewish Hospital and a member of the Washington University Faculty Practice Plan board of directors.

A renowned diabetes researcher, Polonsky studies factors that influence the health of pancreatic beta cells, which secrete insulin. Defects in the secretion process and in the hormone's ability to stimulate glucose uptake by cells are hallmarks of noninsulin dependent (type 2) diabetes.

His studies have revealed that people who are not diabetic but have mild defects in glucose tolerance already have malfunctioning beta cells. Polonsky also has demonstrated that one form of diabetes could result from an impairment in beta cell function that is associated with a defect on chromosome 20. He currently is studying genes that increase the risk for type 2 diabetes and is evaluating drugs that stimulate insulin secretion.



Kenneth S. Polonsky, MD



TIM PARKER

Face-off Kent Porter, a Protective Services response officer at the School of Medicine, spends much of his free time officiating in a different venue. A lifelong St. Louis resident and former hockey player, Porter has spent a total of 14 years as a hockey referee. While he currently works junior high games, he has officiated at the high school and college levels, as well as at training games for the St. Louis Blues.

Van Gelder named Becker Professor

Russell N. Van Gelder, MD, PhD, is the new Bernard Becker Professor of Ophthalmology and Visual Sciences.

The professorship is one of two endowed chairs in the Department of Ophthalmology and Visual Sciences that were established in 1983 in recognition of the service and leadership of Bernard Becker, MD, professor emeritus and former head of ophthalmology. Under Becker's leadership, the department became internationally known for its

exceptional research and teaching.

"Dr. Becker is a principal figure in the history of our department, and the professorships endowed in his name continue to advance vision research," says Michael A. Kass, MD, head of the department and a former resident under Becker.

A specialist with the Barnes Retina Institute, Van Gelder also directs the uveitis service for the Department of Ophthalmology and



Russell Van Gelder, MD, PhD

Visual Sciences. In the laboratory, he concentrates most of his attention on nonvisual pathways in the eye and their relationship to circadian rhythms.

"Russ Van Gelder's important work is providing both insight into visual disorders and nonvisual systems regulated by cells in the eye," Kass says.

Valvular center brings cardiology and cardiac surgery together

To better care for the growing number of patients with valvular disease, Barnes-Jewish Hospital now has a dedicated Center for the Treatment of Valvular Heart Disease.

Ten years ago, cardiac surgery was needed mostly for coronary artery disease with few valve procedures. Today, many more patients require surgery for valve disease or valve disease combined with coronary artery disease.

Washington University School of Medicine cardiac surgeons at Barnes-Jewish Hospital perform nearly 1,300 heart procedures each year. In 2004, the group performed nearly 150 isolated valve repairs, and almost twice that number in conjunction with other heart procedures.

The new outpatient center includes a multidisciplinary team review of each case to provide optimum care for patients. Cardiology and cardiac surgery physicians work closely together and communicate openly.

"Through the Valvular Center, we formally bring all the resources and expertise at Barnes-Jewish Hospital together," says Benico Barzilai, MD, professor of medicine, cardiologist at the Washington University Heart Care Institute at Barnes-Jewish Hospital and medical director of the Center for the Treatment of Valvular Heart Disease.

School of Medicine cardiac surgeons at Barnes-Jewish Hospital perform valve repair whenever possible, rather than valve replacement. Repair is more surgically complex than replacement, but it allows patients to avoid blood thinners and the complications of prosthetic valves. Another critical benefit is that the need for reoperation is low after valve repair, even after 10 to 15 years.

They also perform the greatest number of minimally invasive valve repairs and replacements in the area. Barnes-Jewish Hospital is the only hospital in the region to use the entire spectrum of minimally invasive surgical techniques to repair valves.

Center for the Treatment of Valvular Heart Disease

To make the experience as convenient and comforting as possible for the patient and reduce the number of hospital trips, the staff will:

- Collect outside information before the patient is seen.
- Review records and information and provide feedback to the referring physician.
- See patients within one week of receiving medical records. Patients will see the cardiologist and the surgeon the same day.
- Patients will know what tests they need before their appointment, and other tests will be scheduled for the same day, or one day before or after.



TIM PARKER

Gross anatomy "Corpus Delicti: Just Desserts," a play investigating the art and science of anatomy as practiced in Holland during the Age of Enlightenment and immortalized in Rembrandt's 1632 painting "The Anatomy Lesson of Dr. Tulp," enjoyed a two-night run at the School of Medicine in October. Archives and Rare Books provided a display of period engravings from its collection, and afterward a faculty panel discussed the educational value, science and ethics of human dissection. The evening was sponsored by Washington University's Humanities Program in Medicine, the Center for Humanities and the Center for the Study of Ethics and Human Values.

PSYCHIATRY

Parents in the dark about adolescent substance abuse

A research team led by School of Medicine scientists has found that parents often don't know when their children are using alcohol, nicotine or other drugs.

"We found that parents knew their kids were using alcohol, cigarettes or marijuana only about half the time," says Laura Jean Bierut, MD, associate professor of psychiatry and principal investigator of the study.

The study, published in the October issue of the journal *Alcoholism: Clinical and Experimental Research*, also found that for cocaine or other illicit drugs, the number of informed parents is even lower.

"For example, among 12- to 17-year olds, 8.5 percent of the children said that they had tried a drug other than marijuana, but only 3.1 percent of parents reported that their child had used one of these drugs," says Sherri L. Fisher, the study's first

author and the project coordinator for the St. Louis site of the Collaborative Study on the Genetics of Alcoholism (COGA).

The researchers surveyed 591 children ages 12-17, asking them questions about alcohol, tobacco and drug use. They also surveyed one parent per child. A total of 483 parent-child pairs came from families participating in the COGA study, meaning that at least one family member had sought treatment for alcoholism. Another 153 pairs were recruited from the community. The researchers found that parents who had experienced drug or alcohol problems were no more likely to know that their children were using any of the substances.

"As a parent, I think that we're not talking to our kids enough and asking them if they're using or if they're ever at parties or other places where they could get alcohol or drugs," says Bierut.



Parents often know less than they think they do about teens' use of alcohol, tobacco or other drugs.

The study was conducted to determine how reliable parent information is when studying or treating adolescents with alcohol and drug problems. Bierut and Fisher say it's clear from the results that if doctors or researchers want good information about drug or alcohol use in adolescents, they need to ask the kids themselves.

Bierut says keeping the lines of communication open is key, and so is listening to parental intuition. "If you think your child is using," she says, "you're probably right."



Explosive chemistry Jennifer Elam, far left, postdoctoral research scholar in molecular microbiology, demonstrates a chemical process as high school students (left to right) Brittney Andrews, Rhonda Jones, Kieara Crisp and Shakeyla Kimble look on. About 100 students from six St. Louis City public high schools attended Women in Science Day on November 7. The event, held on the university's medical and Danforth campuses, was hosted by the Association for Women in Science and the School of Medicine's Young Scientist Program, with support from a mini-grant from the Midwest Rural-Urban Girls Collaborative.

Record now online twice weekly

The *Record*, Washington University's faculty, staff and student newspaper is now available online twice a week. The new electronic issues, the *Record/Monday* and *Record/*

Thursday, have been e-mailed to members of the Washington University community since September.

In addition to serving as the comprehensive source for official university announcements, these timely editions will contain news of research, scholarship and accomplishments; feature stories highlighting faculty, staff and students; human resource, benefits and other important information; updates on transportation, parking

and construction projects, as well as articles and calendar listings of special events, concerts, lectures and happenings of interest to the community.

To view the *Record* online, visit <http://record.wustl.edu>. Submissions are welcome via e-mail (recordcalendar@wustl.edu), campus mail (Campus Box 1070) or fax (314-935-4259).



School of Medicine to become tobacco-free by Spring 2007

Smoking cessation resources available

In an effort to create a healthier environment for patients, employees and students, the School of Medicine's facilities and property will become entirely tobacco-free by April 2007.

The new policy applies to all School of Medicine buildings as well as all owned or occupied property, including parking lots and garages, vehicles parked on the school property, university-owned vehicles and all leased property.

"Our goal in implementing this policy is to provide a clean and healthy work and patient-care environment for everyone, to reduce the toll of tobacco-related illness and to reduce tobacco use among employees, students, visitors and patients interested in quitting," says Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. "As a health care organization, this is the right thing to do."

A variety of free or reduced-cost resources will be available to those employees who choose to quit, including smoking cessation classes and telephone counseling. Danforth Campus employees also are eligible for the smoking cessation resources, although that campus has not adopted a similar tobacco-free policy.

The executive faculty and the dean of the School of Medicine decided to make the medical school tobacco-free based on recommendations from the Tobacco Policy Work Group, chaired by James P. Crane, MD, associate vice chancellor for clinical affairs and chief executive officer of the Faculty Practice Plan.

"This was not a quick or easy decision," Shapiro says. "We understand that this will be a time of transition for the School of Medicine, but we are confident that it is the best move for the entire community."

Smoking huts will be removed from school property in April. Signs communicating the tobacco-free policy will be placed around the medical school facilities. The School of Medicine also has assembled an employee advisory group to help establish the most effective ways to implement the policy and to communicate with employees regarding the resources available to smokers who want to quit. This group, made up of current smokers, former smokers and nonsmokers, will provide recommendations and feedback to the Tobacco Policy Work Group.

"This was not a quick or easy decision," Shapiro says. "We understand that this will be a time of transition for the School of Medicine, but we are confident that it is the best move for the entire community."

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Kite-flying on the lawn of St. Louis Children's Hospital during the 1920s.



Looking back

Hope and Healing, a history of St. Louis Children's Hospital written by St. Louis author Candace O'Connor, is now available at Amazon.com and local bookstores. The nearly 200-page volume describes the journey of St. Louis Children's Hospital through its first 125 years — from its modest beginnings to its affiliation with Washington University School of Medicine's Department of Pediatrics in the early 1900s to its current position as one of the top pediatric hospitals in the United States. All book proceeds benefit children and families served at St. Louis Children's Hospital.

NEUROSCIENCE

Could tweaking copper brain circuits make us smarter?

The flow of copper in the brain has a previously unrecognized role in cell death, learning and memory, according to researchers at the School of Medicine.

"Why don't we think a hundred times better than we do?" asks senior author Jonathan D. Gitlin, MD, the Helene B. Roberson Professor of Pediatrics. "One answer to that question is, perhaps we could — if the brain could make the right connections."

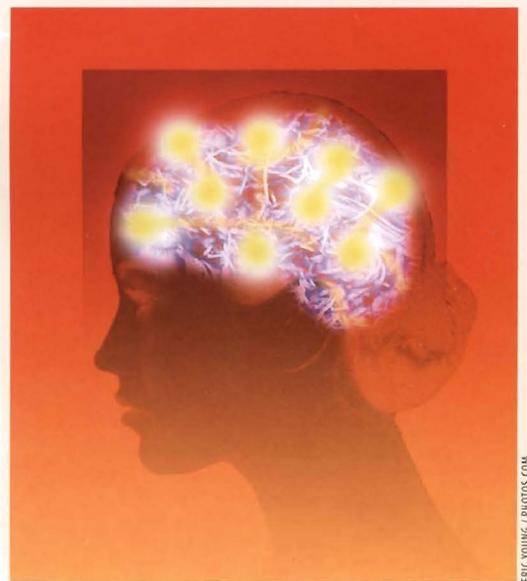
The research, published in the Oct. 3 issue of the *Proceedings of the National Academy of Sciences*, was led by neuroscience graduate students Michelle Schlieff, PhD, and Tim West, PhD, in collaboration with Anne Marie Craig, PhD, and David M. Holtzman, MD, the Andrew B. and Gretchen P. Jones Professor of Neurology and head of the Department of Neurology.

The researchers' findings suggest that copper and its transporter, a protein called Atp7a, are vital to human thinking. They speculate that variations in the genes coding for Atp7a, as well as other proteins of copper homeostasis, could partially account for differences in thinking among individuals.

Using rat and mouse nerve cells to study the role of copper in the brain, they found that the Atp7a protein shuttles copper to neural synapses, the junctions that allow nerves to talk to one another.

At synapses, the metal ions affect important components responsible for making neural connections stronger or weaker. The changing strength of neural connections — called synaptic plasticity — accounts for, among other things, the human ability to remember and learn.

The researchers found that when a chemical signal, or neurotransmitter, hits



one of the microscopic antennas present at nerve synapses, Atp7a reacts and quickly brings copper ions from their storage areas within nerve cells to the cell surface.

When released into neural synapses, the copper limits the activity of these antennas, called NMDA receptors, which determine the strength of the connections between nerve cells. Changes in the receptors' activity are critical to cell survival, learning and memory.

Seeing things differently



Some say it's not worth it to treat the eyes of children with severe neurological disorders.

Others see an opportunity to make a difference in kids' lives.

BY BETH MILLER

Julie Lawrence, a young woman with a big smile and shiny dark hair, was once considered legally blind. Angelman Syndrome, a genetic disorder that can cause a jerky gait, absent speech, excessive laughter and seizures, made her extremely nearsighted with astigmatism. When coupled with her autistic tendencies, her poor vision caused her to withdraw into herself.

Her mom, Greta Lawrence, says some of Julie's physicians discouraged them from having vision correction surgery. Because Julie can't read or do academics, "it wasn't worth it," she recalls them saying.

But Lawrence Tychsen, MD, thought otherwise.

"Dr. Tychsen thought it would be worthwhile," says Greta. "He always treated Julie like she was important."

Three years ago, Julie's parents decided to have Tychsen, professor of ophthalmology and visual sciences, perform the vision correction surgery. They noticed changes in their daughter right away.

"When we drove home from the hospital, she started noticing all the cars around her," Greta says. "She hadn't realized that there were other cars on the road. Even though she doesn't talk, she was laughing and looking at everything."

In addition to treating routine pediatric patients in his clinical practice, right, Lawrence Tychsen, MD, has become an advocate for improving the vision of children with neurological disorders such as cerebral palsy, Down syndrome and autism.

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Vision correction surgery helped Julie Lawrence to see "almost perfectly."

Julie Lawrence has been a patient of Tychsen's since she was 5 years old. Glasses were prescribed for her for several years, but because she dislikes anything on her head or face, she would remove them and throw them, breaking pair after pair. Eventually, Julie refused to wear glasses at all.

Tychsen, professor of pediatrics and of neurobiology and ophthalmologist-in-chief at St. Louis Children's Hospital, told Julie's parents that she needed corrected vision to become interested and engaged in the world. He had previously surgically corrected a muscular problem in Julie's eyes and suggested the additional surgery.

Since the surgery, which corrected Julie's vision to "almost perfect," she now can recognize her family from across the room, she walks and uses stairs without assistance, and she is less restless and insecure when in public.

"She's more content to sit and watch what people are doing," says her mom, Greta. "All she has to occupy herself with is what she can look at. If she couldn't see, she wouldn't be doing that."

Many children with neurological disorders have extremely poor eyesight and are blind without correction (worse than 20/200). The ability of these children to read, pick up objects and see the world is so impaired and complicated to treat that many go untreated.

Janice E. Brunstrom, MD, a Washington University neurologist at St. Louis Children's Hospital, saw firsthand how her patients' poor

vision interfered with every aspect of their daily lives. Having cerebral palsy herself and wanting to help reverse the isolation that many of these children endure because of their poor vision, she approached Tychsen to devise some solutions.

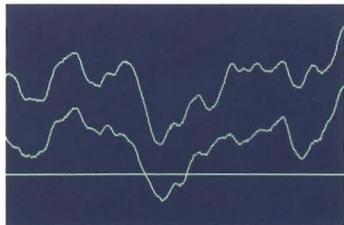
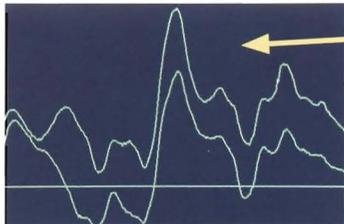
Tychsen established a laboratory for specialized testing of children's vision and now does vision correction, or refractive, surgery on children with cerebral palsy, Down syndrome and neurobehavioral disorders such as autism. To date, St. Louis Children's Hospital is one of only a few U.S. hospitals performing such operations, averaging about 60 special-needs children each year.

"We work with the most profoundly impaired children who are the most difficult to examine," says Tychsen.

Brunstrom, assistant professor of neurology, of pediatrics, and of cell biology and physiology, says when she talked with Tychsen about repairing the vision in these children, he readily agreed and made room for them in his busy clinical schedule.

"These are kids who were legally blind and on whom everyone had given up," Brunstrom says. "One by one, he has restored their sight by going through every detail and figuring out what is wrong and what he can fix."

The children who are the best candidates for vision correction surgery are those who cannot or will not wear glasses, like Julie, and have blunted social interactions or fearfulness because of their visual impairment. Tychsen says these children suffer from a kind of "visual autism."



As Colton Barnes watches a test pattern, right, a readout of his brain activity, above, allows the physician to determine the child's visual acuity.



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Tychsen and his staff perform laser-assisted subepithelial keratectomy, or LASEK, in which the cornea is reshaped with a laser. This technique doesn't require a surgical flap to be cut in the eye and is safer for children, who will inevitably rub their eyes after surgery.

In addition, the LASEK technique is able to correct much higher degrees of myopia, or nearsightedness, than the LASIK technique (laser-assisted *in situ* keratomileusis) commonly used on adults. The surgeons also can correct extreme farsightedness.

For children with focusing defects so large that they are beyond the range of laser correction, Tychsen uses other surgical techniques. One of these is implantation of an intraocular lens, leaving the natural lens in place.

The other is a lens extraction technique, in which the natural lens is removed and replaced with another type of implant. These techniques can improve vision in a child with profound nearsightedness, such as 20/1,500 (nine times worse than legally blind), to nearly 20/20, Tychsen says.

Most of these children also have other factors affecting their vision, such as strabismus (crossed eyes), nystagmus (wiggling eyes) or a structural anomaly. In those cases, refractive surgery alone can't correct their vision to 20/20, but when combined with eye muscle surgery or other procedures, it can considerably improve their vision.

To overcome the child's communication difficulties, Tychsen and his team use several noninvasive electronic techniques to measure eyesight before, during and after surgery. A computer allows precise measurement of visual acuity and eye tracking, which can help determine whether a child has a problem with sensory input or motor output.

Although the surgeries can make significant improvements in the child's vision and overall quality of life, most laser-treated children see some regression in their vision over time, and about 10 percent require repeat surgery. But for most parents, the decision to have their child go through the surgery is relatively simple.

"For special-needs children, there is often no alternative," Tychsen says. "When contemplating what it could mean to the overall development of the child, most parents opt for surgery." □

"These are kids who were legally blind and on whom everyone had given up."

JANICE E. BRUNSTROM, MD

When "good enough" is not good enough

When Janice E. Brunstrom, MD, opened the Washington University Pediatric Neurology Cerebral Palsy Center at St. Louis Children's Hospital in 1998, she heard the same story over and over from parents of her patients who had difficulty with their vision. The parents were often told by other physicians that their child's vision was "good enough" for a child with cerebral palsy (CP).

Brunstrom recalls one patient who had been examined by many ophthalmologists. Her parents had accepted that their daughter's vision always would be poor. Brunstrom convinced the family to see just one more ophthalmologist — Lawrence Tychsen, MD. He found that the little girl was profoundly nearsighted, but amenable to treatment.

Stories like these motivate Brunstrom to advocate for more research into cerebral palsy's causes, treatments and potential cures.

In testimony to the U.S. House Subcommittee on Labor, Health and Human Services, Education and Related Agencies — Committee on Appropriations earlier this year, Brunstrom asked the committee to allocate \$10 million in 2007 to establish 10 cerebral palsy surveillance and epidemiology research sites nationwide.

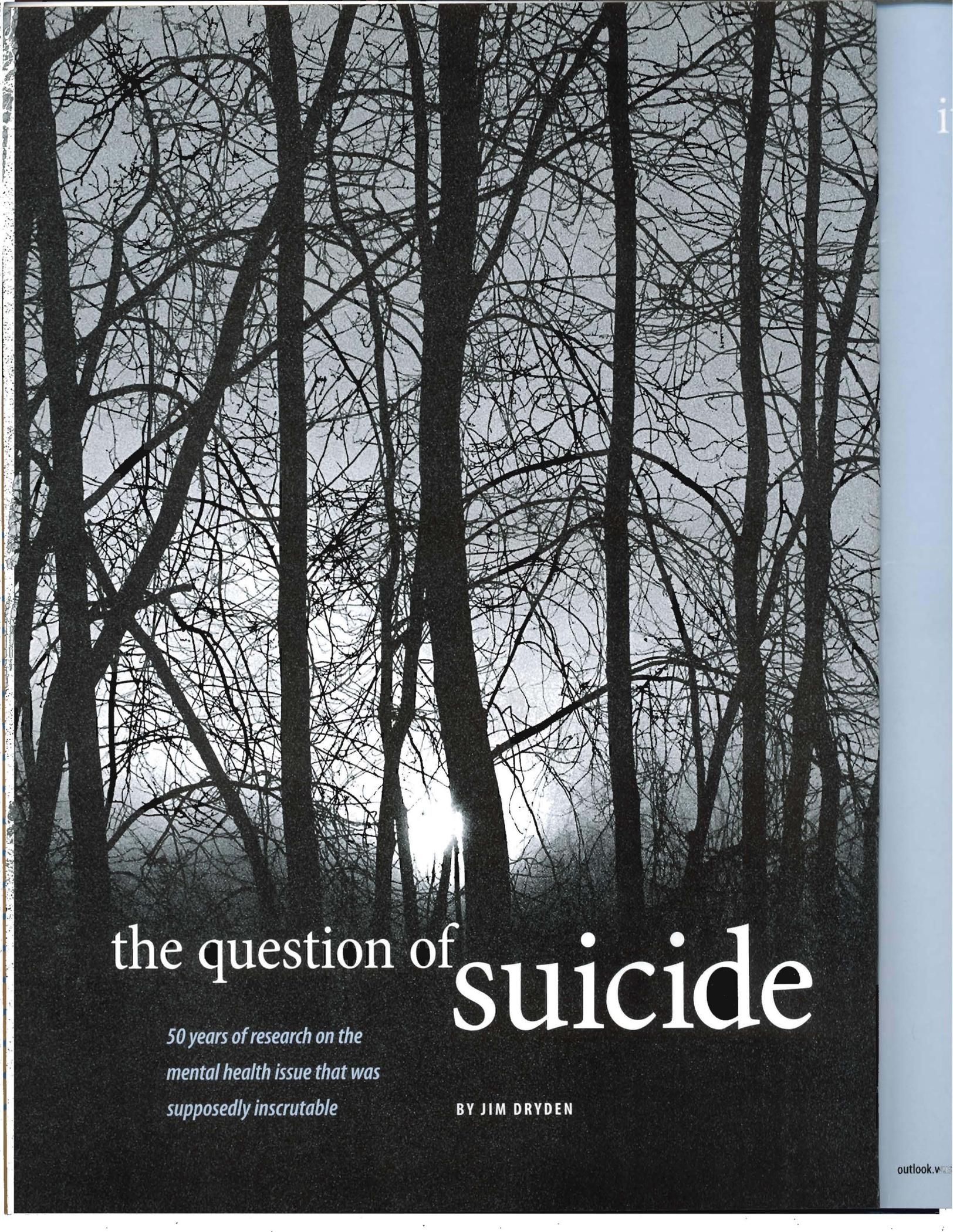
The little girl Brunstrom insisted be examined by Tychsen had LASEK vision correction surgery shortly after her exam. One year later, her vision is now 20/40 in one eye and 20/70 in the other. This summer, she saw stars in the night sky for the very first time.



CP advocacy to U.S. Congress: Janice E. Brunstrom, MD

Janice E. Brunstrom, MD, and cerebral palsy patient Emma Price demonstrate martial arts moves for karate instructor Charlie Walton. A national seminar, led by Brunstrom, highlights a highly effective approach to managing cerebral palsy through physical education.





the question of
suicide

*50 years of research on the
mental health issue that was
supposedly inscrutable*

BY JIM DRYDEN

it's impossible

to study suicide. That was the conventional wisdom in the 1950s, despite years of progress in psychiatric research and treatment. But two Washington University psychiatrists, Eli Robins and George E. Murphy — who launched the first systematic study of suicide 50 years ago — were convinced otherwise.

“Early in my career, I wouldn’t have bet a nickel that we would ever see acceptance, because there was so much disparagement of these ideas,” recalls Murphy, MD, emeritus professor of psychiatry. He and the late Robins, former head of the Department of Psychiatry, first presented their work in 1958 at a meeting of the American Public Health Association in St. Louis.

Two other “authoritative-sounding” speakers first presented papers about suicide — each one asserting that it was “impossible to study because the people who did it were already dead,” says Murphy, recalling the way Robins began his presentation that day. “Eli said: ‘Well, we’re just simple country folk, and we hadn’t realized the impossibility of our task.’”

Seminal papers published by Murphy and Robins created a whole new area of psychiatric research. Their work has been cited nearly 800 times by scholars from more than 300 universities in 32 countries. Not bad for a subject that’s impossible to study.

Robins and Murphy looked at 134 suicides in St. Louis City and County from May 1956 to May 1957. They used a systematic interview containing a few hundred questions to gather information from relatives, physicians, landladies, co-workers and anyone else they could find who had regular contact with the person who had committed suicide.

Interviews often took more than two hours to complete. The researchers, who were given the names of the deceased by the coroner, always waited at least six weeks before contacting friends and family of suicide victims. Those interviews were uncomfortable for Murphy.

“I didn’t like doing it,” he says. “People got emotional, of course, about their loss. Some of them said they felt better after talking with us, but a lot of them felt worse.”

Robins and Murphy invented what is now known as a “psychological autopsy,” which uses post-suicide interviews to better determine the cause of suicide. Since that first study, many additional studies have validated their findings.

After the interviews were completed, Robins and Murphy spent evenings together using a new system of diagnostic criteria — that later would become the basis for the American Psychiatric Association’s *Diagnostic and Statistical Manual* — to “diagnose” the psychiatric health of the suicide victims. They found that at time of death, at least 90 percent had some form of psychiatric illness.

The most common diagnosis was depression, followed by alcoholism. And those remain the two most common psychiatric problems affecting people who take their own lives.

That early suicide research gave hope to those who wanted to intervene and prevent people from taking their own lives. Murphy and Robins found, somewhat surprisingly, that most people had visited a physician within six weeks prior to their suicide. At least two-thirds had told someone they were thinking about ending their lives. Subsequent

Washington University researchers invented what is now known as a “psychological autopsy.”

research determined that although most wouldn’t volunteer their suicidal intentions to a physician, they would talk about it if asked.

So the idea was hatched to give people considering suicide a special place to call, where they could speak with trained volunteers and be referred for professional mental help.

Noted St. Louis social worker Sydney Jacobs proposed the idea of a suicide hotline to then-coroner Richard Harris. Because Harris had an ongoing relationship with Murphy and Robins through their research, he proposed involving them in the project.

Research has shown that most people who make suicide attempts don't really want to kill themselves. They're hoping to change their lives.



Eli Robins, MD



George E. Murphy, MD

The Suicide Prevention Hotline, now known as Life Crisis Services, opened in 1966. Since then, thousands of people have called.

"George and Eli repeatedly found that most people who make suicide attempts don't really want to kill themselves," says Richard D. Wetzel, PhD, professor of psychiatry, neurology and neurological surgery.

Failed attempts fall in one of three categories: those who were rescued or couldn't properly carry out their chosen method, those who didn't know or care what would happen as a result of their actions, and those who made the attempt in an effort to change their lives.

Most "successful" suicides, on the other hand, involve people who can't see a way to improve their lives; they simply want to end them.

Wetzel was the hotline's director in its first year, and he worked with Murphy on a study of hotline callers designed to learn whether they tended to be more like the people who go through with suicide or more like those who threaten or attempt suicide in hopes of making life better.

"The probability that a caller was going to commit suicide was really quite low," Murphy says. "They were upset, no question about it, and yet their characteristics did not fit the typical suicide."

In fact, most of the phone calls that seemed connected to serious suicidal intentions involved third parties who called the hotline to report someone they suspected was suicidal.

Although psychiatrists have known about many suicide risk factors for decades, it's still true that people who could be helped fall through the cracks. That's a lingering frustration for Murphy.

"I think it's clear that many suicides have been prevented over the years," he says, "but the suicide rate hasn't really changed. To this day, suicidal persons who have seen a physician have been undertreated, if not untreated, for depression."

And while much has changed in the 40 years since the hotline opened, and in the 50 years since the research began, one thing hasn't changed: Suicide remains relatively rare, representing less than 2 percent of total deaths in the United States.

Still, Murphy feels more can be done. He firmly believes that suicide should be high on the list of routine doctor-patient discussions. The lingering problem of suicide, he says, is not so much the failure of psychiatric treatment as it is the failure to treat psychiatric illness. □

LIFE CRISIS SERVICES



Lifeline celebrates anniversary, honors founders

The St. Louis-based social service agency Provident recently held a special ceremony to mark the 40th anniversary of its Life Crisis Services (LCS) hotline. The event, held at The Ritz-Carlton in Clayton, honored those who have assisted LCS in its mission of helping individuals at risk of taking their own lives.

Founded in 1966, Life Crisis Services is one of the oldest such hotlines in the nation. Its trained volunteers, under the supervision of clinical staff, provide round-the-clock, telephone-based suicide prevention and crisis intervention services to more than 40,000 callers each year.

Hotline volunteers are trained to ask callers specific questions. For example, questions about sleep patterns or feelings of sadness can provide clues about whether the caller is depressed. Questions about drinking and drug use also provide important information. They'll even ask how old the caller is, knowing that impulsive teens are at particular risk, as are men who've recently retired.

Three Washington University School of Medicine faculty were honored at the event: George E. Murphy, MD, emeritus professor of psychiatry, the late Eli Robins, MD, former head of the Department of

Psychiatry, and Richard D. Wetzel, PhD, professor of psychiatry, neurology and neurological surgery.

Murphy and Robins were recognized for their involvement in the creation of the hotline, while Wetzel was lauded for his early and continued support of the effort. Murphy and Wetzel remain members of Life Crisis Services' Founders' Committee.

"When you consider what is required to make this work your profession," says Kathleen Buescher, president and CEO of Provident, "it is extraordinary that so many people in our community find it in their hearts to become involved."

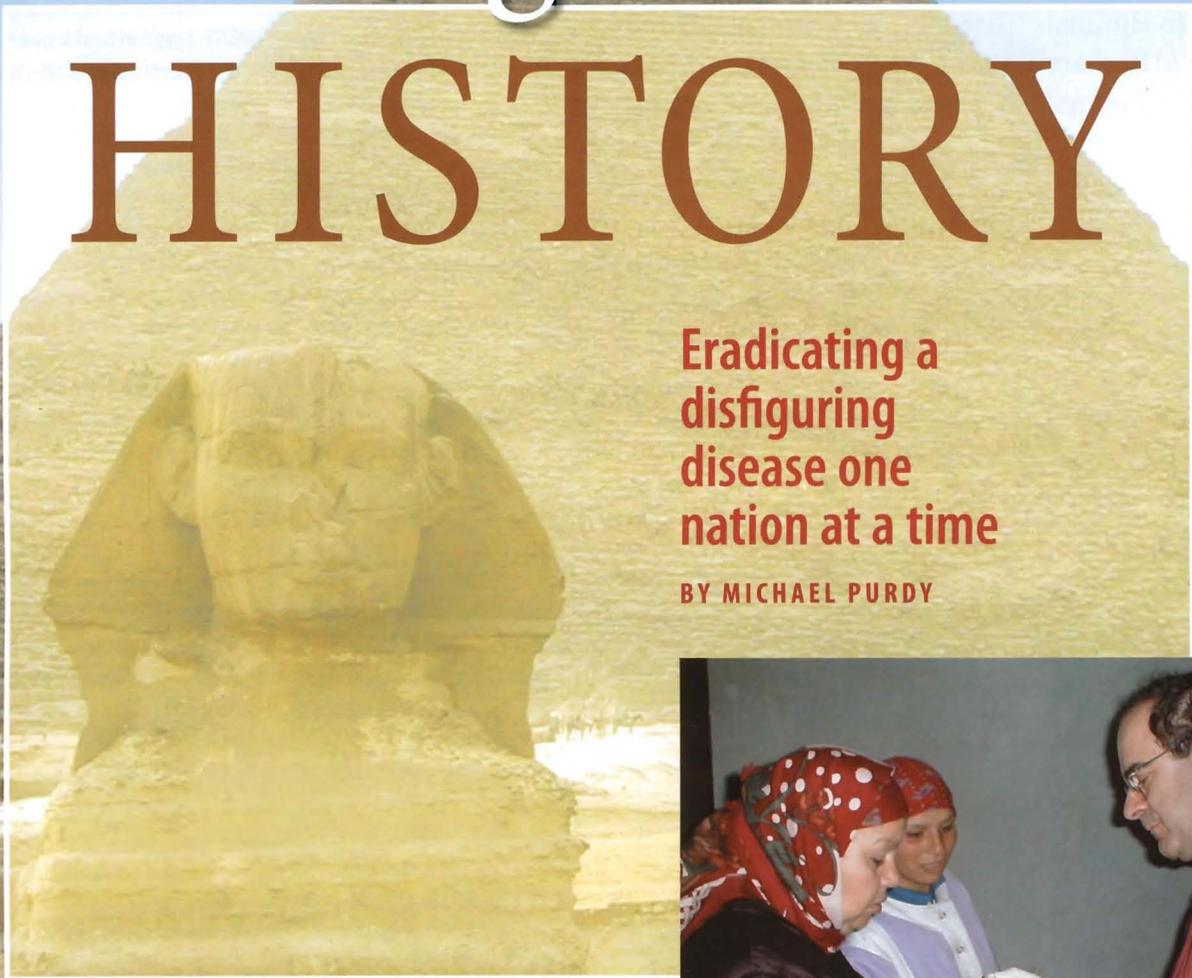
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Making filariasis HISTORY

Eradicating a
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BY MICHAEL PURDY



BETTERING PUBLIC HEALTH Gary J. Weil, MD, tests for filariasis in Egypt.

Making filariasis HISTORY

A focused, five-year Egyptian public health campaign has dealt a stinging defeat to lymphatic filariasis, a mosquito-borne parasitic disease that devastates the lives of millions of people worldwide and is a leading cause of disability in many developing countries.

The effort is part of a comprehensive strategy to eliminate filariasis from the planet by the year 2020. Gary J. Weil, MD, professor of medicine and of molecular microbiology, has been a major contributor to the campaign. He hopes to see the program's success in Egypt repeated in many other countries.

"The world faces many challenges in bringing this kind of campaign to the many nations that are afflicted by this parasite," says Weil, "but our assessment of one of the first national elimination programs is very encouraging."



NATIONAL COMMITMENT Egyptian health care workers dispense antifilarial drugs to those people living in affected regions.

Egypt's campaign to eliminate filariasis

Egypt became one of the first countries to start a mass drug administration (MDA) program in 2000 as part of a 20-year World Health Organization (WHO) initiative. The five-year effort's goal was to reach 2.5 million people affected by filariasis in more than 180 Egyptian localities.

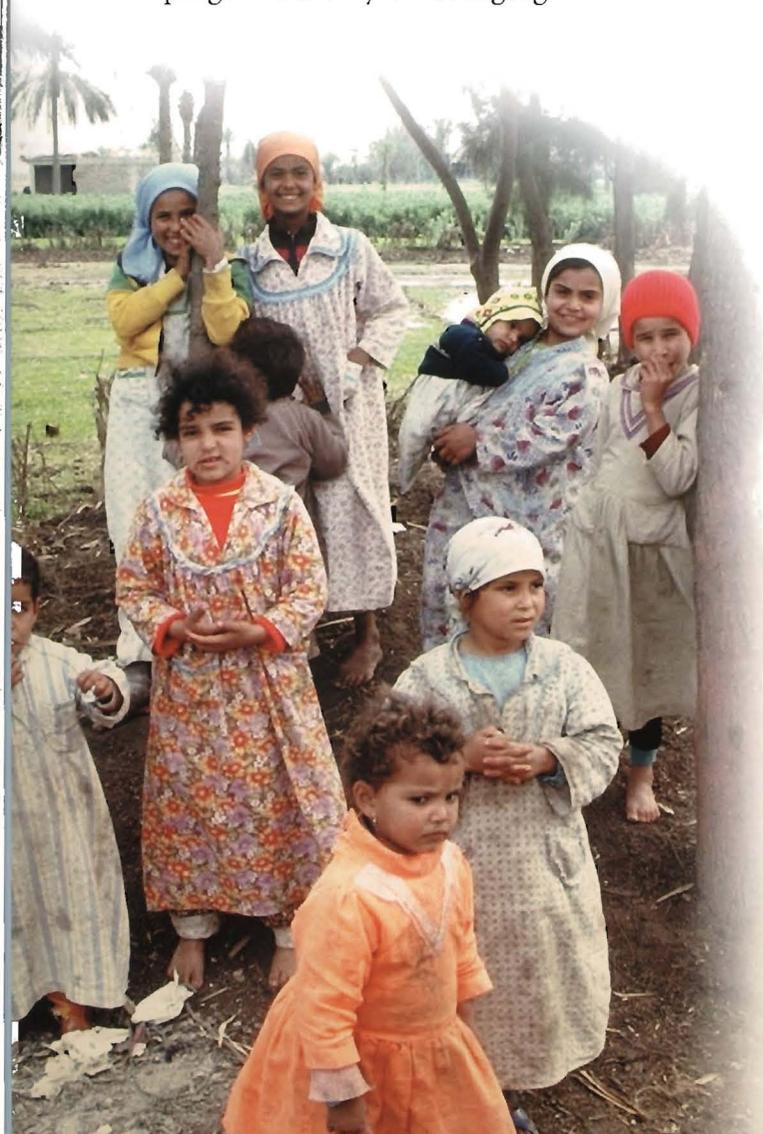
A systematic program of mapping the affected areas, MDA and follow-up testing has resulted in a sharp decline in infection rates and eliminated the disease in most areas of the country.

"The drugs are free or inexpensive, but distribution on this scale in poor agricultural villages is a big, expensive job," Weil says. "Donations from foundations and wealthy countries helped fund the distribution in Egypt, and more of that support is needed for campaigns in other countries."

Collaborating with Washington University colleagues including William D. Shannon, PhD, associate professor of biostatistics, and Ramakrishna Rao, PhD, associate research professor of medicine, along with researchers at Ain Shams University in Egypt, Weil developed a plan to assess the Egyptian MDA program's impact.

Using several tests, some of which were developed in Weil's lab, Egyptian scientists annually assessed infection rates during the MDA program in four villages near Cairo, each with a population of 3,000 to 5,000 people. The tests revealed sharply declining infection rates in people and in mosquitoes over the course of the program.

Weil's filariasis research has kept him traveling to Egypt regularly for nearly two decades. He has high praise for the Egyptian Ministry of Health and Population's efforts to encourage participation in the MDA program, noting the diverse array of economic, cultural and logistical obstacles it has faced in the process. Creative approaches, such as educational comic books for children and television advertisements featuring Egyptian celebrities to promote public awareness, have proved particularly helpful to the effort.



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A painful scourge, a simple test

Filarial worms damage the lymphatic system (lymph nodes and drainage). While many infected people have no symptoms, about 30 percent experience clinical symptoms such as swelling of an arm or leg, the scrotum, vulva or breast. Some patients develop elephantiasis, a deformity marked by massive swelling and thick, stiff skin.

But coping with the physical problems these conditions create is only half the battle — those afflicted also must deal with the debilitating psychological impact of the disease.

“In addition to causing disability, the disfigurement created by elephantiasis is often a source of great social stigmatization,” says Weil.

Weil has worked for many years to develop improved methods for detecting filarial infections. Filarial worms are transmitted as 1 mm larvae by mosquitoes. They mature in the body to become adult worms over a period of months, then live for years in lymphatic vessels, releasing thousands of microfilariae, microscopic larvae that circulate in the blood until taken up by mosquitoes to begin the cycle anew. Microfilariae hide in the liver and lung

during the day when a person is active and can only be seen if blood is collected at night and examined under a microscope — a task difficult to accomplish on a large scale in tropical countries where filariasis is common.

Weil realized that an affordable, rapid field test could have a dramatic impact on filariasis control efforts, and he set about developing a method that would detect the worms during the day or night by identifying waste products of the worm in the blood.

Because filarial worms in humans are close relatives of the heartworm parasite that infects dogs, Weil first devised a test for heartworm infections. Dog parasites are large and live right in the heart chambers, which made it feasible to develop a test based on detection of worm excretion products.

From that experience, Weil’s lab moved on to develop a test for filariasis in humans. It works much like a home pregnancy test; instead of urine, however, a drop of blood is placed on a card. The test is read after 10 minutes: A single line means that the person is not infected and that the test is working properly; two lines appear if the person is infected.



MEDICAL DIRTY WORK Weil covered in mud after freeing a stuck vehicle in New Guinea.

Outstanding in his field

Weil was a medical student at Harvard University when modern medicine’s first — and thus far only — successful campaign to completely eliminate an infectious disease was nearing its conclusion.

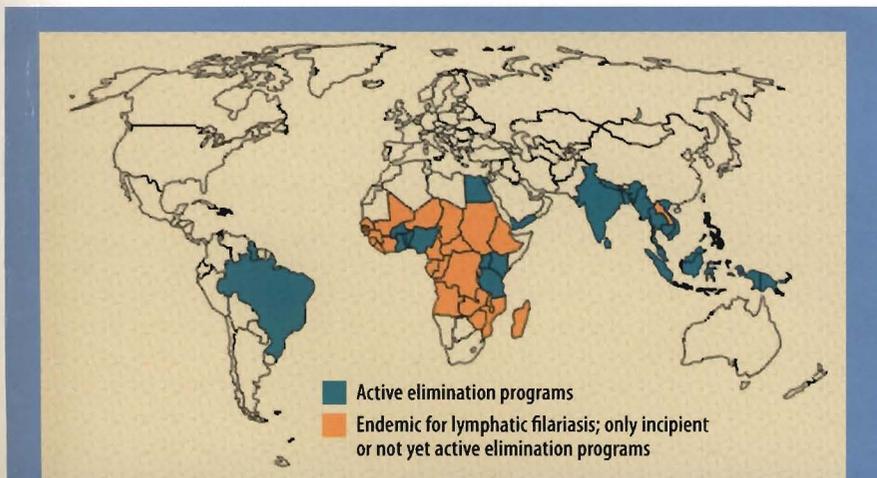
After 11 years of mass vaccination campaigns around the globe, the last reported case of a smallpox infection occurred in 1977; in 1980, the World Health Organization (WHO) declared the disease eradicated.

By that time, many infectious diseases that were previously common in industrialized nations, such as diphtheria and tuberculosis, had been largely controlled with vaccines and antibiotics.

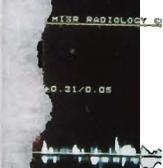
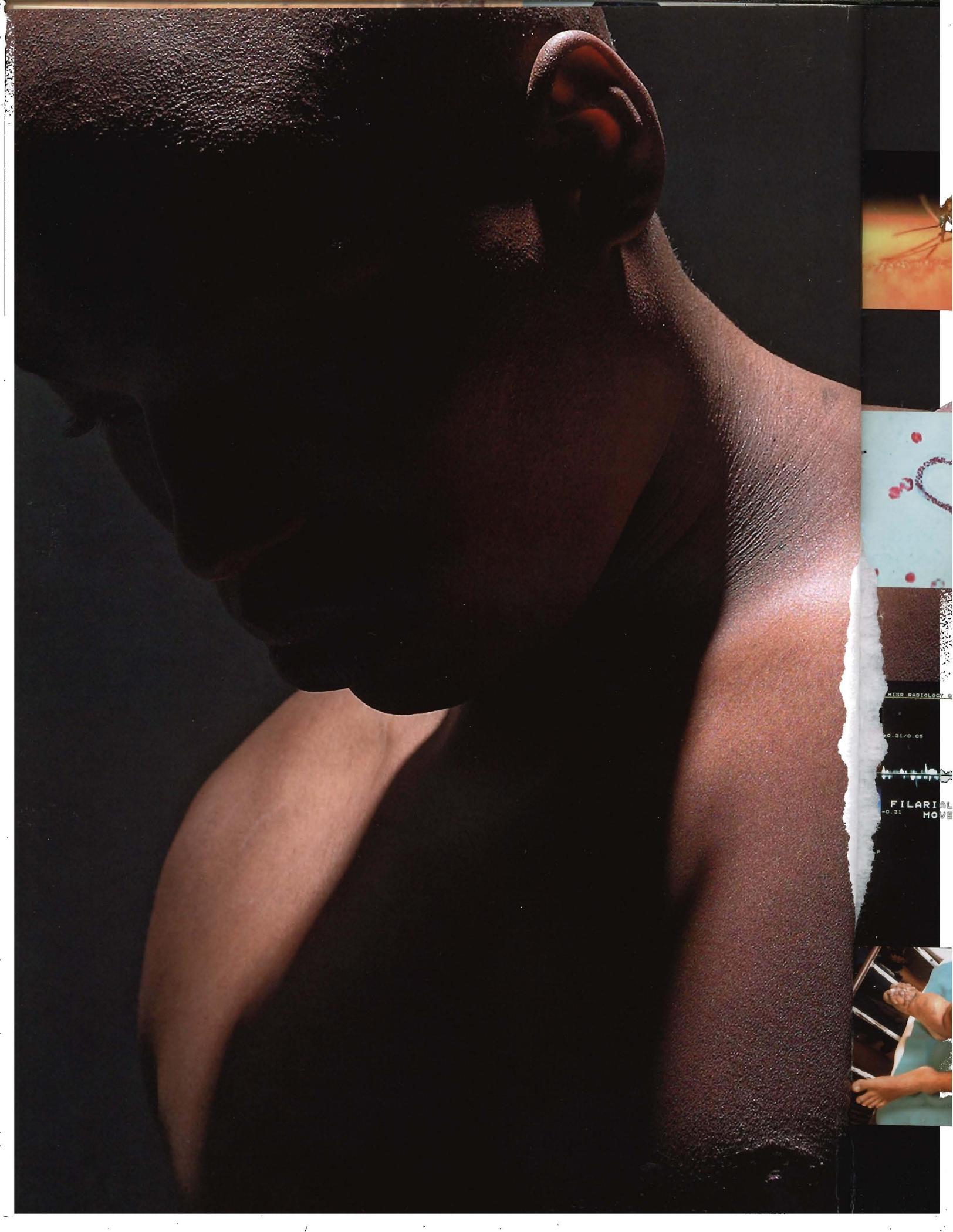
Ironically, the world was just a few short years away from the discovery of a rash of new and very serious diseases that would affect the developed world, including Legionnaire’s disease, AIDS and toxic shock syndrome. But, during the lull before the emergence of these new diseases, Weil’s focus turned to tropical diseases.

“WHO started its Tropical Disease Research Program in the mid-1970s, and the effort focused on six diseases: malaria, leprosy, leishmaniasis, sleeping sickness, onchocerciasis and filariasis,” Weil recalls. “Many of these diseases affected millions of people annually and yet there were no good treatments or diagnostic tests for them.”

Through his postgraduate work at the National Institutes of Health, Weil developed what has become a lifelong interest in lymphatic filariasis.



Global impact An estimated 130 million people from more than 80 countries around the world have lymphatic filariasis, and more than 1 billion people are at risk for contracting the disease. To date, nearly 400 million people in 42 countries (shown in blue) have started mass drug treatment for the disease as part of a World Health Organization (WHO) initiative. WHO’s 20-year plan calls for eradication of the disease by 2020.



FILARIAL
HOVE



The cycle of filariasis



A

Filariasis, a parasitic disease caused by microscopic, thread-like worms living in the human lymph system, is transferred from person to person by mosquitoes (A). Once in the body, immature worms grow to become thin adult worms several inches long. They live for many years and produce thousands of offspring that circulate in the blood (B). An ultrasound test can be used to detect adult worms in lymphatic vessels (C). Persons may be unaware that they have the infection until they develop swellings caused by blocked lymphatic vessels. Lymphatic fluid can accumulate in the arms, legs, breasts or genital area. The skin gradually thickens and hardens into a condition called elephantiasis (D). While not life-threatening, filariasis is an important cause of disability; affected people are prone to recurrent bacterial infections, and the social and psychological effects of the disease can be devastating.



B

A simple blood test, similar to a home pregnancy test, allows health care workers in filariasis-infected regions to quickly, easily and inexpensively determine whether a person is infected (E). The test is used to map the distribution of filariasis for disease elimination campaigns.



C

Because the disease spreads from human to human only through insect bites, mass drug administration can cure existing filarial infections and prevent new cases by reducing the number of parasites available for transmission. The drugs are inexpensive, safe and effective. A global campaign based on mass treatment shows great potential to make lymphatic filariasis a disease that, like smallpox, appears only in medical history books.



D



E



Hope in sight

Weil's test was one element among several that led WHO policymakers to endorse filariasis as a candidate disease for global elimination in 1997. Other factors also made eradication feasible.

First, filarial worms are believed to live only in humans and mosquitoes. If they lived in another animal host, that species could provide a source of parasites to renew the cycle of human/mosquito infections after an MDA campaign ended it.

Second, the worms are inefficiently transmitted. Because they are deposited on the skin and then must crawl into the hole left by the mosquito bite, they need many chances to actually get into a host and start a new infection. This led scientists to theorize that all filariasis in a region wouldn't have to be cured to get the worms to die out. Many experts believe that this will happen if infection rates drop below 1 percent.

Finally, the worms are vulnerable to three types of drugs. Manufacturers GlaxoSmithKline and Merck & Co. donate their products for filariasis elimination campaigns, while a third drug is available at an affordable rate. A single dose clears microfilariae from the blood for about one year. But repeated doses are needed, because available treatments are only partially effective against adult worms.

Comparing the filariasis eradication effort to the smallpox campaign of the

20th century, Weil notes that the technology for eliminating smallpox — the vaccine developed from a related, but much weaker, virus (cowpox) — was developed in the late 18th century.

"It took almost 200 years for public health officials to develop and implement a global eradication program based on this simple tool," he notes, calling the effort one of the most important medical achievements in history.

"Filariasis is not as important a disease as AIDS, tuberculosis or malaria, but we don't have the tools to eliminate those diseases yet. We now have the technology and the focus to make an effort globally against filariasis."

Gary J. Weil, MD

Worldwide effort under way

The WHO initiative to eliminate filariasis through MDA began in 2000 in 12 countries. The program has grown rapidly — some 380 million people in 42 countries were treated in 2005. By the target date of 2020, it is hoped that lymphatic filariasis will join smallpox as a disease of the past.

Weil and his colleagues were awarded a grant from the National Institutes of Health's International Collaborations in Infectious Diseases

Research program for expanded studies of the results of the Egyptian filariasis elimination program.

"We will work with the Ain Shams University group to monitor 44 Egyptian villages and towns, checking to see if remaining infections die out as expected, or if the parasite shows any signs of resurgence," he says. "We'll also be looking at the goals WHO has set for these programs in terms of how far we need to drive infection rates down to eliminate the disease."

The success of Egypt's MDA program shows it is possible to eliminate filariasis. However, each country striving to emulate Egypt's success will face its own set of challenges. Not all will have a strong health care infrastructure. Other factors, such as a country's geography and climate, as well as the culture of its people, will also play a role in the successful implementation of a disease elimination campaign.

Planners will apply what they have learned in Egypt to maximize the effects of MDA in other nations.

Weil, who admitted in a profile published seven years ago that he "mostly had traded [youthful] naive optimism for humility and realism," is feeling a renewed surge of optimism.

"I consider myself very fortunate," he says. "Research advances from my laboratory have had a significant impact on this important global public health project." □



FROM EGYPT TO THE EQUATOR Fresh from the success of the effort in Egypt, Weil's focus now turns to the WHO project's next target for eradication of filariasis, Papua New Guinea. The country's tropical climate and lack of standardized health care will present different challenges.

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When migraines start in the heart

Closing a hole,
residual from birth,
helps some
migraine sufferers.

BY GWEN ERICSON

A SEVERE MIGRAINE ATTACK can be agonizingly painful and accompanied by extreme light sensitivity and powerful nausea. For some people prone to migraines, medications keep their headaches under control, but for others no drug completely prevents debilitating attacks.

For such people, hope may come from a new clinical trial at the School of Medicine that offers an unexpected solution — doctors are closing a hole in the heart to try to fix the ache in the head.

The trial’s first patient, Brenda Hoock, has undergone the heart procedure and found relief.

“Migraines ran my life so completely that when I heard about this new study, I thought, ‘Maybe it sounds a little crazy, but I’m not going to turn down any opportunity that might help relieve this burden,’” she says. “I’m thoroughly amazed with the results. I haven’t had a migraine in the six months since I came home. It’s given me back my life.”





Above: This device, used for closing a hole in the heart, seems to hold the potential to aid migraine sufferers.

About 600 million people around the world, including some 28 million Americans, get migraine headaches. Physicians and researchers suspect a link between migraines and a particular heart defect in some people.

The defect is called a patent foramen ovale or PFO. A remnant of fetal development, a PFO is a hole between the two upper chambers of the heart and is generally smaller than a pencil eraser. In the fetus, the foramen ovale passes blood from the heart's right atrium directly to the left atrium, bypassing the unused lungs. After birth, the foramen ovale grows shut — most of the time. In about 25 percent of people, it stays partially open, leaving a tiny, flap-covered passage between the atria — a *patent* foramen ovale.

"A PFO serves as a strain valve," explains John M. Lasala, MD, PhD, who oversees the Washington University portion of the migraine/PFO study. "If the pressure gets too high on the right side of the heart, the PFO can open, and blood can travel from the right to the left side. We think something usually cleared out by the lungs is in that blood and can trigger migraines."

One source of the idea that PFOs could be a cause of migraines was a study of divers with decompression illness. Researchers looked for a correlation between PFOs and "the bends," but they also asked the patients if they had migraines. It turned out that those with PFOs were more likely to get migraines than those without.

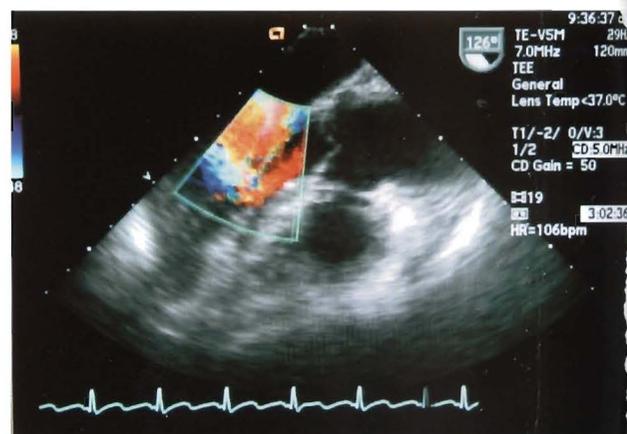
Other studies showed closing PFOs to prevent strokes had the side effect of significantly decreasing migraines. All in all, such studies have shown that about three-fourths of migraine patients who

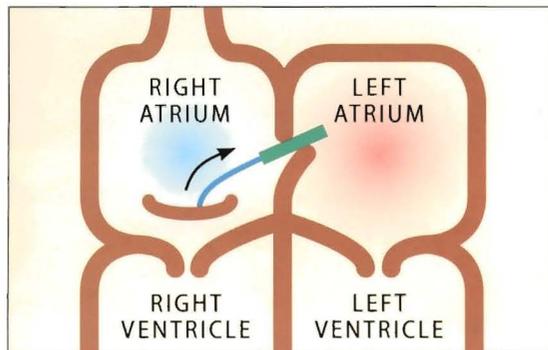
underwent PFO closure to prevent stroke or treat other problems got some migraine relief.

Estimates now hold that PFOs are present in about half of migraine sufferers who experience aura — an arc of zigzag lines in the visual field, numbness of one side of the face, weakness or altered consciousness — and in about a quarter of those who don't have aura with their migraines.

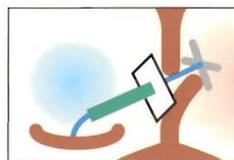
Early results from a set of ongoing British clinical trials of PFO closure in migraine patients found a 37 percent reduction in migraine frequency and duration. Now the School of Medicine is one of 13 centers conducting a new trial called the ESCAPE trial in which Hoock is a participant. (ESCAPE stands for Effect of Septal Closure of Atrial PFO on Events of Migraine with Premere™.) Led by St. Jude Medical in Minnetonka MN, the study aims to close PFOs in 500 migraine patients who haven't responded well to current medications.

Doppler imaging signals the presence of a patent foramen ovale.





The device is threaded into the opening; its wings are spread and cinched snugly and disconnected from the catheter. The closed PFO soon will heal permanently.



“We don’t believe this will be a cure for all migraines,” says Lasala, medical director of the cardiac catheterization laboratory and professor of medicine. “But even if it’s effective in just 50 percent of migraine patients with PFOs, it could benefit a lot of people.”

The apparatus used to close PFOs in the SCAPE trial delivers a small device to the heart through a vein in the leg. Once in place at the PFO, the tip of the device can be opened like a miniature umbrella with two opposing canopies that sit on either side of the wall separating the atria. Smaller and trimmer than previously available mechanisms for repairing heart defects, the device, called Premere™, is about a half an inch across and contains just a few fabric-covered wires.

“I designed Premere specifically for sealing PFOs — it has a very minimal, open architecture,” says Dennis W. Wahr, MD, of St. Jude Medical. “With a PFO, you just have to hold the door shut for a while until it heals, so you don’t need a lot of metal and fabric.”

Lasala closed the PFO in Hoock’s heart in late June of this year. Hoock had suffered from migraines since she was 7 years old, and in recent years, the 44-year-old had experienced more frequent and more debilitating attacks.

“I would have at least one really severe one every month,” she says. “They would totally knock me down. I would basically say, ‘Throw an ice pack on me, turn out the lights and leave me alone.’”

Hoock’s migraines did not prevent her from working — she is a plant technician at a phone company — but she frequently had to disappoint her husband and three children by bowing out of family activities during migraine attacks.

Over the years, she tried many migraine treatments. Medications prescribed for migraines include beta-blockers, calcium-channel blockers

and anti-hypertensive medications, as well as anti-seizure and antidepressant drugs. A new category of drugs developed especially for migraines, called triptans, came on the market in 1993.

“At various times, my doctors have had me on epilepsy and blood pressure medications, but they didn’t work well,” Hoock says. “With one of the epilepsy drugs, there was never a day in the three months I took it that I didn’t have a headache.”

Hoock got some benefit from triptans, which often took the edge off her migraines and allowed her to function, but still she lived in constant fear of an attack and was continually wary of anything that might trigger one.



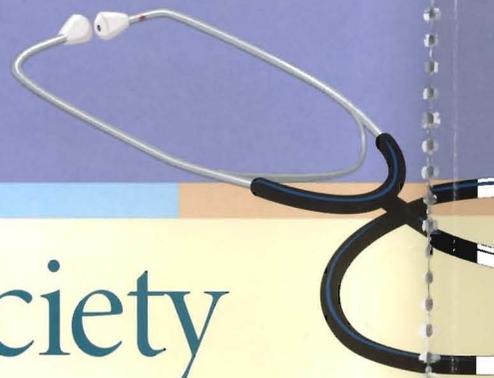
John M. Lasala, MD, PhD, right, with the inventor of the Premere™ patent foramen ovale closure system, Dennis W. Wahr, MD, of St. Jude Medical.

Common migraine triggers include fluctuations in estrogen and progesterone levels, certain foods such as cheese or chocolate, alcohol, caffeine, stress or changes in the weather. For Hoock, triggers included artificial sweeteners, raw onions, sunlight flashing through trees, getting overheated, having a sip of alcohol or oversleeping.

Hoock no longer needs migraine medications. And, while she hasn’t yet had the nerve to chug down a glass of Diet Dr. Pepper™, her favorite brand of soda, she gradually has been incorporating a few other former migraine triggers into her life since her procedure. She recently savored the taste of raw onions on a salad and sipped a margarita at a social gathering without getting a migraine.

Hoock’s two daughters and son also experience migraines, and she has hopes that research such as the ESCAPE trial also may someday help them.

“I think it’s wonderful that doctors give their time to research like this,” she says. “It means so much to people like my family and me.” □



Of medicine & society

Danforth lecture addresses health care issues, sense of purpose

To commemorate the naming of the Danforth Campus, Washington University this fall sponsored the “Higher Sense of Purpose” lecture series. Inspired by Harold T. Shapiro’s book, *“A Larger Sense of Purpose: Higher Education and Society,”* the series focused on universities’ responsibilities to serve and improve society.

“Universities have an inherent responsibility to promote new ideas and urge society to think a little differently, to think of how the *status quo* can be changed in a positive way and to always be a little uncomfortable with the current situation,” Shapiro writes in his book. Shapiro, president emeritus of Princeton University, was the keynote speaker during the Danforth Campus dedication ceremony held on September 17.

The series’ speakers — who have embraced these values and dedicated their lives to shaping progress in their fields — used the lectures to explore some of society’s most critical concerns in the medical, business and political arenas.

Chancellor Emeritus William H. Danforth, MD, presented the first program in the three-part series, “Medicine & Society,” which addressed the need for educating future medical practitioners and for continuing the advancement of medical research and patient care.

He was joined on stage by Steven H. Lipstein, president and CEO of BJC HealthCare, and Larry J. Shapiro, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. Bradley P. Stoner, MD, PhD, associate professor of medicine and of anthropology in Arts & Sciences and director of the Program of Medicine and Society, moderated.

A timeless ideal can still guide physicians

In his remarks, Danforth shared the words of a prayer attributed to Moses Maimonides, a 12-century Jewish physician and philosopher. When Danforth first saw these words hanging on the wall of the former Jewish Hospital, he was transfixed. “I am as affected today as then,” Danforth says. Part of the prayer reads as follows:

“The Eternal Providence has appointed me to watch o’er the life and health of Thy creatures. May the love of my art actuate me at all times; may neither avarice, nor miserliness, nor the thirst for glory or a great reputation engage my mind; for, enemies of truth and philanthropy, they could easily



William H. Danforth, MD

deceive me and make me forgetful of my lofty aim of doing good to Thy children. Endow me with strength of heart and mind so that both may be always ready to serve the rich and the poor, the good and the wicked, friend and enemy, and that I may never see in the patient anything else but a fellow creature in pain.”

“What can we today see in those words?” Danforth asks. “Medicine is not another profession; it is a mission, some might say a calling ... A physician is called to be the keeper of his or her brothers and of his or her sisters.”

Danforth says temptations to stray from “love of the art” are even more prevalent now than in the time of Maimonides — the love of money, fame, a great reputation, a front-page story in *The New York Times* — but self-restraint must triumph over the natural human weaknesses that afflict everyone.

Physicians today are fortunate to have knowledge and technologies that give them great power over illness and suffering, he adds. “We have much greater ability to stave off the death that will inevitably afflict us all. But I like to think that the ideal of the doctor and of the doctor-patient relationship has changed little and that that ideal can guide us today as in the days of old.”

► Visit danforthcampus.wustl.edu for more information on the dedication and the lecture series.



Fostering community involvement

The pairing of a top-ranked School of Medicine with a health system that has two top-rated teaching hospitals (Barnes-Jewish and St. Louis Children's) is unique to St. Louis, Lipstein says, emphasizing that it is "up to us and to our successors to decide how to make our unique collaboration one of higher purpose and higher calling."

Lipstein gave an overview of the nation's health condition, saying America, in general, and St. Louis, in particular, is not healthy. Missourians, he says, have a higher incidence of cancer and heart disease and are more likely

to suffer from conditions associated with smoking and obesity.

There also are significant disparities in access to care and health outcomes, he adds. "I sometimes tell people that if you stand under the Arch downtown, and look east, west, north and south, and then you look at health status indicators in each of those geographies ... you would think you were looking at four



Steve H. Lipstein

different countries ... not the same metropolitan area."

He also commented on the high cost of health care, the staggering number of uninsured and the system's high dependence on federal and state tax dollars. But the focus, according to Lipstein, should be on disease prevention, not just managing costs of caring for the sick and injured.

The health system needs to engage the entire community in disease prevention, wellness, effective disease management and personal responsibility for improving health, he says.

"Our higher calling is to lead our respective medical institutions in such a way as to eliminate human illness that need not occur," Lipstein says, "... making use of the discoveries of the past and those that we can make happen on our watch."

Continue asking the big questions

Quoting a line from the Charles Dickens classic *A Tale of Two Cities* — "It was the best of times, it was the worst of times" — Shapiro wondered if Dickens could have known he would be describing the American health care enterprise in the early 21st century.

"The central paradox of medical care in this country is that at a time when our knowledge is the most advanced and we have the best hopes for making inroads into some health problems that have vexed us since the dawn of human history, we face unprecedented challenges as well."

Shapiro says there are four very significant problems in the U.S. health care system: cost, access, quality and disparities.

Idealistic medical students come with the profound desire to help others, as exemplified in the prayer of Maimonides, but their challenges are great, Shapiro says. They must master an exponentially expanding base of facts, learn to manage the flow of information and operate in an increasingly complex environment.



Larry J. Shapiro, MD

In terms of research, today's investigators face the big questions in science and biology, such as applications from the Human Genome Project, says Shapiro. But, he adds, research today is an expensive enterprise, and the quest for financial support can be fatiguing, due to "economic factors of restricted public support for science and profit-driven research programs in industry."

Universities and medical schools are entrusted with the transmission of knowledge, he says, but they also serve as agents of discovery and change.

"We must prepare the next generation of physicians to achieve more than we have," Shapiro says, "not only in their abilities to unlock the secrets of nature, but also to seek a more equitable and balanced approach to health care that is as morally robust as it is scientifically rigorous."

Mahalo nui loa

Grateful alumnus says “Thank you very much,” gives back

In the summer of 1950, Rudolph J. Maffei, MD 48, was vacationing at his family’s farm outside of Portland OR. A phone call abruptly halted both his respite and his medical residency in St. Louis; Maffei had been drafted into the U.S. Army. He was ordered to report immediately to Camp Stoneman CA.

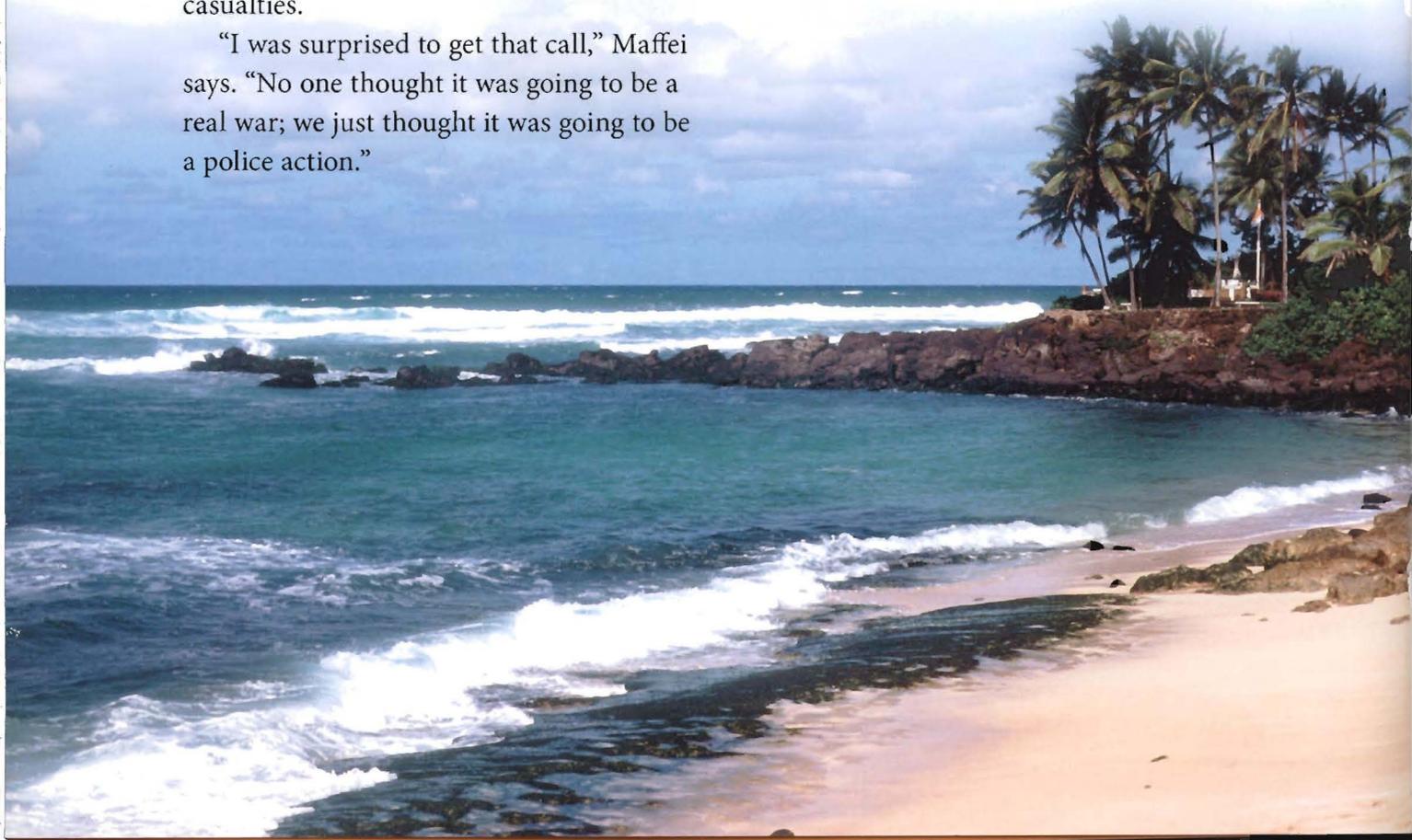
Five days earlier, the North Korean army had stormed across the 38th parallel — the boundary between North and South Korea — provoking a civil war that would last three years and produce more than 2.5 million casualties.

“I was surprised to get that call,” Maffei says. “No one thought it was going to be a real war; we just thought it was going to be a police action.”

Maffei was assigned as a surgeon at a hospital in Yokohama, Japan, and eventually served in the 8063rd Mobile Army Surgical Hospital (MASH).

While in the MASH unit, Maffei saw firsthand the devastation of war, and he notes that many of the people he operated on were Korean locals who had been shot or injured by bombs.

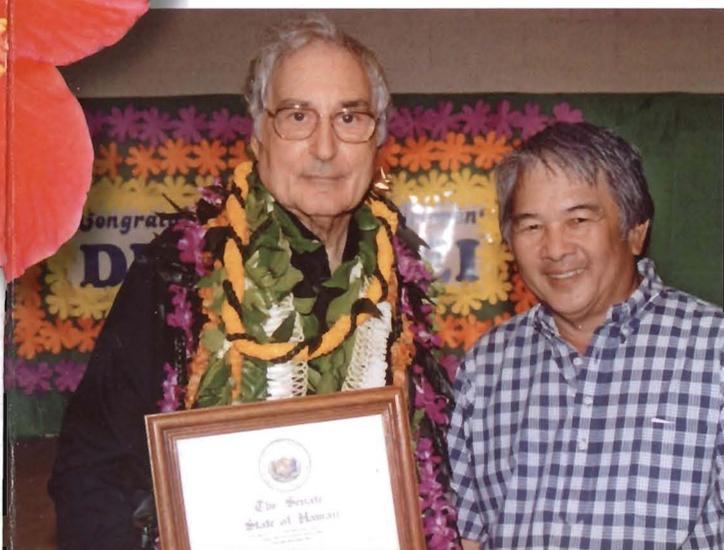
“It was very scary because I was forced to do things that I wasn’t really qualified yet to do,” Maffei recalls. “I handled 1,800 cases in the two years I spent in Japan and Korea.”



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“I wanted to give back to the School of Medicine for giving me the ability to be a doctor.”

—RUDOLPH J. MAFFEI, MD 48



Rudolph J. Maffei, MD 48, left, receives a letter of recognition from former Hawaii State Sen. Cal Kawamoto, one of the hundreds of colleagues, co-workers, patients and friends who attended Maffei's retirement celebration in 1998.

Over his 50-year career as a general surgeon, Maffei has helped thousands more patients, performing colectomies, cancer surgeries, gastrectomies and many other procedures.

“Surgery is something that you feel, and it was something that I enjoyed doing,” says Maffei, who retired in 1998.

Maffei's stint in Japan and Korea was not his first brush with military service or with the Asian Pacific. After attending the University of Oregon as a pre-med major for his first year of college, he was drafted by the U.S. Navy during World War II and completed part of his training at a naval unit at what was then Southeast Missouri State Teachers College in Cape Girardeau MO. And, while Maffei was growing up, his family often visited Honolulu HI, where an aunt and uncle owned two hotels.

When Maffei later finished his undergraduate work and decided to apply to medical school, he was influenced in his selection of Washington University School of Medicine by the prestigious faculty members among its ranks, which included many noted surgeons as well as Joseph Erlanger, MD, then under consideration for the Nobel Prize.

“I figured if Washington University was good enough to have such an illustrious faculty, I would be proud to be accepted,” he says.

After completing his Army service, Maffei returned to City Hospital in St. Louis to finish his surgery residency. He then practiced surgery solo in Portland for two years before accepting an offer from the Waipahu Clinic, a private practice in Honolulu, in 1958. He fell in love with the weather and the people and decided to settle there permanently.

Maffei says that being a student at Washington University School of Medicine prepared him well for his medical career.

“I wanted to give back to the School of Medicine for giving me the ability to be a doctor,” he says.

To that end, Maffei has bequeathed two scholarships to honor his mother, Lena Francone Maffei, and his grandmother, Maria Francone Pepe.

“My mother and grandmother had a great influence on me,” he says. “They were both kind and generous, and I loved them very much.”

Maffei lives in Aiea, a subdivision near downtown Honolulu, in a home that sits 600 feet above Pearl Harbor and overlooks the southern tip of Oahu. His property includes an orchard with guavas, oranges, tangerines, lemons and lychee.

A man of many interests, Maffei successfully bred Afghan Hounds and Salukis for more than 30 years. Among them was the first Hawaiian-born Afghan champion, a dog named Champion Mafreeka's Akahi; many more champions were bred by Mafreeka Kennels.

He also is a collector of canine art and Asian art, much of which he acquired while stationed in Japan.

Of his fondness for Hawaii, Maffei says: “I've been here for almost 50 years. It's my home.”

Since retirement, Maffei has taken computer classes and attempted to learn Italian at the University of Hawaii. For the past five years, he has served as a guardian *ad litem* for the Family Court of the Oahu First Circuit. As a trained volunteer appointed by the court to advocate for the best interests of abused or neglected children, he has overseen two successful adoptions in the past year.

“The work is very meaningful to me since I never had children of my own,” he says. “I enjoy children and simply like the work.”

Washington University also is very dear to Maffei, and he's grateful for his affiliation.

“I think the School of Medicine is one of the finest in the country,” he says. “I'm very proud that I am a graduate.”

Caring and sharing

Celebrating people, places and School of Nursing memories

The School of Nursing celebrated another festive all-class reunion in September. Enthusiastic nursing alumnae and their guests gathered to greet classmates and former instructors. Some toured the medical center, while others spent time with Becker Medical Library's archivists telling stories for an oral history project.



Sherry Sherwood Stewart, NU 45, contributed to her reunion by participating in an oral history project conducted by Bernard Becker Medical Library archivists.



Sporting her nursing cap, Joanne Stansfield Parrott, NU 50, scans the crowd for familiar faces.



Patsy Walker and Mary Matheny Leonard, 1947 graduates, welcomed several classmates who traveled to St. Louis for the reunion.



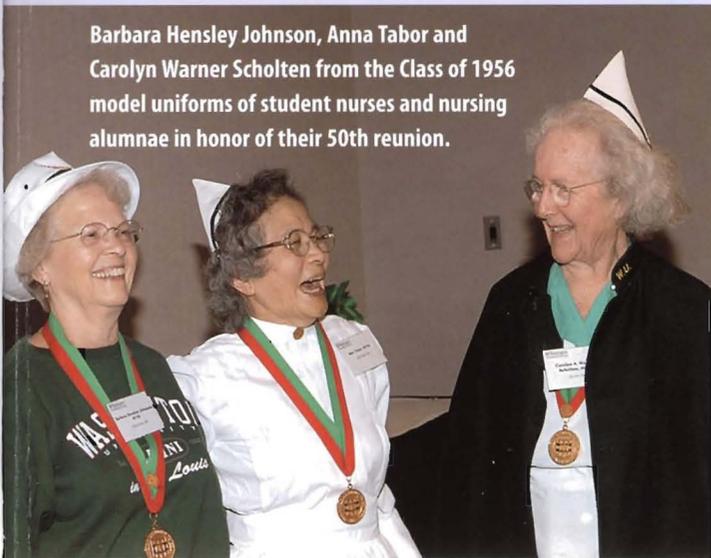
Kathryn Robbs Kowalski, NU 53, and Helen Schake Hoertel, NU 53, crossed many miles to see each other again.



Doris Baur Schroer, NU 48, and Alice Comstock Kasten, NU 48, smile for the camera.



Barbara Hensley Johnson, Anna Tabor and Carolyn Warner Scholten from the Class of 1956 model uniforms of student nurses and nursing alumnae in honor of their 50th reunion.



Alumnae from 1946 celebrated their 60th reunion with a weekend of activities.



Carol Rossel, NU 60, hugs her friend and classmate Barbara Bradshaw, NU 60.



After the luncheon, some graduates from the Class of 1947 viewed a display of School of Nursing photographs and memorabilia in the Becker Library's Archives Reading Room.



Enid Breen, NU 42, acknowledges the applause of fellow nursing alumnae during the luncheon.



Ginny Bastian Copp, NU 47, shares memories with classmate Janet Neal Hueckel, NU 47.

Second Century Awards

The 2006 Second Century Awards were presented at a dinner at the Ritz-Carlton Hotel in Clayton on September 16. The awards, bestowed annually since 1991, mark Washington University School of Medicine's entry into its second century of leadership in patient care, teaching and research.

James P. Crane, MD, is the associate vice chancellor for clinical affairs and professor of obstetrics and gynecology and of radiology at Washington University School of Medicine. He also is chief executive officer of the school's Faculty Practice Plan, which ranks as the third-largest academic medical practice in the United States.

Crane oversees several clinical practice support operations and works with the 14 clinical department chairs and more than 980 faculty physicians to coordinate clinical program development and to make the School of Medicine's clinical enterprise more efficient and responsive to the needs of patients and referring physicians.

He led the planning of the Center for Advanced Medicine, a 710,000-square-foot ambulatory care facility that offers patient-centered, multi-disciplinary care.

Crane established the first reproductive genetics program at the School of Medicine and became a national leader in developing new prenatal diagnostic techniques. He also served as obstetrician-in-chief at the former Jewish Hospital, where he co-led the establishment of Missouri's first successful *in vitro* fertilization program.

In the greater community, Crane is actively involved in efforts to eliminate health disparities and improve access to care for the uninsured.

The Edward Mallinckrodt, Jr.

Foundation was established in 1953 to further medical education and research. Today, the foundation supports investigators who are beginning their independent research careers.

The foundation has provided research support for 28 new faculty members at the School of Medicine since 1991; currently, eight are receiving grants. Since its inception, the foundation has made grants to Washington University School of Medicine totaling more than \$10 million, including the Edward Mallinckrodt, Jr., Chair of Physiology and Biophysics (1968), currently held by Philip D. Stahl, PhD, and the Oliver M. Langenberg Distinguished Professorship of the Science and Practice of Medicine (2006), held by Anthony Muslin, MD.

Jessie L. Ternberg, PhD, MD, is emeritus professor of surgery and professor of surgery in pediatrics at Washington University School of Medicine.

She joined the faculty in 1959 as an instructor in surgery, rising through the ranks to become professor of surgery. She organized the Department of Surgery's Division of Pediatric Surgery and, in 1975, was named professor of surgery in pediatrics.

Ternberg pioneered the use of electron spin resonance to show the presence of free radicals in viable tissue, demonstrating that differences existed between normal and diseased tissues. She also studied short gut syndrome and bowel infarction.

In 1998, former pediatric surgical residents and colleagues established the Jessie L. Ternberg Award, given annually at the School of Medicine to a female member of the graduating class best exemplifying Ternberg's "indomitable spirit of determination, perseverance and dedication to her patients."

James P. Crane, MD, Jessie L. Ternberg, PhD, MD, and Oliver M. Langenberg, chairman of the Edward Mallinckrodt, Jr. Foundation, received awards at the 2006 Second Century ceremony.





Committee volunteers M. Carolyn Baum, PhD, director of the Program in Occupational Therapy, and James E. Marks, MD 65, prepare to work.

On a Monday evening in late September, John A. (Jack) Pierce, MD, presided over the annual kickoff meeting for the School of Medicine's Eliot Society membership committee. Pierce, professor emeritus of pulmonary medicine, is serving as chair of the School of Medicine's 2006-07 William Greenleaf Eliot Society. He welcomed nearly 25 volunteers who will personally be inviting friends and colleagues to join this year's Eliot Society with a gift of at least \$1,000 in support of the School's Annual Fund.

Pierce's first order of business was to congratulate the committee members for their successful efforts the previous year. Under the leadership of last year's chair, Dolores R. Tucker, MD 74, assistant professor of clinical medicine (dermatology), the Eliot Society grew to a record 884 members. Tucker, serving on this year's committee as well, also thanked the members for their hard work.

During the meeting, committee members were treated to an inside perspective on the School of Medicine and its students. Guests W. Edwin Dodson, MD, associate vice chancellor and associate dean for admissions, and Alison J. Whelan, MD 86, associate dean for medical student education, offered

Record-setting Eliot Society pledges continued success

insight into how the School of Medicine continues to rank among the top medical schools in the nation. Members also heard reports from Emily L. Smith, MD 68, Annual Fund chair, and from Phillip E. Korenblat, MD, former house staff and professor of clinical medicine, on the ongoing success of the Scholars in Medicine program.

The volunteer committee members include MD alumni, former house staff and faculty, as well as the directors of the programs in Audiology and Communication Sciences, Health Administration, Occupational Therapy and Physical Therapy. The committee wrapped up its meeting by accepting the challenge to take Eliot Society membership to another record level.



The face of the School of Medicine's Eliot Society: Chair John A. (Jack) Pierce, MD, welcomes attendees to this year's kickoff meeting.

Planning under way for MD Reunion 2007: Please join us

School of Medicine alumni

are looking ahead to

Reunion 2007 to be held

May 10-12. Volunteers

from each class are

planning friendly gatherings.



WASHINGTON UNIVERSITY
SCHOOL OF MEDICINE

Reunion Social Chairs are planning the festivities

1942

Jack Martz, MD, and
Robert K. Royce, MD

1947

George Sato, MD

1952

John D. Davidson, MD

1957

Frederick D. Peterson, MD,
and Kenneth R. Smith Jr., MD

1962

Gerald Medoff, MD

1967

Ira J. Kodner, MD

1972

Daniel E. Potts, MD

1977

Stuart R. Schlanger, MD

1982

Mary A. Murphy, MD

1987

Laura J. Bierut, MD, and
David Jick, MD

1992

Susan Gudeman Laenger, MD

1997

David S. Lotsoff, MD

For more details on MD Reunion 2007, visit: medicalalumni.wustl.edu

1940s

D. Cramer Reed, MD 41

Reed was honored by the University of Kansas Medical Alumni Association with its 2006 Honorary Medical Alumnus Award. Reed is the founding dean of the KU School of Medicine-Wichita. He stepped down as dean in 1978 but has continued as clinical professor of surgery at the KU School of Medicine-Wichita and as clinical professor of health education at Wichita State University.

William T. Moss, MD 44

Moss was honored with the designation of Fellow of the American Society for Therapeutic Radiology and Oncology during the society's 48th annual meeting in November 2006.

Paul F. Brown, MD 47

Brown reports on his ever-expanding family. He has "seven lovely children, all accomplished in various fields, 23 even lovelier grandchildren, and 10 great-grandchildren in the process of becoming lovely."

1950s

Warren W. Simonds, HA 52

Simonds is spending his retirement in Cumming GA, which is in the Atlanta area.

James B. Strachan Jr., LA 50, MD 52

Strachan received the Arthritis Foundation Lifetime Achievement Award for 2005 in Jacksonville FL. In retirement, he enjoys gardening, travel and spending time with his children and grandchildren.

Victor A. Marcial, MD, HS 55

Marcial was named a Fellow of the American Society for Therapeutic Radiology and Oncology during the society's 48th annual meeting in November 2006.

Adel A. Yunis, MD, HS 57

Yunis' new autobiography, *Call Me Del: Dogged in the Pursuit of Excellence* (trafford.com/05-0708) describes his scientific achievements and disappointments, as well as some of his thoughts on what

makes a medical school great. Several words were omitted in the Fall 2006 Class Note on Yunis; *Outlook* regrets the error.

Godofredo M. Herzog, MD 57

Herzog lives in Longboat Key FL and conducts surveys of ambulatory surgery centers, medical practices and HMOs for national accreditation.

Robert D. Utiger, MD 57

Utiger received the Sidney H. Ingbar Distinguished Service Award from The Endocrine Society in 2006. He has retired as deputy editor of the *New England Journal of Medicine* and now edits *Clinical Thyroidology*.

Gerald E. Hanks, MD 59

Hanks was honored with the designation of Fellow of the American Society for Therapeutic Radiology and Oncology during the society's 48th annual meeting in November 2006.

1960s

Leroy E. Kagle Jr., MD 62

Kagle teaches math, law, music and English at the local community college in Lothian MD, and he enjoys spending his spare time practicing the piano, writing music, learning Spanish, playing bridge, ballroom dancing, traveling and reading (especially history).

David L. Dunner, MD 65, HS 69

After 40 years of academic involvement (27 at the University of Washington), Dunner became professor emeritus in the Department of Psychiatry and Behavioral Sciences and moved the Center for Anxiety and Depression to a private practice setting in Mercer Island WA. He specializes in consulting on difficult-to-treat depressed, bipolar and anxious patients and continues to publish and teach at continuing medical education activities.

Stephen B. Lewis, MD 66

Lewis has joined the board of directors of the Annapolis Center for Science-Based Public Policy, a national nonprofit educational organization that supports and promotes responsible energy, environmental, health and safety policy making through the use of sound science.

Michael Adams, MD 67

Adams is an assistant clinical professor of medicine in the UCSF Fresno Medical Education Program, a major branch of the University of California, San Francisco's School of Medicine. He is proud to announce that he has become a grandfather. In his spare time he enjoys skiing, hiking, reading and traveling.

Benjamin C.K. Kwan, MD 67

Kwan is a clinical professor of ophthalmology at the University of California, Los Angeles. Retired from practice, he continues to teach. He formerly served as president of the Chinese-American Ophthalmological Society and Chinese Physicians Society of Southern California. His hobbies include singing, ballroom dancing and golf.

Michael R. Treister, MD 67

Treister played his flute in the Icons Flute Orchestra at the annual meeting of the National Flute Association in Pittsburgh PA. He serves on the organization's Performance Health Care Committee and on the editorial board of its quarterly journal *The Flutist*. Treister also recently won second and fourth place ribbons in the adult competition at the Porter County Fair for clothing items that he knit during the past year.

1970s

Toby L. Simon, MD 70

Simon accepted a new position as corporate medical director for ZLB Plasma Services, a division of ZLB Behring, a pharmaceutical company specializing in biologics. The company is located in Boca Raton FL.

Joel E. Tepper, MD 72

Tepper was named a Fellow of the American Society for Therapeutic Radiology and Oncology during the society's 48th annual meeting in November 2006. He serves as professor and chair of the Department of Radiation Oncology at the University of North Carolina School of Medicine at Chapel Hill.

Michael E. Cain, MD, HS 77

Cain was named dean of the School of Medicine and Biomedical Sciences at the University at Buffalo, effective Nov. 1, 2006. Cain had been director of the Cardiovascular Division and the Tobias and Hortense Lewin Professor of Medicine at Washington University School of Medicine. The University at Buffalo is the largest and most comprehensive campus of the State University of New York.

Jeffrey M. Fried, HA 79

Fried is CEO of Beebe Medical Center in Lewes DE, which won the 2006 Top Leadership Teams in Healthcare Award for small hospitals from HealthLeaders Media. The medical center, which serves the beach community along the Delaware shore, is preparing to launch new open-heart surgery and interventional cardiology programs and is expanding its Tunnell Cancer Center. Fried has served as CEO since 1994.

1980s

Randall W. Tobler, MD 84, HS 88

Tobler and his family have moved to Memphis MO, where he has joined the Scotland County Hospital's Women's Center as an obstetrician/gynecologist. Tobler will continue his television and radio work, begun in St. Louis, by broadcasting two shows — "The Randy Tobler Show," a syndicated current events talk show, and "Vital Signs," a medical show — from Memphis in the future.

Carlos Buznego, LA 82, MD 87

Buznego is president of his 12-physician practice, the Center for Excellence in Eyecare in Miami FL. He has served as president of the Dade County Medical Association and of the Florida Society of Ophthalmology. He enjoys boating, snow skiing and stays active in medical politics.

Douglas J. Johnson, MD 87

Johnson, a family physician, lives in Morganfield KY and is clinical assistant professor of family medicine at both the University of Kentucky and the University of Louisville. His four children include an adopted son who is from Khabarovsk,

It's *your* reunion. Help us get you to the right one!

MD alumni who earned an additional degree or took a year off from medical school for any reason may not be getting information about their preferred reunion. If you graduated in a different year than the classmates you'd like to see at a reunion, please get in touch with Medical Alumni & Development at (314) 286-0010, toll-free (877) 816-2586, or alumni@medicine.wustl.edu.

Tell us your preferred reunion year, and we'll make sure you find familiar faces back on campus.



Russia. He enjoys, among other things, competitive racewalking and singing in a gospel quartet.

David G. Standaert, MD 88, PhD 88

Standaert has been named the first John T. and Juanelle D. Strain Endowed Chair in Neurology at the University of Alabama at Birmingham. He is also the director of the Division of Movement Disorders in the Department of Neurology and the director of the UAB Center for Neurodegeneration and Experimental Therapeutics.

Lisa Ann Ferguson, PT 88

Ferguson recently became board-certified as an orthopaedic clinical specialist by the American Board of Physical Therapy Specialties. She practices in St. Petersburg FL at a hospital-based outpatient clinic.

1990s

William Osborn Hartzell, MD, HS 95

Hartzell was appointed to the medical staff of Whittier Rehabilitation Hospital in June 2006. In his new position as pulmonologist, Hartzell is responsible for overseeing the rehabilitation programs and orthopaedic care of Whittier's residents.

Martin J. Bonick, HA 97, SI 97

Bonick was named an "Achiever Under 40" by the Oklahoma City *Journal Record*. He has been chief executive officer of the Tulsa Regional Medical Center since June 2005.

Mark S. Cohen, EN 94, MD 98

Cohen is assistant professor of surgery, pharmacology, toxicology and therapeutics at the University of Kansas Medical

Center. He recently completed his general surgery residency at Barnes-Jewish Hospital as well as a three-year research fellowship in endocrine and oncologic surgery at Washington University School of Medicine.

Jennifer M. Hausladen, MD 98, MA 98, and

Derek A. Hausladen, MD 98

Jen has settled into a busy pediatrics practice in Dartmouth MA, and Derek has joined a group of urologists in town. They enjoy sailing in Buzzards Bay and spending family time with their daughters, Johanna, Lilly and Sophia.

Kaye Reid Lombardo, MD 98

Lombardo is completing a fellowship in hepatobiliary and pancreatic surgery at Mayo Clinic in Rochester MN. She married Carlo Lombardo on June 23, 2006.

Jolie C. Holschen, LA 95, MD 99

Holschen practices emergency medicine and primary care sports medicine at the University of Michigan. She also continues to work with the USA Hockey National Team Development Program as a team physician.

Richard C. Tam, MD 99

Tam and his spouse, Christina, live outside of Toledo OH and have started their own general ophthalmology and glaucoma practice. They have a 1-year-old daughter, Claire.

2000s

Nathan E. Hellman, MD 00, PhD 00

Hellman is "taking a break" by working in a research lab in Paris after completing his residency in internal medicine at the Hospital of the University of Pennsylvania. He'll be back in the United States next year, when he plans to do a fellowship in nephrology.

Monica L. Hulbert, MD 00

Hulbert and her family have left St. Louis (after 10 years) and moved to Indianapolis IN where she is beginning a position in pediatric hematology/oncology at Indiana University School of Medicine and Riley Hospital for Children.

Dena M. Minning, MD 00, PhD 00

Minning has been named to receive a Henry Crown Fellowship, designed to engage young leaders in a dialogue about leadership with a diverse group of their peers. This Aspen Institute program brings together young executives and professionals under 45 years of age who have already achieved conspicuous success in their chosen fields. The new Henry Crown Fellows will meet four times over a two-year period and will undertake individual community service commitments.

Kalley T. Sadler, HA 01

Sadler is the interim coordinator of cancer education/business development for The Don & Sybil Harrington Cancer Center in Amarillo TX, where she handles prevention education, publications and other external relations.

Ting-Hsu Chen, MD 01

Chen is finishing his third and final year of pulmonary fellowship at Boston University.

Dora Y. Ho, MD 01

Ho finished her fellowship training in infectious diseases in June 2006 and is now on the faculty at Stanford University School of Medicine as clinical assistant professor, specializing in infections of immunocompromised patients. She also spends time playing the pipe organ.

Karen M. Burgner, MD 03

Burgner has joined Edward Medical Group in the Chicago area. She specializes in internal medicine.

Adit A. Ginde, MD 03

Ginde has received one of the Emergency Medicine Foundation's top awards, a Research Fellowship Grant. He is a research fellow in emergency medicine at Beth Israel Deaconess Medical Center in Boston and is pursuing a master's degree at the Harvard School of Public Health.

Casey T. Swenson, MD 03

Swenson is beginning a family practice at Belle Fourche Regional Clinic in Belle Fourche SD. The clinic has undergone renovations to prepare for Swenson's practice and to address recent growth in the community.

IN MEMORY

Robert F. Parker, LA 27, MD 29

Parker died on Aug. 5, 2006, in Cleveland Heights OH. He was 98. He served on the faculty of Case Western Reserve University School of Medicine from 1936 to 1977, retiring as professor and dean emeritus of medical education. He is credited with helping to introduce an instruction method in the early 1950s that encouraged students' interactions with patients

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Washington University in St. Louis
SCHOOL OF MEDICINE

during their first year of medical school rather than the third year.

Mary Weiss Barnhart, NU 34

Barnhart died at the age of 93 in Indiana on March 11, 2006. She was an elder at the First Presbyterian Church and a member of the Social Literary Society, the Vanderburgh County Medical Auxiliary and Bible study fellowship. She loved playing the violin. She was preceded in death by her husband, **Willard T. Barnhart, MD 33**, in 1980, her son in 2003, her sister and her brother.

E. Norris Robertson Jr., MD 37

Robertson died on Sept. 12, 2006, at the age of 94. An ophthalmologist by training, Robertson practiced medicine in Oklahoma City OK for more than 50 years before moving back to St. Louis to be near family. He is survived by his daughter, his son and four grandchildren.

Edward C. Spitze Jr., MD 45

Spitze died Aug. 29, 2006, in his hometown of Belleville IL. He was 85. After serving as a flight surgeon in the U.S. Air Force during World War II, he returned to the St. Louis Metro East area, becoming the first thoracic surgeon in the region. He is survived by his daughter, two sons and three grandchildren.

Robert C. Dodd, LA 44, OT 45

Dodd died July 18, 2006, at the age of 87. He lived in Kenmore NY and is survived by four children, nine grandchildren and two great-granddaughters.

Barbara B. McCormick, NU 46

McCormick died on Jan. 29, 2006, at the age of 82. She was a resident of West Lafayette IN.

Marilyn Maasberg Standring, NU 48

Standring died on April 25, 2006, at her home in Evansville IN. She is survived by her husband, William C. Standring, DE 48, a daughter, a son and three grandchildren.

Donald C. Bilhorn, HA 49

Bilhorn, of Hendersonville NC, died Aug. 11, 2006. He was employed for 33 years by Mather Memorial Hospital in Port Jefferson NY, retiring in 1987. He was a member of the Rotary Club for 30 years and was very active at Mount Pisgah Lutheran Church. He is survived by his wife, one son, two daughters and five grandchildren.

Albert Goldstein, MD 50

Goldstein died May 6, 2006, at Pomona Valley Hospital Medical Center in California, where he had practiced medicine for many years, delivering more than 8,000 babies. He was a violinist, lover of classical music, and a chemist who had worked on the Manhattan Project. He is survived by his wife, two daughters and three grandsons.

Rosemary Hyer Watson, OT 50

Watson died on Aug. 26, 2006, in Baton Rouge LA at the age of 78. She worked for the Veterans Administration Hospital for 35 years. She is survived by two daughters and four grandchildren.

Richard M. Peters Sr., HS 52

Peters died Sept. 1, 2006, at his home in Palo Alto CA at the age of 84. A distinguished cardiothoracic surgeon, he introduced one of the first postgraduate programs in bioengineering at the University of North Carolina and later joined the University of California, San Diego. After retiring, he co-founded the electronic health records firm Oceania. Survivors include two daughters, a son and four grandchildren.

William L. Donegan, HS

Donegan died on July 17, 2006. He was 73 and a resident of Milwaukee WI. A surgical oncologist, he served on the faculty of the Medical College of Wisconsin for 29 years. Survivors include his spouse, **Judith H. Donegan, MD 64**, and two children.

Philipp E. Bornstein, MD 67

Bornstein died on Aug. 10, 2006, at his home in Springfield IL. He was 65. He served as a psychiatrist at the Vine Street Clinic in Springfield, specializing in geriatric and forensic psychiatry. He taught clinical psychiatry to medical students and residents at Southern Illinois University School of Medicine. He is survived by his son and his daughter.

Sheila E. Hodgson, MD, HS 69

Hodgson died on July 12, 2005, in Columbus OH at the age of 75. A native of Boston, England, she served on the faculty of Ohio State University as a radiation oncologist for the majority of her career.

Kathryn A. McThompson Maule, NU 69

Maule died on Aug. 21, 2006, at the age of 67. She was a nurse at Barnes Hospital and

at St. Anthony's Medical Center in St. Louis, each for more than 20 years. She is survived by her husband and her daughter.

John P. Feighner, MD, HS 70

Feighner died Aug. 15, 2006, at his home in Rancho Santa Fe CA after a yearlong battle with leukemia. He was the founder and former president of the Feighner Research Institute, a clinical neuro-psychopharmacology research center in San Diego CA. He was known as one of the world's leading experts in clinical psychopharmacology and the development of new antidepressants. Most recently, he served as president of Tetragenex, a biopharmaceutical company. He is survived by his wife and three children.

Charles L. Robinette Jr., MD 78

Robinette died Sept. 9, 2006, at the age of 63. He lived in Nashville TN. Survivors include his wife, Susan Robinette, a son and a daughter.

FACULTY

Michael M. Karl, MD, HS 40

Karl, widely recognized in St. Louis and nationally as one of the country's outstanding general internists, died on Nov. 22, 2006, at his home in Richmond Heights MO. He was 91. A professor of clinical medicine at Washington University School of Medicine, he was co-founder with **I. Jerome Flance, MD 35**, of the Maryland Medical Group, where he practiced for nearly 50 years. He introduced Missouri's first needle biopsy of the liver in 1946. Karl was one of few general internists to become a member of the Institute of Medicine of the National Academy of Sciences. He was a master of the American College of Physicians (ACP) and governor of the ACP for the State of Missouri, and he received the ACP Laureate Award in 1988. He was born in 1915 in Milwaukee. In 1938, he graduated *summa cum laude* in medicine at the University of Louisville. In 1941, Karl married his high-school sweetheart, the late **Irene E. Karl, MD, PhD**, who became one of the first female biochemists in the United States. Karl is survived by two daughters and three grandchildren.



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Jerry Flance, MD 35, right, with Michael J. Holtzman, MD, the Selma and Herman Seldin Professor of Medicine. Flance supports Holtzman's pulmonary research and has decided to leave a legacy by including the School of Medicine in his estate plans.

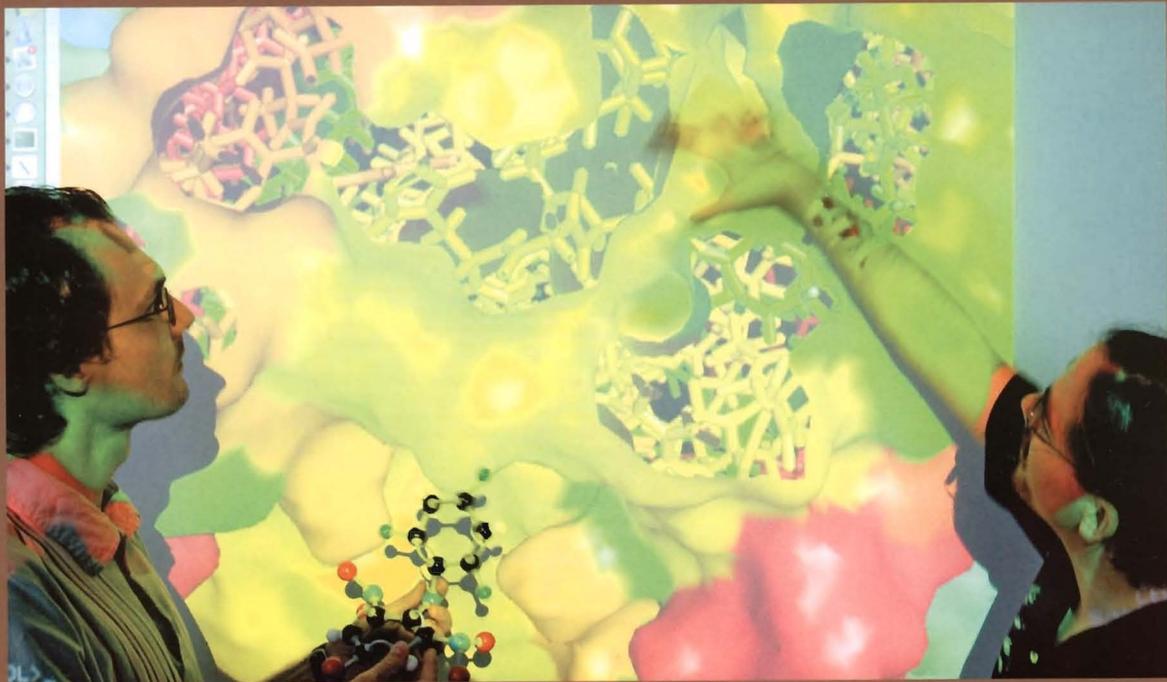
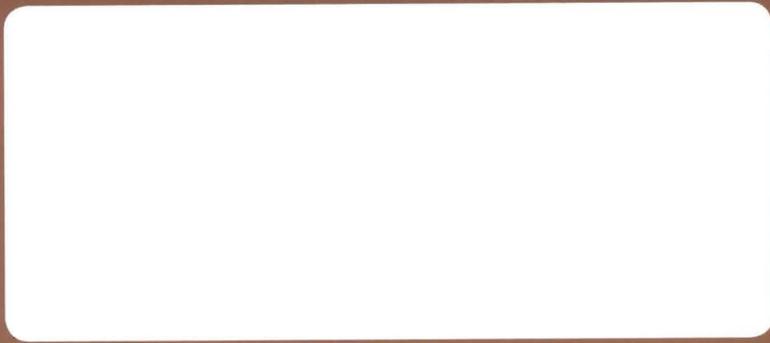
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RAY MARKLIN



Flora and faculty Shashikant Kulkarni, PhD, assistant professor of pediatrics, and Shamika Ketkar, a senior statistical data analyst in the Department of Biostatistics, admire the plant life at the Missouri Botanical Garden, the site of this year's New Faculty Reception held on October 4. "Walla Walla Onions" float in the reflecting ponds beneath Carl Milles' "Winged Angels." The glass sculptures were created by Dale Chihuly and his team of Seattle studio artisans for the "Glass in the Garden" exhibition.



ROBERT BOSTON

Taking note of nickel Researchers in the Department of Biochemistry and Molecular Biophysics are using experimental and computational approaches to understand the function of the nickel-sensing protein, NikR, and how it controls the nickel-dependent metabolism of gastrointestinal microbes. Above, Matt Wyczalkowski, left, and Brett Olsen, graduate students in the Center for Computational Biology, examine an image of the protein. Nickel nourishes the microbes, increasing their recovery of dietary nutrients and enabling pathogenic bacteria, such as *Helicobacter pylori*, to survive in the acid stomach environment.

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