

OUTLOOK



A Twist of Fate

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The Medical Center continues to expand. An aerial view taken this past fall reveals the new Library and Biomedical Communications Center and the new crosswalk to the Barnes Hospital Garage. Jewish Hospital completed its new ambulatory care building in November of 1987.

OUTLOOK

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A Twist of Fate

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Yetta Luger twirls ribbons during a rhythmic gymnastics exercise for people with Parkinson's disease. See story on page 8.

Obstetricians Use Special Sound Stimulators To Startle Unborn Babies Into Good Health

Obstetricians at Washington University are using a “startling” new method that can serve in lieu of a fetal blood sample when deciding whether or not a fetus is getting enough oxygen during labor. The new method, as described in the October issue of *Obstetrics and Gynecology*, may both decrease brain damage in infants and reduce the number of unnecessary cesarean sections, according to Roy H. Petrie, M.D., professor of obstetrics and gynecology.

The new test entails the startling of the unborn child with a sound stimulator that is placed on the mother’s abdomen, over the baby’s ear. When stimulated, or buzzed, the heart rates of fetuses who are getting enough oxygen go up in the same way the heart rates of adults go up in response to a loud, unexpected noise, Petrie says. But if the heart rate of a fetus does not increase by at least 10 beats per minute for a period of 10 seconds, it is probably not getting enough oxygen and may suffer brain damage if not immediately removed from the womb.

Fetal oxygen deprivation is a problem in 3 to 5 percent of all pregnancies, according to Petrie, who explains that fetuses who do not have enough oxygen for their metabolism must get their energy from an alternative biochemical pathway that produces lactic acid—a by-product that literally fries brain cells. Physicians have monitored fetal heart rates as a means of detecting fetal distress during labor for the past

15 years. But while a normal heart rate is very accurate for ruling out problems, only 35 to 50 percent of fetuses with abnormal heart rates actually have a problem. “Fetal heart rate monitoring is very good for making a diagnosis of health,” Petrie explains. “But when you try to use the same technique to diagnose babies that may be sick and need to be taken out by cesarean section or by early force of delivery, it’s not a very good technique.”

Physicians have traditionally used a fetal blood analysis to distinguish fetuses with abnormal heart rates who are in distress from those who are not. Fetal blood is collected with a tube-like endoscope that is in-

serted into the birth canal and used to prick the baby’s scalp. Once obtained, the blood is tested for acid-base content, or pH.

But while fetal blood sampling is very accurate, it is also very difficult and cumbersome to do. The new startling method being used at Washington University yields the same information without having to prick the baby in the head, or put an already uncomfortable mother into the frog-like position required for blood sampling.

As described in their *Obstetrics and Gynecology* article, “Fetal Vibroacoustic Stimulation: Magnitude and Duration of Fetal Heart Rate Accelerations as a Marker of Fetal

Health,” Petrie and colleagues Gregg B. Polzin, Karin J. Blakemore and Erol Amon used both the startling and more conventional blood sampling methods in 100 patients who exhibited abnormal heart rates. The blood pH of those babies whose heart rates accelerated by at least 10 beats per minute for 10 seconds were found to be within the normal range, while those with lower or no heart rate accelerations had abnormally acidic pHs (which could cause brain damage), and were subsequently removed by cesarean section.

Not only did Petrie and his fellow researchers discover heart rate response to be correlated with blood pH, but they also identified two different levels of response.

Fetuses whose heart rates accelerated 10 beats per minute for 10 seconds but less than 15 beats per minute for 15 sec-



Roy Petrie, M.D., startles a fetus with a sound stimulator. The heart rate acceleration that results can be used as an indicator of the unborn child’s well-being.

onds were more likely to develop problems later in labor and required closer monitoring than fetuses with greater accelerations. "We found no differences between the two groups in the short-range, but as the labor goes on, the group with heart rate accelerations less than 15 had less base excess," Petrie says. "When we say base excess, we mean buffer reserve—the amount of buffers available for neutralizing that terrible acid. As you use more and more buffers to neutralize the acid, the base deficit gets larger and larger. You've used up your bank account and you're borrowing from the bank. Soon you're going to go into Chapter Eleven, because you've borrowed all you can and you can't pay it back."

While the heart rate response method used by Petrie and others at Washington University can substitute for a conventional blood test, it will probably never replace it. Yet because it is so much easier to do, the new method can be done much more frequently and therefore provide closer monitoring and better knowledge of fetal health than ever before—knowledge that can potentially decrease both the incidence of fetal brain damage and number of unnecessary and unwanted cesarean sections. ■

Correction

The previous issue of Outlook gave an incorrect title for Michael B. Rumelt, M.D., whose editorial on the hazards of self-diagnosis and treatment appeared in "Personal Outlook." His correct title is associate professor of clinical ophthalmology. ■

Pediatric Dentistry Establishes New National Center for Ectodermal Dysplasia

One of five national centers for research and treatment of ectodermal dysplasia, a rare genetic disease that affects children's teeth and skin, has been established in the division of pediatric dentistry.

Housed at Children's Hospital, the center was created through the efforts of the National Foundation for Ectodermal Dysplasias and the School of Dental Medicine.

One in 15,000 people are believed to be affected by ectodermal dysplasia, a group of closely related diseases that occur during pregnancy because of defects in formation of the ectoderm, the outer layer of tissue that surrounds the developing baby and that

contributes to proper growth of many parts of the body.

The most common and most visible problem of these patients is that they generally are missing some or all of their teeth, according to the new center's director, Donald V. Huebner, D.D.S., director of the division of pediatric dentistry. Those teeth that remain are irregular in shape, often pointed and lack enamel, the protective coating on teeth, he adds.

People with ectodermal dysplasia often have absent or poorly functioning sweat glands. They may also have thin or abnormally textured hair and fair, rash-prone skin. Their bodies underproduce fluids; they tend to have frequent

eye infections because of a deficiency in tears, and difficulty swallowing because saliva is sparse. Other complications can include hearing and vision loss, mental retardation, abnormal limbs and cleft palate.

Although there is currently no cure, there are helpful treatments. Dentures, for example, can replace missing teeth, and salivary substitutes can aid swallowing.

The new center provides a central location for diagnosis, treatment and support groups. Research to investigate clinical and basic science problems associated with the disease will be an integral part of the program. ■

American Heart Association Awards Its Best

Philip Needleman, Ph.D., Alumni Professor and head of the Department of Pharmacology at the School of Medicine, was selected as a co-recipient of the 1988 Research Achievement Award of the American Heart Association, the highest honor given by the association.

Needleman was honored in recognition of his original and important contributions to the identification and understanding of atrial natriuretic factor, a factor in the blood that regulates salt and fluid balances in the body. Its discovery was the culmination of a search that had gone on several decades in the scientific community.

The identification of atrial natriuretic factor was a result of Needleman's research on atriopeptins, chemicals produced in the heart that dramatically affect the kidneys and the body's internal fluid environment. Needleman's research team isolated and established the molecular structure of atriopeptins in 1983.

He is also an authority on prostaglandins, hormone-like substances that affect many of the body's regulatory systems. He has made specific contributions to the relationship between prostaglandins and blood clotting, blood pressure regulation and heart disease.

Needleman joined the School of Medicine faculty in

1967 as an assistant professor, and was named head of the pharmacology department in 1976. He has held the Alumni Endowed Professorship since 1982, and has been voted Teacher of the Year four times by senior medical students. He received his doctorate from the University of Maryland in 1964, and served postdoctoral and advanced research fellowships at the School of Medicine. He was elected to the National Academy of Sciences in 1987. ■

Computerized Imaging Detects Gum Disease

Experts in dentistry and radiology at the medical and dental schools are collaborating on research using computerized imaging to detect gum disease much earlier than is now possible.

The work is being supported by a \$335,000 five-year grant from the National Institute of Dental Research.

Although the actual causes of gum, or periodontal, disease are unknown, dentists generally agree that most forms are made worse when plaque is allowed to accumulate. Throughout the course of gum disease, the bone that holds teeth in the

mouth is eroded. Eventually, this erosion can lead to tooth loss.

Washington University researchers are interested in using computer imaging to diagnose patients before visible signs of gum disease and its aftermath, loss of bone, have occurred.

"We know in hindsight when bone is lost," says principal investigator Charles F. Hildebolt, D.D.S., Ph.D., assistant professor in dental diagnostic services. "We're asking the computer to detect structural changes in the patients' early X-rays—changes not vis-

ible to the naked eye—to let dentists know it's about to happen."

The study involves taking biannual dental X-rays of patients at high risk for gum disease, digitizing the X-rays and entering them into a sophisticated computer system that enhances the image, allowing for easier measurement of bone levels. The series of images from each patient is then analyzed by the computer to determine if bone loss has occurred and to detect subtle bone pattern changes that may occur before deterioration.

Ultimately Hildebolt and colleagues Michael K. Shroud, D.M.D., assistant professor in dental diagnostic services, and Michael W. Vannier, M.D., associate professor of radiology, hope this imaging can be simplified for personal computers so that general dentists can use it routinely as a diagnostic tool.

Periodontal disease affects three out of four people between the ages of 18 and 70 and causes 60 percent of tooth extractions in those over 40. Gum disease has surpassed cavities as the leading cause of tooth loss in the world, causing nine out of every 10 people to lose at least one tooth, according to Hildebolt. ■



Drs. Michael Shroud (left), Charles Hildebolt (seated) and Michael Vannier review images used to detect gum disease.

Studies Show the Blues Can Literally Break Your Heart

Feeling blue may be as big a risk factor in developing coronary artery disease as cigarette smoking, elevated cholesterol or high blood pressure, says a psychologist at the School of Medicine.

According to a recent study by Robert Carney, Ph.D., associate professor of psychology, nearly one out of five patients with coronary artery disease was clinically depressed before their diagnosis. And, in the year after diagnosis, depressed patients were twice as likely to have a major coronary event—heart attack, surgery or death—than nondepressed patients.

“Our study underscores the fact that depression is an important, independent risk factor for the occurrence of major heart problems,” says Carney. “If early diagnosis and treatment of depression in patients with coronary artery disease is initiated, we may be able to save lives.”

Carney’s study on the prevalence of depression in heart patients was published in the *American Journal of Cardiology*. His more recent work on depression in heart patients as a predictor of major cardiac events appeared in the journal *Psychosomatic Medicine*.

Interviewing 50 patients recently diagnosed as having coronary artery disease, Carney found that nine of them—18 percent—suffered from major depressive disorder, a much higher incidence of depression than the 4 percent found in the general population.

The study also showed that

depression in heart patients is not related to the severity of coronary artery disease, medical problems caused by their condition, age of the patient or use of medication. In most cases, the depressive symptoms preceded symptoms that could be attributed to heart disease, such as chest pain and breathlessness.

Study results did indicate a relationship between depression and smoking—all but one of the depressed patients were smokers—but the significance of that relationship is not yet clear.

Carney emphasizes that his studies dealt only with recently diagnosed, relatively healthy patients: None of them had ever suffered a major cardiac event or been acutely ill or hospitalized because of coronary artery disease.

“For the most part, these were patients who hadn’t experienced severe pain, but perhaps breathlessness or minor chest pain upon exertion,” he says. “So it’s not as if they were depressed because they’d had to live with pain or with the knowledge and symptoms of serious cardiac disease for a long time.”

Seven of the nine depressed patients either died or suffered a major cardiac event during the year following their coronary artery disease diagnosis, more than twice the incidence in nondepressed patients. In that year, one depressed patient died, one had a heart attack, and five underwent either coronary angioplasty or bypass surgery.

Carney says that because cases of major depressive dis-

order generally respond well to psychiatric treatment, it is unfortunate that depressed coronary artery disease patients are seldom recognized by their primary care physicians or cardiologists.

“Physicians who treat coronary artery disease patients may be inadequately trained to recognize depression or more concerned with the physical manifestations of the disease,” he says. Thus, depression in these patients usually remains undiagnosed and untreated.

To remedy this, Carney suggests that cardiologists use a brief, easily administered test, the Beck Depression Inventory, when they examine patients

with coronary artery disease. According to Carney’s studies, the 21-question inventory, designed to measure the severity of depression, is fairly accurate in identifying patients with major depressive disorder.

“What we’d like to see as a result of our research is increased attention to the psychological side of illness,” Carney says. “A patient’s reactions and experiences during illness should be recognized as important from a humanitarian point of view, of course. But it is also important to recognize that a patient’s psychological state may also have an effect on the disease and on the outcome of the disease.” ■

Baum Becomes New Head of OT

Carolyn Baum has been appointed Elias Michael Director of the Program in Occupational Therapy.

As director, Baum is planning and directing undergraduate and graduate programs in occupational therapy. She also serves as an instructor.

Baum will continue as director of occupational therapy clinical services at the Irene Walter Johnson Institute of Rehabilitation, a position she has held since she joined the faculty in 1976.

Her research includes an investigation on the effects of Alzheimer’s disease, including functional changes in patients and the burden the disease places on family and family structure. The study is being conducted through the School of Medicine’s Memory and Aging Project in which Baum is collaborating with the project’s director, Leonard Berg, M.D.

She is co-investigator of another study to identify the incidence of hand injuries—one of the most common workplace injuries—in workers whose jobs require repetitive motion with the hands. She was principal investigator of a study funded by the Social Security Administration to develop programs to rehabilitate injured workers so they can resume employment.

Baum is pursuing a doctorate in gerontology and social policy at the university’s George Warren Brown School of Social Work. In addition to local professional activities and involvement in state associations, she is active in the American Occupational Therapy Association, having served two terms as vice president and one as president. She is currently president of the American Occupational Therapy Certification Board. ■

Pulmonary Specialist Says That Asthma Is No Reason To Be out of Shape and Advises His Young Patients to "Get Physical"

This summer, 15-year-old asthma patient Eva Stahl biked and canoed for 21 days through Canada and Michigan. Friends and family were concerned that asthma, the respiratory disease that can make its victims struggle for each breath, would keep her from finishing the trip. But she completed the journey, enjoyed herself and proved her doctor's point: Asthma need not stand in the way of physical fitness.

All too many young asthmatics are completely out of shape, says Eva's doctor, Robert Strunk, M.D. Strunk, a pulmonary specialist and professor of pediatrics at the School of Medicine, is an asthmatic himself. He says the disease should not be a handicap. Children who have it can achieve normal fitness levels, regardless of the severity of the disease, he says.

Unfortunately, many young patients aren't active enough because of restrictions placed by parents and teachers who fear an asthma attack. That shouldn't happen, he says, as long as asthma medication is properly prescribed and taken before exercise.

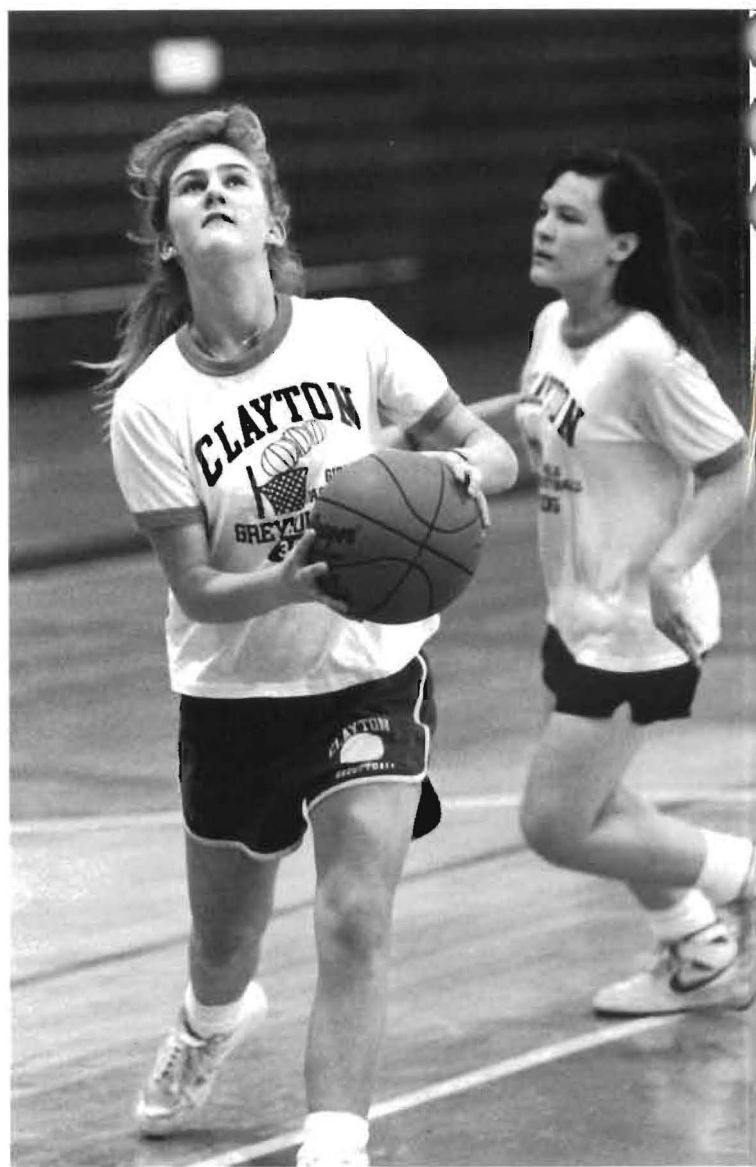
"Many child asthma patients are not fit because their medical management is not tailored so they can exercise," comments Strunk, director of pulmonary medicine at Children's Hospital. "These are the ones who are not encouraged to exercise by their doctors, parents or P.E. teachers. Often, they don't even realize that they're living restricted lives. They believe that part of having

asthma is to limit physical exertion. These children get used to not exercising because they believe if they do, they'll have problems."

It is possible to improve fitness levels in asthmatic children, as Strunk reports in the September 1988 American Journal of Diseases in Children. While on staff at the National Jewish Center for Immunology and Respiratory Medicine in Denver, he measured the fitness of children with moderately severe to severe asthma, before and after they completed an intense four-week program.

As a standard, he used the Health Related Fitness Test for abdominal strength, flexibility, body fat composition and endurance. Patients fared the worst on the endurance test. A full 91 percent of the children performed in or below the 50th percentile, compared to the expected 50 percent of a normal population; 74 percent scored in or below the 25th percentile; and 51 percent in or below the 10th percentile. What's more, those endurance problems correlated strongly with increased body fat, as measured by skinfold thickness. Abdominal strength and flexibility tests showed normal results.

To improve his young patients' conditioning, Strunk prescribed an intense exercise program of physical education four times a week, with an emphasis on age-appropriate sports and motor skills; an hour of aerobic conditioning three times a week; plus any extra team sports or intramural activities the patient wanted to



Eva Stahl prepares for a lay-up during basketball practice at Clayton High School. Stahl is living proof that asthma does not have to limit a person's participation in sports.

play. Of the 58 participants who received an exit evaluation, 43 had improved their score on the nine-minute run by at least 10 percent. By the time of discharge, participants

in the program had improved fitness in three areas—endurance, abdominal strength and flexibility—though skinfold thickness had not changed.

"With asthma, there are certain things you do in life," Strunk says. "You brush your teeth every morning. You take your medicine regularly."

And, if you follow his advice, you work at fitness. He strongly encourages his asthma patients to do a minimum of 20 minutes of aerobic exercise three times a week. He recommends any exercise that is rhythmical, continuous and enough to get the individual's heart rate up. Asthma sufferers who experience difficulty breathing when they exercise should consult their doctor for a change in treatment, Strunk advises.

In addition to showing that children with asthma who exercise can vastly improve fitness, he also notes that mental attitude and self-image improve as well.

"They seemed to feel better about their bodies as they progressed. That's very important, considering how badly they felt about their bodies for so many years," he says. "They still thought it was a pain in the neck to take the medicine and they didn't like having asthma, but to be able to perform athletically like other kids was a very rewarding experience for them."

Eva Stahl echoes Strunk's comments. "Asthma can't keep you from doing anything, and it shouldn't be a disability at all," she says. "A lot of people were worried about me on that 21-day bike and canoe trip, but I didn't have any trouble at all. In fact, I ended up helping another girl who did." ■

Hammerman and Schlesinger Are Granted MERIT Status From the National Institutes of Health for Their Most Recent Research Grants

Two faculty members at the School of Medicine have received MERIT status for their latest grants, an honor that guarantees uninterrupted support for their research.

Marc R. Hammerman, M.D., associate professor of medicine, was awarded a five-year grant from the National Institute of Diabetes and Digestive and Kidney Diseases that totals more than \$832,000.



Marc Hammerman, M.D.

A 1972 graduate of the School of Medicine, Hammerman has been on the faculty since 1979, specializing in diabetes, kidney disease and other metabolic diseases. With this grant, he is trying to explain biochemical mechanisms that affect the development and growth of kidneys. Specifically, he is studying growth hormone and insulin-like growth factors and how they

interact with various cells from the kidney, to determine their role in kidney growth.

Ultimately, he hopes to learn more about how growth factors may influence very early development of the kidney. He also hopes to explain their role in compensatory renal hypertrophy, a condition that occurs in patients when one kidney is removed or fails and the remaining kidney becomes enlarged due to increased workload.

Sondra Schlesinger, Ph.D., professor of microbiology and immunology, received a five-year grant from the National Institute of Allergy and Infectious Diseases that amounts to more than \$800,000.

Schlesinger's research examines the structure and replication of RNA viruses. She is focusing on a virus that serves as a model system for understanding how viruses replicate and assemble into particles. The virus, Sindbis, does not usually cause disease, but is related to viruses known to cause encephalitis in humans and animals. It may also be related to the newly identified non-A, non-B hepatitis virus.

Schlesinger, who has been on the faculty since 1964, hopes to determine which viral RNA sequences are required for the regulation of viral replication. It might then be possible to develop very specific antiviral agents that would interfere with, and thus prevent, the interactions that allow disease-causing viruses to grow. ■



Sondra Schlesinger, Ph.D.

Because Sindbis virus can grow in a wide variety of environments and can enter cells without causing genetic changes, Schlesinger and her associates—Henry V. Huang, Ph.D., and Charles M. Rice, Ph.D., both assistant professors of microbiology and immunology—are now developing it as a means of introducing foreign RNAs into cells in a number of different organisms. Cells infected with Sindbis virus produce large quantities of proteins, so the introduction of foreign RNAs may be useful for producing hormones and growth factors. ■

A Twist of Fate

RESEARCHERS
USE
SYNTHETIC
HEROIN
TO STUDY
PARKINSON'S
DISEASE

BY KATHY
WILL

Phillip Ballard and William Langston were stumped. The 42-year-old patient who had been admitted to their Santa Clara Valley Medical Center in San Jose, Calif., because he was unable to move or speak appeared to be suffering from Parkinson's disease — a disorder of movement and balance that usually affects much older people.

In all their years as practicing neurologists, Ballard and Langston had never heard of anyone so young coming down with such a severe and sudden case of this disorder.

They were even more puzzled when, a week later, the patient's 30-year-old sister came in with similar symptoms. Although her condition was not as poor as her brother's, she had a hand tremor, exhibited slow movement, and her face was blank and expressionless.

During the course of their patients' treatment, Ballard and Langston learned that the Carillo siblings — both intravenous drug users — had been shooting up a synthetic version of heroin that they had recently purchased on the street.

The synthetic heroin became even more suspect as the cause of their parkinsonism when Ballard learned that a colleague in Santa Cruz, Calif., was involved in a similar case. In this one, two brothers in their 20s had suddenly become stiff and unable to move. Like the Carillos, these brothers

were also drug users who had recently purchased synthetic heroin.

It was a terrifying conclusion: that a drug being sold on the street was capable of inducing irreversible parkinsonism in young people. Yet it was confirmed by one of the toxicologists to whom Ballard and Langston had sent the drug for analysis.

The toxicologist remembered reading about a similar case that occurred in the 1970s. A 23-year-old graduate student who had been trying to synthesize a heroin-like compound in his home laboratory had taken some shortcuts and contaminated his product with a byproduct called MPTP. After using the contaminated drug, the student developed parkinsonian-like symptoms and was referred to the National Institute of Mental Health for testing.

When the student later died of a drug overdose, the autopsy revealed that a large percentage of the substantia nigra cells in his brain had been destroyed — a conclusive sign of parkinsonism.

Ballard and Langston had stumbled upon a drug that causes parkinsonism. And this drug was not the product of ingenious research, but a result of sloppy laboratory practices by a few drug addicts.

Yet while the making of MPTP was tragic for the individuals who injected themselves with it, MPTP has become one of the most powerful tools in Parkinson's

Drs. Joel Perlmutter (right) and Erwin Montgomery



disease research — bringing new hope to as many as 1 million North Americans who have the disorder.

MPTP was a breakthrough because it can be used to create an animal model with which researchers can learn more about Parkinson's disease and test new drugs. Neurologists at Washington University School of Medicine, for example, use MPTP to study how the brain controls movement and how this control is affected by Parkinson's disease.

No End in Sight

Hope is a rare commodity for a disease that has no cure. Although there are drugs that are very effective during the onset and early stages of the disorder, these drugs treat the symptoms without halting the progression of the disease. Furthermore, these drugs may cause severe side effects and lose their potency over time.

Some patients with Parkinson's disease may have worsening symptoms that include uncontrollable trembling of a limb, side of the body or the entire body. They may experience muscle rigidity, difficulty in walking or maintaining balance, slowness of movement, difficulty in initiating or stopping movement, speech problems, and complications with swallowing. Ordinary tasks such as dressing, getting out of bed or a chair, and dialing the telephone can become major challenges, requiring assistance or special aids. Patients may be unable to drive or maintain a job.

Yetta Luger, 74, who has had Parkinson's disease for 17 years, cannot carry a glass from the kitchen sink to the table without falling or dropping the glass. She was falling and bruising her knees so frequently that her husband, Aaron, bought her the same type of knee pads that volleyball players wear.

Like most Parkinson's patients, Yetta takes a form of L-dopa, a drug that was first used in the 1950s. The drug was developed after researchers learned that Parkinson's patients were missing cells in an area of the brain called the substantia nigra. These cells produce dopamine — the chemical messenger that carries brain signals to the area of the brain that controls balance and movement.

They do this by training larger and more docile relatives of the Rhesus monkey, called Pig-tailed macaques, to play video-like games. These games require the monkeys to perform very specific hand movements that can then be analyzed, according to Erwin B. Montgomery Jr., M.D., assistant professor of neurology, who has been working with these animals for about seven years.

As each monkey plays the video game, its every hand movement is measured and

recorded for muscle activity, reaction time (the time it takes to initiate a movement), speed of movement and the amount of time it takes to reach the final target, among others.

While the monkeys are performing these movements, electrodes in a portion of their brains called the basal ganglia record the activity of individual brain cells. "We kind of eavesdrop on the conversation the neurons are having with each other and then try to decipher what they're saying," Mont-

L-dopa, which turns into dopamine when it enters the brain, was designed to replace this missing dopamine. But things are not that simple. The dopamine-producing cells of the brain ordinarily release minute amounts of dopamine (microliters) over very short periods of time (milliseconds), so the effect is very controlled and subtle. This is a whole different ball game from the large doses of dopamine patients receive from L-dopa.

In the early stages of Parkinson's, L-dopa is so effective that patients may almost forget they have the disease. "When I first went on it, it was like a wonder drug," says patient Fred Barr, who continued to run three miles a day for four years after he was diagnosed and placed on the drug. "It's almost like you don't have the disease."

But over the years, treatment becomes more complicated. Patients start to vary a great deal in their response, "turning off suddenly, as if someone turned off a light switch," according to Erwin B. Montgomery Jr., M.D., assistant professor of neurology, who takes a special interest in the complications of Parkinson's disease.

They may develop side effects called dyskinesias, in which they cannot stop a part of their body from moving. Involuntary movements can occur in the hands, face, lips, tongue or legs. These movements can become so pronounced that patients cannot even walk or take care of themselves. "I've seen situations where family members have literally tied patients to a chair, because these movements would propel them out of the chair," Montgomery says. "There are times when the side effects may be even

worse than the Parkinson's disease itself."

Patients who have been on the drug for a long time also may become responsive for shorter and shorter amounts of time, according to Montgomery. Where before their medication may have lasted four to six hours, many patients end up taking their medicine at hourly, even half-hourly intervals. Montgomery recalls one patient who kept a tablet of her medicine in a locket around her neck and nibbled off a quarter of a tablet every 45 minutes.

Currently, the only way to help these difficult-to-treat patients is to adjust the dosage so that it is enough to be effective without causing side effects. And because no two patients are the same, the ideal dosage will be different for each individual. To help tailor the medication to the individual patient, Montgomery and members of the physical therapy department at the Irene Walter Johnson Institute have developed an all-day evaluation program in which individual patients' responses to medication are evaluated every half-hour.

"I'd say that by going to these evaluations, I got at least six or seven more useful years," says Barr, whose condition is worsening now to the point that he is no longer sure he'll be able to keep his job in sales. "I just keep hoping they learn something from those monkeys."

To receive printed material on Parkinson's disease or to learn about services offered in the St. Louis area, call the Washington University Parkinson Center at (314) 362-3299. ■

gomery says. "That way we can understand how these different neurons are involved in controlling movement." There are neurons, for example, that serve to initiate movements, neurons that help sustain movements and neurons that help guide movements towards a target.

Once the normal activities of these neurons have been observed, the monkeys are given MPTP. The movements and brain cell activities of these parkinsonian monkeys are then compared to recordings made before they were given MPTP, Montgomery explains. "We go back to the brain to see what actually goes wrong in the brain after they're made parkinsonian."

Montgomery has shown that the parkinsonian monkeys actually lose those neurons that help them reach the final goal of their movement. This led him to suspect that the area of the human brain that is damaged by Parkinson's disease may also be involved in enabling us to guide our hands all the way to a target.

With this hypothesis in mind, he designed a human study to see how patients with Parkinson's disease are affected when the goal of the movement, or target, is varied. In this study, Montgomery asked both normal and parkinsonian subjects to move their arms a specified distance: first against a mechanical stop and then without the stop. The assumption was that people would move their arms faster when they knew they would be stopped by a barrier, and slower when they had to stop their own arms at the correct distance, without any barrier. Montgomery's predictions were correct: normal subjects reached more slowly when no barrier was present to stop them, but the parkinsonian subjects moved their arms at the same rate in both situations.

"What that tells me is that when a normal person knows what the target conditions are, he can adjust his programming to account for it," Montgomery says, "while Parkinson's patients can't." This may explain why some Parkinson's patients may move through a room very well, yet freeze up when they approach a door. "Normally, you and I incorporate different movement strategies based on what we want to do, whereas Parkinson's patients can't," Montgomery says.

Montgomery's brain cell recordings are complemented by Positron Emission Tomography (PET) scans of MPTP-treated monkeys. Directed by Joel S. Perlmutter, M.D., assistant professor of neurology, the PET scans look at the effects of MPTP on blood flow within the brain and on the brain's receptors for dopamine — a chemi-



Parkinson's patients play an adapted version of volleyball during a special exercise program developed by occupational therapist Linda Hunt.

cal messenger that is missing in the brains of Parkinson's patients.

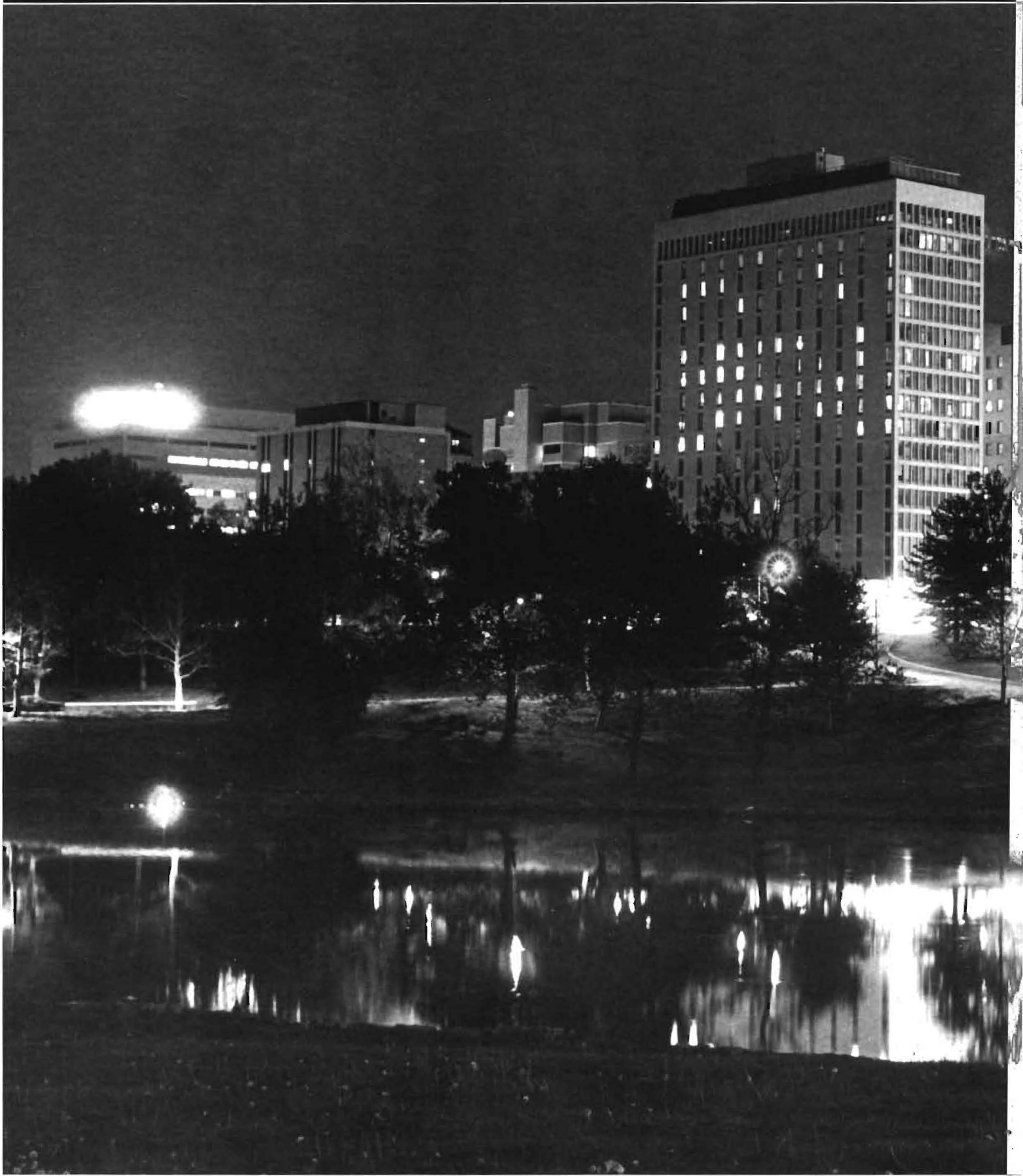
PET measurements of a human patient with MPTP-induced parkinsonism have revealed an increased sensitivity of dopamine receptors, according to Perlmutter. This increased sensitivity of receptors is most likely the brain's way of compensating for the diminishing supply of dopamine in Parkinson's disease, making the receptors able to respond to smaller and smaller amounts. This may also help to explain, at least in part, why some patients become more sensitive to dopamine-replacing drugs over time, and may even experience side effects, Perlmutter says.

In addition to adding new insights into the disease itself, the MPTP model has proved invaluable in the testing of new drugs — two of which are now being evaluated in a \$10 million North American study. The study, which involves 800 patients at 27 medical centers in the United States and Canada, was launched after scientists discovered that monkeys who had been given the drug deprenyl before they were given MPTP did not become parkinsonian. Deprenyl's ability to block the effects of MPTP in monkeys helped identify it as a drug that could potentially slow or halt the progression of Parkinson's disease in patients who show early symptoms, according to Perlmutter, who is principle investigator for the local study. The double-blind study, now in its second year, is testing the effectiveness of both deprenyl and a similar-acting drug, tocopherol.

Whether the drugs work or not, Al Grabel, a 76-year-old accountant and participant in the study, explains how important it is to keep a positive attitude. One thing that helps keep his spirits up is a special exercise program for Parkinson's patients, which he attends twice a week with his wife, Joan.

Started three years ago by Linda Hunt, an occupational therapist at the Irene Walter Johnson Institute (IWJ), the classes emphasize exercises that improve patients' flexibility, range of motion, endurance, coordination, muscle strength and breathing. Patients also participate in recreational activities that have been especially tailored to their needs and abilities. Because they would be unable to hit a regular volleyball, they play with a beach ball. And they play sitting down, to prevent falling. They play baseball with a large plastic bat and ball, and play similarly modified versions of horseshoes and golf.

The classes, which are supported jointly by IWJ and the Greater St. Louis Chapter of the American Parkinson's Disease Association, also seem to serve as a support group for both patients and their spouses. "I get a real lift by watching some of the people here," Grabel says. "When we play volleyball, there's a guy who has to be lifted out of his chair to serve, but he still plays. And one woman is almost always falling, yet she gets up and keeps on going. It's a real inspiration to me." After all, when it comes down to it, it's your attitude that counts, he remarks. "Whenever anyone asks me how I am, I answer, 'Never better.'" ■





After Hours

BY TOM HEINE

Those of us who leave the Medical Center at 5 p.m. to head for warm, snug houses daily reenact a ritual as old as humanity itself. Like a prehistoric clan of hunter-gatherers returning to fire-lit caves, we return home by the last glimmer of daylight after earning our suppers.

Headlights and streetlamps begin to burn in a futile attempt to push back the blanket of darkness. Colors fade to gray and then to black. Like the cave people, we see frightful creatures in the darkest shadows. Some are real, while others exist only in our imaginations.

Even familiar places take on an otherworldly quality. The crosswalk over Euclid Avenue becomes a black tunnel lit by a slash of laser light. A lake in Forest Park glows like white-hot lava as it takes on the reflection of Barnes Hospital's lights. The Medical Center becomes eerily quiet as normally crowded corridors loom empty.

Despite appearances, the Medical Center never sleeps; it just functions at a slower pace. Victims of the darkness are rushed into emergency rooms. Residents labor throughout the night, secretly hoping that no problem arises that is too great for them to handle.

This picture essay is dedicated to those who keep the Medical Center running 24 hours a day with sweat, strong coffee and a goodly portion of midnight oil.

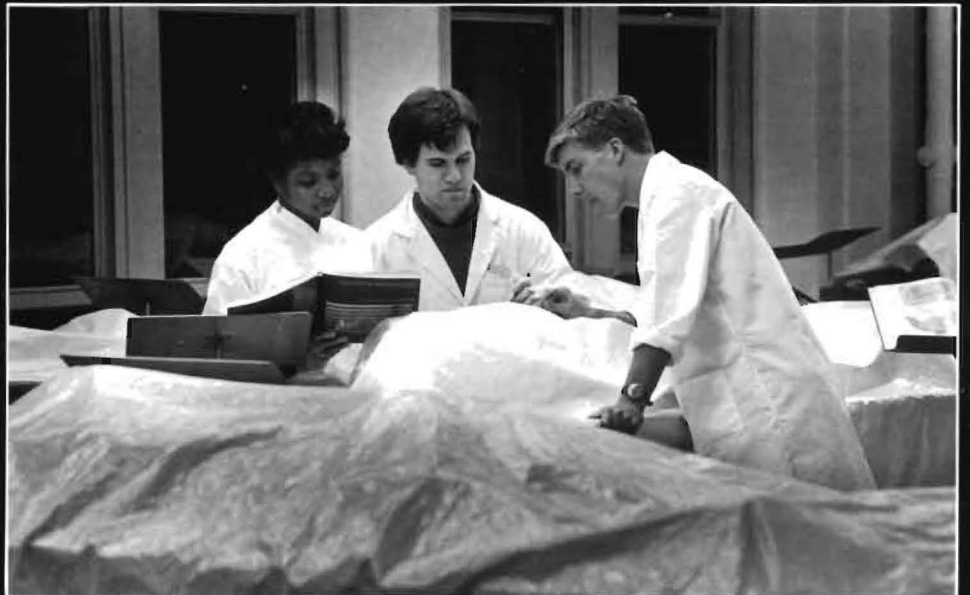
Sickness won't wait until daybreak. Just ask Mary Callahan (right), a nurse at Children's Hospital. Here she checks the vital signs of one sleepless patient. Meanwhile, emergency medical technicians (below) continue to rush critically ill patients into the Barnes Hospital emergency room. A late-working medical school staffer takes on a ghostly appearance in this time exposure (far right), as he hurries through the crosswalk over Euclid Ave.







For some, work is just starting. Security guard Phil Bolduc (above) monitors his walkie-talkie, while medical students (right, from left) Dominique Jacob, Steve Harvey and Russ Griffith begin a late-night cadaver review in the anatomy lab to prepare for an upcoming test.

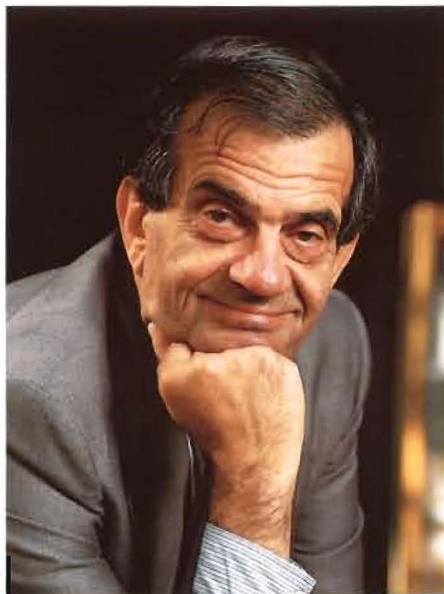




Many will be going to bed as the sun rises. First-year student Russ Johnson (far left) does some late-night cramming in the McDonnell Science Building. Henry Robinson (left) knows that the best time to wax floors in the East Building is when the corridors are empty. Finally, Greg Vandeven, M.D., (below), a resident on duty at Jewish Hospital's coronary care unit, tries to grab 40 winks in the on-call room on a slow night.



ERNST WYNDER AND THE DISCOVERY OF
THE SMOKING GUN
B Y R E G I N A E N G E L K E N



David Hoffman

Ernst Wynder, M.D.

The senior medical student awaited the publication of his first professional paper with trepidation. His research, which started during summer vacation following his sophomore year, was to be published in no less than the *Journal of the American Medical Association*. And it was bound to make the medical profession nervous.

The young man already had jumped many hurdles, first convincing his professor to support his research, then persuading the American Cancer Society to fund it. Now he faced the largest challenge of his young career.

Sensing his apprehension, his mentor and co-author reassured him. "Don't worry," he said, "you happen to be right."

The professor was Evarts A. Graham, chief of surgery at Washington University School of Medicine. His student: Ernst L. Wynder. Their paper: "Tobacco smoking as a possible etiologic factor in bronchiogenic carcinoma. A study of 684 proved cases."



Their message: the staggering correlation between cigarette smoking and lung cancer. More than 96 percent of the lung cancer patients in their study had smoked cigarettes for more than 20 years. Only 2 percent had never smoked.

Wynder's fears were well-founded; his paper met with opposition or, perhaps worse, silence, from the medical profession for decades to follow.

But Graham's faith in his student also was on target. The paper, published May 27, 1950, has become a seminal publication in its field. Former Surgeon General Jesse Steinfeld, M.D., recently com-

mented, "This landmark article deserves a place among the classics of modern medical literature."

The precocious medical student had immigrated from Germany with his parents and sister just before World War II. His father, a general physician specializing in obstetrics and gynecology, established his medical practice in New Jersey.

The junior Wynder received his second bachelor's degree and his medical degree in 1950 from Washington University and was honored with the annual \$500 Borden Undergraduate Research Award, given to a graduating senior for meritorious research.

Two years later, at the age of 32, he was appointed the first head of the Section of Epidemiology at the Sloan Kettering Institute for Cancer Research in New York.

Today he is president of the American Health Foundation, which he founded in 1969 in New York. It calls itself "the only research organization of its kind in the world devoted solely to the prevention of chronic diseases including heart disease, stroke and cancer." Its motto: "Medicine should help us die young, as late in life as possible."

On a sad, ironic note, Graham, who had been a half-a-pack-a-day cigarette smoker, quit smoking and retired in 1951, but died in 1957 from lung cancer. Among his other accomplishments, he had performed the first successful lung removal surgery on a lung cancer patient in 1933.

While Graham had become convinced of the causal link between smoking and lung cancer—albeit too late to save his own life—the medical profession at large remained dubious.

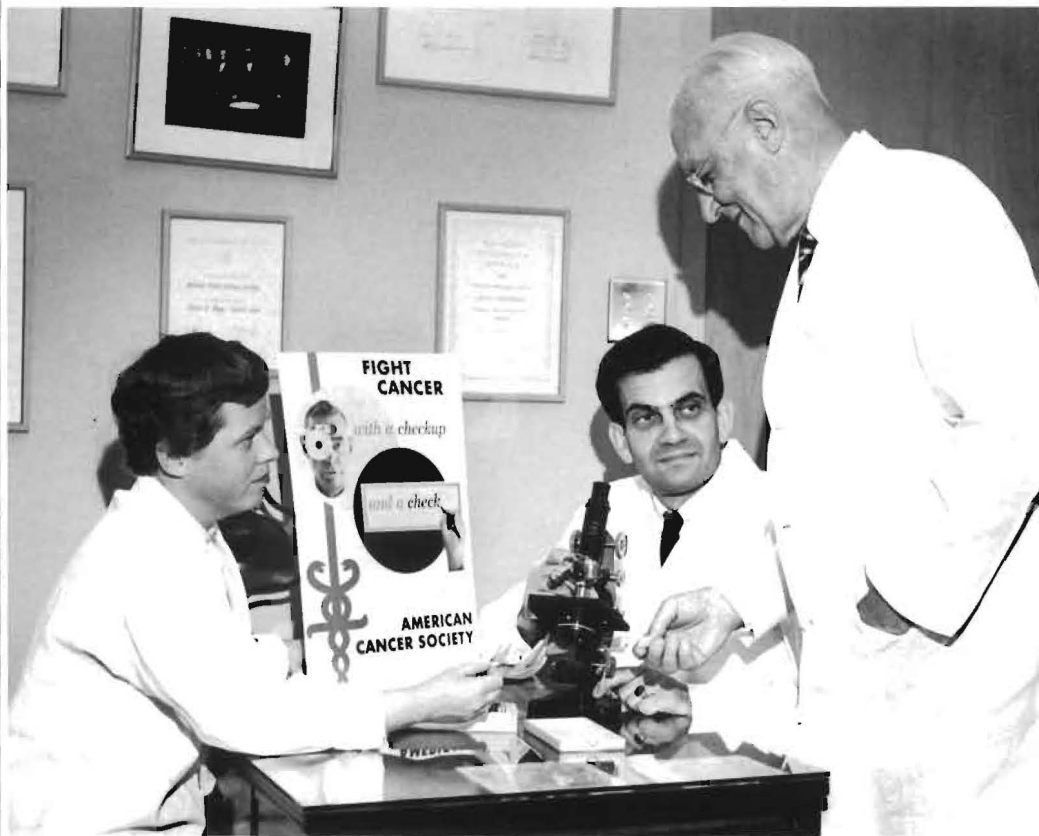
Wynder has been more disturbed by the reaction of his professional peers than by his natural adversaries in the tobacco industry. "If my peers in medical science had been interested in prevention as an aspect of medical care, we would have made our mark much earlier," he said in a recent telephone interview.

The popular press, however, was quick to cover the smoking/lung cancer connection. The Associated Press, for example, carried a story on July 18, 1950, from the Fifth International Cancer Research Congress in Paris. The Wynder/Graham report was among the papers presented.

"Three teams of scientists blamed smoking, especially cigarettes, for apparently causing part of the increase in lung cancer, the fastest growing type of cancer in the United States," AP reported in its opening paragraph.

The St. Louis Post-Dispatch was among the newspapers covering the second Wynder/Graham study, which showed the cancerous effect of tobacco tar applied to the skin of mice and rats. Their research assistant was a young St. Louis woman named Adele Croninger. A Nov. 27, 1953 news report with a photograph of the three researchers was followed two days later with an editorial:

"Few of the realistic research scientists expect the American smoker to give up cigarettes, even on the basis of alarming disclosures," it read in part. "The hope is that something can be done to make cigarettes less harmful. . . ."



Edward H. Goldberger

Drs. Evarts Graham (standing), Ernst Wynder and Adele Croninger in 1956. Courtesy of the Medical Library's archives.

"A professor can never better distinguish himself in his work than by encouraging a clever pupil, for the true discoverers are among them, as comets amongst the stars."

**-Linnaeus (Carl von Linné)
1707-1778**

"Repeatedly, eminent physicians both here and in Europe have urged cigarette manufacturers themselves to help finance the necessary research. . . . At this point, it is clearly wiser for the cigarette industry to help solve the medical problems than to let its product become a public health problem."

Not surprisingly, the tobacco industry launched a counterattack. In an 18-page report, "A Scientific Perspective on the Cigarette Controversy," issued by the Tobacco Industry Research Commission, 40 authorities, half of whom were medical doctors, questioned the smoking/lung cancer link.

Dr. Max Cutler, identified as an "internationally noted cancer surgeon of Chicago," called the connection "unwarranted," adding, "simply because one finds bullfrogs after a rain does not mean that it rained bullfrogs."

A national television interview on ABC with Dr. Walter B. Martin, president-elect of the American Medical Association, was cited: "I don't think the evidence is convincing enough to establish as a positive fact that cigarette smoking is necessarily the cause of cancer of the lung," Martin said. "I've smoked long enough to have incurred all the possible dangers and don't think I will stop now."

In 1961, the *New England Journal of Medicine* published a debate between Wynder and Clarence Cook Little, director of the Tobacco Research Council. The journal "sided with our views on causation in an editorial titled 'The Great Debate,'" Wynder wrote later, "but failed to be definitive in its conclusion."

The Surgeon General's first report on smoking and health was not published until 1964.

Even in 1988, his foundation has a difficult time finding funds for preventive health research, he says, partly because "we have no natural constituency."

Individuals suffer from "illusions of immortality," especially when they are young, and are disinclined to consider the long-range effects of current health behavior. "It is almost against human nature," he says. "We are supposed to go to the dentist twice a year, but we only go if we have a toothache. It is against our nature to think of things that might happen in the future."

"Many physicians are not as interested in prevention as in other aspects of medicine, and the teaching of preventive medicine is not emphasized at most medical schools," he says.

"There's very little money in prevention. Hospitals are disease care centers, in-

surance plans pay for disease therapy, and corporations support care rather than prevention."

In an article on tobacco and health in the January-February 1988 issue of *Public Health Reports*, Wynder wrote:

"When one of our interviewers posing as a heavy smoker recently telephoned 28 hospitals in New York City, 24 said they could not help, three referred her to a local smoking cessation program conducted by the American Cancer Society, and one recommended a hypnotist. At a time when our

■

"Many physicians are not as interested in prevention as in other aspects of medicine, and the teaching of preventive medicine is not emphasized at most medical schools," Wynder says.

■

hospitals have all kinds of medical specialty clinics, they should be willing to help heavy smokers who cannot stop smoking on their own."

On the plus side, the National Institutes of Health and National Cancer Institute "have nurtured the establishment and growth" of his foundation, Wynder says.

He oversees a full-time staff of 240, an annual budget exceeding \$14 million and two institutes: The Eleanor Naylor Dana Institute, which conducts research, and the David J. Mahoney Institute, which implements related programs.

Wynder and his team also publish the professional journal *Preventive Medicine* and edited a comprehensive reference guide for the layman, "The Book of Health," published in 1981.

In addition to his lung cancer research, Wynder has linked cigarette smoking to cancer of the larynx, esophagus, bladder, and oral cavity and has established the relationship between smoking and lung cancer in women. Early studies focused only on men because they had smoked longer.

Wynder also has pioneered research showing that a high-fiber, low-cholesterol, low-fat diet can reduce the risk of heart disease and cancer of the breast, colon and prostate. Through Cholesterol Check, his foundation's national cholesterol education

program, his staff has tested the cholesterol levels of more than 300,000 individuals.

Wynder is especially proud of the Know Your Body program, which screens elementary school-age children for health risk factors and educates them in good health habits. Children are educated about health risks such as smoking, drugs, AIDS and teen pregnancy. While it may be too late for many adults to adopt healthy lifestyles, health behavior modification for children could guarantee better health for future generations.

The program has been adopted by 25 schools in the United States and in schools in five countries.

In 1984, Wynder received the Distinguished Achievement Award from the American Society for Preventive Oncology, and he was more recently selected as the recipient of the 1988 Alton Ochsner Award Relating Smoking and Health. He shares the award with Sir Richard Doll and Sir A. Bradford Hill of Great Britain, who published a study linking lung cancer and cigarette smoking shortly after the Wynder/Graham report appeared in *The Journal of the American Medical Association*. Wynder was gratified to receive the award because Alton Ochsner, who founded the Alton Ochsner Medical Foundation, was a friend of Graham and an early supporter of the Wynder/Graham findings.

"Dr. Wynder is a principal shareholder in the public health benefits that have accrued to 30 million Americans who have stopped smoking the past several decades," says Vincent T. DeVita, M.D., former director of the National Cancer Institute. More than 200,000 premature smoking-related deaths were avoided from 1964 to 1978, he says, adding an average of 23 years to each individual life affected.

Dr. Jerome J. DeCosse, M.D., professor of surgery at the New York Hospital-Cornell Medical Center says, "In my judgment, Dr. Wynder is something of a genius. He combines both creativity and extraordinary diligence in pursuit of his beliefs."

"Extraordinary diligence"—and he hasn't stopped yet. Despite his uphill climb, Wynder remains convinced that "the future of health care depends on the prevention of unnecessary illness."

"I'm not discouraged," he adds. "I still have the same persistence I had as a medical student."

And the words of a great teacher still echo in his ears. ■

On Pigs and Swaziland

Jim Stevermer could have lived high off the hog if he wanted.

But although hog farming and farming in general have been a way of life in the Stevermer family for generations, 28-year-old Jim would rather bring home the bacon his own way.

A first-year student at the School of Medicine, this Stevermer intends to earn his living caring for people instead of animals. Yet the experience he had caring for animals on his father's 1,200-hog, 360-acre farm in Easton, Minn., instilled in the young Stevermer a stalwart sense of responsibility that he will carry with him into his medical practice.

Like most children who grow up on farms, Stevermer was expected to do his share of chores every day after school. "On a farm, as in any small business, what you do is important to your livelihood. Yet there's the added responsibility that the animals depend on you," he explains. "If you have a small store and you don't open on a Sunday afternoon, you might lose some money, but it's not going to ruin things. Whereas, if you don't feed the hogs—or any other animal for that matter—they go hungry."

After graduating from high school, Stevermer left the farm for Michigan State University, where he majored in physics. He chose physics as his major because he wasn't sure what he wanted to do with his life, and physics left him with plenty of options. It also gave him the opportunity to work at one of the largest cyclotron labora-

tories in the world, an experience he valued during all four years of college.

Stevermer became interested in medical school during his junior year. But although he applied and was even accepted at one school, he wanted to get out of academics for a while, do something that would be of positive benefit to someone besides himself, and live in another country. "I wanted to gain an outside view of America," he says. So he took a job with the Peace Corps, teaching people how to raise pigs in a small country between South Africa and Mozambique called Swaziland.

The idea behind the project was to provide the inhabitants of Swaziland, particularly the women, with a means of generating cash. Because the majority of Swazi men work in South Africa, the women often rely solely on the cash their husbands bring home every one to six months, Stevermer explains. Designed to provide these women with a more reliable source of income, the pig project was run like a co-op. Members would buy a sow, take her to a central piggery to be bred, take the sow home, raise and sell the piglets, and then take the sow back for breeding.

As sometimes happens with the best laid plans, however, the pig project failed. The project site was too far from the infrastructure needed for such a venture, and transporting the pigs to and from the co-op and to markets where they could be sold was a major stumbling block.

After the pig project fell through, Stevermer spent almost three more years in Swaziland, teaching math and science to junior high and high school students.

His own rural background made it somewhat easier to relate to the Swazi youngsters and their parents, as most Swazi's also grow up on farms. "I noticed more than once that I'd be sitting there talking to a farmer, and it was just like being at home, except it was in



Jim Stevermer

a different language," he says. "They would talk about the grain or the weather and express some of the same concerns and outlooks."

The biggest hurdle he had to overcome was that of crowd control. "It's hard to keep a group of 50 children interested in looking through two microscopes," he says. Still, he found the Swazi children to have greater enthusiasm and higher motivational levels than the majority of American youth. Perhaps that was due to the fact that they have to compete just to get into high school, he says. Only half of

the children in Swaziland are admitted to secondary schools.

Although he missed his family and friends back in the states, Stevermer did not miss too many creature comforts. While the cuisine was quite simple, there was a wide variety of foods available. He describes the Swazi mainstay as a dried form of cornmeal mush that looks like overcooked Cream of Wheat.

While in Swaziland, Stevermer did as the Swazis do. He wore their traditional garb, which resembles a kilt, and attended festival events, including the crowning of the new king.

His stay in Swaziland helped him gain a worldwide perspective of medicine. "It's pretty clear that there's an inequitable distribution of resources," he says. "People spend billions of dollars here on research for diseases that are caused, in large part, by lifestyle. People are willing to smoke and abuse their bodies for 50 years and then they want medicine to fix it for them."

In countries like Swaziland, it's a different matter, according to Stevermer. People suffer and die from diseases—diseases that could be cured by medicines that are never manufactured because there's no money in it.

Although he's not sure just what bearing this realization will have on his own practice of medicine, Stevermer plans to return someday to a developing country as a physician, he says. "There's definitely a need." ■

A Dream Come True

By Lisa DeNike

When the Nazis occupying his home country of Austria unceremoniously kicked him out of medical school in 1938 because he was Jewish, Eduard Ascher saw his dream of becoming a doctor crumble in the ravages of German power.

Four years and thousands of miles later, however, that dream came true as Ascher stood up with 100 of his classmates to receive his M.D. and bachelor's degree in medical science from Washington University School of Medicine.

"I felt so happy and so proud. I had finally done it," says Ascher, now 73 and a psychiatrist in Baltimore. "Attending medical school in America was one of the happiest times of my life, and it's been a good life."

Today Ascher is a psychiatrist in private practice in Baltimore and also holds positions as associate professor and clinical associate professor at both the Johns Hopkins and University of Maryland schools of medicine. During his long and industrious career, some of his work has been profiled in both Newsweek and Time magazines, and he has been recognized professionally for establishing group therapy programs in a variety of settings.

The doctor's journey from Europe to medical school and success in America is a bonafide drama-in-real-life story, complete with encounters with Nazi SS men and border patrols in the night. Surviving — and eventually thriving —

despite these early experiences has given Ascher a particular slant on life, including a yearning to understand human behavior and a sharp sense of justice and injustice.

"How I came to the United States is a very interesting story," Ascher says, "and has greatly influenced my subsequent life. What I saw and how I felt have stayed with me to this day."

“When I was 12 — on July 15, 1927 —

I saw workers machine-gunned down in the street like dogs as they demonstrated to protest the acquittal of some Nazi thugs who had murdered other workers. That had a profound effect on me.”

Ascher was only 22-years-old when he came to this country — alone and separated from his family, who remained behind in Vienna. Sponsored for immigration to America by his father's cousin in Indianapolis, Ascher fled Europe because he feared the worst of the Nazi regime that was occupying Vienna and intent on advancing its way across Europe.

"I'd seen things change so much even from the way they were when I was a child," he remembers. "When I was 12 — on July 15, 1927 — I saw workers machine-gunned down in the street like dogs as they demonstrated to protest the ac-

quittal of some Nazi thugs who had murdered other workers. That had a profound effect on me."

Years later, as a young man in medical school, Ascher experienced his own humiliation at the hands of his country's oppressors. Caught riding a streetcar without the regulation Swastika sewn on his lapel or armband, he was accosted by Nazis, who ordered him to the

found himself alone on a train bound for the Swiss border city of Buchs — and freedom.

"I have some very, very vivid memories of that night, because I was 22 and alone in a train that had stopped at Feldkirch, in Austria," Ascher says. "No one in my compartment said a word, including me. The SS came aboard and began to look at passenger's passports and emigration papers. They left and came back again and again. Then they asked the man sitting next to me to get off."

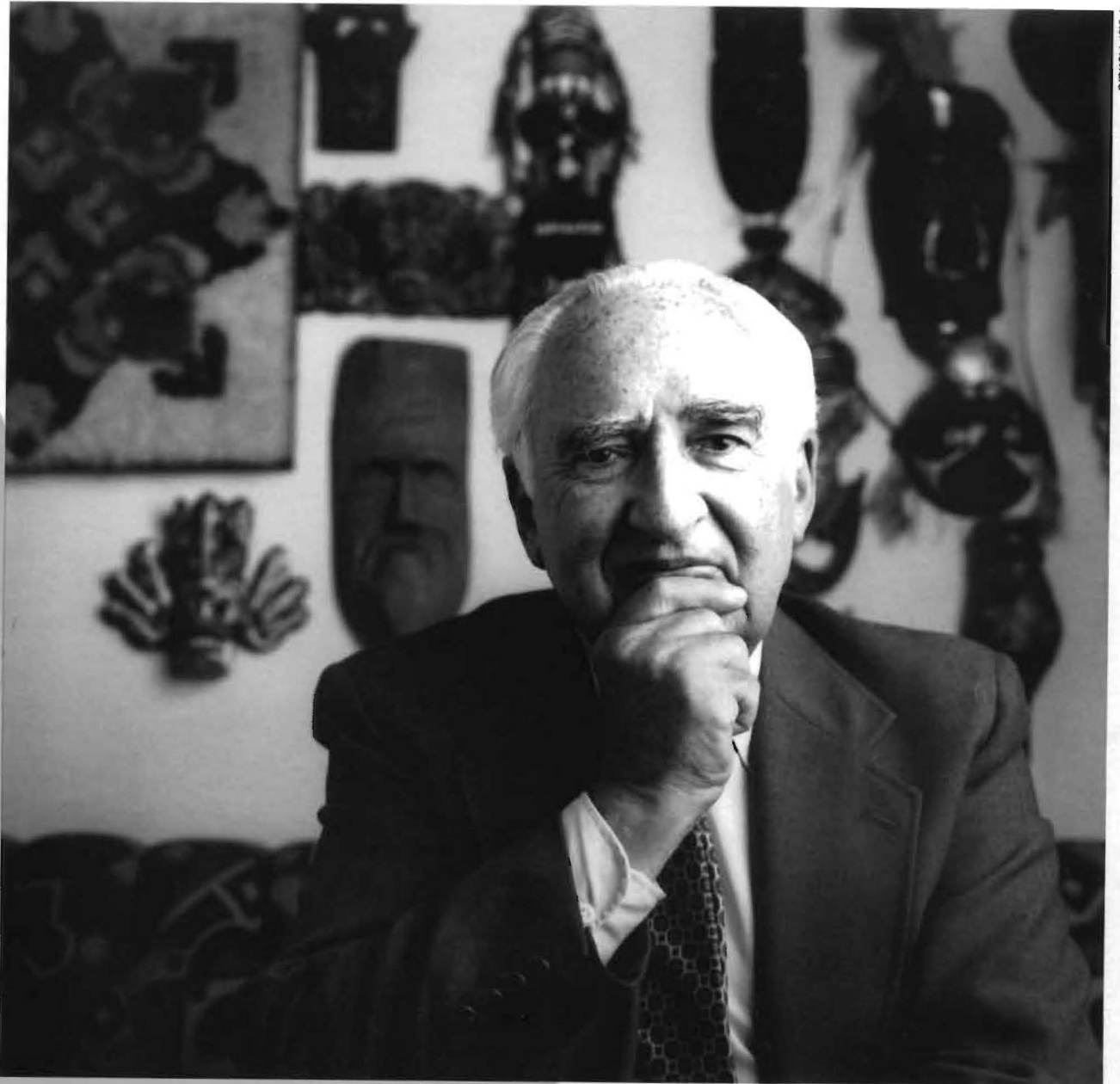
Ascher sat in the train, barely breathing, uncertain whether the SS would approach him next. But the train started to move, and the soldiers jumped off. Minutes later, the locomotive pulled into Buchs, and the young man realized he was free at last.

"It was quite emotional," he remembers. "It still is."

Weeks later, he found himself in New York City, in the bachelor apartment of his father's two lawyer cousins. He lived there for a while, spending a lot of time at the movies when his relatives entertained young ladies at the apartment.

"I didn't speak any English at the time," he says, laughing. "I guess the movies may have helped me learn some. I've never seen so many movies in my life!"

At the time, Ascher was also working to bring his parents and siblings to his new country. His brother and sisters finally escaped to the safety of England, where they took positions as domestic help. Ascher had been able to get a visa quickly because he was born in Austria, and the Austrian quota for emigration to the United States was not full at the time. His brother and sisters were



Peter Howard

Eduard Ascher, M.D.

born in Poland and Hungary, making their situations more difficult.

Two siblings eventually made it to America, while his oldest sister remained in England with her family. Ascher's parents, however, did not. Plans to bring the elderly couple to America fell through due to bad luck, and they were eventually shipped to Theresienstadt — a clearinghouse for Jews on their way to concentration camps. Caught in the net of the Nazi's "final solution," they were shipped to the Auschwitz death camp, where they were murdered. Ascher's last communication with them was a postcard they sent prior to their deportation in 1944 — which he still cherishes.

When Ascher first arrived in America during the Depression, there were few jobs. His first was sorting out stockings at his father's cousin's National Hosiery Mill in Grenada, Miss.

"It was all I was qualified for," Ascher remembers, "and I welcomed the job. Being a third-year medical student during the Depression was about as useful as nothing. So I took the job and made \$6 a week. I also worked part-time in a medical laboratory to have a little income."

Before long, though, Ascher realized that sorting ladies' hosiery was not his calling in life. He moved to St. Louis, where he had more cousins, and landed a job as a laboratory technician at the St. Louis City Sanatorium, a state mental hospital. In exchange for his skills, Ascher earned room and board and a small salary, and became friends with many medical students who worked there, sparking his interest in going back to medical school.

"It was during this time I began to once again think about going to medical school and becoming a doctor," Ascher says. "Up until then, I'd been so busy surviving. I'd been devastated by what was happening to my family and country. Suddenly, I was thinking about it again."

He applied for entrance to Washington University School of Medicine. They responded that they would be glad to let him into the sophomore class of 1938, if he passed an oral examination of first-year subjects.

"I told them I'd take the test if I could take it in German, because my English was still shaky," Ascher says. Dr. Carl Cori of the medical school staff, who spoke fluent German, monitored the examinations. Ascher was admitted.

It was a break he would never forget: 45 years later, he established an educational and charitable trust in his parents' name to fund scholarships for needy students at the School of Medicine.

Ascher described his medical school years as "the most wonderful time of my life." Surrounded by a faculty that included Drs. Evarts Graham and David Barr, the Nobel Laureates Coris and Erlanger, and a very strong neuropsychiatry department, Ascher thrived and became a popular member of his class.

He also became interested in psychiatry, especially the treatment of schizophrenics. He attributes this enthusiasm to Dr. Whitehorn, head of the Department of Psychiatry.

"Dr. Whitehorn impressed me very much, and that is why I think I became interested in psychiatry," Ascher says. "Later we became great

"So long as I can, I'll keep being a patient advocate. That's my purpose."

friends. If he would have told me to climb Mount Everest, I would have gladly done so."

After graduation and completion of a rotating internship at St. Louis City Hospitals, Ascher applied to become house officer at Johns Hopkins in Baltimore, where Whitehorn had moved to assume control of the psychiatry department. Ascher began as a house officer in 1943 and left as an assistant resident in 1944, when he was inducted into the Army. Stints at Fort Leonard Wood in Missouri, as a battalion surgeon in the 70th Infantry Division, and as an induction officer in Baltimore ended when the war ceased in 1945.

His career in psychiatry began in earnest when he was appointed chief resident at Hopkins in 1946, holding that position longer than anyone before 1948. When he later became a full-time researcher in motor behavior, his work on Tourette's disease was written up in Time magazine and became a chapter in the "American Handbook of Psychiatry."

Ascher's contributions to group therapy have been many. The group therapy program he and Dr. Jerome Frank established at Hopkins has served as a model throughout the U.S., and Ascher has established similar programs at the Psychiatric Institute of the University of Maryland, the Crownsville

State Hospital and the Baltimore Public School System. He has also served as an instructor at the Annual Institutes of the American Group Psychotherapy Association and has been active in group therapy teaching at the Washington School of Psychiatry. In 1971, he was named a life fellow of the American Psychiatric Association, something he had always dreamed about.

Most of Ascher's time these days is devoted to seeing his private practice patients, specifically those suffering from depression.

He spends his spare time with his wife, Amalie Adler Ascher, a freelance writer. The two enjoy travelling the globe, taking photographs and skiing. Several times a year, the couple travels to Big Sky, Mont., where they own property.

"While I am there, I like to look around and see if there is anyone else as old as me out there skiing," he says, his eyes crinkling as he gives a broad smile.

Until he retires, however, his patients will be his first concern.

"After what I have seen and experienced in my life, I've learned that doing the right thing and being fair come first," he says. "So long as I can, I'll keep being a patient advocate. That's my purpose." ■

The Alumni Report

CLASS NOTES

'30s and '40s

Last year, **Terrell Davis Jr., M.D. '36**, and a group of psychiatrists met with psychiatrists in Spain and Egypt to exchange ideas about clinical practice and culture.

Melvin I. Gibbel, M.D. '42, is living in Keowee Key in Salem, SC. He retired from his practice of general surgery in 1983, following an aortic valve replacement in 1980.

Virgil Loeb, M.D. '44, is now chairman of the School of Medicine's Annual Fund Program.

Kenneth Dirks, M.D. '47, is president-elect of the Bryan Rotary Club.

John E. Hult, M.D. '49, clinical associate professor emeritus of pediatrics at the University of Colorado Health Sciences Center, has retired from Denver's Neighborhood Health Program. Since his retirement, he and his wife, Adeline, have spent three months as volunteers in mission medical clinics in Sambururand, North Kenya, and visited hospitals in Tanzania, where they worked from 1957 to 1961. They also took a 4½-month, 12,000-mile dream trip in their recreational vehicle to visit their four children and seven grandchildren in California, Oregon, Washington and Alaska.

'50s and '60s

Robert C. Drews, M.D. '55, is now chairing the Annual Fund Committee for the Alumni Board of Governors.

Selena Kaplan, M.D. '55, Ph.D., has been named co-recipient of the University of California—San Francisco School of Medicine's Women's Faculty Association's 1988 Career Achievement Award. She shares the award with Eileen B. King, M.D. Kaplan joined the University of California at San Francisco in 1966 as director of the Pediatric Endocrinology Unit, became professor of pediatrics in 1974, and currently is associate director of the Pediatric Clinical Re-

search Center. She has been a leader in research on the effects of hormones on growth and maturation, on growth disorders and their treatment, and developmental endocrinology. She was the recipient of the Endocrine Society's 1987 Ayerst Award for distinguished service to endocrinology.

John A. Headrick, M.D. '58, has been promoted to senior vice president of medical affairs at Christian Health Service, the parent corporation for four health-care companies based in north St. Louis County.

O. Michael Colvin, M.D. '61, research director for the Johns Hopkins Oncology Center, has been named associate dean for research at the Johns



It wasn't the first time Mitchell Yanow, M.D. '41, (center) gave Glen Reznikoff (left) a helping hand. Shortly before attending the Medical Scholars Loan Program dinner this past fall, Reznikoff learned that Yanow was not only the sponsor of his

student loan, but also the doctor who delivered him. Yanow, Reznikoff and another of Yanow's loan recipients, Steven Podolsky, got a laugh out of this at the loan program dinner.

Hopkins University School of Medicine. Colvin, who is a professor of oncology and medicine and holds a joint appointment in pharmacology and molecular science, has chaired the Oncology Center's clinical research committee since 1983. He also serves on the Joint Committee on Clinical Investigations at Johns Hopkins. Colvin and his wife, Arline Lockerbie Colvin, live in Baltimore with their four children.

Nicholas T. Kouchoukas, M.D. '61, is co-chairing the Eliot Society with Phillip E. Korenblat.

Robert Scheibe, M.D. '64, is now chairman of the Dean's Committee of the Annual Fund.

Roger L. Mell, M.D. '65, is president-elect of the Southern Medical Association.

David Kemp, M.D. '67, is commanding officer of the Naval Hospital in Bethesda, Maryland.

Lawrence E. Holder, M.D. '68, was named a fellow of the American College of Radiology.

John Barr, M.D. '69, was named a fellow of the American College of Radiology.

Barry A. Siegel, M.D. '69, professor of radiology at Washington University School of Medicine, served on the faculty of the 11th annual post-graduate course on practical radiology last October at the University of Virginia School of Medicine in Charlottesville, Virginia. He presented lectures on "Ventilation-Perfusion Scintigraphy and Pulmonary Embolism" and "Gastrointestinal Bleeding Scintigraphy."



Dr. and Mrs. Lawrence Kotner, M.D. '38, talk with fourth-year student Timothy Bartholow at the annual Medical Scholars Loan Program dinner held this past fall. Bartholow is the recipient of a no-interest loan from the Class of 1938. The annual dinner gave 24 loan recipients and their donors a chance to meet one another face-to-face.

'70s and '80s

Joseph K. T. Lee, M.D. '73, professor of radiology at Washington University School of Medicine, chaired a scientific session last August at the 7th annual scientific meeting of the Society of Magnetic Resonance in Medicine in San Francisco. Lee also spoke at a seminar on "Magnetic Resonance Imaging of the Liver and Male and Female Pelvis" last September in Los Angeles.

Mark Dillen Stitham, M.D. '75, won more than \$10,000 on the "Jeopardy" quiz show last May. He hit the "Daily Double" in anatomy and "fortunately got the right answer so I didn't lose face!"

Robert Lamberg, M.D. '76, is chairman of the Century Club Fellows.

Margaret Jensen Cheadle, M.D. '81, has been appointed an Associate Director of the Family Practice Residency Program at Ventura County Medical Center at the University of California at Los Angeles.

Lanyard K. Dial, M.D. '81, director of the Family Practice Residency Program at Ventura County Medical Center, has become one of the first physicians in the nation to receive a Certificate of Added Qualifications in Geriatrics. The certificate is awarded jointly by the American Board of Internal Medicine and the American Board of Family Practice.

Edgar Engel Jr., M.D. '81, has joined the private practice his father—**Edgar Engel Sr., M.D. '36**—started in Evansville, Indiana. Edgar Jr.'s wife continues to teach

neuroanatomy and physiology at the Indiana University Regional Campus. They have four children: Sharon, 6, Jonathan, 5, Patricia, 2, and Carolyn, 1.

Michelle Kemp, M.D. '81, is co-chairing the Century Club with her husband, Fredric Klopff, M.D. '81.

FORMER HOUSE STAFF NOTES

Howard J. Eisen, M.D., FHS in cardiology, is an assistant professor of medicine at the University of Pennsylvania School of Medicine. His wife, Judy Wolf, M.D., FHS '84-87, is an assistant professor of medicine at Thomas Jefferson University.

National Alumni Program Activated

With more than 70 percent of alumni and former house staff now residing outside the St. Louis area, the Alumni Association is activating a national program responding to the interests of alumni who want to maintain close contact with the school.

Recent events and alumni planning committees include:

Boston

Alumni Planning Committee

Hywel Madoc-Jones, M.D.,
FHS, Chairman
Elisha Atkins, M.D., FHS
Elliot A. Finkestein, M.D.'61
Eugene A. Foster, M.D.'51
Michael A. Goldstein,
M.D.'61
Edward B. Hager, M.D.'55
Timothy C. Wang, M.D.,
FHS'86

Houston

Alumni dinner and address by
Harvey R. Colten, M.D.
Harriet B. Spoehrer Professor
of Pediatrics and Head, Dept.
of Pediatrics

Alumni Planning Committee

William T. Shearer, M.D.'70,
Chairman
Don Anderson, M.D.'70
Russ Blattner, M.D.'33
Ted Bowen, HAP'48
Wilson Brown, M.D.'39
Bill Cheek, M.D.'51
Lynn Gibbs, M.D.'76
Jose Gutierrez, M.D.
Joel Kirkpatrick, M.D.'62
Ed Massin, M.D.'65

New York

Alumni reception and presentation by Edward L.
MacCordy Vice Chancellor for
Research

Dr. T.L. Tolbert
Director of External R&D for
Monsanto Company

Chicago

Alumni reception and
presentation by:

Virginia V. Weldon, M.D.
Deputy Vice Chancellor for
Medical Affairs

David W. Scharp, M.D.
Associate Professor
Department of Surgery

Alumni Committee:

Sarah R. Anschuetz, M.D.'81
Raymond H. Curry, M.D.'82
Paul F. Detjen, M.D.'84
James F. Marks, M.D.'65
Robert W. Parsons, M.D.'54
Roy Ramsey, M.D.'69
Margaret C. Telfer, M.D.'65
Eric B. Zurbrugg, M.D.'70
Joe Zurbrugg, M.D.'70

Los Angeles

Alumni Planning Committee

Wayne Buck, M.D.'55,
Chairman
Rolf Anderson, M.D.'61
Howard Bierman, M.D.'39
Lee Cady, M.D.'51
Lee Fisher, M.D.'62
Bert Mandelbaum, M.D.'80
Joe Natterson, M.D.'48
Gordon Schaye, M.D.'63

Philadelphia

Alumni Planning Committee

Samuel P. Martin, M.D.'41,
Chair
Ann Ainsworth, M.D.'69
V. Terrell Davis, M.D.'36
John M. Eisenberg, M.D.'72
Leonard Jarett, M.D.'62
Sari R. Levine, M.D.'85
Bruce A. Schainker, M.D.'75
M. Richard Katz, M.D.'55

Alumni Planning Committee

Alfred M. Markowitz,
M.D.'52, Chairman
Seymour Advocate, M.D.'50
Barbara Cooper Mandell,
M.D.'73
David L. Globus, M.D.'54
Scott Mellis, M.D., Ph.D.'84

San Francisco

Special Alumni tour of Rodin Collection

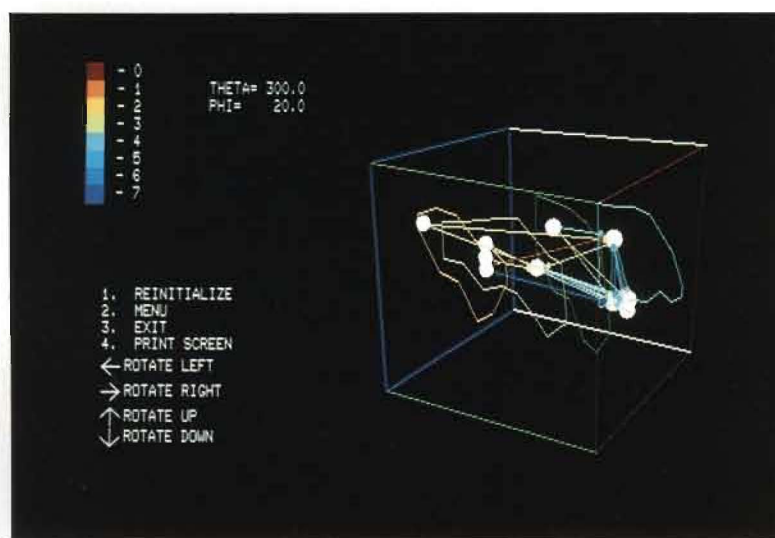
Alumni Planning Committee

G. Garrison Fathman,
M.D.'69, Chairman
Mary Bishop, M.D.'40
Anne and Carl Goetsch,
M.D.'41, FHS
C. Fillmore Humphreys,
M.D.'53

If you want to start a group in
your area or get involved in one
already organized, call the
Medical Alumni Office or get
in touch with one of the alumni
listed above.



Reunion 1989
Mark your calendars!
May 4, 5, 6



Erwin Montgomery, M.D., uses computer representations of brain cell activity recordings to study Parkinson's disease. See story on page 8.

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Doug McKay

As dusk settles over the Medical Center, many staff members will be just starting to work. See picture essay beginning on page 12 for a glimpse of these hard-working night owls in action.