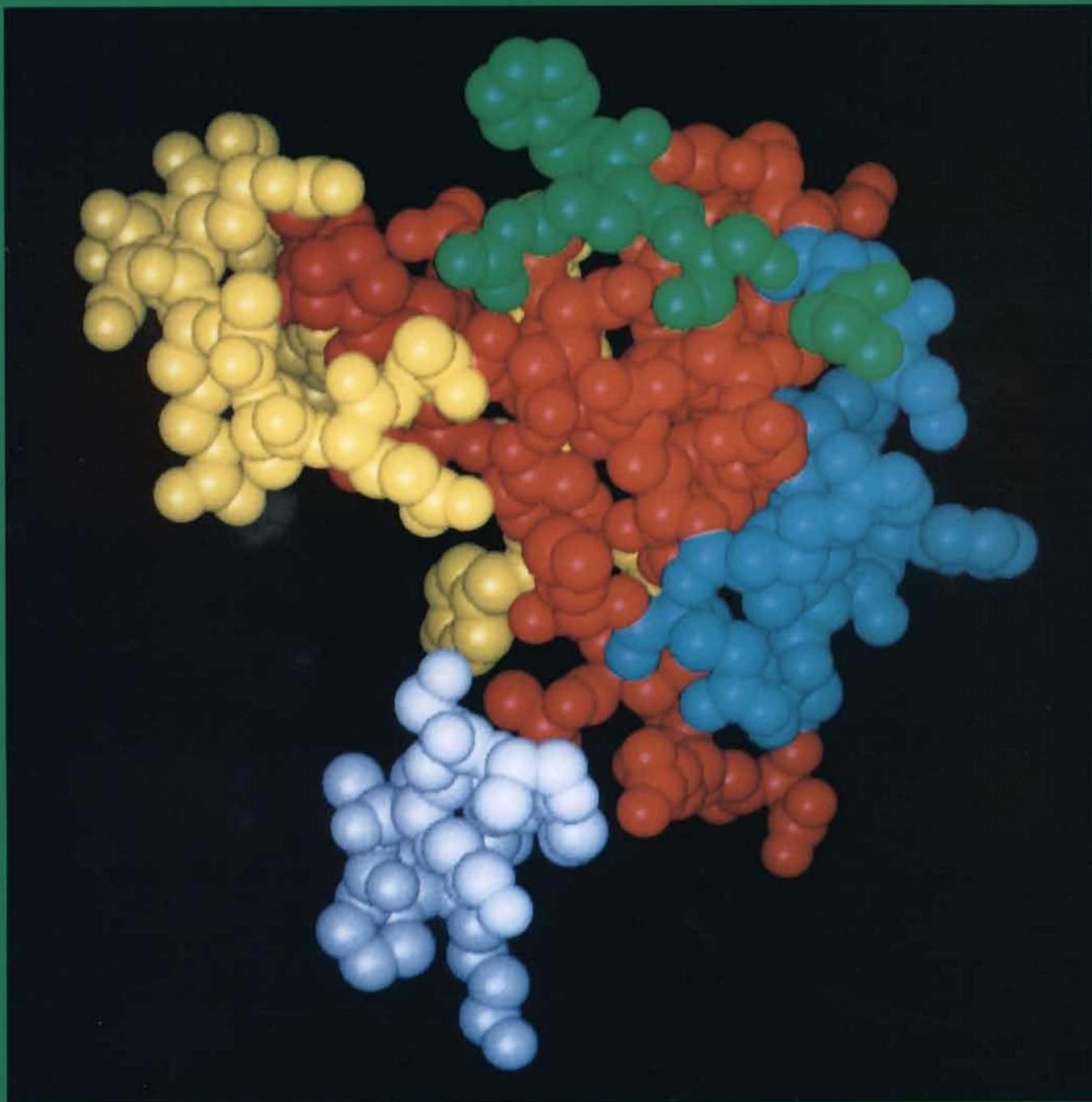


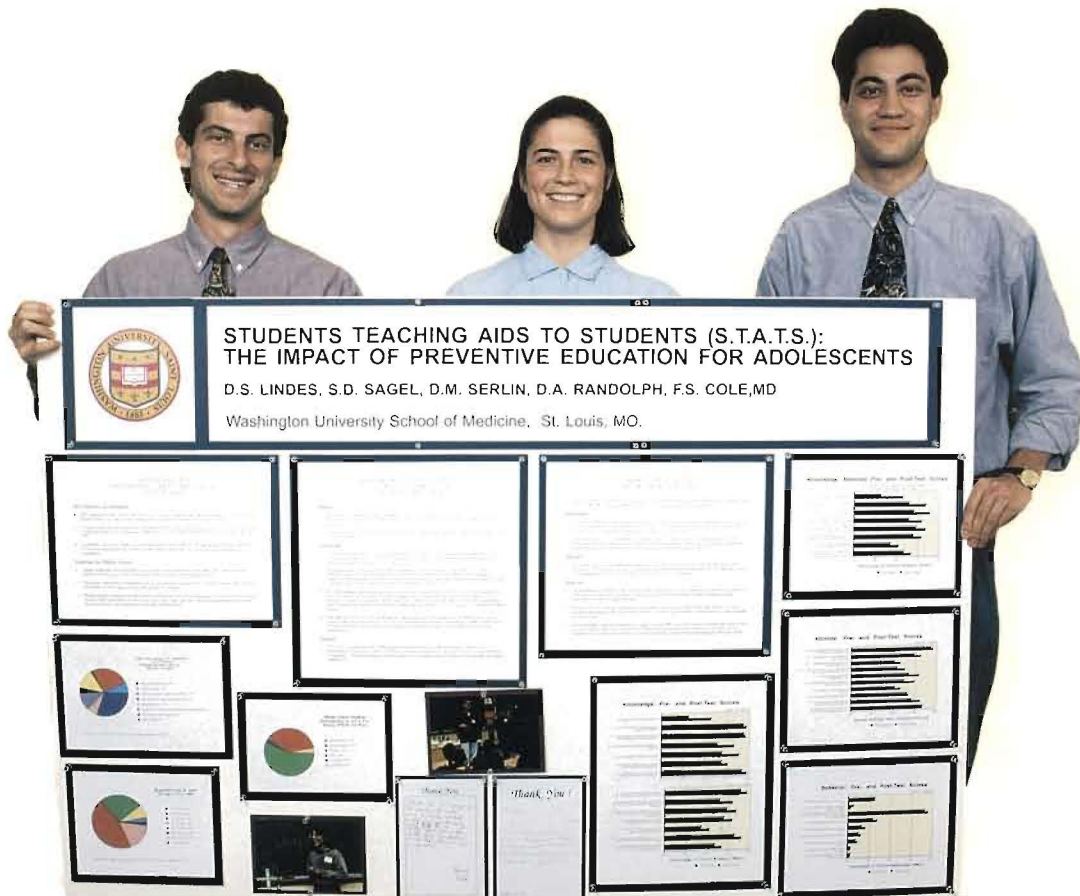
Outlook

Washington University School of Medicine

Fall 1994



Bone Replacement • Renal Disease • Art Show



Three second-year medical students — Scott Sagel, Debbie Lindes and David Serlin — won a first-place award at the meeting of the American College of Preventive Medicine for a poster presentation on the impact of the STATS (Students Teaching AIDS to Students) program. The poster shows results from a survey taken of middle school students on their knowledge, attitudes and behaviors regarding AIDS. The STATS program, which is in its fifth year here, involves medical students visiting middle school classrooms to discuss HIV and AIDS prevention. The poster has been submitted for the Association of American Medical Colleges Secretary's Award for Innovations in Health Promotion and Disease Prevention.

Outlook

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THE COVER

The insulin-like growth factor (IGF-1) molecule, with its various domains identified by colors. The hormone may become part of a therapy for renal disease. See the story about the work of Marc Hammerman, M.D., beginning on page 12. Modeling by R.M. Shymko and P. De Meyts. With permission from *Endocrinology*, Vol. 135, # 1, July 1994. © The Endocrine Society.



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FEATURES

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New surgery rescues extremities that otherwise would be lost to amputation.

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Identifying a pulmonary protein deficiency *in utero* saves infants.

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Faculty and members of their families display the results of their artistic natures.

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Littenberg Directs General Medicine

Benjamin Littenberg, M.D., is the new medical director of the recently established division of general medical sciences in the Department of Medicine.

The new program will include the Center for Quality Management, General Internal Medicine, Medical Informatics, Health Behavior Research, Occupational Medicine and Technology Assessment. Future efforts in related areas such as Geriatrics and Clinical Epidemiology may be coordinated through the program as well.

"The goal of the program is to apply science to the evolving healthcare needs of the public," says Littenberg. "To accomplish this goal, program faculty and staff will teach and conduct research.

Littenberg, who joined the faculty as an associate professor of medicine, previously was assistant medical director of Mary Hitchcock Memorial Hospital and on the faculty at Dartmouth-Hitchcock Medical Center. ●

Woolsey, Rovainen Share Award

Thomas A. Woolsey, M.D., professor of neurology and neurological surgery, and Carl M. Rovainen, Ph.D., professor of cell biology and physiology, have been awarded a \$1.5 million Javits Neuroscience Award from the National Institutes of Health.

Woolsey and Rovainen received the award to support their joint project "Imaging Brain Blood Vessels During Cortical Activity." They are interested in how and why local blood flow to the brain changes with nerve cell activity. The work is basic to studies that use positron emission tomography (PET) and functional

magnetic resonance imaging (fMRI) to monitor brain function by detecting blood flow changes. Woolsey and Rovainen have collaborated for six years, during which time they have developed techniques that they are extending to studies of brain development and stroke. ●

Student Achievements

Mary L. Vest, a May 1994 graduate of Washington University School of Medicine, was one of 50 outstanding young medical professionals honored by the American Medical Association at its annual National Leadership Conference.

The AMA/Glaxo Achievement Awards were presented to 25 medical students and 25 residents in recognition of their exceptional leadership abilities in medicine or achievements in non-clinical community activities.

Vest was recognized for her active involvement in organized medicine as both a local and state leader. She has been involved with the Missouri State Medical Association Medical Student Section as vice

chair and has served as an alternate delegate to the AMA House of Delegates. Her involvement in health policy activities led to her appointment as a healthcare research fellow for Sen. John Danforth in 1993.

Following graduation, Vest began a one-year medical residency at Jewish Hospital, to be followed by a residency in radiation oncology at Barnes Hospital. ●

For Outstanding Research

David H. Perlmutter, M.D., professor of pediatrics, has received the 1994 E. Mead Johnson Award for Pediatric Research from the Society for Pediatric Research.

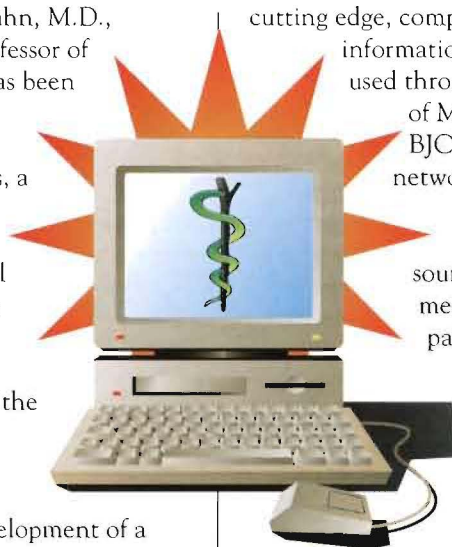
Perlmutter, who also is professor of cell biology and physiology at the School of Medicine and director of the division of gastroenterology and nutrition at St. Louis Children's Hospital, is one of two researchers to receive the \$10,000 award which recognizes outstanding pediatric research. Perlmutter studies the cell biology and regulation of protease inhibitors, specifically alpha-1-antitrypsin. ●

Computer Source For All Records

Michael G. Kahn, M.D., assistant professor of medicine, has been named director of Advanced Clinical Information Systems, a new joint appointment that will serve the School of Medicine and the BJC Health System. He also will retain his duties as head of the division of medical informatics.

In his new role, Kahn will guide development of a

cutting edge, computerized clinical information system to be used throughout the School of Medicine and the BJC healthcare network. The information system will be a centralized source for all the medical records of patients treated and will be widely accessible to physicians working within this healthcare system. ●



Accolades For Ladenson

Jack H. Ladenson, Ph.D., professor of pathology and clinical chemistry in medicine, received the 1994 Award for Outstanding Contributions to Clinical Chemistry from the American Association for Clinical Chemistry (AACC).

Ladenson, associate director of clinical laboratories and co-director of clinical chemistry at Barnes and Jewish hospitals, co-founded what now constitutes the largest postdoctoral training program for clinical chemists.

Ladenson's scientific research concerns measurements performed via ion-selective electrodes and the development of monoclonal antibodies for rapid diagnosis of heart attacks. ●

Decade Of The Brain

Dennis W. Choi, M.D., Ph.D., Jones Professor and head of the Department of Neurology, is the recipient of the 1994 Silvio O. Conte Decade of the Brain Award from the National Foundation for Brain Research.

The \$10,000 award is given annually to one who has demonstrated leadership and excellence in the advancement of the brain sciences. The award commemorates the late Silvio O. Conte, a Massachusetts congressman whose efforts resulted in President George Bush designating the years 1990-2000 as the "Decade of the Brain."

Choi is recognized worldwide as a leader in stroke research. During his career as a neuroscientist, Choi has focused on understanding the cascade of chemical and molecular events that follows various types of brain injury. This line of inquiry, Choi believes, will be important in providing ideas for developing new drugs that protect the brain from diseases, stroke and trauma. ●



James Forage, center, a second-year medical student, received the Alpha Omega Student Research Award for outstanding research from John D. Davidson, M.D., left, Alpha Omega Alpha Councilor, and S. Bruce Dowton, M.D., associate dean for medical education. Forage's research was conducted in the laboratory of Marcus Raichle, M.D., professor of radiology and of neurology and neurological surgery.

Banting Medal Honoree

Philip E. Cryer, M.D., professor of medicine and director of the division of endocrinology, diabetes and metabolism, has been awarded the 1994 Banting Medal for Scientific Achievement.

The award honors highly meritorious career achievement in the field of diabetes research and is the highest scientific award given by the American Diabetes Association.

Cryer, who also directs Washington University's general clinical research center, has concentrated his research on the mechanisms that prevent or correct hypoglycemia in patients with insulin-dependent diabetes.

The Banting Medal is presented annually to an individual who has made significant, long-term contributions to understanding diabetes, its treatment and prevention. ●

Historical Perspective

Mabel L. Purkerson, M.D., professor of medicine, has been named associate dean for academic projects. Purkerson will collaborate with Mark Frisse, M.D., associate dean for information management and director of the medical school's Library and Biomedical Communications Center, to develop new programs on the history of the School of Medicine. She also will assist the alumni and fund-raising efforts in cooperation with Randy Farmer, assistant vice chancellor and director of medical alumni development.

Purkerson, who has been the associate dean for curriculum at the School of Medicine since 1976, joined the faculty in 1961. ●

Children's Joins BJC Health System

St. Louis Children's Hospital has joined BJC Health System. The affiliation supports BJC's mission to improve the health of the communities it serves by providing a continuum of care ranging from prenatal and infant services through senior care.

Children's pediatric programs will be integrated with BJC's obstetric services to create innovative models for women's and children's health services.

Ranked as one of the top 10 pediatric hospitals in the country, Children's provides a full range of health services for children and their families. Specialty services include organ transplantation, newborn medicine, cardiology and heart surgery, cancer care and treatment for epilepsy and seizure disorders.

Barnes, Jewish and Children's

hospitals, all members of Washington University Medical Center, are now part of BJC Health System and link the school and BJC closely.

With the addition of Children's, BJC serves the residents of Missouri and southern Illinois with 16 member hospitals, seven nursing facilities and one retirement center. BJC also provides high quality, cost-efficient medical services throughout a 150-mile radius of St. Louis through 22 affiliated hospitals in its Regional Healthcare Network and relationships with 12 hospitals in the VHA Great Rivers Network.

BJC was formed in 1993 to improve the health status of the community. It was the first system in the nation to integrate an academic medical center with suburban, rural and metropolitan-based healthcare facilities. ●



Robert Lee, Ph.D., assistant dean for minority student affairs, visits with Harvey Colten, M.D., at a dinner held at the Whittemore House on July 20 in Lee's honor. The School of Medicine's first minority affairs officer, Lee held the position for 22 years. He left to become the associate dean for minority affairs at Emory University in Atlanta. During his tenure here, he implemented numerous programs to enhance minority recruitment. He also was involved with admissions, student affairs and academic support.

Newman Center For Education Begun

A \$10 million, 44,500-square-foot building is being constructed for continuing medical education at the Medical Center.



The Medical Center's new continuing medical education facility will be named for Eric P. Newman, left. The building is made possible by a grant from the Harry Edison Foundation and Andrew E. Newman, right. Father and son are pictured at the groundbreaking ceremony.

The Eric P. Newman Education Center is being made possible by a \$2.2 million gift from the Harry Edison Foundation and Andrew E. Newman. Newman, who is chairman of Edison Brothers Stores Inc., has close ties to the university and Medical Center institutions. During the past decade, he has served as chairman of the board of St. Louis Children's Hospital and chairman of Washington University Medical Center. He currently serves on the board of trustees of Washington University.

The education center, which will be located on the northeast corner of Euclid Avenue and Children's Place, will be used for continuing education, seminars, workshops, meetings and events.

In addition to classroom space, the three-story facility will include a 450-seat auditorium, 15 additional meeting rooms and offices. The education center will be connected to the medical school by pedestrian bridges.

Two St. Louis firms are overseeing the project. Construction of the building is underway and should take approximately one year. ●

Award Honors Karls' Service

The St. Louis Chapter of the American Technion Society has honored Irene E. Karl, Ph.D., and Michael M. Karl, M.D., for distinguished service in their respective fields.

The husband and wife team received the Albert Einstein Award, the highest honor bestowed by the American Society for Technion-Israel Institute of Technology.

Irene Karl, a research professor in medicine, is noted for her work and teaching in biochemistry, particularly in muscle metabolism. Michael Karl, clinical professor of medicine, is locally and nationally renowned in the field of clinical medicine and has received numerous honors and awards.

In addition, David A. Caplin, M.D., clinical instructor in the division of plastic surgery, received the group's Young Leadership Award. Caplin has been responsible for shipping medical equipment to the Bikur Holim Hospital in Riga, Latvia.

The Technion, located in Haifa, is Israel's oldest university and one of the few technological universities in the world to incorporate a medical school. ●

Laudable Leadership

A portrait of David M. Kipnis, M.D., Distinguished University Professor, by artist James Ingwersen, now hangs on the second floor walkway of the Clinical Sciences Research Building. The portrait, unveiled in June, honors Kipnis' contributions to the School of Medicine and his nearly two decades of leadership in the Department of Medicine.

Kipnis also was presented with the prestigious George M. Kober Medal by the Association of American Physicians (AAP). The award, named for George M. Kober, a respected researcher, clinician, teacher and administrator, is presented annually to a member of the AAP

who has made significant achievements in the medical sciences and whose efforts have helped advance the field of medical science as a whole.

Kipnis' research has helped to delineate the mechanisms of sugar and amino acid transport, the regulation of insulin release within the pancreas and the molecular mechanisms underlying the metabolic effects of various hormones.

In its 70-year history, the Kober Medal has come to be one of the most recognized and lauded awards in

medicine. Past recipients of the medal include 10 Nobel laureates. ●



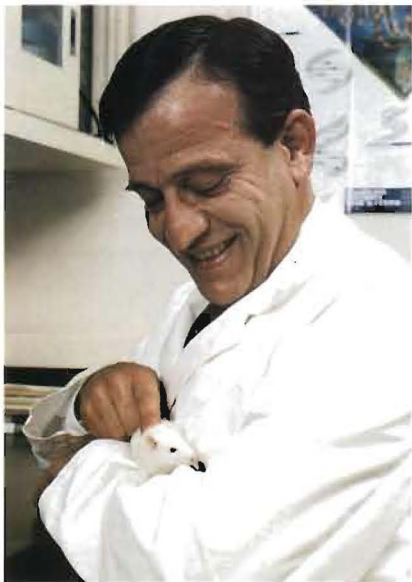
David M. Kipnis, M.D., Distinguished University Professor, stands before his portrait which hangs in the Clinical Sciences Research Building.



William A. Peck, M.D., executive vice chancellor for medical affairs and dean of the School of Medicine, was among a contingent of leaders in academic medicine who were invited to the White House to meet with President and Mrs. Clinton and their health policy staff this summer. Peck helped arrange the meeting and presented the President with a statement advocating universal coverage and extolling the critical role of academic medical centers. The statement was signed by more than 70 medical school deans and teaching hospital executives, many of whom attended the White House conference.

Problems With Paternal Drinking

Researchers have found that a single, large dose of alcohol taken by the father may have a negative impact on fetal development. Working with rats, they discovered that when male rats took a large dose of alcohol, the number of their successful matings was cut in half. Alcohol exposure also resulted in litters with fewer and smaller pups, and the mortality rate of the pups that were born more than doubled.



Theodore Cicero, Ph.D., and a subject in his study of the effects of alcohol.

Male rats were treated with a 5g/kg dose of alcohol, equivalent to approximately 0.2 percent blood alcohol content in humans, which is twice the legal level of intoxication in most states. The males then were mated with females who never had been exposed to alcohol or drugs.

The single dose allowed researchers to clarify that resulting abnormalities were caused by alcohol and not other problems associated with chronic abuse of the drug, explains Theodore J. Cicero, Ph.D., professor of neuropharmacology in psychiatry.

Because the females in the experiment were not exposed to alcohol, fetal development should have been normal, Cicero says, unless the alcohol was causing problems at conception.

"Our data would suggest that something occurred at conception which rendered the fetus either not viable, and therefore it was spontaneously aborted, or that the fetus was born with abnormalities that made it less viable," he says.

Cicero says it is clear that alcohol is having a dramatic effect, and though this study was done in rats, he believes it may have immediate implications for humans. Cicero says he hopes this research will prompt clinicians to look more carefully at the role of paternal alcohol use in fetal developmental problems in humans. ●

Encapsulated Islets A Success

The first FDA-approved human trial of encapsulated islet technology has met with success, say diabetes researchers Paul Lacy, M.D., Ph.D., Robert L. Kroc Professor of Pathology, and David Scharp, M.D., professor of surgery.

Encapsulated islets — tiny capsules containing insulin-producing human islet cells — may hold the key to eventually freeing diabetics from insulin injections and the blindness, kidney failure, heart disease and stroke that often accompany their disease.

In August 1993, the researchers implanted the encapsulated islets into nine patients — three with insulin-dependent diabetes, three with adult-onset diabetes and three normal, healthy patients, who served as controls.

Each implant contained 150 to 200 islets — not enough to alleviate

the diabetics' need for insulin injections or oral medication, but sufficient to test whether the semi-permeable membrane surrounding the islet cells could protect the islets from immune system rejection and, in the case of insulin-dependent diabetes, autoimmune destruction.

None of the patients suffered adverse complications during the study. In eight patients, 90 to 95 percent of the islets were still alive after two weeks. In one patient, who suffered a fall from a tree during the study, 70 percent of the islets remained alive after two weeks.

Scharp and Lacy now are working to develop a semi-permeable membrane that will hold hundreds of thousands of islets. ●

PSA Gets FDA Nod

The Food and Drug Administration has approved a simple blood test to help detect prostate cancer in men. The agency's decision was hailed by William J. Catalona, M.D., chief of urologic surgery and a champion of the clinical usefulness of the so-called prostate-specific antigen (PSA) test.

Catalona directed a series of studies that ultimately led to the FDA's recent decision. Previously, the PSA test only had been approved to monitor prostate cancer patients for disease recurrence.

"The FDA is saying to the medical community and the public that this PSA test is safe and effective for the early detection of prostate cancer," Catalona says. "I think the approval will have a major impact, because it will encourage more men to have an annual PSA test."

Early detection may help improve the survival rate for men with prostate cancer, the second leading cause of cancer deaths in American men. ●

Exploring How Bone Cells Talk

Four teams of investigators will share a \$4.4 million program project grant to study the communication between bone cells in the body's skeleton.

The four-year grant will help researchers explore how communication among bone cells leads to new bone formation and how miscommunication may cause bone disorders such as osteoporosis and osteoarthritis. The overall program is directed by Louis V. Avioli, M.D., Shoenberg Professor of Medicine and director of the division of bone and mineral diseases at the School of Medicine. Avioli also directs the division of endocrinology and metabolism at Jewish Hospital.

The research projects will enable scientists to better understand the delicate balance between bone-forming cells, called osteoblasts, and bone-resorbing cells, called osteoclasts.

As part of the grant, Avioli and his co-investigator, Roberto Civitelli, M.D., assistant professor of medicine, will direct a project to investigate the complex interactions between different types of osteoblasts and between immature and mature osteoblasts and nutrients in the extracellular environment.

Stephen L. Gluck, M.D., associate professor of medicine and assistant professor of cell biology and physiology, and Howard G. Welgus, M.D., professor of medicine, will strive to identify the signaling molecules released by osteoblasts that control osteoclast development.

Keith A. Hruska, M.D., Ira M. Lang Professor of Nephrology and associate professor of cell biology and physiology, will study how vitamin D influences osteoblast function and osteoclast differentiation. Vitamin D regulates the body's absorption of calcium and phosphorus and controls the rate of bone

turnover and increases bone cell communication.

Philip Osdoby, Ph.D., professor of biology, and his co-investigator, Patricia Collin-Osdoby, Ph.D.,

research assistant professor of biology, will direct a project to investigate the role of osteoclasts in controlling osteoblast development and action. ●

Mold: A Growing Problem

In a survey of buildings damaged by the flood of 1993, researchers at the School of Medicine have found extensive mold contamination. In many homes, including those that have been partially or completely reconstructed, the researchers found unhealthy mold spore levels — even where conventional decontamination procedures were followed.

“What we're finding is that flooding can lead to problems over and above simple water damage,” says H. James Wedner, M.D., chief of clinical allergy and one of the study's investigators.

In an initial survey of 15 formerly submerged homes and businesses in eastern Missouri, the researchers found mold spore levels hundreds of times higher than those believed to be capable of causing health problems such as allergic reactions or asthma attacks. The team now is measuring mold levels in homes that have undergone partial or complete reconstruction to evaluate the

effectiveness of decontamination procedures and determine the health effects of continual mold exposure in occupants who return to live or work in the buildings.

In the survey, Anu Dixit, Ph.D., an immunobiologist and the study's principal investigator, examined buildings that had been submerged in floodwaters up to 12 feet deep for as long as six weeks.

Upon surveying the homes, the team noted intense mold growth on wallpaper and drywall, insulation, framing, carpets and furniture.

“The data suggest that the high indoor mold spore concentrations may pose a health hazard to residents living in flood-damaged homes and to workers exposed to molds during cleaning and repairs,” Dixit says. ●



Anu Dixit, Ph.D., right, collects mold samples from an interior wall of a flood-ravaged, abandoned house in Imperial MO. Dixit and research assistant Harley Wieselthier, left, are studying the health effects of continual mold exposure.

Salvaged Limbs, Saved Lives

Nine months after losing the femur in his left leg to cancer, Kyle Yarber is walking, driving and back at the University of Missouri, Columbia, hitting the books.

Kyle's first year at MU, which began in fall 1993, came to an abrupt halt last October when doctors discovered that a rare form of bone cancer had invaded his left thigh bone.

Bone Replacement Surgery Increases Survival Chances

by **Kleila Carlson**

The diagnosis dashed the Poplar Bluff youth's expectations of hanging out with his new fraternity brothers, cheering on the Missouri Tigers and enjoying the freedom college brings.

Instead, the 18-year-old found himself in a hospital undergoing chemotherapy treatments and dealing with the possibility that he might lose his leg.

"In a way, it was a relief when they told me I had cancer," says Kyle. "I had been going to doctors for six months, and no one could figure out what was wrong with my leg."

Kyle's mother, Carolyn, says that at one point her son was taking anti-inflammatory medication because doctors thought he had a pulled muscle. "I knew it was more than a pulled muscle when he called home one day from college saying he felt really bad," she recalls. "He never would have done that unless he was in real pain. He was tired all the time, had no energy and he had lost a lot of weight, so I knew there was something seriously wrong."

Kyle was diagnosed with Ewing's sarcoma, a rare and sometimes difficult-to-pinpoint cancer that strikes between 200 and 300 people each year in the United States. The disease, which starts in the bone and percolates through its channels and canals, eventually invading the tissues outside the bone, had spread through his entire femur from the hip down to the knee.

Although Ewing's sarcoma is more amenable to therapy than some types of bone cancer, treatment alternatives were limited. Kyle's physician, Stanley L. London, M.D., assistant clinical professor of surgery, referred him to Kurt D. Merkel, M.D., assistant professor of orthopedic surgery, who performs limb salvage surgery at the Medical Center. Merkel, who also is associate chief of orthopedic surgery at Jewish Hospital, is one of relatively few surgeons across the United States who has experience

in removing entire or partially diseased bones and replacing them with cadaver allografts or prosthetic metallic implants.

Merkel, who removed Kyle's cancerous femur and replaced it with a 2-foot-long titanium rod, says Kyle's chance of survival is greatly improved



Nine months after surgery, Kyle's left leg appears nearly normal. He credits his mother, Carolyn, with steering him through the yearlong ordeal.

because of the surgery. Without surgery, there was less than a 40 percent chance of survival. Kyle, who stands 6 feet 6 inches tall, also received cobalt chrome knee and hip joints during his eight-hour surgery on January 25.

A New Leg To Stand On

Just over a decade ago, bone cancer patients had no choice but to undergo limb amputation. "Survival rates were very low with amputation — 20 percent 10 years out," says Merkel. "Survival rates now with limb salvage and bone allograft are 70 percent after 10 years for patients with bone sarcomas. About 85 percent of bone sarcoma patients are limb salvage candidates. We expect success in two out of three patients, because our surgical techniques have improved in the last five to 10 years, and chemotherapy — which reduces metastatic disease — is much better than it used to be. This enables us to get closer to the cancer and save more of the leg."

Merkel says sporadic reports of limb salvage and bone allograft surgery date back to the 1930s. However, the procedures were not done on a regular basis until 1971, when Henry J. Mankin, M.D., and his orthopedic oncology team at Massachusetts General Hospital in Boston began performing the surgeries. Another 10 years elapsed before other orthopedic surgeons followed Mankin's lead.

Merkel, who did his fellowship training under Mankin, has done about one allograft or limb salvage procedure per month since his arrival at the Medical Center two years ago. The majority of his patients are teenagers, but the procedures are also performed on older adults and younger children. He recently com-

pleted a combination bone allograft/titanium implant in a 10-year-old boy from Illinois. Although the results are short-term, his success rate one to two years after surgery is 90 percent.

"A lot of people don't even know this can be done, and surgeons have been routinely performing limb salvage for 10 years," says Merkel. "People don't understand that you can actually take out half of somebody's femur and replace it, and the patient can do well."

In Kyle's case, Merkel used a metallic prosthesis because he could not find a bone long enough to fit a patient of Kyle's height. In addition to the problem of finding a bone of proportionate length, both joints (hip and knee) had to fit exactly, which, says Merkel, was next to impossible to achieve with Kyle.

Merkel used a titanium rod because the metal is more

biocompatible and less toxic than other metals, and it has some flex like bone. Also, he says, soft tissue, like muscle, may grow into hydroxyapatite-coated titanium better than it does other metals like cobalt chrome, a stiff metal used mainly in joints.

"Muscle doesn't really grow into a metal surface, but there is evidence it grows into a (synthetic) hydroxyapatite surface," says Merkel, noting that hydroxyapatite is actually a mineral found in human bone. "We had to remove some of Kyle's muscles, but the remaining muscles should attach and function. In fact, right now he can straighten out his knee on his own, bend it, lift his leg up and walk."

Although Merkel prefers performing bone allografts in young patients like Kyle because the effect of the surgery is more lasting, he says the procedure is more difficult and more complications can arise early on, such

as infection, fracture and improper healing.

"Unfortunately, we know the life span of metal is somewhat limited," he says, referring to metallic prostheses. "I don't think there are any good long-term studies available on these kinds of procedures. In the first place, it's fairly rare to have to do them, because primary bone cancer is rare, and, secondly, there are not that many people doing them. If it lasted 10 or 15 years, I'd be happy. By then, we may have something new. Our hope is that it will last forever, but that's a little unrealistic."

Unpredictable Problems

Because the procedures are relatively new, Merkel says no one really knows why some allografts that appear successful fail early. Some speculate problems arise because there is no tissue typing. Merkel says there is little or no immune response to donor bone, because when bone is procured it is stripped of muscle (only ligaments remain) and frozen at -70 C.

Merkel prefers bone because when a problem occurs, at the joint site for instance, it usually can be replaced with a conventional prosthesis and the bone remains intact. When a metal prosthesis fails, it must be completely replaced. Depending on the patient's specific problem and his or her age, Merkel says many surgeons use both metal and bone in what is known as alloprosthesis.

"I think probably most surgeons have had problems with joint reconstruction using allografts alone, and so they tended to use total prosthetic joints since they are relatively easy to do," he says. "But now I think most people are leaning toward using a combination of allograft bone and prosthetic joints."

The location of the tumor can complicate an already tricky procedure. Although most tumors are found at the end of the bone, cancer can occur between two joints, within a joint or outside the joint. In addition to removing the tumor, the surgeon also must take out at least a one-inch segment of bone above and below the cancer site. Magnetic resonance imaging enables orthopedic surgeons to be precise when removing cancerous bone.

While metastatic cancer of the bone occurs frequently, primary bone cancer (that which arises from the bone) is rare, says Merkel. Osteosarcoma, the most common type of primary bone cancer, occurs in about 400 to 500 people a year in the United States; Ewing's sarcoma, the type of cancer Kyle has, occurs even less frequently.

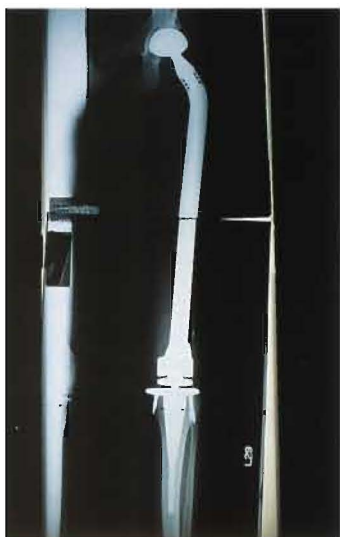
"If a medical center performs this type of procedure on 50 bone sarcomas a year, it's considered busy," Merkel says. "Last year, my first year here, we



Kurt D. Merkel, M.D., says improved surgical techniques and better chemotherapy regimens have dramatically increased survival rates for patients who have long limb salvage or bone allograft procedures.

did 15 bone sarcoma resections with allograft reconstruction. This year we are seeing more patients who are candidates for limb salvage."

Optimistic and enthusiastic about those he has helped, Merkel is realistic about the limbs he restores. He advises patients not to be disillusioned about the arm or leg with which they are left. "There's no question, if you think you're going to have a normal leg, that isn't going to happen," he says. "But I think that 70 percent of patients are happy, and we're happy with 70 to 80 percent of the outcomes in terms of achieving the long-term goal that we want — a leg or arm that is free of cancer, looks pretty good and can be used to carry on the activities of daily living."



An X-ray of Kyle Yarber's leg reveals the 2-foot-long titanium prosthesis physicians implanted to replace his cancerous femur.



During an eight-hour procedure, Merkel removed Kyle's cancerous femur, along with a tumor about the size of a grapefruit, and replaced it with a 2-foot-long titanium rod.

Merkel hopes that one day he will be able to relate a similar experience to one recounted by his mentor, Henry Mankin, of Boston. "One of his (bone allograft) patients came back to see him after 20 years while I was doing my fellowship at Harvard," he says. "She was his first bone allograft patient — a proximal tibial allograft — and she went on to become a doctor."

Back On Steady Ground

Kyle's immediate goal after his surgery was to plant his two feet back on the MU campus, which he accomplished on August 16. For the time being, he supports his slow, steady stroll with a cane in hand. The limp he describes as "huge" is barely visible and should fade within about a year, his doctors say.

He rebuilt his strength by sitting in a recliner and doing continuous passive motion movements until he could begin physical therapy in May. And, while he has had to give up basketball and never will be able to run or jump, he can swim, throw a

football and play his new favorite sport, golf.

Kyle's mother has been at his side from the beginning. When he was sent home in a hospital bed one week after surgery, she rearranged her house so that she and Kyle never were more than a few feet apart, night or day. "We have been together nonstop, but every bit of it is worth it when I see him walk," she says.

His surgery in January seems like a lifetime ago, says Kyle, after relearning how to sit, to stand and to walk. He has gained an appreciation of the little things in life, like going to the kitchen for a glass of water and getting into the shower on his own.

During one of his final chemotherapy treatments at St. Louis Children's Hospital, Kyle summed up his feelings about the past 12 months. "Dr. Merkel said he would need me for a year, and I knew it would be a long process to become normal again. I have a ways to go, but I've still got my leg, and I'm going to get through this." ●

IN THE BALANCE

Clinical Studies Address Renal Failure

Each bite of food and sip of liquid that enters the human body eventually will mean work for its kidneys, the organs that bear the burden of maintaining proper chemical balances in the body. As food is digested, the resulting waste products must be disposed of; water and salt levels must be kept steady regardless of the content or timing of the last meal.

Without adequate kidney function, people are at risk for high blood pressure, heart and nervous system disorders, eventually even early death. And chronic renal disease affects hundreds of thousands of Americans. For them, medical science offers only limited help.

by Juli Leistner

Researchers at the School of Medicine are drawing from decades of basic research, much of it performed here, to arrive at a novel possible solution. They have spent years deciphering the hormonal signals that direct natural growth and repair processes in healthy kidneys. By administering these hormones to kidney patients, they now hope to stimulate growth and repair in diseased kidneys

promoting renewed, life-sustaining renal function. With early clinical work under way, the investigators are hopeful that their efforts may eventually reduce, delay or eliminate the need for dialysis.

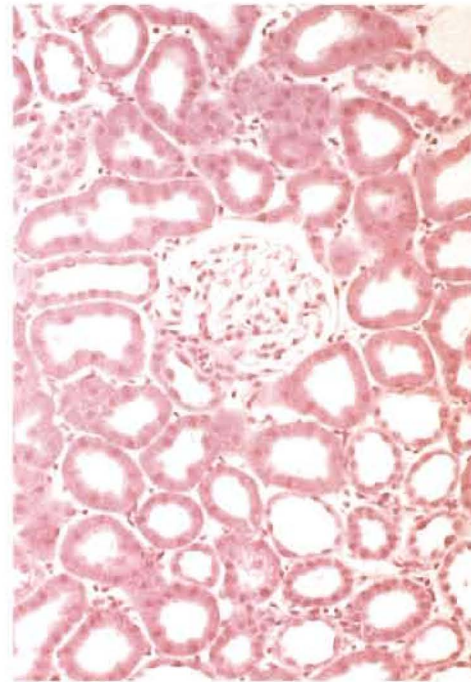
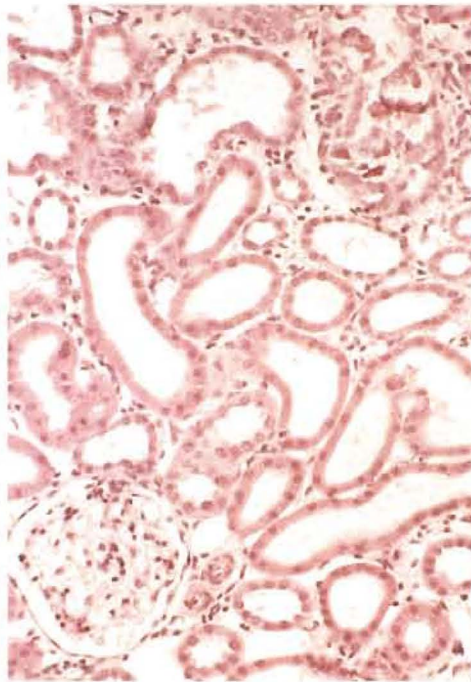
The kidney's workhorses are its millions of tiny nephrons — complex sets of filters and tubes that cleanse the blood. In a

healthy person, these miniature factories collectively filter about 4 ounces of blood every minute. When many of the nephrons are permanently damaged following a sudden injury or from a chronic illness such as diabetes, the result is chronic kidney failure — a gradual and irreversible decline in kidney function. Patients require therapy and are termed "end-stage" when kidney performance dips below 10 percent of normal.

End-stage patients — currently numbering 200,000 in the United States — have only two options: dialysis or transplantation. "The benefits of these therapies are pretty obvious: they're life saving. If these individuals did not receive dialysis or a transplant, they all would die," says Marc Hammerman, M.D., professor of

medicine and director of renal medicine at Barnes Hospital and the medical school.

At the same time, each treatment carries several significant costs. One of the most obvious is their staggering price tag — together an estimated \$7.26 billion in 1990, the majority of it paid by the federal government via Medicare. On the medical level, transplants often serve recipients well, but the



Kidneys subjected to ischemic injury recover after seven days when they are pretreated with insulin-like growth factor I (right). Those not pretreated (left) fail to recover, as shown in this comparison of histological slides.

immunosuppressive drugs required to prevent rejection also leave patients vulnerable to infection. Dialysis treatment is so time-consuming that many recipients cannot work. In spite of this time commitment, the therapy does not adequately make up for lost kidney function; most dialysis patients feel ill much of the time, and all of them face a progressive decline in health. Dialysis patients of ages 40 and 59 can expect to live another 8.8 and 4.2 years, respectively, compared to the American population as a whole, in which individuals live another 37 years and 20 years.

"Every year about 10 percent of individuals who are receiving hemodialysis elect to stop the therapy, which means they die. They prefer that to hemodialysis," explains

Hammerman. "So if a medical therapy to improve kidney function in end-stage renal disease could be found, it would be extremely valuable."

Hammerman leads a research team here looking at hormonal therapy as a possible way out. The idea began with research in the 1940s concerning a pituitary hormone called growth hormone, or GH, well-known for stimulating body growth during

childhood. Studies at that time began to illustrate that GH also had the ability to control kidney growth and function. It was noted that when GH was given to animals or humans it made certain portions of the kidney grow. It also boosted several aspects of kidney function, such as glomerular filtration rate, a measure of how much blood the

kidney filters in a given time period. Also, humans with an overabundance of GH had large, highly functioning kidneys, while humans who lacked GH had small kidneys.

"It actually occurred to these researchers early on that the potential existed to use growth hormone as a therapeutic agent for kidney disease," says Hammerman. "The idea was that if you could take an end-stage kidney and make it grow and function better, then you might have a medical cure for end-stage renal failure."

It was soon realized that many of GH's effects in the kidney were not exerted by GH directly, but through a hormone called insulin-like growth factor I (one), or IGF-I. Washington University's William Daughaday, M.D., professor emeritus of medicine,

was the first to see this in 1956. Since then, Hammerman and his colleagues, as well as investigators at several other institutions, have gathered more evidence about IGF's natural role in kidney growth and repair. Hammerman's laboratory has learned that IGF-I is required for the growth and development of rat kidneys during embryonic life. They also found that the kidney carries receptors for IGF-I, a sign that the organ is equipped to respond to the hormone. IGF-I also accelerates repair of rat kidneys damaged by ischemic injury, a type of injury that occurs from temporary interruption of blood flow.

Based on these findings, Hammerman and his colleagues, including Steven Miller, M.D., assistant professor of medicine, and Sharon Rogers and Daniel Martin, research instructors of medicine, have taken the next step to see whether IGF-I can spur renal growth in patients with chronic kidney disease.

The results so far are promising. They began by looking at IGF-I in four patients with moderate chronic renal disease. These patients had about 27 percent of normal kidney function and did not yet need dialysis. They received IGF-I injections under the skin twice daily for four days. After four days, their kidney function had increased by 41 to 76 percent.

The investigators then went on to look at IGF-I in nine end-stage patients, all of whom had kidney function of less than 17 percent of

normal and were on the verge of starting dialysis. They administered IGF-I to four of the patients for four days and to the remaining five patients

for 13 to 27 days. IGF-I worked well in the short term; on average, the patients' kidney function rose 23 percent by the fourth day of treatment. Unfortunately, temporary side effects forced most patients in the long-term portion of the study to quit therapy early. Complications ranged from minor complaints of nasal congestion to more problematic symptoms such as facial numbness. And the benefits did not last, but rather wore off after about two weeks.

Even with the complications, the results are encouraging, Hammerman says. If the peak benefits seen in these trials could be sustained, it would be more than enough for an effective therapy, he says. "We don't need to bring people back to normal in order to prevent the need for dialysis or transplantation. If we could increase renal function from say 10 percent of normal to 15 percent, that would be enough.

IGF-I is able to do that, at least in the short term.

"The important message from these trials is that even in the setting of end-stage chronic renal failure, where the kidneys are operating at very low levels, they retain a functional reserve. They have the capacity to respond and improve their function," Hammerman says.

Hammerman is optimistic that the complications can be overcome by refining the therapy. His group continues clinical work to see whether altering the dose



Marc Hammerman, M.D., investigates the potential for hormonal therapy in renal disease.



Research by Steven Miller, M.D., and others may eventually free renal patients like Thomas Watson from the inconvenience and complications of dialysis.

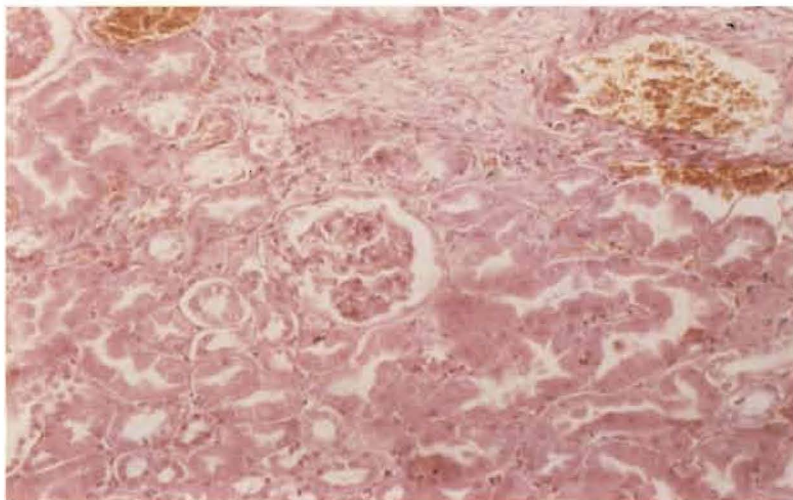
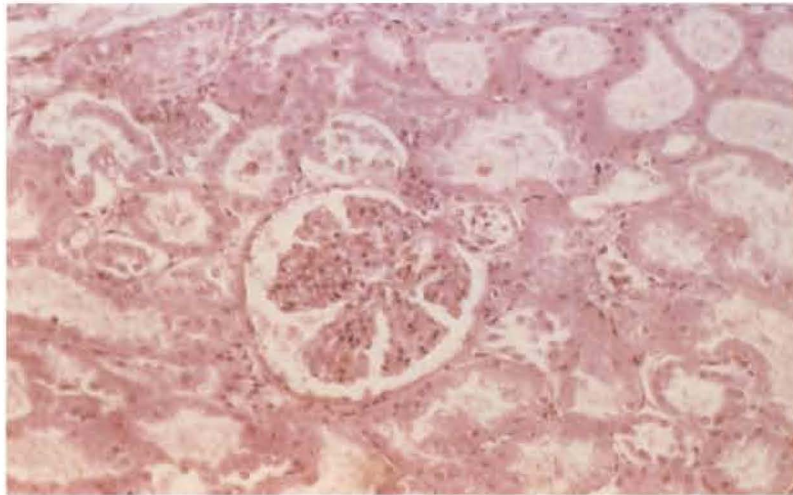
or the timing of doses will reduce side effects or prolong the enhancement of kidney function. The researchers suspect that adding GH to the therapy may help prolong the benefits. The reason: As an ironic side effect of the therapy, extra IGF-I received from injection causes a drop in blood levels of the carrier protein that IGF-I needs to be effective; GH is known to stimulate production of this carrier. So by giving patients GH along with IGF-I, the researchers hope to boost carrier protein levels enough to make IGF-I effective in the long term.

The researchers hope their work might lead to a cure for end-stage renal disease, but their immediate goal is more modest. "Although we would hope that we could delay the need for dialysis indefinitely, most people would be grateful if we could extend the time they are off of dialysis by another six months or a year," Hammerman says. "It would provide them with more time to look for a kidney transplant, which is more satisfactory than dialysis in many ways."

IGF-I also may help those kidney patients with acute renal failure. These are patients whose kidneys have shut down as a reaction to a sudden loss of blood supply or exposure to a toxic substance. Common causes are interruption of blood flow during surgery and reactions to certain drugs, including radiographic dyes. "When this happens, cells die in a certain part of the kidney called the proximal tubule, and the kidney stops

working very suddenly," Hammerman explains.

Depending on the severity of the injury, the kidney often can repair itself and return to normal. If the injury is too severe, the patient is left with chronic renal failure. Treatment



Fifty years ago, it was first observed that an excess of growth hormone resulting from acromegaly — a benign tumor of the pituitary — causes the kidneys to grow and function supranormally, as in the section at the top. The bottom section represents a normal kidney.

is aimed at supporting the patient to give the kidneys a chance to recover.

"The mortality rate for acute renal failure of moderate/severe degree is about 50 percent. That hasn't changed over the last few decades, in spite of advances in our abilities to support patients with renal dysfunction," Hammerman says. He and Miller are looking into the possibility of using IGF-I to hasten the recovery process.

They have developed an animal model for ischemic renal injury in which they temporarily block blood flow to the kidneys. With the model, they have found that giving IGF-I after ischemic injury greatly improves recovery of the proximal tubule and reduces mortality;

laboratory rats given IGF-I had a mortality rate of seven percent, compared with 37 percent in a control group.

They are now doing a trial of 50 people undergoing surgery for abdominal aortic aneurysm repair, a procedure that sometimes involves the risk of acute renal failure. "We hope that if we give patients IGF-I immediately after surgery it will reduce the risk of developing acute renal failure postoperatively," Hammerman says.

Rat studies also have revealed dramatic benefits from giving IGF-I before ischemic injury occurs. This opens up the possibility of using IGF-I as a preventive agent by administering it before procedures that carry the risk of ischemic injury. Candidate procedures would include

certain surgeries and the use of radiographic dyes in people with impaired kidney function.

Hammerman and Miller are anxious to see what the future holds for IGF-I in clinical work. "This project has been very satisfying," Miller says. "Not many people get an opportunity like this to see their research apply in the clinical setting." ●

Breath Of Life

Identifying A Protein Deficiency

Rebecca Bailey — the firstborn daughter of Floridians Richard and Lauri Bailey — struggled on a ventilator for five months.

When the couple knew Rebecca would not get better, the Baileys took her home, where she died 11 days later. No one could explain to the couple what had been wrong with their child; she died without a diagnosis.

The Baileys were told that if they had another baby, the chance of the child having the same problem would be very small. “They didn’t really know for sure, but they told us it was very unlikely. I think that’s why we went ahead and had another baby,” says Lauri. “We honestly didn’t think it could happen again.” Lauri conceived again, and, after a normal pregnancy, Autumn Bailey was born nine months later.

by Diane Duke

But immediately after her birth, Autumn also had respiratory problems. She was transferred to the neonatal intensive care unit at All Children's Hospital in St. Petersburg FL. "When we got there, she was in the same bed, in the same row that her sister had been in. And she looked just like

Rebecca," says Lauri. "She was on a ventilator, and she was paralyzed (with medication). It was a nightmare."

Because of prior research conducted by Harvey R. Colten, M.D., the Harriet B. Spoehrer Professor and head of the Department of Pediatrics, and his collaborators, doctors were able to

determine the precise cause of Autumn's respiratory distress, and, after a lung transplant, the six-month-old is thriving. Later, doctors discovered that Rebecca Bailey also died because her lungs lacked a protein called pulmonary surfactant protein B (SPB). The protein keeps the tiny air sacs open in babies' lungs when they exhale.

Before 1993, children with respiratory problems similar to the Bailey children were described on the basis of the lung disease they had, something called congenital alveolar proteinosis (CAP). Doctors did not know the cause of this disease. But in 1993, Colten and his colleagues reported an association between CAP and pulmonary surfactant protein B deficiency, suggesting a cause for the respiratory failure in these babies. More recently, the group reported the molecular basis for the disorder, called pulmonary surfactant protein B deficiency, which provided a genetic marker of the abnormal gene.

Babies with this disorder do not produce pulmonary SPB, which is responsible for the organization of lipids and proteins in the lung's airways. The air sacs of babies with this deficiency fill with a protein substance that keeps oxygen from reaching the bloodstream; the lungs later collapse. Treating the deficiency with artificial surfactant has failed, researchers believe, because the protein may have effects other than simply keeping the air sacs open.

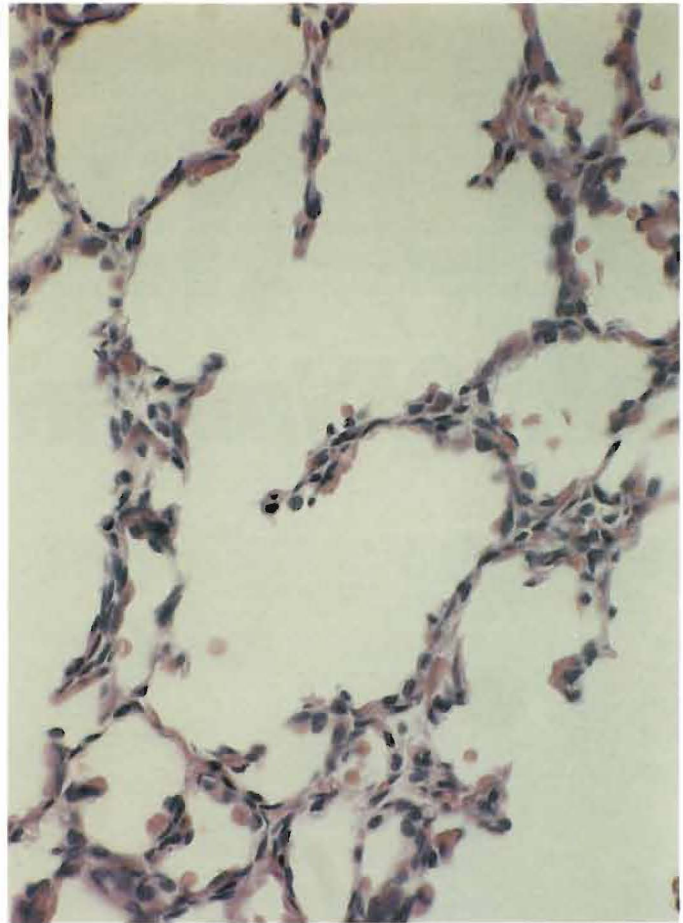
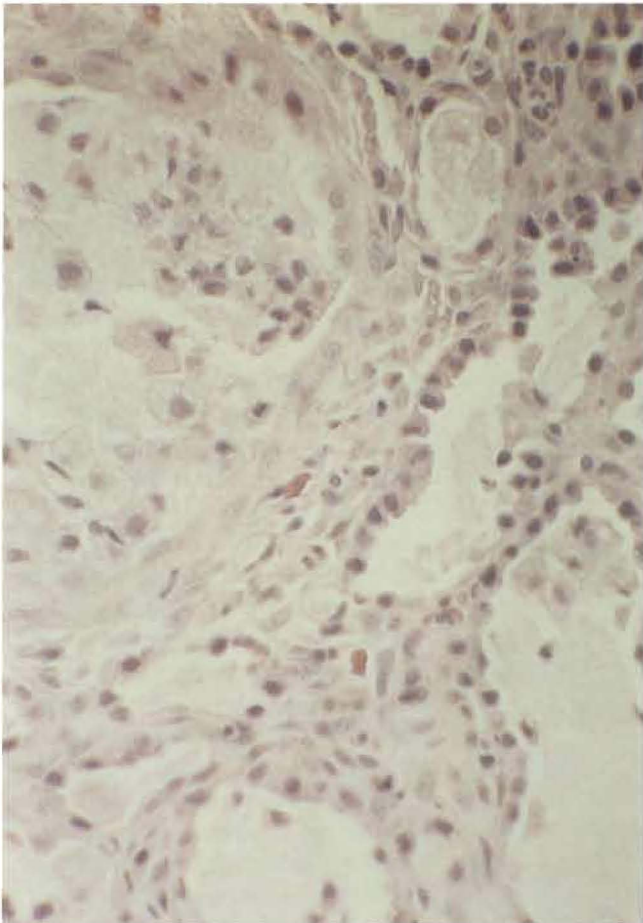
With the molecular defect of pulmonary SPB deficiency identified, physicians now can definitively diagnose babies with this disorder using amniocentesis *in utero* or by taking a blood sample after the baby is born. *In utero* identification allows for the necessary advance arrangements for immediate treatment at birth with a lung transplant or other therapies.

Before the molecular defect was identified, the diagnosis could be made only after delivery with a lung biopsy, a highly invasive procedure. The research, which also may confirm that the disease is more common than

cy That Claims Infants



Lauri Bailey holds her daughter, Autumn, who is doing fine after a lung transplant rescued her from a genetically determined protein deficiency.



A genetic deficiency of pulmonary surfactant protein B (SPB) allows air sacs in the lungs to fill with a fatty substance, impeding oxygen transfer (left). Normal lung tissue, with open air sacs, is pictured on the right.

expected, also can help families in screening and family planning.

As awareness of the disorder spreads, doctors across the country have begun sending to the research team blood and tissue samples of infants who have died under similar circumstances. "It now appears that the molecular cause of the syndrome is not as uncommon as we had imagined before," says Colten, who has identified more than 10 families who have lost a child to the disease.

Autumn's Story

From the neonatal intensive care unit at All Children's Hospital in St. Petersburg, Autumn was transferred to Tampa General Hospital in Tampa FL. The team there that cared for Autumn postnatally suspected that she might have pulmonary SPB deficiency. Soon

after she was born, blood and tissue samples were sent to Lawrence Nogee, M.D., at The Johns Hopkins School of Medicine. Within two days, the Baileys were told what was wrong with their second child. They later learned that they both are carriers of the disease.

"We were just devastated. I cried so hard," says Lauri, who had difficulty accepting that Rebecca and Autumn had the same disorder. "I couldn't believe it. I knew there was no other treatment besides a transplant, which seemed so far-fetched."

Deciding to go ahead with the transplant was a difficult decision for the Baileys. Lauri says she and Richard spent hours discussing their course of action. Lauri feared going through such emotionally wrenching uncertainty again, but her husband, whose second job is as a paramedic, believed that life is to be preserved at all costs.

"And then there was that little

chance, the one slim chance, that she would survive," Lauri says. "I couldn't stand knowing that I hadn't taken that chance, that I let her die without trying everything."

The Baileys eventually decided to send Autumn to St. Louis Children's Hospital to wait for a new set of lungs. After remaining on a ventilator for about seven weeks, she received donor lungs in a transplant procedure performed by Thomas L. Spray, M.D., professor of pediatrics and director of cardiothoracic surgery at Children's Hospital.

A week after her transplant, Autumn was taken off the ventilator. She had to remain in St. Louis for three months following the transplant, so Lauri rented an apartment and stayed with her. Richard visited whenever possible but could not stay because of his job as a correctional officer in Florida.

The stress of caring for Autumn alone and being away from home came close to overwhelming her, Lauri says. "I kept a diary from the day Autumn was born, and I read some of it the other day. I just can't believe everything we've been through."

But Lauri would tell other parents whose children have this problem that lung transplants for this disease can be successful. "You can never give up. Nobody said it was going to be easy."

Autumn's life expectancy is normal, though she will have to take immunosuppressive drugs and steroids that produce some side effects. Still, Lauri and Richard have no second thoughts.

Defect First Discovered

In 1991, Colten, Lawrence Noguee, M.D., then at the School of Medicine, and Aaron Hamvas, M.D., assistant professor of pediatrics, saw a full-term baby at St. Louis Children's Hospital who died of respiratory distress. A medical history showed that the mother had given birth to a child who had died from the same problem 18 years earlier. Lung tissue from this infant helped the research team, including a physician from St. Louis University, Daphne DeMello, determine that the babies both suffered a genetic deficiency of pulmonary SPB. Each parent carried the defective gene.

During the mother's next pregnancy, doctors were able to determine late in the pregnancy that the developing baby also had pulmonary SPB deficiency. When this baby was born, he received therapy with an artificial surfactant that contained the type of protein his lungs were not producing, but it did not help. He was listed for a lung transplant but died before organs were available.

"Information from this family and from others helped us conclude that this respiratory problem was a genetically determined deficiency of this protein," says Colten.

A year later, that information helped physicians determine what was

wrong with Autumn Bailey, saving her life.

Other families also may benefit from the research conducted by Colten and his colleagues. Sessions Cole, M.D., professor of pediatrics and cell biology and physiology and director of the division of newborn medicine at St. Louis Children's Hospital, has begun to study this problem by looking at birth and death records of infants for the last 10 to 12 years in Missouri. By examining tissue retrieved from autopsies of children who died of respiratory distress, researchers may be able to determine if the children suffered from pulmonary SPB deficiency.

At the moment, a lung transplant is the only treatment for the disease. Researchers are hopeful, however, that one day gene therapy will be available to treat the disorder. "The longer-range payoff of these findings is that by knowing this, we can understand the disease better and find an effective therapy," says Colten.

Lauri Bailey has a five-year-old daughter, Mackenzie, from a previous marriage, who also is a carrier of pulmonary SPB deficiency. And Lauri hopes that by the time Mackenzie and Autumn have children, medical research will have answered more



Harvey Colten, M.D., head of the Department of Pediatrics, has identified the mechanism at work in pulmonary surfactant protein B deficiency.

questions about the disease.

For now, the Baileys are grateful that the condition has been identified and that a transplant was possible. "Sometimes I just stand there and watch her sleep," Lauri says. "We're very thankful." ●



Pediatric cardiothoracic surgeon Thomas L. Spray, M.D., performs lung transplants on infants deficient in pulmonary surfactant protein B.



Helen Donis-Keller, Ph.D., studied graphic design and photography, then worked professionally in the field for six years before turning her attention to scientific research. Portraits of friends and loved ones provide a focus for her drawings and photographs. She is professor of surgery and genetics and director of the division of human molecular genetics in the Department of Surgery.



Victoria McAlister will study printmaking in the University's Fine Arts Graduate Program this fall. Her work has been shown publicly and purchased to decorate a prominent St. Louis restaurant. She is the wife of William McAlister, M.D., radiologist-in-chief at St. Louis Children's Hospital.



Diane Radford, M.D., is an amateur photographer who uses a 35 millimeter camera in her work. This was her first public showing. She is an assistant professor of surgery.

From the Right Side of the Brain

In June, 35 artists brought their imaginative creations into the realm of meticulous scientific investigation, displaying their original works for three weeks at the Kenton King Center in the Medical Library. The artists all were members of the faculty or spouses or children of faculty members.

The show's opening, which drew more than the 100 guests who signed the register, revealed works in media ranging from photography and computer-generated images through woodworking and quilting to oil painting and ceramic sculpture.

Sponsored jointly by the Computer Graphics Center, the Medical Library and the Division of Biology and Biomedical Sciences, the first-of-its-kind show was not juried. Nonetheless, it presented an uncommonly high level of ability and quality. A 1995 art show is being planned.



Suzanne Marshall is a self-taught quilter whose work began as utilitarian projects and since has propelled her to international recognition. Her work is notable for both design and craftsmanship. She has received many blue ribbon and best of show awards in juried shows from Pennsylvania to Japan. She is the wife of Garland Marshall, Ph.D., professor of molecular biology and pharmacology.

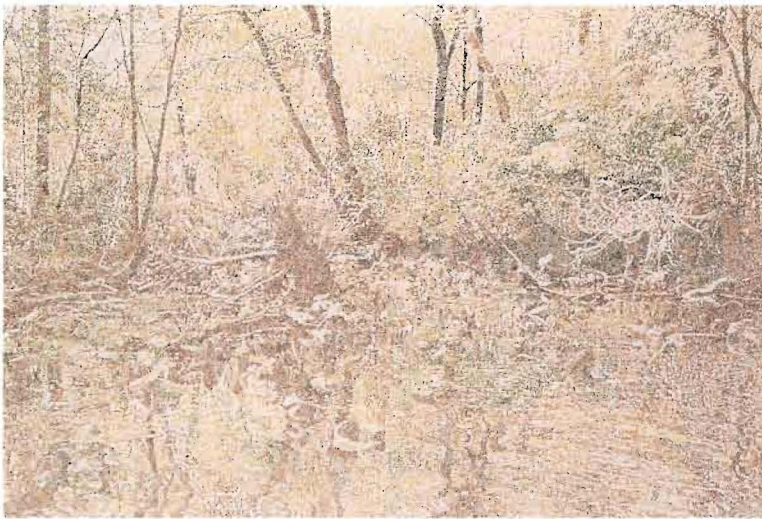


William A. Frazier, Ph.D., says he discovered watercolor 15 years ago. He finds people the most challenging and difficult subjects to paint in watercolor, "a sloppy and spontaneous medium." He is professor of biochemistry and molecular biophysics and of cell biology and physiology.





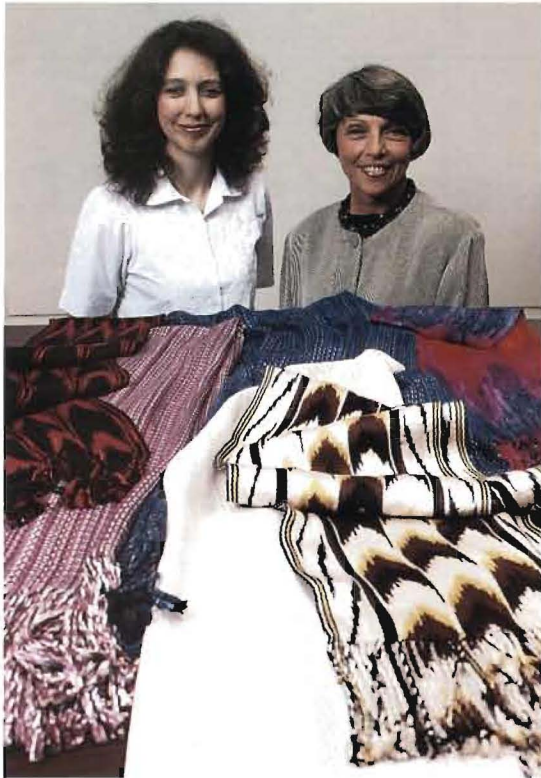
Jay Seltzer, M.D., creates by combining his interest in computers and his love of surrealism. Much of his work involves an element of fractal geometry and experiments with three-dimensional modeling and rendering. His "medium" includes a Macintosh IICX and a Quadra 700 running Photoshop, Stratavision Studiopro and Mandelzot. He is an instructor in medicine.



Nancy Newman Rice holds both B.F.A. and M.F.A. degrees from Washington University. A professor of art at Maryville University, she has displayed her work widely and is represented in galleries in St. Louis, Atlanta and in private and corporate collections internationally. She is the wife of John P. Rice, Ph.D., professor of psychiatry. (Artwork courtesy of the Elliot Smith Gallery of Contemporary Art.)



Joseph Levitt, M.D., has worked with wood for the 60 years since his introduction to the medium in an elementary school manual arts class. He has won national competitions, and he continues to create furniture that challenges his ability. He is professor of clinical medicine.



Ann Edington Adams (left) and **Barbara Wells** are both members of the Weavers Guild of St. Louis and respected textile artists. Adams' style developed after a scholarship to the Penland School of Crafts in North Carolina built her confidence and enhanced her technical skills. She says that much of her inspiration comes from the things that she sees around her. She is the wife of **Michael Adams, Ph.D.**, research assistant professor of psychiatry.

Barbara Wells weaves art to wear, creating large afghans on commission and sewing her handwoven fabric into functional clothing. The artist, who shows her work in St. Louis, North Carolina and Door County WI, says she always has been attracted to the texture and feel of the weaver's materials and enjoys filling her need for fabrics that can be found nowhere else. She is the wife of **Samuel A. Wells, Jr., M.D.**, Bixby Professor of Surgery and chairman of the Department of Surgery.



Peter G. Tuteur, M.D., has been a photographer for 30 years. Recently, he has been using a medium-format camera to explore reflections. He is an associate professor of medicine.



Patricia Peck has returned to an early love of art after years as a community volunteer and mother. Two years ago she undertook the study of watercolor at Washington University with Lois Gruberger. She says she finds her medium challenging and unpredictable. She is the wife of **William A. Peck, M.D.**, executive vice chancellor and dean of the School of Medicine.

Right Place, Right Time — I. Jerome Flance, M.D.

by Steve Kohler

Jerry Flance, M.D., already has learned some of the things that the nation's healthcare reformers will need to know.

In the early days of his professional life, he undertook what was then called home health care. Forty years ago, he helped establish at Jewish Hospital the first such organized system west of the Mississippi, showing it to be of vital assistance to those in need of continued medical care at minimum cost.

And 25 years ago, Flance and several colleagues opened a clinic in a depressed St. Louis neighborhood, determined to take healthcare delivery to those who needed it most. All of their fees were deferred, and any Medicare or Medicaid money the physicians collected went to a development corporation working for the improvement of the neighborhood.

After five years at the clinic, Flance says he came to understand that doctoring alone is not what disadvantaged people require. "Only a few patients came to the clinic. We were superfluous," Flance says. "Real healthcare means attention to the total problem, not just having doctors available," he insists. "It must be a team effort."

His experiences showed him that, "If it's going to work, it will take the interest of corporations and industry to offer training and jobs. There's a need for safe schools,

decent housing and strong family structure. The police must control and get rid of crime. The city must maintain and repair the infrastructure. All aspects of society have to be involved."



I. Jerome Flance, M.D.

Flance believes that his experiences serve as a paradigm for the nation. "The distribution of healthcare has been uneven; some people have been poorly served. And I believe in universal coverage. But the problem is badly misunderstood. The bills before Congress are

primarily disease-care bills, not healthcare bills. They propose to cover most of the costs of getting sick. But healthcare has to do with the totality of life itself, with having a job, a real neighborhood, a safe

house to live in. There is a need to recognize that most poor healthcare is closely related to poverty."

Flance's insight is not limited by politics or the undeniable difficulties of bringing a huge and more complete coalition together. He knows not just in his bones but from practical experience and research that it can be done. Fifty-plus years of intimate contact with patients who became friends has shown him that people live up to the expectations that are placed upon them.

So who is there to lead from the dismal reality to Flance's vision? He doesn't shirk any personal responsibility but says frankly that his profession and the medical school have a long road ahead, with much still to do in unexplored directions. "If we expect industry

to return to the city with jobs, we must give them a reason to act," he says. "Such projects can start with a demonstration area, even in just a single neighborhood. But it still requires leadership."

Flance's passion is more than issue-oriented; it is the way he has

lived. And his enthusiasm for medicine and the medical school as the source of what can be done is characteristic.

Now 83, Flance works 10-hour days more than five days a week, seeing patients in his St. Louis practice. He retired from active teaching at 75, because, he says, "It was time to start getting home for dinner on time." But he taught with dedication and ardor for 40 years, giving back to the medical school what he considers fair recompense. He was recognized as Teacher of the Year in 1981 in the Department of Medicine.

"The school did something for me that I couldn't get any other way, and I owe it almost everything. They took a naive kid of 19 and made him a doctor. They were patient with me, educating me properly. I was exposed to great teaching and shown a way of study that has lasted all my life," he says.

Medicine has been Flance's *raison d'être* since he graduated from the School of Medicine in 1935. His undergraduate degree also was earned at Washington University. "Some people play golf or bridge. I prefer to go to the hospital to see patients, attend seminars, confer with colleagues," he says. "This is both my vocation and my avocation. I've been constantly exposed to new ideas and developments by faculty, students, interns and residents. All of those experiences and relationships have affected my practice and my outlook on life. I've been like a kid in a candy store — a very good candy store."

The 40 years of long days meeting teaching responsibilities he

thinks of as "payback" for all that the school has done for him, though he continues as a vocal supporter of the school, speaking eloquently on its behalf and enlisting direct support for its future.

In the course of a lifetime practicing medicine — first at the old Beaumont Building and, since 1953, at the Maryland Medical

Group which he helped to found — Flance has developed many long-term relationships. "One man I saw first when I was an intern in 1935 is still a patient of mine in 1994," he says. "That's as long a follow-up as any doctor could want."

Flance calls the intimate relationship between doctor and patient that only comes with long association "one of the great strengths of American medicine." And he sees it passing away. "It can still happen, but the chances are slimmer. The private practitioner is fading, and I have a sense of loss over that. Greater emphasis is being put on saving money. I don't hear enough talk about better care; I hear about lower costs. But as doctors' fees go down, administrative fees are going up," he says, doubtful that much of an overall savings is realized. "However," he says, "there's not much anybody can do to stop this juggernaut."

Nothing Flance sees interferes with his enjoyment of his practice.

He knew he wanted to be a physician from the time he was five, when, in a game of "house" organized by his two older sisters, he was appointed to take the role of the doctor. "Ever since, it's been assumed that I'd be the doctor," he says.

In his spare time, Flance pursues several interests with the same

passion he displays in his professional life. Accompanied

by Rosemary, his wife of 57 years, he enjoys

travel. The couple often shuns more

conventional destinations for instructive visits to places like Vietnam, Africa,

India and Peru.

Instrumental in his success — in all success, he says — has been what Flance calls "luck." A loving family made him feel secure and gave him "a strong start. I had a great childhood," he says. And good genes have virtually assured his continued activity. Flance's mother lived to the age of 107, and many relatives on his father's side reached 100, though Flance's father himself succumbed to an infection that a single dose of penicillin would cure today.

To remind him of the role that happenstance plays in even the most ordered and thoughtful life, Flance keeps a Joan Miró print on the wall of his Spartan office. An unusual lithograph, it shows a pair of jugglers with many balls in the air around them. "Life is full of vagaries, and one had better be a good juggler," Flance says, interpreting the print. "Ability is fine, but you still have to be in the right place at the right time." ●

"Healthcare has to do with the totality of life itself, with having a job, a real neighborhood, a safe house to live in."

The Reason We Entered: A Hands-On Summer

by Tom Sommers

The baby came out blue. That was the biggest surprise during the first delivery I witnessed, a Cesarean section.

I expected stress levels in the delivery room to shoot up and emergency procedures to begin, but instead the doctor carefully clipped the umbilical cord, and the baby girl took her first screaming breath. Before my eyes, the infant quickly turned pink, even before she was handed over to the pediatrician for Apgar scoring. She appeared to be a normal newborn, and the doctor turned back to complete the procedure after assuring the new mother that everything was fine.

Any third-year student at Washington University School of Medicine could tell this story from firsthand experience. Clinical level students witness many births during their rotations through Barnes, Jewish and Regional hospitals. What makes the experience unusual is that when I attended that birth I had just finished my first year of medical school. I was in a small hospital in Missoula MT, and the doctor performing the C-section was a family physician with a practice there.

During the middle of my first year, it became apparent to me that opportunities for activities during the upcoming summer didn't suit my needs. Many students spend the summer months working in a research laboratory in the Medical

to remind myself why it was that I had entered medical school in the first place.

Some of my classmates shared my interest in a summer experiencing the work that doctors do. So, with the help of the Office of

Student Affairs, I began to explore clinically oriented projects that were available. I found many opportunities for students existed all across the country, but, unfortunately, most of them were unfunded. That severely limited debt-ridden students like me. The prospect of spending the summer increasing our financial burden was very unappealing to many of us, despite the clinical nature of the experiences.

With the help of Leslie Kahl, M.D., of the Office of Student Affairs, and John Walters, assistant dean for student affairs, the Committee on Student Financial Aid agreed to treat summer projects that met certain

criteria as continued enrollment in the School of Medicine and provide financial aid accordingly. Those students who were interested in participating in a project wrote proposals for their summer plans.



Second-year medical student Thomas Sommers in Montana's Glacier National Park. Sommers is from St. Louis.

Center. Others take the period off from work and study to travel. Neither of those options appealed to me, because I had decided that I needed to spend my last unencumbered summer working with patients

Each of us explained what we were planning to do, what our expenses would be and why we were interested in the project. The committee then decided whether the projects we proposed were appropriate and funded the approved summer projects with a mixture of grant and loan funds at the same level provided to those students who chose to do research for the summer.

The program evolved as new proposals were submitted. The committee continued to refine the requirements for use of the funds to ensure the wise use of

the school's resources. Some students used the money to underwrite projects abroad — one student worked in South

Africa. Others of us stayed in the United States or even in St. Louis. One rule: The money could not be used for travel. We found our ways to a number of various locales, but all of the funded students took part in educational experiences — the overriding requirement for receiving funding.

I spent the summer accompanying R. D. Marks, M.D., the family physician who delivered the first baby I had ever witnessed being born. Apart from all of the obvious clinical information that I planned to learn, I was exposed to many things I hadn't expected to see. With almost 75 percent of his patients insured by Medicaid, the physician in private practice faces the many issues that crop up when dealing with the government.

For example: Although it is less expensive to draw blood in the physician's office and send it to a laboratory for tests, Medicaid requires patients to visit the lab in person to have the blood drawn there. The independent physician sees quickly that this inconveniences patients and adds to the cost of their treatment.

Also, Medicaid requires only a \$2 co-payment for adults and none for children. Such low rates made it possible for some patients to visit the doctor frequently to be checked for trivial or even nonexistent problems.

The issue of how many government-insured patients to include in a practice is of critical importance to family physicians, since the reimbursement schedule of Medicaid sometimes barely seems to keep pace with the increasing costs of running a private office. These are issues that many of us in medical school now

University rarely see a family physician during their in-house rotations. Students now can schedule time during their fourth year to experience this specialty, and mentorships under the auspices of student organizations are offered, but at the moment there is no Department of Family Medicine. But with all the changes in the way American medicine is being delivered, there is liable to be such a training program for the specialty here eventually. For now, programs like the summer stipends offer an excellent opportunity for students to

gain exposure to some of the facets of medicine that they otherwise might not see during their training.

“We all took part in educational experiences – the overriding requirement for receiving funding.”

and all private practitioners will face in the future, and the opportunity to be exposed to them now was enlightening.

The practice of medicine in towns like Missoula is, by its very nature, different from medicine in more urban settings. Many of the smaller towns in the state's vast expanses have no doctors at all, and outstate residents often must travel many miles to see a primary care physician. Follow-up is difficult for patients so far removed from the office, making patient instructions and education even more important. Identifying potential difficulties with prescribed treatments requires a visionary.

Most of all, my summer experience working with a family physician gave me a chance to see firsthand how medicine is administered. The baby I saw delivered is now the Missoula doctor's patient, as are the mother, the father and the infant's older sister. Whole families rely on him for their care, and the continuity that he sees grants insight into the true causes of what otherwise would be vague complaints.

Medical students at Washington

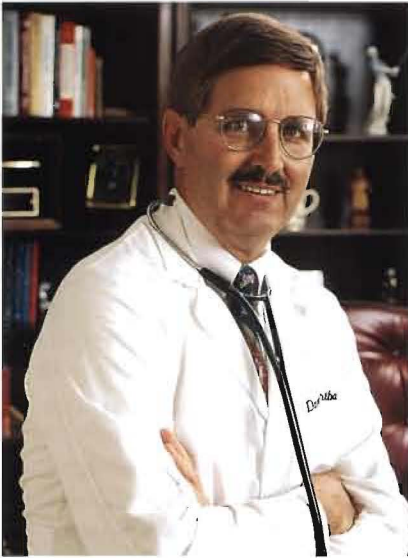
The summer stipend program has taken root and should be available for students again during this academic year. That means other students will have experiences like mine when I saw Dr. Marks discover that a woman who had come in with a cough actually was suffering with an asymptomatic lung tumor. He referred her to a surgeon, then re-assumed her care, stopping by in the evening on his way home to check on her.

With the continued help of the Committee for Student Financial Aid, soon-to-be second-year medical students can use their last block of free time to experience the reason we all entered medical school — to take care of people. ●

Editor's Note: *The School of Medicine recently has announced the creation of the division of general medical sciences that may, in the future, be expanded to include special training opportunities in general internal medicine and primary care. For more about the program, see the story in the People section.*

Ortbals Gets Golden Gavel

The golden gavel and plaque that passes between successive presidents of the Washington University Medical Center Alumni Association (WUMCAA) was put into the hands of David W. Ortbal, M.D. '70, on July 1, 1994.



David W. Ortbal, M.D.

Ortbals is a private practitioner in St. Louis who specializes in internal medicine and infectious diseases. He is an assistant professor of clinical medicine and a faculty member since 1977. He is on the medical staffs of St. Luke's, Barnes and Jewish hospitals.

A member of WUMCAA's executive council for six years, Ortbal says he has seen the association grow into a dynamic organization that makes significant contributions to the medical school student population and faculty.

"My contributions will follow those of my predecessors over the last five years," he says, "and I hope to continue our support to various student organizations and also to interact with the faculty on a very positive basis."

Ortbals says now more than ever it is important to maintain and expand alumni-funded scholarship programs to ease the financial burden of students graduating from medical school. The class of 1970, Ortbal's class, has accepted a challenge by the class of 1969 to fund a scholarship in its name. The class of 1969 started the student scholarship program during the 1993-'94 academic year.

"I feel this is a very positive thing for the future of the medical school, with the cost of a medical education having skyrocketed from what it was when I was a medical student," he says. "Most of the students coming out of medical school now have large debt loads which create tremendous obligations after graduation. This is a way in that we can contribute directly to the education of students who are beginning in the medical school."

Additionally, Ortbal says it is important for WUMCAA to continue to support student organizations such as the Drug Education Project and Students Teaching AIDS To Students (STATS). Some of the student activities funded by the association are:

- \$750 each for the student activity funds of the first- and second-year medical school classes.
 - \$1,600 for the STATS program, in which medical students go into middle school classrooms to talk about HIV infection and AIDS prevention.
 - \$1,500 for the Perinatal Project, in which medical students provide prenatal care for low income, expectant mothers in the inner city.
 - \$5,000 for the Young Scientist Program which provides opportunities for economically disadvantaged high school students to spend a summer working in a laboratory.
- Ortbals, who has been in practice since 1977, earned his

undergraduate degree in chemistry at St. Louis University. His internship and first year of residency were done at Jewish Hospital, and his second year of residency was at the University of North Carolina, Chapel Hill. He served two years in the United States Navy and completed a fellowship in infectious diseases at Barnes Hospital. He is a fellow of the American College of Physicians and Infectious Diseases Society of America. ●

Annual Fund: An Important Difference

The School of Medicine's annual fund drive — the yearly solicitation of support for the school — ended at the close of June, again crossing the \$1 million mark. A total of \$1,113,037 was raised for fiscal year 1994 from medical, healthcare administration, occupational therapy, physical therapy and nursing alumni and former house staff.

Through the inspiration of the Holden Challenge, sponsored by Dr. and Mrs. Raymond F. Holden, Jr., alumni and former house staff participation in the Annual Fund increased significantly. Total dollars from these two groups rose by 16 percent this year.

Additionally, the number of new Eliot Society members (donors of at least \$1,000) reached 104 this year, and 83 percent of current Eliot Society members renewed their memberships. Through the extra efforts from the volunteer membership committee, the medical school was successful in reaching its goal. The growth in new memberships, as well as the retention of current members, shows the dedication of the Eliot Society to the School of Medicine and its affiliated programs. The medical school now has a total of 465 Eliot Society members.

Investment In Student Project Pays Off

The \$15,000 WUMCAA provided in 1992 to enable a group of M.D./Ph.D. students to initiate the Young Scientist Program launched a project that has now received a five-year, \$300,000 grant from the Howard Hughes Medical Institute. WUMCAA provided partial funding for the program in 1993 and 1994.

Two students in the Medical Scientist Training Program conceived the Young Scientist Program as a way of involving economically disadvantaged high school students from the St. Louis City Public Schools in summer laboratory research internships at the School of Medicine. The goal of the program is to encourage the students to pursue careers in science.

During the first summer, five high school students participated. The program later expanded to include teaching teams of medical students who make presentations in public school classes, a year-round, one-on-one tutoring program that culminates in science fair projects and a summer program for selected high school teachers.

With the \$300,000 grant, 1,765 high school students will be involved with and exposed to a variety of scientific subjects, including human anatomy, neuroscience, chemistry, developmental genetics and microbiology.

Special reunion class gift drive efforts also played an important part in the success of the School of Medicine's annual fund drive this year:

- The DeBruine Class of 1959 Challenge, sponsored by Paul and Ruth DeBruine, matched the gifts of classmates to the School of Medicine. Sixty-six percent of the class of 1959 participated, raising over \$44,000.

- The Class of 1964 completed a five year gift drive, chaired by Ron Evens, M.D., endowing a student scholarship. A total of \$94,100 was raised, with 63 percent of the class participating in the gift effort.

- The Class of 1969, led by a steering committee of 17 members of the 25th year reunion class, kicked-off a scholarship gift effort this year raising over \$119,000. Each class member was asked to give \$2,500 over five years, or \$100 for every year since his or her graduation from medical school. Forty-five percent of the class has pledged thus far.

William A. Peck, M.D., executive vice chancellor for medical

affairs and dean, notes "The leadership and support obtained from our dedicated volunteers has made this a very special year for the School of Medicine. We are grateful to all the alumni, former residents, faculty, friends and volunteers whose gifts and service to the school make such an important difference." ●

New Officers Named At Annual Meeting

The annual meeting of the Washington University Medical Center Alumni Association (WUMCAA) was held on Friday, May 13, 1994, with Barry Siegel, M.D., presiding.

Siegel reviewed the activities of the past year and reported on the sources and disposition of funds.

The slate of nominees for new officers and Executive Council members for 1994-'95 was presented and approved unanimously. The new officers and members are:

Vice President - Julian C. Mosley, Jr., M.D. '72

Secretary-Treasurer - Stephen A. Kamenetzky, M.D. '70

Council Members to serve three-year terms - Ronald K. DeGuerre, M.D. '74; Robert G. Kopitsky, M.D.; Henry E. Mattis, M.D. '75; Carlton S. Pearse, M.D. '78, and Dolores R. Tucker, M.D. '74.

Barry Milder, M.D. '73, was elected to serve a two-year term filling the vacancy created by Robert Fry's resignation.

Each of the out-of-town members, who are elected to serve one-year terms, agreed to serve for another year. They are: Captain Stephen B. Lewis, M.D. '66; Jonathan M. Mann, M.D. '74; Gary Rachelefsky, M.D. '67; Stephen W. Van Meter, M.D. '67, and Sharon Van Meter, M.D. '67. A new member in this category is James E. Marks, M.D. '65.

Council members elected in prior years whose service on the Executive Council continues are: new president David W. Ortvals, M.D. '70; president-elect Richard A. Blath, M.D. '71; past presidents Ira J. Kodner, M.D. '67; Penelope G. Shackelford, M.D. '68, and Barry Siegel, M.D. '69, and members William J. Ross, M.D. '72; Ernest T. Rouse III, M.D. '71; Emily L. Smith, M.D. '68; James Bobrow, M.D.; Robert C. Drews, M.D. '55; Gordon W. Philpott, M.D. '61; Bruce I. White, M.D. '64, and M. Gilbert Grand, M.D.

Ex-officio members include executive vice chancellor and dean William A. Peck, M.D.; associate dean for postgraduate education Morton E. Smith, M.D.; president of the Class of 1995, Abdi Raissi; chairman of planned giving, Paul Hagemann, M.D. '34; chairman of the annual fund, John D. Davidson, M.D. '52, and co-chairmen of the Eliot Committee, Nicholas Kouchoukos, M.D. '61, and Philip Korenblat, M.D. ●

Challenge Presented

In addition to ongoing annual giving activities that include reunion class gift drives, a special effort is now underway — the M.D. Class of 1970 Scholarship Gift.

The M.D. Class of 1970 Scholarship Gift is chaired by David Ortvals, M.D. '70, and a steering committee of five members of the 25th year medical school reunion class. Each classmate is being asked to give a total of \$2,500 payable over five years, or \$100 for every year since his or her graduation from medical school. The Class of 1970 was challenged at Reunion 1994 by the Class of 1969 to meet or exceed its 25th reunion class gift. Last year's M.D. Class of 1969 Scholarship Gift of more than \$119,000 will be endowed and devoted to medical student scholarships.

All gifts made to fulfill the Class of 1970 Scholarship Gift will count toward giving-club membership for the donor at the appropriate level. For further information, please call Sue A. Ghidina, director of annual giving, at (314) 362-9671 or Elizabeth R. Kodner, assistant director of annual giving, at (314) 362-9660. ●

New Directory Coming

Preparations are underway for a new directory of School of Medicine alumni and former house staff.

During the next several months, the publishing company, Publishing Concepts, Inc., will contact those for whom we are able to supply mailing addresses. Their representatives will update information for inclusion and will inform alumni of the procedure for obtaining a copy of the finished product. ●

Free Advice

At each spring's reunion of the School of Medicine, alumni are asked what advice they would give to current students. Last year, members of classes from 1934 to 1984, and special guests from 1994's class, responded with their wisdom. Identified here only by the class of its origin is some of that serious, inspiring, reassuring and funny advice.

1934:

- Work! Do not forget the humanities.
- Get a good filing system started early in your career.

1939

- I know that times have changed, but try to talk with your patients, and let them talk to you.
- The greatest satisfaction will come not from admiring your bank account but by approaching medicine as a sacred calling, not unlike the ministry. That will yield the greatest rewards over the years.

1944

- If you like medicine, don't worry about the present turmoil.
- Study hard, work diligently and learn all you can. Never will

you have a better time to prepare yourself for the future.

1949

- 1) Take good notes, for future reference as well. 2) Pretest anxiety is okay as long as it is conducive to studying. 3) Work and play makes a good blend forever.
- Always remember — though you are obviously bright, there are probably a thousand homeless people who could do your job as well if they'd been given the opportunities you've had. Don't get a big head.

1959

- Be loyal to your family, loyal to your school. Be prepared for reform and educate yourself about the political process.

1969

- Be optimistic about the future of American medicine — only you can assure that it will remain the best in the world.

1979

- Look toward primary care. Or vote Republican.

1994

- As soon as you can, find and maintain a balance between medicine and other aspects of your life. And don't forget why you came to medical school. ●

Venable Honored For Humanitarianism

Phillip Venable, M.D., former fellow in ophthalmology and long-time member of the clinical faculty, has been selected to receive the Outstanding Humanitarian Service Award from the American Academy of Ophthalmology. Venable is to be one of three honored with this year's award.

Venable was the first African-American member of the faculty,

according to Bernard Becker, M.D., who appointed him. He was instrumental in recruiting minorities to the student body and has personally provided fellowship funds that allow minority students to engage in research and become interested in careers in ophthalmology. Becker calls Venable, the former head of ophthalmology at Homer G. Phillips Hospital, "a big help to the medical school." ●

'30s

Lawrence E. Mendonsa, M.D. '37, was recently honored by the St. John's Mercy Medical Center (St. Louis) Department of Obstetrics and Gynecology with its first Distinguished Physician Award. Mendonsa has been a member of the staff at St. John's since 1947.

Edna Maxwell Roberts, NU '39, is the co-author of an article titled "Mississippi Public Health Nurses and Midwives: A Partnership That Worked," that appeared in the February 1994 edition of *Public Health Nursing*. Roberts retired from her position as director of Public Health Nursing for the Mississippi State Department of Health in 1983.

'40s

Hugh E. Stephenson, M.D. '45, retiring chief of staff at the University of Missouri Hospitals and Clinics, was elected to the chairmanship of the American Medical Association's prestigious Council on Medical Education. Stephenson immediately began his term as the top elected official in American medical education.

'50s

John S. Spratt, M.D., FHS 1952-'59, traveled to Santiago, Chile, to take part in the 38th Clinical Congress of the Chilean Chapter of the American College of Surgeons. In addition to lectures to the congress, he consulted in medical school clinics and spoke to the medical staffs at several Chilean hospitals.

William B. Blythe, M.D. '53, has stepped down as chief of the division of nephrology at the University of North Carolina School of Medicine. He led the division for two decades. Affiliated with the school for more than 45 years, Blythe continues to teach and to see patients.

Allan E. Kolker, M.D. '57, professor of ophthalmology at the medical school, has been named a director of the American Board of Ophthalmology and also was voted to the board of trustees of the American Academy of Ophthalmology. In 1990, he was the first to receive the Distinguished Alumni Award presented by the Washington University Eye Alumni Association.

'60s

Richard A. Cooper, M.D. '61, has announced his intention to step down from his position as dean at the Medical College of Wisconsin and return to teaching and research there. He has served as dean for nine years and says he looks forward to having more free time to pursue his interests.

Hugh H. Tilson, M.D. '64, Dr. P.H., is president-elect of the American College of Preventive Medicine (ACPM). He represented the ACPM at the White House in December 1993 to demonstrate physician support for healthcare reform that provides universal coverage. Tilson is vice president for epidemiology surveillance and pharmacoeconomics at Burroughs Wellcome Co.

Judy Huffman Taft, O.T. '65, writes that she works as an occupational therapist in the Chapel Hill NC school system, evaluating and treating perceptual/motor problems, especially among preschoolers.

Steven B. Raffin, M.D. '68, has been named medical director of Foundation Health Corporation in Rancho Cordova CA.

Wallace B. Mendelson, M.D. '69, has recently become director of the Sleep Disorders Center, Department of Neurology at the Cleveland Clinic Foundation in Cleveland.

'70s

John M. Eisenberg, M.D. '72, was featured in the American

College of Physicians' *Observer*, in December 1993, commenting on healthcare reform. Eisenberg is chairman of the congressional Physician Payment Review Commission, Congress' primary advisory group on physician payment issues affecting Medicare, Medicaid and health reform. He serves as chairman of the Department of Medicine and physician-in-chief at Georgetown University Medical Center.



J. Michael Condit, M.D. '73

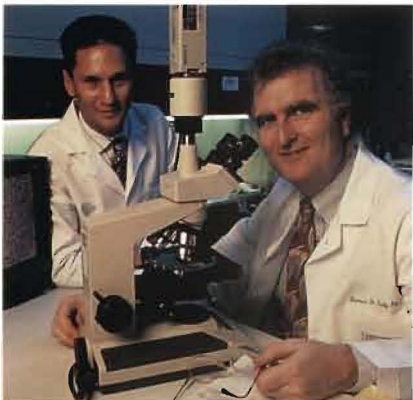
J. Michael Condit, M.D. '73, has been elected chairman of the board of directors of the Kelsey-Seybold Clinic in Houston. He replaces James W. Kemper, M.D., who stepped down after 11 years in the position.

John S. Prout, HAP '74, has been named president and chief executive officer of Saint Joseph Hospital in Towson MD. He is the first layperson to be named to that position by the Sisters of St. Francis of Philadelphia, the religious order that has sponsored the hospital for 130 years.

'80s

David M. Epstein, M.D. '83, has recently completed four years with the American Academy of Pediatrics (AAP), Delaware Chapter. Most recently, he served as

chapter president. During the past four years, the chapter has won six awards from the national AAP for its child-advocacy efforts.



Norman Sussman, M.D. (left)

Norman Sussman, M.D., FHS '85, is the co-inventor of an artificial liver assist device designed to offer the first real alternative to liver transplantation. The device, now in clinical trials, may help the more than 5,000 Americans each year who suffer fulminant hepatic failure and the 40,000-plus Americans with severe chronic liver disease. The device consists of a cartridge containing hollow fibers covered with cultured liver cells. It works on the same principle as a dialysis machine.

Wilson M. Compton, III, M.D. '86, is the recipient of a five-year Scientist Development Award for Clinicians from the National Institute on Drug Abuse. The grants are made to foster the development of promising scientists and to expand their potential for making important contributions. Compton, assistant professor of psychiatry at the School of Medicine, will use the grant for research into the relationship between substance abuse and mental disorders such as depression, anxiety and schizophrenia.

Lanette Gruben Schumacher, P.T. '87, gave birth to her first child, Peter Timothy, on March 14, 1994, in Davenport IA. She has been married to Tim Schumacher since 1989.

IN MEMORIAM

Richard W. Yore, M.D. '43, died August 15, 1993. He was 76 and lived in Frontenac MO.

Yore retired from the practice of chest surgery in 1990 and became a volunteer at the St. Louis Zoo, the Missouri Botanical Garden and St. Luke's Hospital, where he had been on the staff for 34 years.

An accomplished athlete both as a younger man (football) and in his later years (skiing), Yore was among the first ever to be inducted into Washington University's athletic hall of fame.

Marvin G. Fingerhood, M.D. '49, died July 4, 1994, of cancer at the Hospice of the Valley in Scottsdale AZ. He was 68.

Fingerhood practiced internal medicine in St. Louis County for more than 20 years. He retired in 1984.

A native of St. Louis, he attended Soldan High School and earned his undergraduate degree from Washington University before entering medical school here.

Among his survivors are his wife, Gloria Berman Fingerhood of Phoenix, two daughters, a son, a brother, a sister and two grandsons.

Robert Edgar Thomasson, M.D. '50, died of a brain tumor July 6, 1994, at his home in Ladue MO. He was 74.

In private practice for 39 years, he was former chief of staff at Lutheran Hospital. At his death, he was head of the surgical department at the State Hospital on Arsenal Street in St. Louis.

A well-known historian, he was active in preserving log and stone buildings from the 18th and 19th centuries, including homes, mills and churches.

Among his survivors are his wife, Mary Louis Wahlert Thomasson, M.D. '51, a daughter, a son, a sister, a brother and three grandchildren.

Arthur Berken, M.D. '57, a specialist in oncology, died April 2, 1994, at his home in Huntington NY. He was 62.

Berken was a senior partner in the Mid-Island Internal Medical Consultants Group. He also had been chief of staff and director of the Department of Medicine at Mid-Island Hospital in Bethpage, Long Island.

A clinical professor of medicine at the State University of New York at Stony Brook since 1980, he was an advocate of healthcare reform.

He is survived by his wife, Roberta Menken Berken, three daughters, two brothers and three grandchildren.

Civic leader **Armand C. Stalnaker**, professor emeritus of management and a former member of the Washington University Board of Trustees, died in his sleep July 1, 1994, at his home in Clayton MO. He was 78 and suffered from heart disease.

The former chairman and president of General American Life Insurance Co. had served on the boards of a number of St. Louis institutions including distinguished service as the chairman of the board of Barnes Hospital. He was a great friend of the Medical Center.

After retiring from business in 1980, he began a second career as a professor of management at Washington University. Stalnaker was the 1978 Globe Democrat's Man Of The Year, and in 1981 he received the Right Arm of St. Louis Award. In 1990, he retired from the university. An accomplished sailor, he spent time on his sailboat in Chesapeake Bay and frequently navigated between Maine and the Bahamas.

He is survived by two sons, a sister and two granddaughters. Stalnaker gave his body to science. Memorial contributions may be made to the Irene and Michael Karl Professorship in Endocrinology at the medical school. ●



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The sculptures of John DiPersio, M.D., were among the creations on display at the School of Medicine's Faculty/Spouse Art Show in late June. DiPersio, associate professor of medicine and pathology, is chief of the division of bone marrow transplantation and stem cell biology. For more art, see the story beginning on page 20.