

# Outlook

SUMMER 2000

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE



The Whipple Effect

SOUND CONTROL

ASSAILING ALZHEIMER'S

CANCER PSYCHOLOGY

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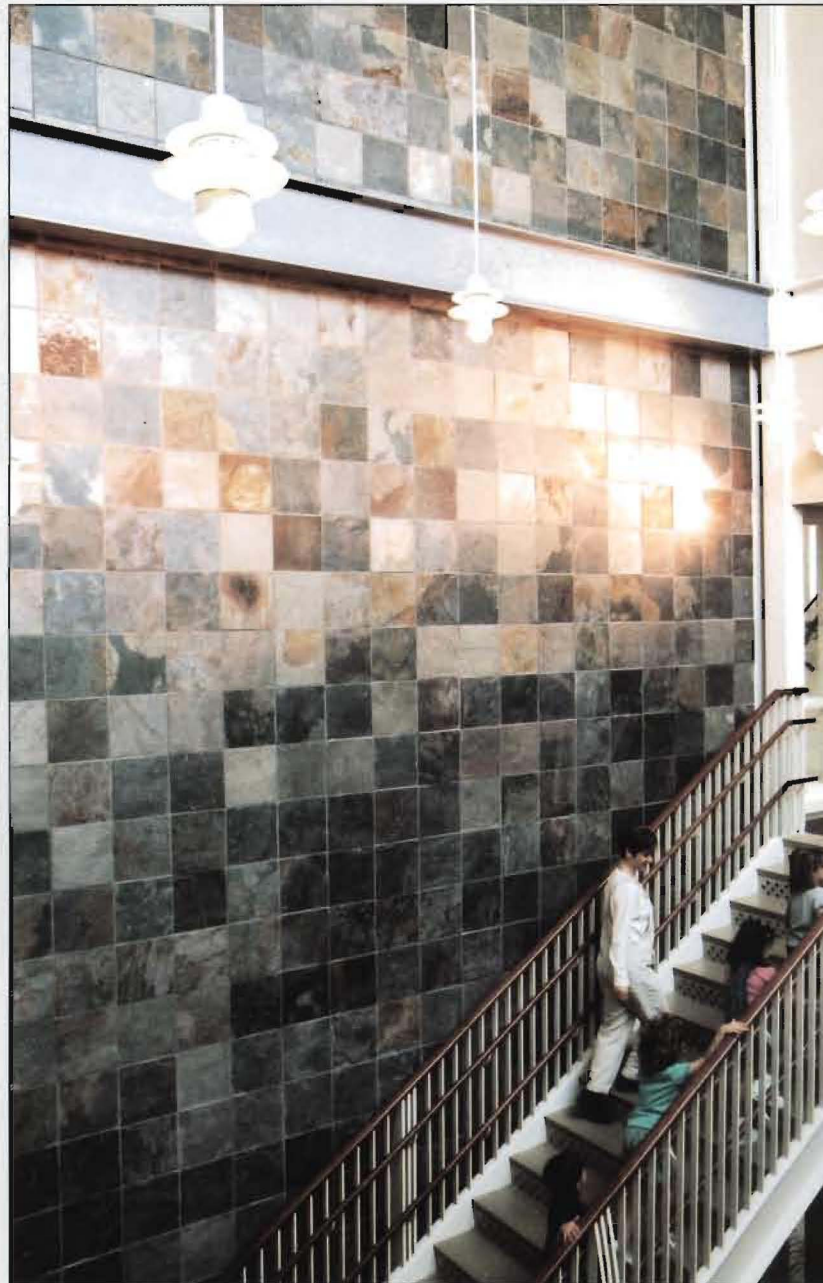
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School of Medicine

**Cover**

Innovative work by Steven M. Strasberg, MD, Pruet Professor of Surgery at the School of Medicine, and a select team of surgeons, is improving the survival of patients with some forms of pancreatic cancer. To learn more about the surgical techniques they have developed and their ongoing research to thwart the spread of pancreatic cancer, please turn to page 16.



**Ascending new heights** Central Institute for the Deaf lower-school teacher Amy McDonald and a small group of students climb the elegant central staircase in the atrium of CID's newly constructed school. The 42,000-square-foot facility was officially dedicated at a ceremony held in January. For more on the school, please turn to page 12.

# Outlook

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*See page 36*

## Class Notes Update Yourself!

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see page 36



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# Class Notes

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on page 36.



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# Outlook

## FEATURES

### 8 **Where Memory Lapses Dwell** by Linda Sage

Scientists dissect the mystery of Alzheimer's disease by hunting for genes, monitoring events that damage brain cells and imaging patients' brains.

### 12 **Turning Down the Volume** by Holly Edmiston

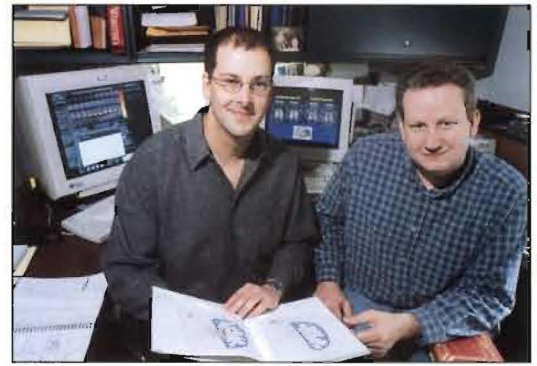
Specially designed acoustics place Central Institute for the Deaf's new oral school at the leading edge of education for the hearing impaired.

### 16 **Operation Whipple** by Candace O'Connor

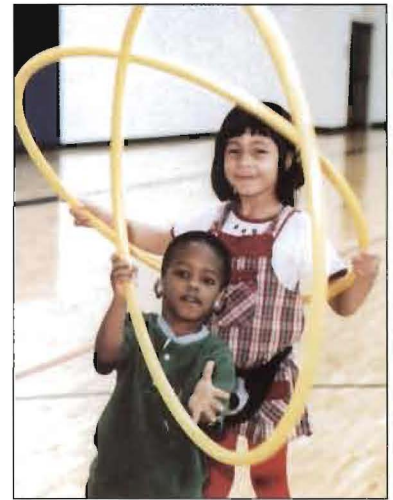
An improved surgical procedure being performed here gives some pancreatic cancer victims a chance at life.

### 20 **State of Mind** by Holly Edmiston

At the Alvin J. Siteman Cancer Center, psychologists work alongside medical specialists to provide patients with ongoing emotional support.



Page 8 Images of memory



Page 12 CID's oral school

## DEPARTMENTS

Pulse 2

Student Stage 24

Alumni Report 26

Reunion 2000 28

Class Notes 33



Page 20 Cancer education and support

# Pulse

## Women advancing in medicine

THREE women students at the School of Medicine were recently recognized for their achievements by the Academic Women's Network (AWN). The AWN recognized Teresa Chapman, who received her medical degree in May, and PhD students in neuroscience Melanie Leitner and Maria Julia Lotharius.



Teresa Chapman

The three received the AWN's Student Leadership Award, which has been presented annually since 1994, and is awarded to students who have demonstrated outstanding leadership in service to or advancement of women within the community.

Chapman has worked as student chapter president of the American Medical Women's Association, co-coordinated a domestic violence symposium, served on the Women in Neuroscience (WIN) steering committee and also orchestrated the student survey component of the LCME survey. In addition, she has actively participated in various research projects and is the recipient of a Howard Hughes Medical Institute fellowship. After graduation, Chapman entered a residency in neurology at UCLA.



Melanie Leitner

Leitner, who also is supported by a Howard Hughes Medical Institute (HHMI) predoctoral fellowship, is an advocate for women's and students' rights in the neuroscience community and is committed to science, ethics and policy development. She has been a student representative to the neuroscience steering committee and the neuroscience subcommittee on mentoring. Leitner was instrumental in organizing WIN and coordinating a "Gender and Science" journal club, as well as organizing a workshop on alternative careers in science through WIN. She has been a member of the Graduate Student Career Advisory Group and also has been involved in community outreach programs such as the Young Scientist Program (YSP), Brain Awareness Week and the MathScience Network for Girls.



Maria Julia Lotharius

Lotharius spearheaded a group of women to launch the first local chapter of WIN. She has been instrumental in moving the organization forward to promote a positive environment for women in the larger neuroscience community through education, advocacy and outreach. As a result of Lotharius' efforts, WIN has promoted networking workshops on topics such as resume writing, job interviewing skills and manuscript/grant writing. She has been influential in developing the WIN website, hosting a booth at Brain Awareness Week at the St. Louis Science Center and has established a "board" of female trainees to oversee the operation of WIN. □

## PT recognizes students

DANELLE Ohmes, a second-year student in the Program in Physical Therapy, has been named Physical Therapy Student of the Year for 2000 by the Missouri Physical Therapy Association (MPTA). Ohmes was nominated by the program's faculty. This is the third consecutive year that a Washington University physical therapy student has received the award.

In addition, two doctoral students in movement science recently were recognized by the physical therapy program for their scholastic accomplishments and professional promise in the field.

Katrina Maluf, a PhD student in movement science, received the Promotion of Doctoral Studies (PODS) Level I award from the Foundation for Physical Therapy. The \$7,500 award is given to post-professional doctoral students and supports the pre-dissertation phase of doctoral studies.

Catherine Lang, also a PhD student in movement science, received the MaryLou Barnes "Adopt-A-Doc" Award for \$10,000 from the Neurology Section of the American Physical Therapy Association. The award was created to ease the shortage of doctorally trained physical therapists (who serve as researchers and academic faculty) by providing financial assistance for the student's educational expenses. Lang also won a \$15,000 PODS Level II award from the Foundation for Physical Therapy. Level II awards help support students in the doctoral candidate phase of post-professional study. □

## DiPersio heads new oncology division

JOHN F. DiPersio, MD, PhD, has been named chief of the division of oncology. The new division combines the previous divisions of medical and molecular oncology and bone marrow transplantation and stem cell biology.

The division will have four sections: molecular oncology, stem cell biology, medical oncology and bone marrow transplantation and leukemia.

Douglas C. Dean, PhD, professor of medicine and of cell biology and physiology, will direct molecular oncology, and Timothy J. Ley, MD, the Alan A. and Edith L. Wolff Professor of Medicine, will direct stem cell biology. DiPersio will direct the remaining two sections.

DiPersio is a professor of medicine, pathology and pediatrics and the Lewis T. and Rosalind B. Apple Chair in Oncology at Barnes-Jewish Hospital.



John F. DiPersio, MD, PhD

DiPersio studies mouse models of leukemia and heads the study group on bone marrow transplantation and leukemia for the Alvin J. Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine. He also conducts research aimed at improving the success of bone marrow and stem cell transplants for the treatment of cancer and blood disorders. □

## Heart care experiences westward expansion

THE School of Medicine and Barnes-Jewish Hospital (BJH) have opened the Heart Care Institute in West St. Louis County to provide the full spectrum of outpatient cardiology services in a convenient setting.

The institute is located in a new medical office building at Mason Road, just south of Olive Boulevard. "The institute is supplementing, not replacing, services currently offered at Barnes-Jewish Hospital," says Craig K. Reiss, MD, associate professor of medicine and medical director of the institute. "Cardiovascular disease is the nation's leading cause of death.

Together, Washington University School of

Medicine and BJH are offering more convenient and comfortable access to some of the nation's leading heart services."

The institute offers full-service diagnostic testing, including stress and non-stress echocardiograms, thallium stress testing and diagnostic catheterization; subspecialty consultations for congestive heart failure, hypertension management, coronary artery disease and chest pain; and management of valvular heart disease, arrhythmia and cardiomyopathy. Cardiac rehabilitation also is offered, including a gym designed exclusively for cardiac patients with telemetry monitoring, indoor track and treadmills. The institute focuses on prevention and wellness, and offers an auditorium for community lectures, a kitchen for heart-healthy cooking demonstrations and a patient library. Jason Gottlieb, executive director, says the institute facilitates a close working relationship with referring physicians as part of the team and promotes the quick return of patients to the referring physicians. "The Heart Care Institute is the first non-hospital site in St. Louis to encompass cardiac wellness, prevention, detection, diagnostics, rehabilitation and clinical investigation all under one roof."

Six WUSM cardiologists at BJH will be based primarily at the Heart Care Institute: Drs. Reiss, Alan N. Weiss, Scott M. Nordlicht, Keith Mankowitz, Charles C. Carey and Mark S. Weinfeld. Physician specialists in cardiac diagnostics, diagnostic imaging and cardiac catheterization, including Victor Davila-Roman, MD, John M. Lasala, MD, PhD, and Ali A. Ehsani, MD, also will see patients there. All the physicians will continue to see patients at BJH. "Physicians will work with clinical nurse specialists, exercise physiologists, dietitians, social workers and cardiovascular technicians to provide patients with a compassionate team approach to care," Gottlieb says. □



The new Heart Care Institute is located at 1020 N. Mason Road.

## Choi to chair NIH panel

DENNIS W. Choi, MD, PhD, the Andrew B. and Gretchen P. Jones Professor and head of the Department of Neurology, has been selected as chair of a blue-ribbon panel that will review the intramural research program at the National Institute of Neurological Disorders and Stroke (NINDS). Choi is an internationally known neuroscientist and president of the Society for Neuroscience.

As well as supporting research at other institutions, NINDS conducts intramural and collaborative research on neurological disorders in its own laboratories, branches and clinics. The panel will review the basic organization of this program, the effectiveness of the board that evaluates its scientists, the balance between clinical- and laboratory-based research, the balance between intramural and extramural funding and the quality of postdoctoral training and career development opportunities at NINDS. It also will address space and recruitment issues.

Choi was appointed by Ruth L. Kirschstein, MD, acting director of the National Institutes of Health. The panel will deliver its findings to Kirschstein, Michael M. Gottesman, MD, deputy director for intramural research, and Gerald D. Fischbach, MD, director of NINDS. □



Dennis W. Choi, MD, PhD

## Human Genome Project: The final phase

THE Human Genome Project international consortium has officially launched the final phase of the human genome sequencing project — the effort to decipher the 3 billion DNA letters that make the human body.

Sixteen genome centers around the world — from the United States and Europe to Japan and China — began Phase II of the Human Genome Project in May.

Phase I was launched in March 1999 and has produced coverage of the vast majority of the human chromosomes in 14 months, at a cost of about \$300 million.

The goal of Phase II is to produce a “finished” sequence of the human genome by filling the gaps in the sequence and by increasing the overall sequence accuracy to 99.99 percent. The process involves performing additional sequencing from the clones used in Phase I, and selecting and sequencing some additional clones from chromosomal segments not covered in Phase I.

“The individual contributions have fallen together to yield a global picture. We can now turn to plugging the remaining holes,” says Robert H. Waterston, MD, PhD, director of the Genome Sequencing Center at the School of Medicine. Waterston, who recently was elected to the National Academy of Sciences, also is the James S. McDonnell Professor of Genetics and head of the Department of Genetics.

In preparation for the second phase, the international consortium has developed high-throughput methods for producing high-quality finished genomic sequence. In the process, approximately 20 percent of the human genome (600 million bases) have been finished to the high standard of 99.99 percent accuracy and completeness. The finished sequence of human chromosome 22 was published in December 1999. □



**AOA Fellowship Recipient** Li Ern Chen, center, a first-year medical student, received the Alpha Omega Alpha Student Research Fellowship from Paul Mennes, MD, left, president of the Washington University chapter of AOA. Chen used the \$3,000 award to conduct an original research project in the laboratory of Robert K. Minkes, MD, PhD, right.



## Sakena Abedin: Medical student, playwright, author

MOTHER and daughter, girlfriend and boyfriend — personal identity is often defined by relationships with other people. Yet what happens when those roles are stretched by time, distance or cultural heritage? How then do we come to know who we are and what is important to us?

Such are the questions raised in third-year medical student Sakena Abedin's theatrical drama, "gitanjali," which won the Performing Arts Department in Arts & Sciences' 1999 A.E. Hotchner Playwriting Competition this spring. The annual competition sponsors a full theatrical production of one work each year. Abedin's play debuted in April.

Abedin says "gitanjali" is set in New York and explores the various tensions between the American-born title character and her Indian-born mother, Meera. Gita, as she's known, has been estranged from her mother since her father's death seven years ago and Meera's subsequent return to India. Now in her early 20s, Gita is surprised when Meera turns up at her apartment for an unexpected visit.

"When her father died, her mother returned to India and Gita was left to reinvent herself. In many ways

she's still dealing with those losses. She's still trying to figure out who she is and what she's going to be."

Abedin began "gitanjali" almost three years ago, while earning a master's degree in anthropology at Stanford University

Though "gitanjali" is Abedin's first full-length drama, the 25-year-old author is already an accomplished writer of short fiction. Her story "Parvati" was published in the July/August 1999 *The New Physician*, while another story, "Mrs. Prem," will be published in the upcoming anthology *Sanskar*, a collection of writing by South Asian-Americans.

A.E. Hotchner, a 1940 graduate of Washington University, is the author of numerous screenplays, novels, plays and memoirs, including the 1966 volume, *Papa Hemingway*, which recounts his long friendship with the famous writer. His memoir, *King of the Hill*, which recounts growing up in St. Louis, was made into a feature film in 1993. □



Sakena Abedin, WUMS III

## Washington University: A leader among medical schools

THE School of Medicine is one of the top five medical schools in the nation, ranks first in student selectivity and has the leading physical therapy program and a top occupational therapy program, according to this year's *U.S. News & World Report* rankings of graduate and professional programs. The magazine publishes the rankings to help students choose graduate schools.

The medical school ranked fourth after Harvard, Johns Hopkins and the University of Pennsylvania, and it placed above Yale, Stanford, Duke and Mayo medical schools. "We are proud to have been ranked fourth overall for two consecutive years," says William A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. "To be among those top-ranked institutions and to have such highly regarded physical and occupational therapy programs is a well-deserved tribute to our fine faculty."

The rankings can be viewed at [www.usnews.com](http://www.usnews.com). They are based on statistics provided by the schools and surveys of deans, faculty members and people who are

most likely to hire new graduates.

The information allows *U.S. News* to rate graduate schools annually on national reputation, research activity, faculty resources and student selectivity. The last is a quality measure that reflects the entering class' undergraduate grade point average and scores on admissions exams. This is the third consecutive year the medical school has been rated No. 1 in student selectivity. "We are especially proud to be attracting the best students in the nation on such a consistent basis," Peck says.

Specialty areas at the School of Medicine listed among the nation's best include: physical therapy (1), occupational therapy (3), microbiology (4), internal medicine (5), neurosciences (tied for 5th), pediatrics (tied for 6th), pharmacology/toxicology (8), drug/alcohol abuse (tied for 10th) and health services administration (tied for 12th).

The School of Medicine has placed in the top 10 since *U.S. News* began ranking medical schools in 1987. □

## Scientists demonstrate that cells can repair damaged spinal cord

SCIENTISTS have trained a workforce of cells to enter the injured spinal cord and rewrap damaged lines. Using simple and inexpensive techniques, they turned embryonic stem cells into nervous system cells called oligodendrocytes. When the oligodendrocytes were injected into the spinal cord of injured or mutant rats, they reinsulated naked nerve axons. These long arms of nerve cells carry messages up and down the spinal cord.

"This is the first demonstration that oligodendrocytes derived from embryonic stem cells can remyelinate in the injured adult nervous system," says John McDonald, MD, PhD, assistant professor of neurology and neurological surgery. "That is relevant because conditions that result in myelin loss, such as spinal cord injury, stroke, multiple sclerosis and transverse myelinitis, occur

mainly in adults."

McDonald's research group reported its results in the May 23 issue of *Proceedings of the National Academy of Sciences*.

Myelin is the fatty material that insulates the nervous system's communication lines. These lines, formed by axons, allow the brain to communicate with the rest of the body. But they stop working if they lose their myelin, as often happens when the spinal cord is damaged.

Embryonic stem cells can develop into any type of cell in the body. But David I. Gottlieb, PhD, professor of neurobiology and associate professor of biochemistry and molecular biophysics, previously discovered that a well-timed application of retinoic acid persuades them to become precursors of nervous system cells: neurons, astrocytes and oligodendrocytes. In the current

study, McDonald's team showed that oligodendrocytes in these mixed cultures wrap the axons of the neurons with myelin.

The researchers also obtained the first nearly pure cultures of oligodendrocytes from the mouse embryonic stem cells. About 90 percent of the resulting cells were oligodendrocytes.

Further experiments showed that oligodendrocytes from both the mixed cultures and the nearly pure cultures can survive and go to work in living animals. First, the researchers transplanted mixed cultures into rats whose thoracic spinal cord had been injected with a demyelinating chemical three days previously. They labeled the mouse cells to distinguish them from rat cells.

A week after transplantation, they detected mouse cells in the damaged region. Most of these cells had become oligodendrocytes, presumably in response to signals from the demyelinated cord. Moreover, these oligodendrocytes were functional.

The researchers transplanted the nearly pure cultures of oligodendrocytes into the spinal cords of shiverer mice. Because these animals are unable to make a key component of myelin called myelin basic protein, their axons get wrapped only loosely. By nine days after transplantation, the mouse oligodendrocytes had migrated several millimeters from the injection site. By a month, some of the axons were tightly wrapped in 10 to 15 layers of myelin, transmission electron microscopy revealed. □



**A Fond Farewell** James O. Hepner, PhD, left, and William A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine, at a gathering in May to mark Hepner's years of service as professor and director of the medical school's Health Administration Program. Hepner, who stepped down as program director on June 30, had been at the helm since 1967. The program was established in 1946.

## Kudos for mentors Kornfeld and Russell

THE Academic Women's Network (AWN) presented its first annual Mentor Award this year to two School of Medicine faculty members.

Rosalind H. Kornfeld, PhD, professor of biochemistry and molecular biophysics and of medicine, and John H. Russell, PhD, professor of molecular biology and pharmacology, were recognized by the AWN for mentoring the academic/professional growth and development of women faculty and trainees at Washington University.

The award differs from a teaching award in that mentors serve as sponsors, advisers, counselors, role models and teachers, says Ann M. Gronowski, PhD, assistant professor of pathology and of medicine. Male and female faculty members at the instructor level or above may be nominated by women faculty or postgraduate trainees. Nominations for next year's mentor



Rosalind H. Kornfeld, PhD



John H. Russell, PhD

award should be made to: Ann M. Gronowski, PhD, Box 8118, or by calling (314) 362-0194, or e-mail [gronowski@pathology.wustl.edu](mailto:gronowski@pathology.wustl.edu). □

## Researchers identify key enzyme in aneurysm development

UP TO 9 percent of people over age 65 carry a time bomb that one day could kill them within minutes: a weak area in the aorta, the main artery coursing from the heart. When the aorta ruptures, it spills blood into the abdomen, halting circulation. Now, researchers have identified a key enzyme that damages the aorta wall. They also have found that a drug called doxycycline, currently used as an antibiotic, keeps the enzyme in check and helps mice avoid abdominal aortic aneurysms.

Robert W. Thompson, MD, an associate professor of surgery, radiology and cell biology and physiology, led the study which was reported in the June 1 issue of *The Journal of Clinical Investigation (JCI)*.

Abdominal aortic aneurysms kill at least 15,000 Americans each year. No current treatment can prevent small aneurysms from enlarging, and if a large aneurysm is discovered before it ruptures, surgery is the only option.

Aneurysms develop when elastin, a structural protein, is

broken down, allowing the wall to balloon out. Scientists have long suspected that enzymes, called metalloproteinases (MMPs), are responsible for degrading elastin in the aortic wall. But they haven't known which member of this large family to blame.

To address this question, the researchers perfused the aortas of mice with a low concentration of the enzyme elastase, initiating aortic wall injury. The elastase disappeared within 24 hours, but 21 of 23 perfused mice had abdominal aortic aneurysms 14 days later. The enlarged area was infiltrated by inflammatory cells, particularly macrophages. These cells appeared to be secreting several different metalloproteinases, including one called MMP-9.

To determine whether metalloproteinases might be involved in aneurysm development, the researchers gave doxycycline, which acts as a nonspecific MMP inhibitor, to another group of mice for 14 days after elastase perfusion.

Only 50 percent of these animals developed abdominal aortic aneurysms, suggesting the involvement of an MMP.

To find out whether MMP-9 or its cousin, MMP-12, is the key player, the researchers studied mice that lacked either enzyme or both enzymes.

When MMP-9-deficient mice were irradiated (to kill their bone marrow) and transplanted with bone marrow from normal mice, their aortas became significantly larger after elastase treatment. But bone marrow from MMP-9-deficient mice did not have this effect.

"The results suggest that MMP-9 produced by inflammatory cells is one of the keys to the development of abdominal aortic aneurysms," says Thompson.

Thompson says he hopes the findings and the results of two pilot clinical studies will lead to a multi-center trial of doxycycline for management of small abdominal aortic aneurysms. □

UNLESS we find a prevention or cure, the number of Americans with Alzheimer's disease is likely to double within the next 40 years. Then 8 million minds will fade like photographs in the sun — 8 million loved ones will forget their families' faces.

But researchers are optimistic about solving the mystery of Alzheimer's. In the past 15 years, they've learned more about the disease than since 1906, when Alois Alzheimer described the telltale brain damage. And understanding the biology is the surest route to effective treatments. A vaccine developed in 1999 protected the brains of mice from developing Alzheimer pathology. The search for new drugs shifted into high gear with the isolation of a key enzyme.

Washington University scientists also are dissecting the disease. While some are hunting for genes, others are monitoring events that damage brain cells. Yet others image patients' brains to see where memory lapses lie. These and other studies are funded by a program project grant from the National Institute of Aging to the Alzheimer's Disease Research Center. This grant, which began in 1985, was renewed this year for five years and \$12.4 million. Eugene M. Johnson Jr., PhD, the Norman J. Stupp Professor of Neurology, professor of molecular biology and pharmacology, and John C. Morris, MD, the Harvey A. and Dorismae Hacker Friedman Professor of Neurology, co-direct the center.

## THE PUZZLE OF APOE

In 1993, Duke University scientists discovered that people who make one form of a protein called apoE risk developing Alzheimer's disease earlier in life than people who are luckier in the genetic roulette. But until now, scientists have been unable to understand the link between Alzheimer's and apoE, which is found in lipoprotein particles.

A recent study by David Holtzman, MD, associate professor of neurology and of molecular biology and pharmacology, provides an explanation. He and his collaborators here found that apoE converts a key protein called amyloid-beta into hair-like fibrils that damage brain cells.

Holtzman became interested in Alzheimer's when his aunt developed the disorder shortly before he entered medical school. "I wanted to work on an important

# WHERE MEMORY LAPSES DWELL

RESEARCHERS BEGIN TO  
UNTANGLE THE BIOLOGY OF  
ALZHEIMER'S BY LINDA SAGE



disease about which very little was known and for which therapies were not yet available," he says.

He joined the Washington University faculty in 1994 and began to collaborate with scientists at Eli Lilly and Co. in 1997. The Lilly researchers were studying mice that develop the pathology of Alzheimer's disease because they had received the human gene for amyloid precursor protein. This gene carried a mutation that causes early onset Alzheimer's in humans. A fragment of amyloid precursor protein, amyloid-beta, is a prime suspect in the disease. It dots the brains of Alzheimer patients and builds up in the brains of the genetically altered mice. In 1998, Holtzman's lab produced mice that make human apoE and bred them with the amyloid-producing mice.

Last March, the collaborators reported in *Proceedings of the National Academy of Sciences* that human apoE promotes the development of neuritic plaques in mice. These plaques contain amyloid and the damaged arms of nerve cells.



The researchers found that brain cells were damaged only where the amyloid took the form of fibrils. Moreover, the mice that made beta-amyloid but not apoE developed few or no neuritic plaques, even though they acquired significant amounts of amyloid-beta in the hippocampus, a brain structure important for memory.

The hippocampi of mice that made human apoE3 or apoE4 (but not mouse apoE) had amyloid-beta deposits and neuritic plaques that stained for amyloid fibrils. But 89 percent of the apoE4 mice had these deposits, compared with only 33 percent of the apoE3 mice. Moreover, several apoE4 mice — but no apoE3 mice — also had amyloid-beta deposits in the neocortex.

Staining for fibrillar amyloid revealed an even more striking difference. The apoE4 animals had more than 10 times as many fibrillar deposits in one part of the hippocampus as the apoE3 animals. All of this fibrillar amyloid was associated with damaged arms of nerve cells.

“To me, these results strongly suggest that the main reason that apoE4 is a risk factor for Alzheimer’s disease is because it interacts with amyloid-beta protein and enables it to become fibrillar, which in turn promotes neurodegeneration,” Holtzman says. “ApoE4 does this more efficiently than other forms of apoE.”

In more recent studies, his group has found that apoE also is critical in the development of cerebral amyloid angiopathy, a common cause of stroke and brain hemorrhage in the elderly.

He now is studying interactions between amyloid-beta and the lipoprotein particles in the brain that contain apoE. “Within the next year or two,” he says, “we should know how raising or lowering levels of apoE affects brain pathology. This information may be very useful in developing treatments to delay Alzheimer’s disease.”

## A KEY RECEPTOR

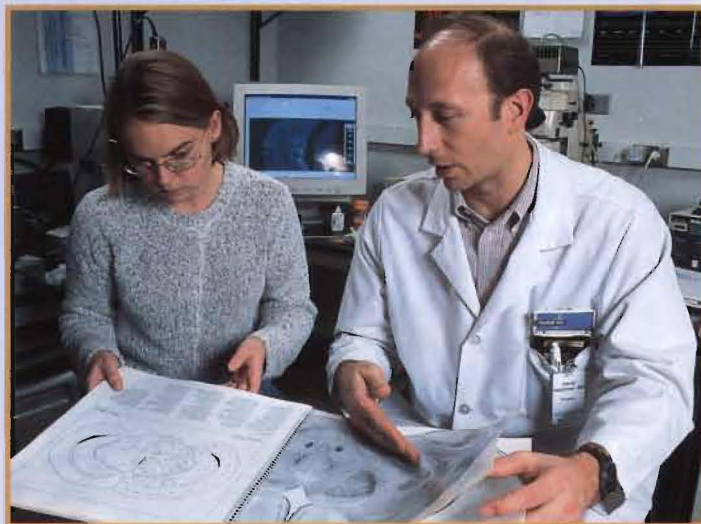
To enter brain cells, apoE must interact with a cell-surface protein called a receptor (which ushers it in), and a family of apoE receptors has been discovered. Knowing

how they function during aging and Alzheimer’s may lead to additional ways to ameliorate the disease, says Guojun Bu, PhD, assistant professor of pediatrics and of cell biology and physiology.

Bu is studying LDL-receptor-related protein or LRP, a giant, multipurpose protein that interacts with several suspects in Alzheimer’s disease. In 1992, Bu discovered that LRP also is a receptor for tissue plasminogen activator. This protein, better known as clot-busting tPA, takes part in learning and memory. Electrophysiological studies have shown that it helps strengthen connections between nerve cells during learning, an effect known as long-term potentiation.

Using slices of mouse brain, Bu and Min Zhou, PhD, assistant professor of anesthesiology and of anatomy and neurobiology, showed that LRP mediates this effect of tPA. They found that a protein called RAP (receptor-associated protein), which prevents LRP from interacting with tPA, reduced long-term potentiation in slices of mouse hippocampus. RAP also prevented tPA from promoting long-term potentiation in hippocampal slices from mice that were unable to make their own tPA. Further studies showed that hippocampal neurons make both tPA and LRP and that the latter is the major cell-surface receptor that interacts with tPA. Finally, the researchers discovered that the binding of tPA to LRP on hippocampal neurons increases the activity of an enzyme that plays a key role in long-term potentiation. These results strongly suggest that interactions between tPA and LRP are important for long-term potentiation in the hippocampus.

Now the researchers are trying to uncover the intracellular events that unfold after tPA and LRP interact. Using



David Holtzman, MD, and senior laboratory technician, Rebecca Gunkel, review a mouse brain atlas.



Guojun Bu, PhD, studies a protein suggested of playing a role in Alzheimer's disease. Here, he confers with Judy Cam, a second-year graduate student in the neuroscience program.

genetically altered mice, they also are altering LRP levels and looking at the effects. One mouse model will produce abnormally high levels of a scaled-down version of LRP, whereas the other will express high levels of RAP. By crossing these two types of mice with mice that deposit human amyloid-beta in the brain, the researchers will be able to ask whether LRP helps remove amyloid-beta from the space around brain cells, preventing it from accumulating in plaques. If so, drugs that could increase LRP levels in the brain might prove useful for treating Alzheimer's.

## GENES AND ALZHEIMER'S DISEASE

In 1991, when Alison M. Goate, D Phil, was a research fellow at St. Mary's Hospital Medical School in London, she reported the first genetic defect linked to Alzheimer's disease. It was a mutation in the gene for amyloid-precursor protein (APP), the large molecule that gives rise to amyloid-beta. The mutation causes APP to be cut in the wrong place, producing a fragment that spontaneously forms fibrillar deposits. The few people who carry this defective gene, which lies on chromosome 21, invariably develop Alzheimer's disease, usually in their 50s.

Goate now is professor of genetics in psychiatry and professor of genetics at Washington University. In 1995, she began studying a large Colombian family in which many members had early onset Alzheimer's disease. She found a mutation on chromosome 14, in the gene for presenilin-1. This family now is the focus of a study to identify genes that modify age of onset because members carrying the presenilin mutation have ages of onset that vary by up to 30 years. "If a genetic or environmental factor that can delay age of onset of Alzheimer's could be identified, it might be useful for treating the disease," Goate says.

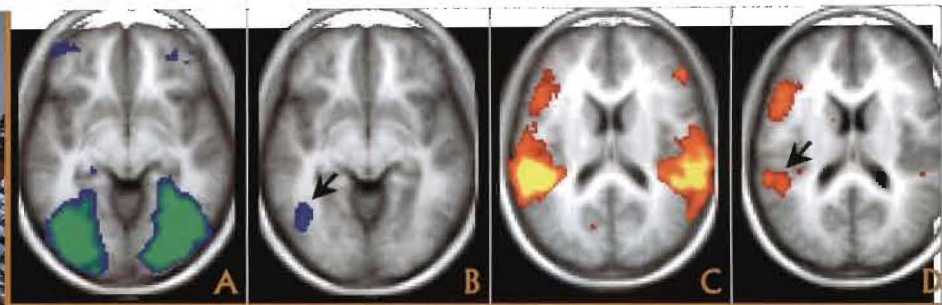
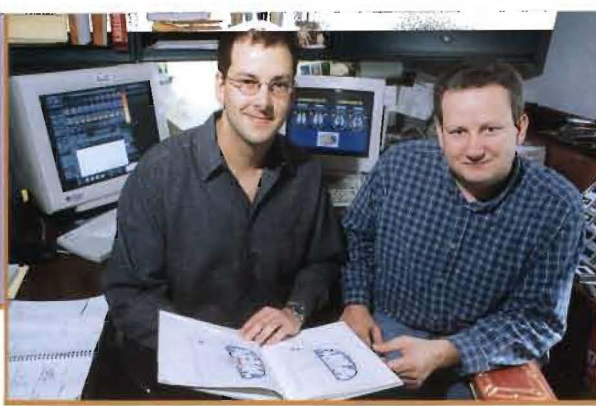
In collaboration with Raphael Kopan, PhD, associate professor of medicine and of molecular biology and pharmacology, Goate is looking for the normal function of presenilin. In March 1999, the collaborators reported in *Proceedings of the National Academy of Sciences* that presenilin-1 physically associates with a protein called Notch 1, which helps determine cell fate during development. Further experiments, reported in *Nature*, suggested that Notch and APP are cleaved by a very similar chemical process in which presenilins play a critical role. "Understanding how defects in presenilins sabotage this process might lead us to new ways of thinking about Alzheimer's," Goate says.

A study in collaboration with Fernando Valdivieso, PhD, at the University of Madrid, focused on the gene for apoE, which lies on chromosome 19. Comparing people who have Alzheimer's disease with those who don't, Goate detected three variations in the promoter region of the gene — the dimmer switch that regulates a gene's level of activity. People who carried one of the variations were approximately three times more likely to have the disease than those who did not have that particular version. In laboratory experiments, this form of the promoter turned up the production of apoE.

Goate now is screening the human genome — our complete complement of chromosomal DNA — to



Alison M. Goate, D Phil, left, reported the first genetic defect linked to Alzheimer's. Here, she and Petra E. Nowotny, PhD, discuss results of a lab experiment.



Randy L. Buckner, PhD, left, and graduate student Mark Wheeler, study memory in aging adults and people with Alzheimer's disease. Brain images A and C show those brain areas that become active while perceiving visual and auditory information. Images B and D show a subset of those areas that are reactivated when subjects remember visual and auditory information.

uncover other genetic variations that might be linked to late-onset Alzheimer's. She compares the DNA from hundreds of pairs of siblings who have the disorder to find regions of the genome that are shared by the siblings more often than would be expected by chance. This work is providing leads to novel genes that might influence risk for late-onset Alzheimer's disease.

## IMAGING THE BRAIN

Studies of Alzheimer genes and proteins eventually should generate effective therapies. But scientists also need objective ways to diagnose the disease and test potential treatments.

Randy L. Buckner, PhD, an assistant professor of psychology, radiology and neurobiology, is taking a novel approach. For the past nine years, he has used positron emission tomography (PET) and functional magnetic resonance imaging (fMRI) to study memory in young, cognitively healthy people. But a history of dementia among his relatives is motivating him to study older people and people with Alzheimer's disease as well.

Buckner has shown that structures in the front part of the brain, which classically have been associated with short-term memory and decision making, also play a key role in memory formation. "If you need to remember something, you want to engage these frontal regions as much as you can," Buckner says.

His work suggests that regions in the frontal cortex represent information as you elaborate on it, as when you think about a new acquaintance's name. The information then is dispatched to regions called the medial temporal lobes, which distribute it to appropriate areas of the brain for storage. "So you could break the system in several ways," Buckner says.

In one study, students looking at words on a computer screen were asked to decide whether each word was abstract, like "freedom," or concrete, like "dog." After they got out of the scanner, Buckner gave them a surprise memory test. On average, the subjects had higher levels of activity in certain frontal areas when

they were studying the words they later remembered than when they were looking at the words they subsequently forgot.

One of Buckner's graduate students, Mark Wheeler, gave subjects pictures of objects or auditory clues such as barking. He found that visual areas of the brain became activated when the subjects remembered seeing pictures, and auditory areas of the brain sprang into action when the subjects remembered hearing auditory clues. These memory echoes were most apparent on the left side of the brain. "We reasoned that this might be how the brain revives memories," Buckner says.

The researchers now are laying the foundations for studies of memory in older adults. Collaborating with Abraham Z. Snyder, PhD, assistant professor of radiology and neurology, Buckner's group has determined how to interpret measurements from this population, whose shrinking brains could compromise imaging data. Preliminary results of memory function suggest that older adults may not activate two regions in the frontal cortex during memorization as much as young adults do. "There is a significant difference in activity in regions that are most associated with elaborating on the meanings of words," Buckner says.

Finding out how healthy older adults learn is setting the scene for studies with Alzheimer patients. "We think that these imaging methods that are characterizing brain function might eventually provide information that will help clinicians diagnose patients, predict outcomes and perhaps also monitor the efficacy of new treatments," Buckner says.

Twenty-five years ago, Alzheimer's was thought to be a natural consequence of aging. Five years ago, hope for a cure was dim. But new research at Washington University and other institutions is accelerating the pace of discovery. "I think that treatments to prevent Alzheimer's and even assist those with the disease may happen sooner than I ever would have predicted," Holtzman says. □



# Turning Down the Volume

**CID's oral school reduces noise to improve sound** **BY HOLLY EDMISTON**

THE “quiet school” is, well ... quiet.

Nicknamed after its goal to provide hearing-impaired children with a quiet environment in which to learn, the new oral school on the Central Institute for the Deaf campus at Washington University Medical Center has all the features of an ordinary elementary school — colorfully decorated bulletin boards,

a library full of books, even a full-size gymnasium. But it also has something extra.

Specially designed acoustics place this school at the leading edge of education for the hearing impaired.

According to Victoria J. Kozak, MAEd, school principal and director of deaf education, the new school became necessary for two reasons: to meet the need for state-of-

the-art building and campus facilities, and because the old school was physically wearing out.

It is especially important for hearing-impaired children to learn in an environment free of “extra” noise, she says, because distractions such as traffic, construction and even conversation can interfere when children are learning to speak and to listen.



The new, 41,975-square-foot facility incorporates a number of distinctive features. Chief among those is its location away from the noisy cloverleaf of U.S. Highway 40 and Kingshighway Boulevard. Inside, support offices and multi-purpose rooms are placed in the building's central core, where they serve as a buffer between classrooms on either side.



A variety of construction materials was used to combat both external and internal noise. Landscaping and the outer walls of the building are designed to reflect and absorb sound, and the school's windows are double paned, permanently sealed, and hung in special acoustic frames.

Mechanical equipment, such as heating and air conditioning, is placed over non-classroom areas, and ducts are insulated and baffled to further reduce noise. Solid wood doors, and ceilings, walls and carpeting designed to absorb sound are installed in each classroom.

The new school exceeds acoustical standards recommended by the American Speech-Language-Hearing Association (ASHA) and the



Above: A lower-school student concentrates on painting in one of the school's three discovery rooms. Below: Middle-school students work on their independent reading skills in the library. Inset: Lower-school teacher Erika VanOrder and her students participate in a language activity.



Acoustical Society of America (ASA). At the old school, constructed in 1916, noise levels ranged between 45 and 65 decibels even when no students were present in the classroom.

“That’s a noise level that can make communication difficult in a classroom full of children with normal hearing,” says Kozak. “Many of our students use assistive listening technology that amplifies all sounds, so a quiet classroom is essential.”

The new two-story school includes 20 classrooms, a library, a music and drama room, an art room, a computer lab, school offices, an audiology lab, and a gymnasium complete with regulation-size basketball court.

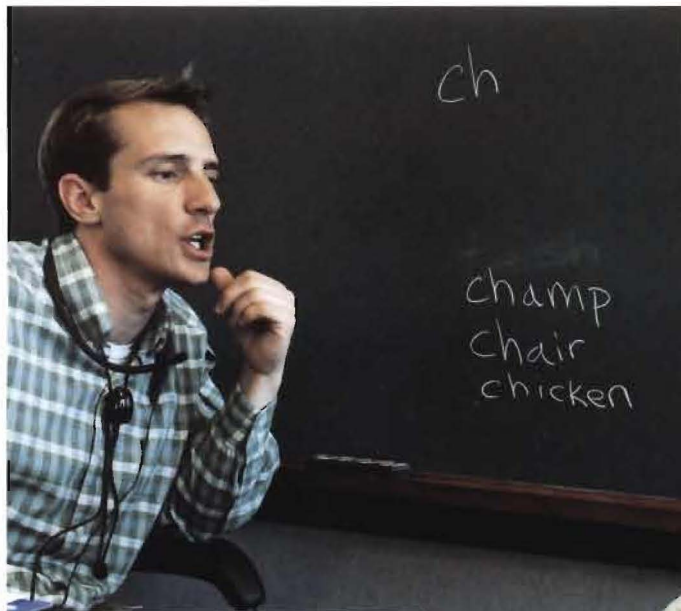
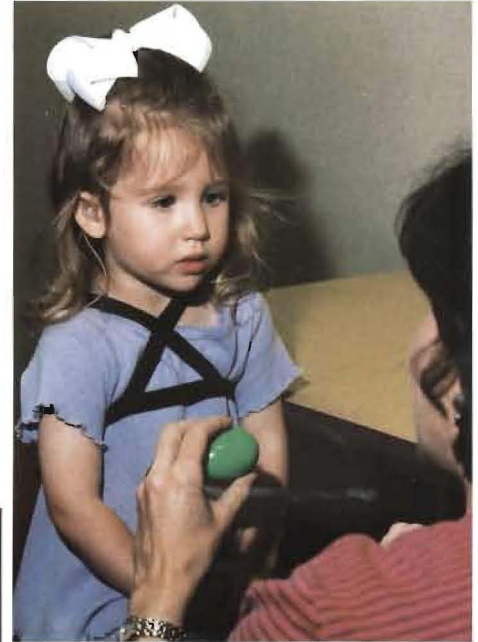
It also houses the Joanne Parrish Knight Family Center, where families with newly diagnosed hearing-impaired infants and toddlers make their first contact with CID. Services the center provides

include evaluation, parent and child education, nursery class, and a parent support group.

The otal school has a student body of 80 children, 15 of whom are full-time CID residents. Students at the school are grouped by age and ability: children ages 3 to 6 make up the lower school, ages 6 to 10 the middle school, and ages 11 to 14 the upper school.

At all levels, there is a focus on speech, language and auditory training. Speech training, where students focus on learning individual sounds, is done in small groups. Language, putting words together in the proper order and using them communica-

tively, is stressed throughout the school day. The goal is to prepare children to participate and succeed in mainstream education.



Left: Lower-school students pause to enjoy a lighthearted moment while playing. Above: Upper-school teacher Rod Easterly provides students with auditory and visual cues during speech class. Top: Children as young as 2 years can attend nursery class four half-days per week.



Left: Middle- and upper-school students have access to the computer lab and learning center. Below: Lower-school students join in the fun during physical education class in the gymnasium.

Located at the southernmost edge of Washington University Medical Center, CID serves as the university's financially independent speech and hearing department. In addition to its school for children, CID supports three other disciplines: a clinic, where audiologists provide hearing aid and cochlear implant evaluations and related services for children and adults; clinical, educational and basic science research programs; and professional education in audiology, deaf education, and speech and hearing sciences.

The \$8 million oral school, dedicated in mid-January, marks the completion of the first of three phases in a \$30 million renovation of the CID campus. The new school replaces CID's old school building, which will undergo renovation to accommodate CID clinic and counseling and interpreting services, graduate education programs and the Center for Childhood Deafness and Adult Aural Rehabilitation.

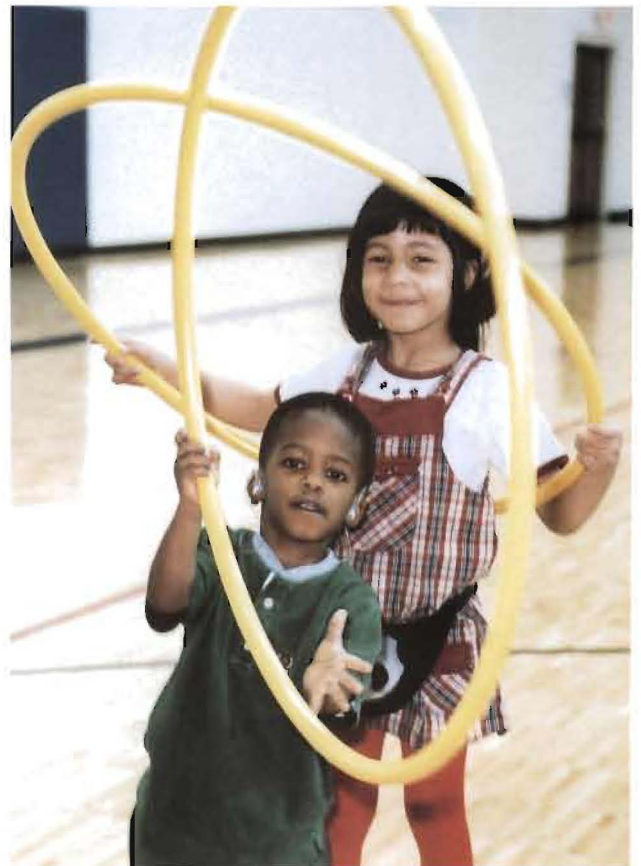
A new research facility will house administrative offices and the

Fay and Carl Simons Center for Biology of Hearing and Deafness. It is currently under construction between the new and old schools and is scheduled for completion later this year.

Research done at CID has been at the center of many of the most important advances in the understanding of hearing and deafness, and its graduate program in audiology was recently named one of the nation's top 10 by *U.S. News & World Report*. The CID school is one of the world's most highly regarded auditory-oral schools and has twice been cited for excellence by the U.S. Department of Education.

"Since 1914, CID has attracted and trained many of the

finest teachers of the deaf in the world," says Donald W. Nielsen, PhD, executive director of CID. "Now we have a world-class teaching environment like none other in the world, where teachers' skills can more perfectly meet the needs of our children." □



# Operation Whipple

**Controversial surgery undergoes renaissance and offers chance at life for some pancreatic cancer patients**

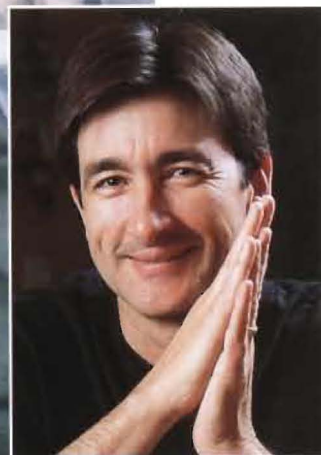
At 46, Mike Ettel felt a little smug about his future. After all, he had followed every health-related rule in the book: he maintained an ideal weight, jogged regularly, ate a healthy diet, shunned smoking and limited his alcohol intake. What's more, he had no family history of serious disease.

"I actually thought, 'Hey, I'm taking care of myself so well that I'm going to beat the world record for longevity — I think I'll try to live to be 120.' I never even considered the possibility that I could die," says Ettel, a St. Louisan and TWA pilot with 26 years experience flying commercial jets.

One morning in September 1997, he awoke to find that his urine had turned a deep orange. He

quickly saw his internist, who ordered an ultrasound. "I remember word for word what the radiologist said: 'Well, Mr. Ettel, you have a mass on your pancreas.' Right away, I broke out in a cold sweat because

Mike Ettel



by CANDACE O'CONNOR

Summer 2000 Outlook



Steven M. Strasberg, MD, talks with patient Harold Vogt, who underwent the Whipple procedure for pancreatic cancer in June.

I knew that Michael Landon, the actor, had died of pancreatic cancer, and I thought, ‘this is deathly serious.’”

It was indeed. A few days later, when he consulted Jeffrey A. Drebin, MD, PhD, associate professor of hepatobiliary-pancreatic surgery at the School of Medicine, he learned that he would need surgery right away to save his life. A tumor — probably malignant — was obstructing his common bile duct and causing the jaundice; it was located in the head of the pancreas, very close to the superior mesentery artery.

He would need to undergo a “Whipple procedure,” one of the most delicate, technically demanding operations in the surgical repertoire. During the procedure, which is usually six to eight hours long, surgeons work amid some of the most critical arteries and veins in the body to remove the head of the pancreas, part of the stomach, a small piece of the jejunum, lymph nodes near the pancreas, the duodenum, gallbladder and part of the

common bile duct. Their challenge is to remove all cancer cells, while not harming healthy tissue.

Twenty-five years ago, the procedure — developed in the 1930s — was highly controversial. The immediate outcome from surgery was poor; operative mortality rates were 20 to 25 percent. Even when patients survived surgery, they faced only a 5 percent prospect of living five years. In two prominent journals, physicians argued that the Whipple procedure should be abandoned.

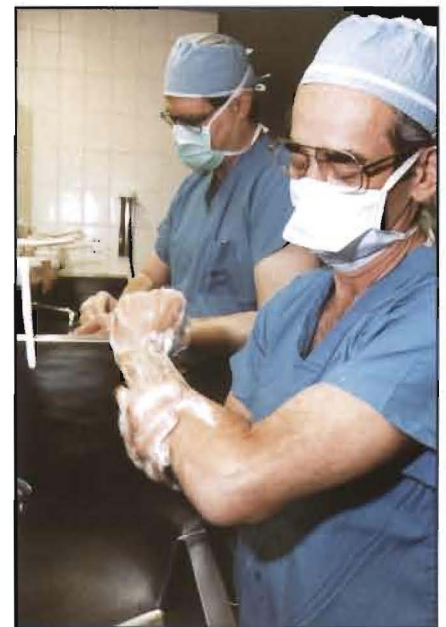
But the procedure has since undergone a renaissance, thanks in part to innovative work by School of Medicine surgeons at Barnes-Jewish Hospital. Since 1992, when Steven M. Strasberg, MD, Pruett Professor of Surgery at the School of Medicine, arrived here from the University of Toronto to establish a dedicated hepatobiliary-pancreatic service, the section has emerged as one of the top three in the United States. The five surgeons on staff — Strasberg; Drebin; Nathaniel J.

Soper, MD; J. Christopher Eagon, MD; and David Linehan, MD — perform 60 to 70 Whipple procedures each year on patients from throughout the Midwest.

Over the past few years, they have achieved a remarkable reversal in survival statistics. In the past 200 Whipple operations, they have not had a single mortality and have had minimal morbidity thanks to a new method of reconstruction of the pancreas which they introduced. This operation is also used for cancers of the bile duct, duodenum and ampulla. The

increasing safety of the operation has led to its use in benign conditions such as chronic pancreatitis.

“We can now offer patients the chance for life without gambling their lives. This advance — making pancreatic surgery safe — has been a huge achievement,” says Strasberg, head of the hepatobiliary-pancreatic surgery section.



Steven M. Strasberg, MD, foreground, and Jeffrey A. Drebin, MD, PhD, prepare for surgery.

## Advancing the Whipple

In part, this dramatic turnabout is due to external factors, such as new antibiotics, better anesthesia and a general improvement in cardiovascular health, which makes patients less likely to suffer a postoperative heart attack or stroke. Studies also have shown that patient outcome from the complex procedure is much better in major medical centers, like Washington University Medical Center, where specialists perform it regularly.

But Strasberg's group also has pioneered a technique that has contributed to this improved survival. During the Whipple procedure, they stitch the pancreas to the intestine, dramatically reducing pancreatic leakage — formerly a major cause of mortality and morbidity. In 1998, Strasberg and colleagues published results from their first 40 patients in the *Journal of the American College of Surgeons*.

"At one year, provided patients do not have a recurrence, their qual-

ity of life is excellent," says Strasberg, currently president-elect of the American Hepatobiliary-Pancreatic Association, the major national society in this area of surgery. "Their digestion is good; they can do anything that other people can."

On October 26, 1997, Mike Ettel went into surgery strongly supported by his colleagues and wife, Debra, a TWA flight attendant, who had herself faced an aggressive form of breast cancer just three years earlier.

The delicate surgery went smoothly and Ettel felt surprisingly well afterward. Then he got the initial pathology results from medical oncologist Joel Picus, MD, associate professor of clinical medicine, who works as part of a multidisciplinary team with the surgeons and radiation oncologist Robert J. Myerson, PhD, MD, professor of radiology.

The report indicated that Ettel probably had ductal adenocarcinoma, the most common form of pancreatic cancer. It is also the most aggressive, creeping insidiously along

the nerves into the lymphatic system and the blood vessels. By the time it produces symptoms — jaundice and intense abdominal itching — it has most often spread. More than 90 percent of ductal adenocarcinomas are too far advanced for the Whipple procedure; these patients undergo systemic therapies and face a median survival of only six to eight months.

## Cancer's deadliest form

In fact, pancreatic cancer is an extraordinarily lethal disease overall. It has the poorest prognosis among all the major malignancies, killing some 30,000 people in the United States each year. Its cause is unknown, though risk factors include smoking, a high-fat diet and diabetes. Age is another; it tends to strike people in their 60s and 70s, with a slightly higher incidence in men. African-Americans are disproportionately affected.

"In any other cancer, the situation is different," says Drebin. "With a one-centimeter lung cancer, you have a 70 percent chance of a cure; with a one-centimeter breast or colon cancer, an 80 percent chance. But at least half the time, a one-centimeter pancreatic cancer has already invaded the lymph nodes and is incurable; even if it has not, the five-year survival is only about 30 percent."

When his final pathology results came in, Ettel heard better news. He actually had a rarer form of pancreatic cancer, neuroendocrine cancer, which is usually less aggressive and has a better prognosis. Even so, he still faced 16 days of hospitalization, six weeks of combined chemotherapy and radiation, then six months



Bassim Mora, MD, surgery resident, center, and Steven M. Strasberg, MD, right, perform a laparoscopic biopsy to determine whether a patient has operable pancreatic cancer.



Jeffrey A. Drebin, MD, PhD

of gradual recuperation, before he returned to the cockpit. He still sees Picus every four months and Myerson every six months for tests to make sure his cancer has not come back.

But what of other patients, with the more virulent form of the disease? “We are at a watershed in pancreatic cancer,” says Strasberg. “We have solved the problem of surgical mortality and serious morbidity, but we still have poor long-term outcome. So now our major thrust is clinical trials and basic scientific research.”

On the clinical side, they are working with Picus and Myerson to study a new chemotherapy drug, Gemcitabine, which they use in conjunction with three-dimensional conformal radiation to destroy enough tumor that some formerly inoperable patients now become eligible for surgery. This also is one of a few centers in the world to test the use of a new agent, marimastat, in preventing the spread of pancreatic cancer. And the researchers routinely use minimally invasive staging laparoscopies to determine which

patients have operable tumors — and spare those who don’t from undergoing a major procedure.

In a new diagnostic trial, David Linehan, MD, is using molecular techniques to analyze abdominal fluid, collected at the time of the laparoscopy, for microscopic pancreatic cancer cells. Next, he will correlate the presence or absence of these “micrometastases” with patients’ clinical outcome to better understand whether they need systemic therapies, and what kinds of therapies those might be.

Linehan, who came to the School of Medicine last July after fellowships at Memorial Sloan-Kettering and Harvard Medical School, was attracted by the mix of talents on the hepatobiliary-pancreatic service. “We have people here who are both world-class surgeons and scientists doing translational research — taking things they find at the laboratory bench rapidly to clinical trial to try to make an impact on this disease,” he says.

One of these surgeon/scientists is Drebin, who is at the forefront of translational research. Backed by funding from the National Institutes of Health, he is focusing on two genes, k-ras and HER2/neu, that are commonly overexpressed in pancreatic cancers. He is studying various ways to target these genes, including monoclonal antibodies and “anti-sense” oligonucleotides: modified DNA molecules that can bind to, and interfere with, the function of a specific gene’s messenger RNA.

“It’s slow but promising work,” says Drebin, who developed the first monoclonal antibodies to HER2/neu during his PhD work at Harvard. “We have clearly shown

that we can inhibit tumor growth and trigger apoptosis, or programmed cell death, in tumors that have the k-ras or HER-2/new mutation. We also have shown that this effect does not seem to affect cells that do not have these mutations. And in some preliminary work in mice, it looks as though these approaches can inhibit tumor growth.”

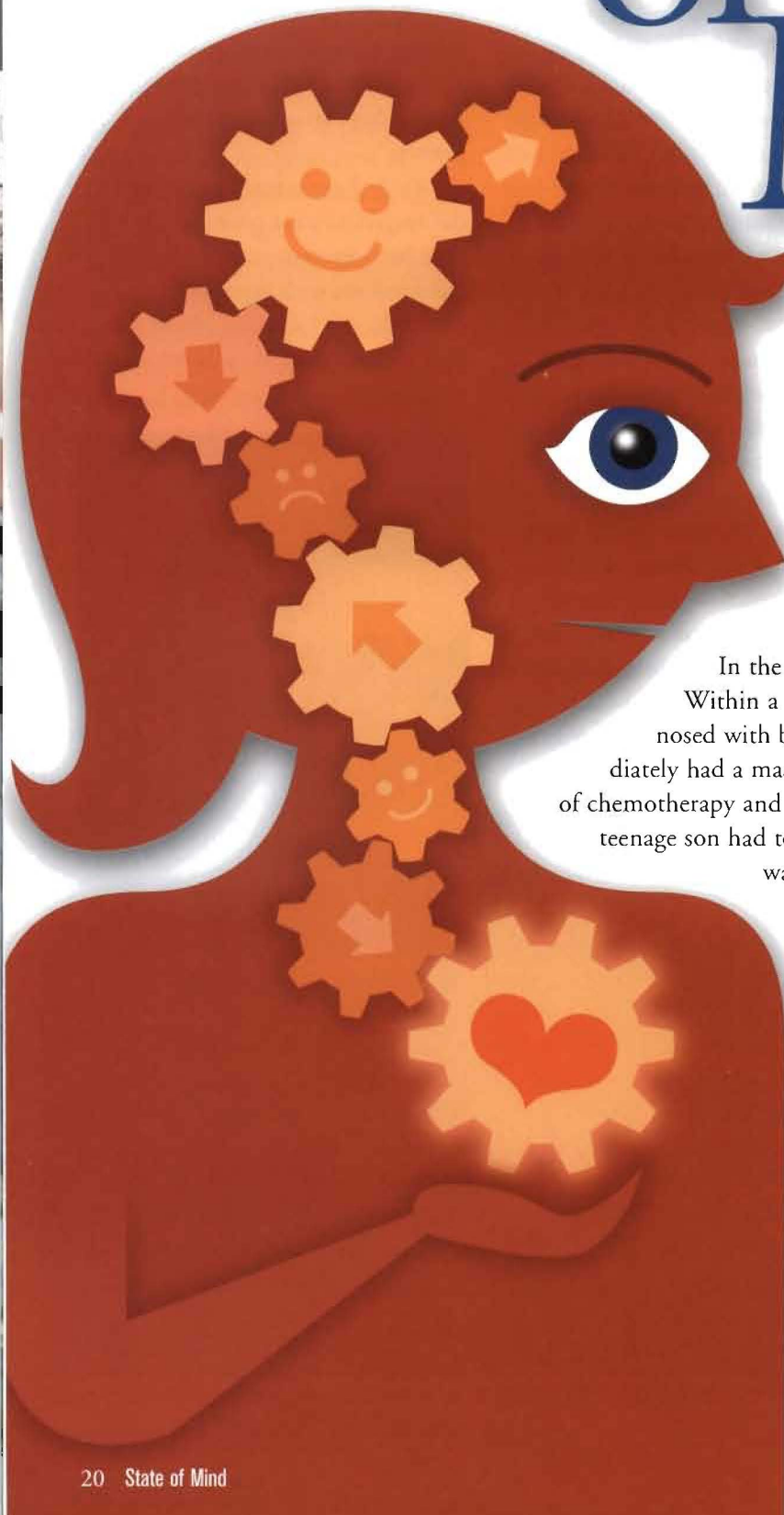
Will these agents be enough by themselves to treat patients? Or will they have an even greater effect in combination with standard chemotherapy? All that remains to be seen, and clinical trials are several years away.



David Linehan, MD

Meanwhile, Mike Ettl will soon celebrate three years free of cancer. “What I have learned from this experience — and I do it — is to enjoy each day because you don’t have a guarantee of tomorrow. It sounds trite, but all of a sudden it strikes home for me in a big way,” he says. “Every single day is a gift.” □

# State of Mind



## PROGRESSIVE TREATMENT APPROACH INCORPORATES PSYCHOLOGY INTO CANCER CARE

by **HOLLY EDMISTON**

Illustrations by **Chris Callan**

In the spring of 1996, Pam Barr's world fell apart. Within a span of two months, the St. Louisan was diagnosed with both breast cancer and ovarian cancer. She immediately had a mastectomy and a hysterectomy, followed by months of chemotherapy and radiation. The 43-year-old wife and mother of a teenage son had to take a six-week leave of absence from work and was concerned that the disease would overshadow the normal routine of her day-to-day family life.

Looking back, the School of Medicine employee credits the personal care she received from oncology professionals at the Siteman Cancer Center with helping her to stay focused and positive as she faced her illness.

"When you are told that you have cancer, you are overwhelmed," says Barr, senior departmental accounting assistant in the hematology research division. "You have new priorities and a new set of problems with which to contend. The psychosocial service helped me to prioritize and get a handle on my fears and worries.



"The team approach made me feel that I was the center of attention, that everyone's energy was being expended on my well-being and getting me back on track, both physically and emotionally. From a patient perspective, it's very reassuring to know that you're in competent hands."

Barr, who has worked at the medical school for 27 years, was one of the first cancer patients at Washington University and Barnes-Jewish Hospital to receive psychological counseling as a routine part of her comprehensive cancer treatment. Under the auspice of the Alvin J. Siteman Cancer Center, mental health care is among an array of support services offered for oncology patients and their families.

Teresa Deshields, PhD, director of psychosocial support services for the Siteman Cancer Center, and others work alongside medical specialists to provide patients with ongoing emotional support.

"Our goal is to educate our patients and their families about the support services available to them through the Siteman Cancer Center," says Deshields. "By meeting with them at the beginning of treatment, we can connect each patient with services early, as well as alert the medical team to any potential problems."

Oncologist Joanne E. Mortimer, MD, says she first recognized the need for psychosocial support while treating breast cancer patients. The issues of breast cancer are incredibly emotional, she says. By identifying areas that cause angst, the treatment team can figure out how to help patients deal with their feelings.

Mortimer received funding from the National Cancer Institute (NCI) to study the psychosocial features of women with breast cancer as they went through the course of treatment. She enlisted the aid of Edwin B. Fisher, PhD, director, division of health behavior research, who had developed a similar and highly successful assessment method for diabetic patients.

Yaffa Podbilewicz-Schuller, PhD, was hired to run the grant research project. The interdisciplinary team model that she

developed proved so successful that it was expanded and adapted to other multidisciplinary cancer clinics, which are supported by the Siteman Cancer Center.

In the traditional referral model, patients are seen by a psychologist only during times of crises. Incorporating psychological care into the treatment plan helps people to understand that a period of psychological adjustment to a diagnosis of cancer and subsequent treatment is normal. By doing so, the team increases the odds that patients will feel comfortable taking advantage of psychological care if it is needed.

"Patients whose psychological needs are addressed are more likely to adhere to a treatment plan, from



Teresa Deshields, PhD, director, psychosocial support services, leads a group of oncology professionals that includes psychologists, social workers, nurse coordinators and chaplains.



Postgraduate student Tiffany Tibbs confers with a patient in the education room at the Breast Health Center.

Shirley Johnson, RN, MS, MBA, director of oncology services for the Siteman Cancer Center, on the clinical side. As well as psychologists, providers include nurse coordinators, social workers and chaplains, all of whom are dedicated to providing an integrated network of support for cancer patients and their families.

“Our program comprises a variety of support groups, as well as special programs like Strength for Caring, a daylong event for caregivers, and Arts as Healing, a unique offering of arts programming,” says Johnson.

In addition, the Cancer Information Center at BJH south and the Cancer Information and Resource Center for Life and Education (CIRCLE) at BJH north have extensive educational resources, as well as breast prostheses, mastectomy bras, and wigs and turbans for chemotherapy patients.

“The Siteman Cancer Center offers a comprehensive grouping of support services for cancer patients that no other cancer center offers,” says Johnson. □

taking medications to showing up for appointments,” says Fisher.

One of the most valuable things that psychologists bring to the treatment team is their ability to teach patients how to better relate to their physicians, says Mortimer, professor of medicine.

“Psychologists often identify errors of misunderstanding or communication rifts between patients and their doctors,” she says. “They are able to encourage patients to ask the right questions or to complain about things that they might normally withhold from the physician’s knowledge.”

Patient response to psychological intervention has been positive. A combination of factors — how deadly a disease is, how disruptive it is, how much pain it causes — contribute to the level of each individual’s need for emotional support. Some patients may opt for weekly sessions, while others may need to talk to a psychologist only during a major stressor in treatment.

The key, says Deshields, is to match needs with services. “Everybody needs support, and some people get that from resources such as family or church. But, from our perspective, everyone can benefit from learning about the range of support options available to them.”

Psychosocial support services is overseen by Fisher on the academic side, and by



Edwin B. Fisher, PhD, and Shirley Johnson, RN, MS, MBA, oversee the implementation of psychosocial services at the School of Medicine and Barnes-Jewish Hospital.

# Cancer and Depression

Laura Sherman was a hospital volunteer in 1988, the first time she encountered a cancer patient suffering from depression. Although the terminal patient had received psychotherapy, he hadn't been prescribed depression medication, and Sherman wondered why.



Laura K. Sherman, MD

"I had known people who had different types of depression and had seen them get better with medication and psychotherapy," says Laura K. Sherman, MD, instructor of psychiatry and medicine. "I questioned why the same wouldn't work for this patient."

Today, instead of asking questions, Sherman provides answers in

her role as director of the Oncologic Psychiatry Consultation Service of the Siteman Cancer Center at BJH and WUSM. Since July 1999, she has been providing inpatient and outpatient psychiatric services as part of the center's multidisciplinary team approach to comprehensive cancer care.

To Sherman, making the distinction between a normal emotional response to a cancer diagnosis and a clinical depression is critical.

"Many people, both medical and non-medical, have the idea that it is normal for people with cancer to be depressed," she says. "They confuse the mood of sadness or feeling down with the full-blown syndrome of a depressive illness."

And while depression is common among cancer patients, it typically has not been treated with medical therapy. It is difficult for patients and their families, Sherman says, to understand that psychiatric illnesses are also biological illnesses.

Research done with PET has shown that certain areas of the brain physically change in a person who is depressed. "The amazing thing," Sherman adds, "is that when people with mild to moderate depression are treated with medical therapy, such as an antidepressant, subsequent PET scans show those areas return to normal.

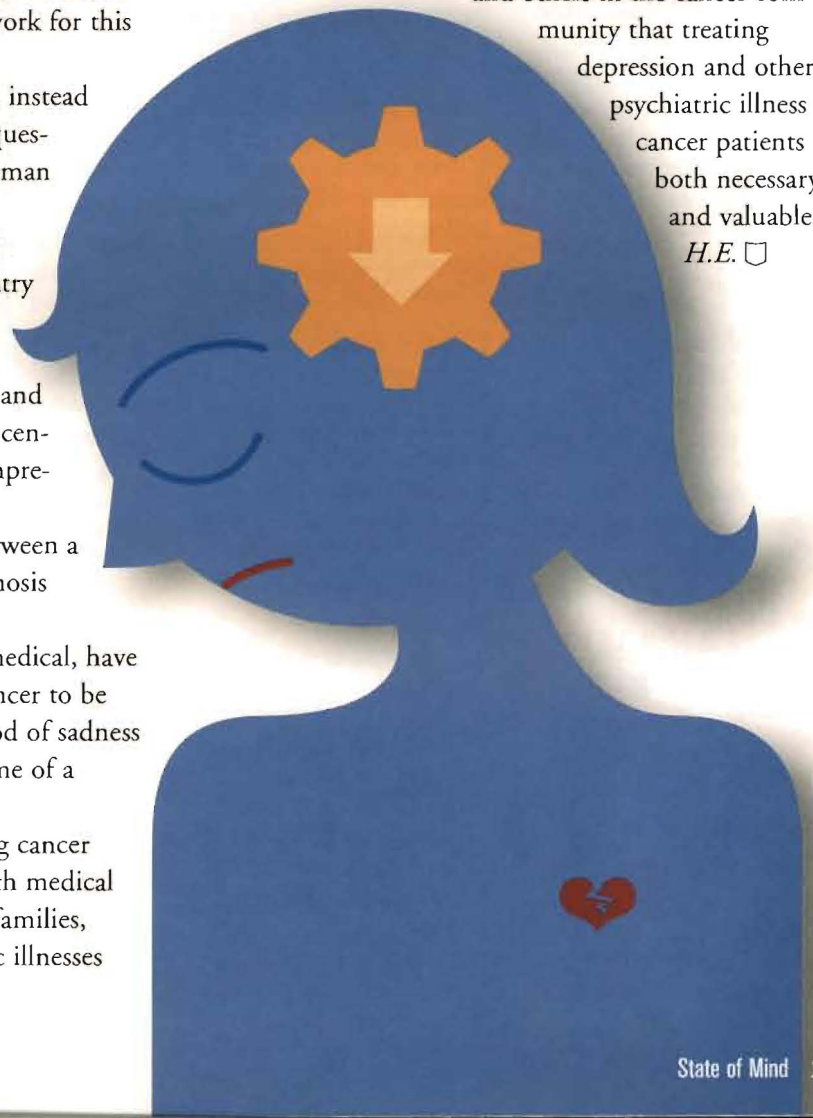
"And it's not just medical therapy that does the trick — psychotherapy can work too. We actually have research that shows psychotherapeutic interventions also can change the chemistry of the brain." For this reason, she says, a combination of medical and psychotherapy is the most valuable for patients.

It can be difficult to figure out precisely what is going on with a particular patient. Medications taken to ease the side effects of cancer treatments can affect mood, and tumors themselves can cause problems that look like psychiatric disorders. Whatever the cause, Sherman stresses that these conditions are treatable.

She hopes that her success will convince oncologists and others in the cancer community that treating

depression and other psychiatric illness in cancer patients is both necessary and valuable.

H.E. □



# Student Stage

## Match Day 2000

THE annual Match Day was held on March 16, and 95 of the 103 graduating medical students took part in the National Resident Matching Program.

One hundred percent of the participants had secured advanced training positions by Match Day. Some 66 percent received first-year residency positions at their first choice of institution and 88 percent matched to one of their top three choices. Eight students found positions independent of the NRMP.

### ALABAMA

#### Birmingham

University of Alabama Hospital

*Internal Medicine*  
Erik Wallace

Joe Kimura

*Internal Medicine*  
Dena Minning  
*Pediatrics*  
Emily Garabedian  
David Randolph

### CALIFORNIA

#### Los Angeles

University of California,  
Los Angeles

*Anesthesiology*  
Lawrence Bercutt  
*Neurology*  
Tess Chapman  
*Otolaryngology*  
Joseph Lee

University of Southern  
California/Los Angeles

City Hospital  
*Neurosurgery*  
Scott Leary

Orange University of California,  
Irvine  
*Otolaryngology*  
Vincent Chen

#### San Diego

University of California, San  
Diego Medical Center  
*Otolaryngology*  
Quy Nguyen  
*Psychiatry*  
David Lehman

#### San Francisco

University of California,  
San Francisco  
*Dermatology*  
Rajiv Bhatnagar  
*Internal Medicine-Primary*

### Stanford

Stanford University  
Medical Center

*Internal Medicine*  
Ali Husain  
*Pathology*  
Brady Feliz

Torrance Harbor-UCLA  
Medical Center

*Internal Medicine*  
Grace Chen

### COLORADO

#### Denver

University of Colorado  
*Internal Medicine*  
Steve Fabian

### CONNECTICUT

#### New Haven

Yale-New Haven Hospital  
*Internal Medicine*  
Cathy Hermann

### DISTRICT OF COLUMBIA

George Washington University  
*Emergency Medicine*  
Christina Fong  
Walter Reed Army Medical  
Center  
*General Surgery*  
Paul White

### HAWAII

#### Oahu

Tripler Army Medical Center  
*Family Practice*  
Dan Kinzie

#### Honolulu

University of Hawaii Integrated  
*Pediatrics*  
Joel Ruff

### ILLINOIS

#### Chicago

Children's Memorial Hospital  
*Pediatrics*  
Margaret Mueller  
McGaw Medical Center-  
Northwestern University  
*Internal Medicine*  
Nita Kulkarni  
*Radiology*  
Cecil Wood  
Rush-Presbyterian-St. Luke's  
*General Surgery*  
Elizabeth Gross  
University of Chicago  
*Anesthesiology*  
Matthew Hill  
*Internal Medicine*  
Anelka Djordjevic

### INDIANA

#### Indianapolis

Indiana University School  
of Medicine  
*Emergency Medicine*  
Drew Houseman

### MARYLAND

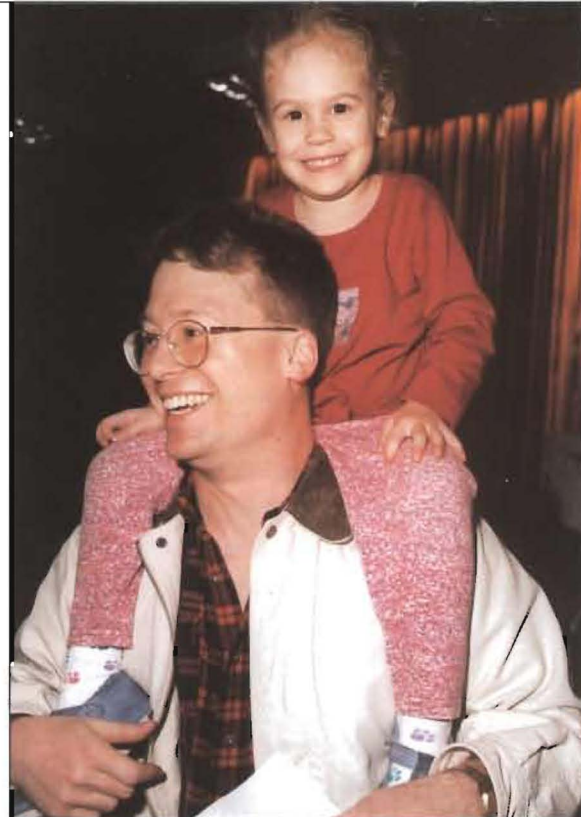
#### Baltimore

Johns Hopkins Hospital  
*Internal Medicine*  
David Shih  
Johns Hopkins/Wilmer Institute  
*Ophthalmology*  
Tony Tsai  
University of Maryland  
*Radiation Oncology*  
Patsa Hungspreugs  
Bethesda National Naval  
Medical Center  
*Internal Medicine*  
Mark Corriere

### MASSACHUSETTS

#### Boston

Beth Israel Deaconess  
Medical Center  
*Internal Medicine*  
Daniel Cho  
Kelly Mercer  
Claire Pipkin



Eva Houseman, atop the shoulders of her father, Drew, shares in his excitement that he has been accepted for residency in emergency medicine at Indiana University School of Medicine.

**Boston University Medical Center***Orthopaedic Surgery*  
Jennifer Taniguchi**Burlington Lahey Clinic***General Surgery*  
Maromi Sakurai**Children's Hospital/Boston Medical Center***Prog. Pediatrics*  
Florence Bourgeois*Prog. Pediatrics*  
Heather MacLennan**Massachusetts General Hospital***Psychiatry*  
Dost Ongur*Radiology*  
Albert Yoo**MICHIGAN****Ann Arbor****University of Michigan Hospitals***Dermatology*  
Sandra Paek*Internal Medicine*  
Mark Ealovega**Royal Oak****William Beaumont Hospital***Radiology*  
Marianne Shih**MINNESOTA****Minneapolis****University of Minnesota***Ophthalmology*  
Nathan Reader**MISSOURI****Columbia****University Hospital***Family Practice*  
Heather Sharp**St. Louis****Barnes-Jewish Hospital***General Surgery*  
Ben Chang  
Emily Diskin*Internal Medicine-Primary*  
Daniel Berg  
Michelle Johnson  
Matthew Nissing  
Moyosore Onifade*Internal Medicine*  
Dan Bohl  
Robin Kundra  
Chris Pavlovic  
Gabriel Soto  
Navin Sawhney*Plastic Surgery*

Ramsey Ellis

**Mallinckrodt Institute of Radiology***Nuclear Medicine*  
Jason Jacob*Radiology*  
Gregory Sanders  
Cynthia Santillan  
Paul Staveteig**St. Louis Children's Hospital***Pediatrics*  
Carolyn Delaney  
Jennifer Dunn  
Eyad Hanna  
Monica Hulbert  
Chayim Newmark  
Paula Raybuck  
James Verbsky**Washington University/ Barnes-Jewish Hospital***Orthopaedic Surgery*  
George Calvert  
Michael Peelle**Washington University School of Medicine***Otolaryngology*  
Gretchen Champion*Neurology*  
Shahin Hakimian*Neurology*  
Mark Reploeg*Neurosurgery*  
Sarah Jost*Psychiatry*  
John Pruett**NEW YORK****Manhasset****Mt. Sinai Hospital***Internal Medicine*  
Terri Cummings**Mt. Sinai School of Medicine***Neurosurgery*  
Ron Benveniste**North Shore University***Radiology*  
Josh Moosikasiwan**NYU Medical Center***Radiology*  
Kyunghwa Rhee**NORTH CAROLINA****Charlotte****Carolina's Medical Center***General Surgery*  
Heidi Weilbach**Durham****Duke University Medical Center***Internal Medicine*  
Matthew Wolf**OHIO****Cleveland****MetroHealth Medical Center***Emergency Medicine*  
Alix Rosenstein*Family Practice*  
Natalie Fowler*Internal Medicine- Preliminary*  
Marc Herant**OREGON****Portland****Oregon Health Sciences University***Family Practice*  
Evan Saulino*General Surgery*  
Chloe Wagner**PENNSYLVANIA****Abington****Abington Memorial Hospital***General Surgery*  
Marna Smith**Lancaster****Lancaster General Hospital***Family Practice*  
Rebecca Hoover**Philadelphia****Children's Hospital of Philadelphia***Pediatrics*  
Suzy Dawid  
Bimal Desai  
Laura Thomas**Hospital of the University of Pennsylvania***Internal Medicine-Primary*  
Ann-Marie Kuhn*Radiation Oncology*  
Jack Wei**Pittsburgh****University Health Center***Internal Medicine-Primary*  
Kristin Foley*Orthopaedic Surgery*  
David Hannallah**University of Pittsburgh***Otolaryngology*  
Jeff Simons**TENNESSEE****Memphis****University of Tennessee***Neurology*  
Daalon Echols**TEXAS****Dallas****University of Texas Southwestern Medical School***Internal Medicine*  
Derek Holland**Houston****Baylor College of Medicine***Pediatrics*  
Cara Doughty**San Antonio****San Antonio Uniformed Health Services Education***Prog. Pediatrics*  
Renee Li**UTAH****Salt Lake City****University of Utah Affiliated Hospitals***Internal Medicine*  
Timothy Trask*Pediatrics*  
Armand Antommaria**VIRGINIA****Richmond****Medical College of Virginia***Internal Medicine-Primary*  
Alan Dow**WASHINGTON****Seattle****Providence Family Medical Center***Family Practice*  
Carla Ainsworth**WISCONSIN****Madison****University of Wisconsin Hospitals/Clinics***Internal Medicine*  
Peter Brookmeyer

## Passing the Torch

# Bloom succeeds Glaser as chair of School of Medicine's National Council

by Nancy Mays

AS INAUGURAL chairman of the School of Medicine's National Council, Robert J. Glaser, MD, launched a guiding body that served not only as the school's scholarly compass, but also as its soul.

"He brought intelligence, yes, but also wisdom," says William A. Peck, MD, executive vice chancellor for medical affairs and dean of the School of Medicine. "He brought experience and knowledge and, just as important, he brought a love for Washington University. We're a much better institution for his involvement."

Now, after 10 years as chairman of the council, Glaser, a biomedical consultant and one of academic medicine's most respected leaders, has passed the torch to Floyd A. Bloom, MD, a world-renowned neuroscientist.

"Serving as chairman has been a challenge, a pleasure, and above all, an honor," says Glaser. "Now the council will benefit from Dr. Bloom's leadership. He is a world leader in neuroscience and knowledgeable on every aspect of academic medicine. It's wonderful to have him."

To have two such preeminent scientists leading the National Council is a valuable resource for the School of Medicine. Glaser, who grew up within walking distance of Washington University, earned his bachelor's and medical degrees from Harvard University in 1940 and 1943 respectively. He returned to the area when W. Barry Wood Jr., MD, then head of the medical school's Department of Medicine and himself a Harvard graduate, offered him an appointment as an intern on the Ward Medical Service at Barnes Hospital. After completing his residency training, Glaser joined the faculty in 1949, rising to the rank of associate professor in the Department of Medicine, where he served as chief of the division of immunology. He left Washington University in 1957 at the age of 38 to become the youngest medical dean in the United States when he was recruited to lead the University of Colorado's Medical School. He subsequently joined the Harvard faculty and went on to become the vice president for medical affairs and dean at Stanford University.

Glaser's career also includes lengthy terms with two of the country's leading medical foundations. He served from

1972 to 1983 as president and chief executive officer of the Henry J. Kaiser Family Foundation, and from 1984 to 1997 as trustee and director of medical science for the Lucille P. Markey Charitable Trust. In the latter post, he had a major responsibility for the expenditure of over one-half billion dollars in support for basic medical research.

"During Dr. Glaser's tenure as chair of the National Council, the medical school has grown remarkably in national stature, in its impact on the development of basic medical science, and on the quality of the clinical programs of the school which bring many benefits to the region and nation," says Chancellor Mark S. Wrighton.

"A great institution must consistently seek to move forward," says Glaser. "The support of the National Council is one of many factors that can contribute to the school's progress."

Reflecting on his role with the National Council, Glaser says: "It gave me an interesting panoramic view of one of the country's great academic centers."

Now Bloom, who earned his medical degree *cum*



Robert J. Glaser, MD, left, congratulates Floyd A. Bloom, MD, on his new role as chairman of the School of Medicine's National Council.

*laude* from Washington University in 1960, will take the broad view. Though their backgrounds are markedly different, both men agree that National Councils serve their purpose best when they use the cumulative experience of their members to guide the institution toward its future.

For Bloom, that experience includes teaching at Yale University and a seven-year stint as head of neuropharmacology at the National Institute of Mental Health in Washington, DC. In 1983, Bloom moved to the Scripps Clinic and Research Foundation where he heads the department of neuropharmacology.

An international authority on the chemical control of neuronal activity, Bloom served as editor-in-chief of *Science*, the world's leading research journal, from May 1995 until June 1 of this year.

"He's brilliant, enthusiastic, dedicated, knowledgeable and very personable," Peck says of Bloom. "He will be a great adviser and advocate for us."

William H. Danforth, vice chairman of the university's Board of Trustees and chancellor emeritus, says Bloom's experience as editor of what is "undoubtedly the world's foremost scientific journal," gives him a breadth of experience and insight that will be of inestimable value to the National Council and to the entire university community."

In fact, Danforth says Bloom is the ideal successor to Glaser, whose wise leadership extends well beyond the School of Medicine and into the entire Washington University community.

Like Glaser, who is trustee emeritus, Bloom serves on the university's board. He chairs the university's regional council in San Diego, a role in which he has been a "tremendous asset," says Danforth.

Bloom says the School of Medicine is in excellent shape in relation to other medical schools. He says he sees his role as chairman of the council as important because he will be an outsider; an interested and invested one, but an outsider nonetheless.

"It's important that the school have someone who serves as an objective adviser. We will be able to help the chancellor and the school assess where progress is being made and to tackle those issues that need addressing," he says.

Still, as leader of the council, Bloom intends to keep a close eye on two emerging situations: the advent of managed care and the completion of the human genome

**"A great institution must consistently seek to move forward. The support of the National Council is one of many factors that can contribute to the school's progress."**

**ROBERT J. GLASER, MD, inaugural chairman of the School of Medicine's National Council**

project. In particular, Bloom is interested in how managed care affects the way medicine is taught. When Bloom was a student he recalls having the time and opportunity to study interesting medical cases just because they were interesting — and potentially helpful to a future practice. Today, with patients discharged more rapidly, students lack some of that invaluable hands-on clinical training, he says.

"We're shifting toward a standard in which academics may feel shortchanged," says Bloom. "That won't work. We all need to make the education of medicine what it should be, not what insurance is forcing it to be."

In addition, Bloom says he is thrilled to be on board at the School of Medicine as the inventory of human genes nears its completion. The scientific and ethical questions such an inventory poses will make academic medicine a stimulating environment.

"And Washington University, with its major role in the sequencing, will be among the leaders in this endeavor," he says.

Like its peer institutions, the School of Medicine strives to maintain its character as a great research institution while taking on expanding clinical responsibilities.

"We are a great scientific biomedical institution; the mecca for clinical medicine in the Midwest, which enriches the students' life," says Bloom. "But we must maintain the balance between research — trying to focus on the rare diseases we might do something new for — and be the competent everyday doctor. That is a knife edge."

Wrighton is naturally pleased such a premier scientist as Bloom will be leading the National Council. What's more, he looks forward to the creativity and personal enthusiasm Bloom brings to the job.

"He will be such an asset to us all," says Wrighton. "We look forward to his era of leadership." □

# Reunion 2000

## Alumni achievement awards

**Clay M. Armstrong, MD '60**, is professor of physiology at the University of Pennsylvania School of Medicine. Armstrong helped to elucidate the properties of ion channels that are the basis of nerve impulses and all cellular electrical activity. For his work on channels, he was co-recipient in 1999 of the prestigious Lasker Basic Science Award. He is a member of the National Academy of Science and of the Institute of Medicine and a fellow of the Biophysical Society.

**Richard L. Landau, MD '40**, is professor emeritus of medicine at the University of Chicago, where he has been on the faculty since 1946. He was secretary and associate chairman of the Department of Medicine from 1962 to 1966, and until 1977, headed the department's endocrinology section. He has numerous journal publications, and, with his wife, Claire, he has edited *Perspectives in Biology and Medicine* for many years. He is described as a wise counselor, superb clinician and teacher.

**William T. Shearer, MD '70, PhD**, is professor of pediatrics and of microbiology and immunology and head of the section of pediatric allergy and immunology at Baylor College of Medicine in Houston. He also directs the Pediatric HIV Research Center there.

A leader in national organizations, he is currently president-elect of the Clinical Immunology Society. He headed the Houston chapter of Washington University's Eliot Society for nine years and now chairs the Houston Regional Cabinet.

## Alumni/faculty awards

**Marshall B. Conrad, MD '45**, is emeritus associate professor of clinical orthopaedic surgery at the School of



Back row, from left: Marshall B. Conrad, MD '45; Philip R. Dodge, MD; and Gary D. Shackelford, MD '68. Front row, from left: Richard L. Landau, MD '40; Clay M. Armstrong, MD '60; and Barbara Monsees, MD '75. William T. Shearer, MD '70, PhD, photo inset.



Medicine. From 1966 to 1979 he was medical director for the St. Louis Fire Department, and for seven years he chaired emergency care courses for rescue personnel. He was president of the Washington University Medical Center Alumni Association in 1969, and regularly serves as reunion chairman for his class.

**Barbara Monsees, MD '75**, is professor of radiology at the School of Medicine and chief of the breast imaging section at the Mallinckrodt Institute of Radiology (MIR). She is the clinical representative to the Executive Faculty and the Academic Affairs Committee for the Executive Committee of the Faculty Council. She chairs the National Mammography Quality Assurance Advisory Committee for the Food and Drug Administration. She is a fellow of the American College of Radiology and of the Society of Breast Imaging, and is vice-president of the latter. A Distinguished Alumni Scholarship was named in her honor in 1995.

**Gary D. Shackelford, MD '68**, is professor of radiology and of radiology in pediatrics at the School of Medicine

and at St. Louis Children's Hospital. He directed medical student education in radiology from 1977 to 1981, and the diagnostic radiology resident training program from 1981 to 1988. In 1995, he received the Distinguished Teaching Award from senior residents of MIR. In 1998, the Washington University Medical Center Alumni Association named a Distinguished Alumni Scholarship in his honor.

## Distinguished service award

**Philip R. Dodge, MD**, is professor emeritus of pediatrics and of neurology at the School of Medicine. He came to Washington University in 1967 as professor and head of the Edward Mallinckrodt Department of Pediatrics and pediatrician-in-chief of St. Louis Children's Hospital. He is an international authority on pediatric neurological problems and published a landmark book on nutrition and the developing nervous system. The Child Neurology Society gave him the prestigious Hower Award in 1978. □





Chancellor Mark S. Wrighton greets Philip Dodge, MD, recipient of the Distinguished Service Award, at the reunion banquet.



Class of '75 members David Clifford, MD, Rachel Julian, MD, Jo-Ellyn Ryall, MD, Bruce Julian, MD, and Barbara Monsees, MD.



Meredith J. Payne, MD '50, welcomes the Class of 2000 into the medical alumni association at the banquet.



Thomas R. Pohlman, MD '76, incoming president of WUMCAA, accepts the gavel from outgoing president John W. Hubert, MD '75.



Jeffrey P. Tillinghast, MD '80, and Karen Tillinghast at the Class of 1980 dinner.

# Reunion 2000



James S. Louie, MD '65, and classmate Margaret (Peg) Telfer, MD. Telfer spoke at the reunion scientific program.



Members of the Class of 1950: Elmer B. Brown Jr., MD, Norman A. James, MD, Bertram J. Oppenheimer, MD, and Albert Goldstein, MD.



Mark H. Spurrier, MD '80, plays a Beethoven sonata at the "Docs Off-Duty" Program, where he received a standing ovation.



Mary McFayden Bishop, MD '40, with classmate Llewellyn Sale Jr., MD. He served as social chairman for the 60th year reunion.



A group of alumni visit the Medical Library Archives on a student-led tour of the School of Medicine.



Christine Litwin, MD, Sheldon Litwin, MD, and Karen Mathews, MD, at the Class of 1985 dinner.



1960 classmates H. Denny Donnell Jr., MD, Lawrence S. Steinberg, MD, Barry W. Steiger, MD, Joseph W. Eades, MD, Cynthia K. Silbert, MD, and her spouse (not a WUSM alumnus) Jeremiah Silbert, MD, Gabriel Zatlin, MD, and Joe R. Utley, MD.



Francisco J. (Paco) Garriga, MD '70, presides at the class dinner. Seated at left is classmate Dale Dierberg, MD, and at right, Judy Kelsey, MD.



Barry W. Steiger, MD '60, works magic at the "Docs Off-Duty" Program.



Linda R. Peterson, MD '90, reunion social chairperson for the class, visits with classmates Peter G. Van Deerlin, MD and Vivianna Van Deerlin, MD.



Gary D. Shackelford, MD '68, recipient of an Alumni/Faculty Award, and Dean William A. Peck, MD.

# Reunion 2000



Three generations of one family, all School of Medicine alumni, were recognized at the reunion banquet: Dan Berg, MD '00, with his father Edward F. Berg, MD '64, and grandfather Ralph Berg, MD '26.



Wolff M. Kirsch, MD, and Richard C. Braun, MD, both from the Class of 1955, compare notes during a break from the scientific program at which both spoke.



Classmates from 1945, George W. Prothro, MD, Clarence G. Schulz, MD, and John C. Herweg, MD, greet each other.



Erik Wallace, MD, president of the Class of 2000; Tess Chapman, MD '00, and David Shih, MD '00 and his guest, Karen Bacon, at the banquet.



Joseph Iwano, MD '50, and his wife, Ann, enjoy a dance after the banquet.



Seymour Brown, MD '40, and Robert R. Anschuetz, MD '40, at the dean's luncheon.

# Class Notes

*News for Class Notes may be e-mailed to [bebermer@msnotes.wustl.edu](mailto:bebermer@msnotes.wustl.edu) or sent to Ruth Bebermeyer, Medical Alumni Office, 4444 Forest Park Ave., Ste. 6500, St. Louis, MO 63108.*

**30s** **John Records, MD '36**, of Oklahoma City writes that he recently celebrated his 88th birthday. In honor of the occasion, their grandson, George Records, took Dr. and Mrs. Records on a trip to Nassau on his new motor yacht. A new great-grandson and his two sisters from Denver were among the family who accompanied them on the cruise.

**Georgia Melsheimer Bartosch, OT '38**, and her spouse live in a total life care community in Memphis TN. They have been married for 52 years and have five children. Both enjoy good health and "travel afar at every opportunity."

**40s** **Lila C. Smith, NU '48**, has settled permanently in Tucson since the death of her husband, **Carl W. Smith, Jr., HS '53-'54**. She writes that "discovering that I can have fruit trees in my yard and flowers blooming all year round has been a delight." She enjoys attending the theatre and travels often to Kansas City to visit her daughter and two granddaughters.

**Florence Cromwell, OT '49**, says, "After 50 years I am still thinking and acting like an OT from Washington University and am grateful to my predecessors for my strong education." Cromwell lives in Claremont CA.

**50s** **Marvin E. Levin, MD '51**, of St. Louis, has been honored by the American Diabetes Association with the Marvin E. Levin MD Scholarship Program, which recognizes Levin for his contribution to the understanding of diabetic foot disorders. The scholarship will be awarded annually to an

investigator for research in diabetic lower extremity disease.

**Clifton Rowland Brooks, MD, MPH, HS '52**, writes that he dislikes retirement and is job hunting with little success. He is "immersed in the Sr. Net Users Group of Oklahoma City PCUG," and is attempting to get his family genealogy organized and published.

**Edgar Draper, MD '53**, is professor emeritus at the University of Mississippi. He is a member of the Board of Regents, program chair for the American College of Psychoanalysts and parliamentarian for the Southern Psychiatric Association. He lives in Jackson MS.

**Jessie L. Ternberg, MD '53, PhD**, professor emeritus of pediatrics and surgery at Washington University School of Medicine, recently became a fellow of the American Association for the Advancement of Science. She was honored for her contributions to the practice and teaching of pediatric surgery and for her role in mentoring students.

**Casimer Jasinski, MD '57, MPH**, and **Doris R. Jasinski, MD '56**, are now retired, he from a career in aviation medicine and she from general practice and pathology. After graduation from Washington University, "Cas" interned at Queens' Hospital in Honolulu and Doris continued her pathology training there, having completed her first year at Washington University. He then attended the U.S. Navy School of Aviation Medicine at Pensacola FL. When the Jasinskis returned to Hawaii, he served as FAA Regional Flight Surgeon and later as flight surgeon at Hickam Air Force Base.

**60s** **Robert E. Fechner, MD '60**, has received the Distinguished Pathology Educator Award from the American Society of Clinical Pathologists, the largest pathology society in the world dedicated to educational programs. Fechner retired July 1, 1999, at which time the surgical pathology laboratory at the University of Virginia Medical Center was named The Robert E. Fechner Laboratory of Surgical Pathology.

**Nancy L. Shalowitz, HA '60, JD**, is executive director of Judicial Dispute Resolution Inc., in Chicago. The company conducts alternative dispute resolution, such as mediation and arbitration, in all areas of legal disputes, including medical malpractice and health care contracts. She continues to teach courses in the Health Law curriculum at DePaul University College of Law.

**70s** **Toby Stein Black, OT '71**, and **John Black, MD '73**, are pleased that their son, Lee, graduated from Washington University in May 2000. He plans to attend law school.

**Dennis Cooper, MD '71**, arranged a tour of hikers to the Anasazi Ruins in Arizona in late April 2000. Some of the ruins date back to the mid-1200s.

**Lisa M. Dunkle, MD, HS '72-'76**, has joined Achillion Pharmaceuticals in Connecticut, as senior vice president, drug development. The company identifies and develops drugs for the treatment and management of serious viral infections.

The Society of General Internal Medicine (SGIM) has established the Mary O'Flaherty Horn Generalist Scholars Program in memory of **Mary O'Flaherty Horn, MD '78**, who died in 1998 of Lou Gehrig's disease at the age of 45. The Scholars program will provide a three-year stipend for a

# Class Notes

physician who chooses to practice academic general internal medicine half time and spend the other half caring for dependent family members, as Horn did. The recipient must be dedicated to promoting creativity and scholarship in the balance of work and family and to serving the indigent. The Society welcomes contributions to the endowment fund to support this program. For more information, contact David Karlson at SGIM, 2501 M Street NW, Suite 575, Washington, DC 20037.

**80s** **Eve Jean Fischberg, OT '80**, just completed her first year as clinical coordinator/instructor in the new OTA program at Lincoln Land Community College in Illinois. She married Steven Staley, a farmer and musician, in 1986; they have two boys, Noah, 12, and Aaron, 8.

**Joy Price, OT '82**, works with O.T. Services of Georgia, providing community-based services to all ages with an emphasis on helping caregivers and families who are keeping loved ones out of institutional settings.

**Linda Muchisky, HA '83**, and her husband, Bruce, are back in Houston after living and working for a year in Thailand. They soon will move to Saudi Arabia, where Linda will continue her work as a senior consultant for a benchmarking company doing knowledge management projects. In recent years Linda has traveled to Kuwait, Venezuela, Abu Dhabi, Brazil and Europe. She welcomes e-mail at [lmuch@hotmail.com](mailto:lmuch@hotmail.com).

**Eric N. Olson, PhD, GM '84**, has moved from the MD Anderson Cancer Center in Houston to become chairman of the Department of Molecular Biology and Oncology at the University of Texas-Southwest Medical Center in Dallas. He is married to **Laurie Susan Clark, MD, HS '84**.

**Edward Rollins, MD '84**, has given up the practice of radiology to become chairman and chief executive officer of Cimtek Commerce, a company he co-founded in 1997. Based in Johnson City TN, Cimtek was the first company to sell medical supplies on the Internet. Rollins conceived the idea when he and his wife, **Susan Rollins, MD '84**, were searching the Internet for supplies for her private practice of pathology and discovered that none were available.

**Katy Ebert Cushing, HA '88**, works as a part-time project manager for St. Andrews Management Services. She lives in Florissant MO with husband, Brian, and three sons: Kenny, 7, Mark, 5, and Tim, 2.

**Mary Ann Walde, PT '89**, and her husband live in Washington MO, with their three children, ages 6, 4 and 1. She welcomes e-mail at [walde@fidnet.com](mailto:walde@fidnet.com).

**90s** **Tamara Stephenson Paul, DT '90**, and her husband, Gary Paul, have a son, Timothy Daniel, born June 28, 1999. He joins a brother, Benjamin, 2 1/2. They live in San Antonio, where Tamara stays at home with the boys.

**Suzanne Strothkamp, HA '90**, and husband, Rob, welcomed their second daughter, Rachel Irene, on April 3, 2000. Big sister Stephanie turned 3 on April 26. They live in St. Louis, where Strothkamp works for SSM Healthcare doing managed care contract negotiations. Her husband works in corporate accounting at Enterprise Rent-A-Car.

**Steven Wright, PT '90**, writes that he is "trying to make the most of life and my practice and looking forward to reuniting with the PT Class of 1990."

**Gary S. Gottesman, MD, HS '91**, reports that he and his wife, Ann, had a son, Matan Gabriel, on March 2, 1999. Gary is a medical geneticist and assis-

tant professor of pediatrics at Saint Louis University School of Medicine. Ann is an educator and teaches at Congregation Shaare Emeth. They would enjoy hearing from friends at e-mail [gottesg@slu.edu](mailto:gottesg@slu.edu).

**John (Jack) Klawitter, PT '91**, is staff physical therapist for St. Joseph's Visiting Nurse Association in Mishawaka IN. The Klawitters had a son, Andrew Thomas, on Aug. 19, 1999, who joined sister Rebekah, 2.

**Crystal Savage, PT '92**, is secretary for the western district in Oklahoma. Her husband coaches Oklahoma University's women's gymnastics. They have a 2 1/2 year old son, Nikoli, and are expecting their second child in July.

**Roger Fontes, MD '93**, is in his second year on the faculty of the Department of Orthopaedics at the University of California at San Francisco. He works as a trauma surgeon but also does some foot, ankle and shoulder surgery. He is currently spending six months in Europe learning orthopaedic techniques in Germany, Switzerland and Italy.

**Daniel T. Layish, MD, HS '93**, and his wife Nancy announce the birth of their third son, Elliott Jordan, on Nov. 29, 1999. He joins Adam, 6, and Rafael, 2. Layish is a practicing pulmonologist/intensivist in Orlando FL. He was recently advanced to fellowship in the American College of Chest Physicians.

**Wendy Olson, OT '94**, recently bought a house in her hometown, Dodge Center MN. She works full-time at the Mayo Clinic.

**Amy Malecki Rogers, MD, PhD '95**, and husband Chris had a daughter on Oct. 17, 1999. Amy is deferring all other career goals for a few years to spend time with Hannah. She writes, "A residency looks quite unlikely now that Hannah's here!" Ultimately she

hopes to get back into teaching at the undergraduate level.

**Melissa Ryan, PT '95**, and Joe Ryan announce the birth of their son, George Ryan, on April 3, 1999.

**Julie A. Miller, MD '96**, will be a chief resident in surgery at Cornell this year. She recently became engaged to Bruce Mann, MD, a surgical oncologist. They plan to marry in June 2001 and will live in Melbourne, Australia.

**Brian A. Smart, MD, HS '96**, specializes in pediatric allergy/immunology in the Chicago area.

**Thomas J. Allen, MD '97**, has finished his year as the only physician at Naval Support Activity in Crete, Greece, and has moved to Beaufort SC, for a two-year stint with a U.S. Marine Corps F-18 squadron as a flight surgeon.

**Lisa Dolphin, PT '97**, and husband Randy have a daughter, Hailey Jo, born Nov. 22, 1999. They live in Cedar Rapids IA.

**Jamey C. Gordon, PT '97**, recently took a position with HealthSouth in Fort Wayne IN as a site coordinator. He was married on Oct. 9, 1999, and he and his wife, Courtney, reside in Leesburg IN, where they enjoy their new home and puppy.

**Jennifer Lanier Payne, MD '97**, and her husband, Rene, live in Columbia MD. She is a third-year resident in psychiatry at Johns Hopkins. Their daughter, Amanda, is "growing like a weed and saying a new word every day"!

**Elizabeth Shoemaker, PT '97**, married Michael Kevil of Denver CO on June 17, 2000. They will continue to live in Mississippi for another year or two and then will relocate closer to family and a pilot-base for Continental Airlines.

**John Stoffel, MD '97**, married Elena Martinez on Oct. 30, 1999, in

Falmouth MA. She is an internal medicine resident at Brigham & Women's Hospital in Boston.

**Shana Birnbaum, MD '99**, is an intern at Massachusetts General Hospital in the primary care medicine track.

**Anurag Singh, MD '99**, and **Stephanie Feldhousen, PT '98**, were married in Catholic and Hindu ceremonies on May 29 and 30, 1999. They are now at home on Laclede Avenue in St. Louis.

## IN MEMORY

**Marion Ainsworth Barnard, NU '24**, died on Feb. 6, 2000, at the age of 99. She had lived at Bethesda Meadow Nursing Home in Ellisville MO for some years. She is survived by children, grandchildren and 18 great-grandchildren, as well as a sister, Dorothy Ainsworth Cornell.

**Franz Arzt, MD '25**, died May 16, 2000, in Delray Beach FL, at the age of 98. He was a retired obstetrician/gynecologist. His wife, Harriet, survives.

**Paul G. Buss, MD '34**, died at home in Kalamazoo MI, on June 9, 1999. He was 92. He is survived by his wife, **Martha Beem Buss, NU '34**, to whom he had been married for 65 years. They had lived in Orange County CA for nearly 50 years before moving to Michigan to be near family.

**Robert C. Kingsland, MD '37**, died in Sarasota FL, on Feb. 10, 2000, at the age of 87. He retired from the practice of internal medicine in St. Louis in 1978 and moved to Florida two years later. He had been an assistant professor at Washington University School of Medicine. During World War II, he served in the U.S. Army Medical Corps. He is survived by his wife, Shirley, two daughters, a son, and two stepsons.

**Kenneth L. Carter, MD '38**, a retired general surgeon, died Jan. 18, 1999, in Beloit WI, at the age of 87.

Following service in the U.S. Army Medical Corps during World War II, he completed his residency at Washington University. With two other physicians, he then founded the Beloit Clinic in 1947 and continued to practice there. He was a fellow in the American College of Surgeons. He and his wife, Frances Ritter Carter, who survives, were natives of Mattoon IL. Three children also survive.

**Eleanor L. Steindorf, MD '38**, died in Medford OR, on Aug. 30, 1999, at the age of 89. She practiced obstetrics/gynecology in California until her retirement in 1978, and had been on the faculty at the University of Southern California School of Medicine. In January 1959 she married Earl Johnson; he died in December of the same year. Her undergraduate alma mater, Bethany College in West Virginia, gave her an Alumni Achievement Award in 1981.

**John H. Ahrens, MD '39**, died March 1, 1996, of complications from diabetes. He had been a general surgeon in Oelwein IA.

**Frank J. Pickett, MD '41**, died at the University of Washington Medical Center in Seattle on Nov. 5, 1999, from complications following surgery for removal of a retroperitoneal liposarcoma. He had been a family practitioner in Bozeman MT from 1947-1976. During World War II he served as a flight surgeon in England and France. He is survived by his wife of 54 years, **Yvonne Bost Pickett, NU '38**, and three children.

**Barbara Shier, MD '45**, died in Maplewood NJ on Dec. 11, 1999, after a 15-year bout with Parkinson's Disease. She is survived by her husband, **Julius M. Shier, MD '41**. □

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Federal Income Tax Deduction	\$22,235 <sup>3</sup>
Federal Income Tax Savings	\$6,893
Total Tax Savings	\$11,893
Effective Payout Rate	7.9%

<sup>1</sup> Gain on stock held over 12 months is taxed at 20%.

<sup>2</sup> Income from Unitrusts will vary.

<sup>3</sup> Donors, husband and wife, both age 75, at the 31% bracket. The Federal Income Tax Deduction is even greater for a Unitrust with only one beneficiary.

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Please have David C. Jones, Paul Schoon, Lynnette Sodha, or Mike Touhey from the Washington University Planned Giving Office call me.

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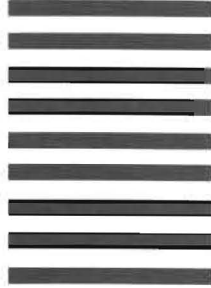
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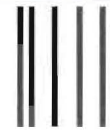
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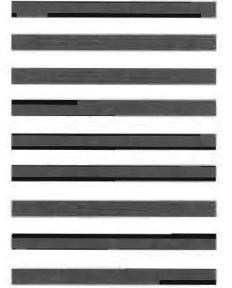
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**The Sweet Sound of Bagpipes** is music to the ears of graduates Erik A. Wallace, left, and Teresa Chapman, who were among 105 students who received degrees from the School of Medicine on May 19. Wallace was one of 86 to receive the MD degree and Chapman was one of two to receive the MD/MA degree; 15 students received the MD/PhD degree. They flank bagpiper Bill Velders, of the John Ford Highland Pipe Band, which regularly performs at the medical school commencement ceremony.

### **Rooftop Respite:**

The Olson Family Garden on the eighth-floor roof of St. Louis Children's Hospital provides a calm and colorful oasis for patients and visitors alike.

Trickling waterfalls, vivid foliage and a view of Forest Park invite a leisurely stroll. The garden, which was dedicated in April, is the result of generous donations from the families of patients.



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