Vice Chancellor's Comments

Health Systems Agencies (HSA's) are new organizations, mandated by Public Law 93-641, to replace existing local comprehensive health planning agencies, regional medical programs, and experimental health delivery systems agencies. In the St. Louis area, it now appears likely that the Greater St. Louis Health Systems Agency will replace ARCH, Bi-State Regional Medical Programs, and comprehensive health planning agencies. The language of the Act is very general and could be interpreted broadly or narrowly with regard to possible responsibilities and authorities assigned to the new HSA's. At a minimum, the new agencies will be expected to carry out the present functions of the three organizations they will supplant.

At least 55 per cent of the new agency's board are to be consumers. The latter are defined by exclusion. The provider category comprises direct and indirect providers. These include physicians, dentists, nurses, social workers, other health professionals, hospital and other health institution administrators, health insurers, health educators, and board members of hospitals, other health agencies, and health professions schools. Spouses of such providers—whether direct or indirect—are considered providers according to this law.

Elected public officials are also to be included on the HSA boards. These officials may be further divided into providers and consumers, depending upon whether or not the political jurisdictions they represent provide health services to the public. A representative from the Veteran's Administration is required on each board. And finally, the boards are expected to reflect the sex, race, age, and income distributions of the areas served.

Ordinarily, Standard Metropolitan Statistical Areas (SMSA's) are not to be divided between HSA's, and, to the extent possible, the boundaries of the HSA's are to correspond to other existing state planning regions and PSRO areas.

The jurisdiction of the proposed St. Louis HSA corresponds to the St. Louis Standard Metropolitan Statistical Area. It includes Franklin, Jefferson, St. Charles and St. Louis counties, and the City of St. Louis on the Missouri side and St. Clair, Madison, Monroe, and Clinton counties on the Illinois side.

The board proposed for the new St. Louis Region HSA includes 60 people, equally divided between Missouri and Illinois. (This even split was the result of prolonged negotiation during the formation of the proposed new agency. Many Missourians have been unhappy with this compromise, though, at the time it was agreed to, it seemed to be necessary if any viable HSA was to be formed.)

The formation of the first board and of the executive committee has been very difficult because of the need to fulfill the law's requirements described above. Nominating committees have been forced to struggle with complex matrices that include categories based on specific county, race, sex, income level, and provider or consumer designation. The last dichotomy has had to take into consideration direct and indirect providers and elected official providers as well. As a result, no one is really satisfied and many are quite unhappy. In particular, many provider categories are inadequately represented on the board, or not represented at all. Some relief might be possible by enlarging the board, though even a board of 60 threatens to be unwieldy. But the executive committee is limited by law to a maximum of 25, even though it is supposed to reflect the same constituency as the full board.

A cynic might argue that the drafters of the legislation were motivated by a secret desire to subvert local health planning. It is hard to see how they thought the legislated organizations could work well, since their formation necessarily brings out many community conflicts and suspicions that take a long time to allay. Yet, whatever the motivation of the framers of the law, it represents the only current hope for local planning and a test of the view that major consumer participation in such planning will lead to more effective and satisfactory health care. Our only choice, then, is to try to work together in a spirit of informed, generous, and mutually supportive good will. This will not guarantee success, but failure will most certainly accompany anything less.

Samuel B. Guze, M.D.
Vice Chancellor for Medical Affairs
# Outlook

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Superimposed over Dr. Charles Oliver and a patient is an abnormal heartbeat identified with an arrow and V by a computer. The lower tracing shows normal heartbeats. See story page 16.
You're in pain. Your bones ache. Your doctor tells you that you have bone disease. He prescribes medicine and therapy, but nothing seems to work. Where do you go?

If you're lucky, you hear about Louis V. Avioli, M.D., and his staff in the Division of Bone and Mineral Diseases at Washington University School of Medicine. It may be a long journey for some, but to walk again without pain would be a "miracle."

Miracle may seem a strong word, but not to the patients who leave the Bone Center with a new life ahead of them. There are many stories of dramatic recoveries of children and adults who were confined to wheelchairs or beds. But once treated here, they can resume normal lives.

Hoping for a cure, patients come from around the globe, as well as from around the corner. They come because their physician cannot diagnose their ailment, or because he is not equipped to handle the complicated aspects of a particular bone or skeletal-related disorder.

Often patients are referred to the Bone Center because their disease is rare, or thought to be incurable, or may require considerable studies before any diagnosis and treatment can be determined.

This was the case of Anthony Parker. Last year Tony came from Sidney, Australia to see Dr. Avioli. At that time he was fourteen and had spent the previous four years in a wheelchair. Tony suffered from a severe form of vitamin D resistant rickets. His doctors were unable to help him further, and even a specialist in England failed to provide him with any long-term improvement.

Then Tony and his mother came to the WU Medical Center. He underwent prolonged diagnostic testing procedures, and was started on a regimen of vitamin D, phosphorus, and calcium supplements, plus a restrictive diet.

Tony spent six months at St. Louis Children's Hospital, taking occupational and physical therapy at WU Irene Walter Johnson Institute of Rehabilitation. When he left for home, medicine and instructions in hand, Tony was a jubilant fellow walking out the door with the help of crutches. Now, six months later, he's getting daily physical therapy, to strengthen his muscles, with the hope of discarding his walking sticks forever. That hope also has been a reality for another Bone Center patient.

To watch Raymond Sander play football with his friends in Seldon, N.Y., you'd never guess that less than four years ago he couldn't walk or stand.
Victim of a resident form of rickets, Raymond came to the Bone Center at the age of twelve with bone deformities and in a generally weakened state despite evaluation by a number of other physicians on the east coast. After the appropriate diagnosis was made, vitamin D and phosphate treatment transformed him into a healthy looking young man with energy to spare.

The availability of a 25-bed Clinical Research Center (CRC) at Washington University has made adequate diagnostic testing and detailed research analysis possible. Once in the CRC, the specialized care and testing begins—all without cost to the patient since he is cooperating in a study which hopefully will advance the knowledge of the disease.

"This free care for the patient is possible," explained Dr. Avioli, "because of National Institute of Health Clinical Research Center Grants, which cover the costs of the bed, nursing, and the associated back up personnel." In addition, specific research grants to Dr. Avioli help defray the cost of salaries of his scientific personnel, supplies and research equipment used in his more specific analysis.

In addition to the specially trained nursing staff in the CRC, there are also two full-time dieticians. "Our staff has the ability to oversee some time-consuming studies which would be hard to administer on a routine patient floor," explained Jane Hamilton, R.N., CRC nursing administrator. "Our dieticians plan tempting menus which must consider the exact gram counts of calcium and phosphorous," she said.

The absorption of calcium from the patient's food is of prime consideration in the overall treatment program. Fortunately, a specialized piece of equipment gives the physician a distinct advantage in determining the absorbed amount. "The Tri-Carb Scintillation Spectrometer, or "Armac," as it is called, is one of only a few machines in the country which is routinely used for this purpose," Miss Hamilton emphasized. "It actually measures the rate at which the skeleton accumulates the calcium which is absorbed from the intestine."

Another patient who benefited from these specialized facilities was a middle-aged man who developed severe osteoporosis of the spine. He was in constant pain, bruised easily and had become totally sedentary because any movement could lead to slipped discs or fractures. He had shrunk 6 inches, gained weight, and felt hopeless.

By chance, he read of Dr. Avioli and his staff in a Sunday magazine section. He wrote and within months he flew from Hawaii and was admitted to the Medical Center where he underwent a battery of tests.

Once the diagnosis was established and correct therapy instituted the father of five returned to his home. He wrote a glowing letter reporting his condition. "I am overjoyed by the return of muscle strength in my forearms; my back feels stronger and I no longer fear that my legs won't hold me up. The treatment prescribed is doing everything one could hope for."

The cases of people walking on their own after being confined to a wheelchair are common at the Bone Center. One woman has been a choreographer most of her life. Then, because of progressive loss of bone, she became immobilized and hunched over in a wheel-

Elaine Totsch, R.N., prepares Edward Ette for scanning by the Tri-Carb Scintillation Spectrometer or "Armac," in the Clinical Research Center. This machine measures the amount of calcium absorbed by the skeleton.
chair most of the time. Now, after diagnosis and treatment she walks with a cane.

A more recent case which was unusual was of a woman with end-stage renal disease. While being maintained on hemodialysis, she developed an osteomalacia, a severe form of muscle weakness. She was so severely disabled that she could not get herself out of bed. Now, with treatment of 25-OH-D, she walks on her own and cares for herself.

An example of the need for sophisticated diagnostic testing and the value of Dr. Avioli's "suspicious eye" is the case of an elderly female referred from South America for treatment of "postmenopausal" osteoporosis. When evaluation was complete, the woman's disorder was correctly established as hypophosphatemia, a rare disease in the adult which has only been reported in the world's literature eleven times. The patient was treated to the point of symptomatic improvement and she now returns to the CRC for follow-up studies at six to eight month intervals.

The stories of such dramatic progress are endless. The work to be done is never-ending too. But, so are the efforts of the Bone Center Team. It is their extensive research program which makes such stories possible.

Since 1966 more than 1,500 persons with bone disease have come to Washington University Medical Center in search of an answer. That was the year Louis V. Avioli, M.D. joined the staff at the School of Medicine and brought with him his interest in bone disease and his reputation in that specialty.

Dr. Avioli was instrumental in the establishment last April of the Division of Bone and Mineral Metabolism of Washington University, which has become an international referral center for bone disorders. Currently, Dr. Avioli is preparing an application for grant funds in order to continue and enhance bone research and to create a bona fide Bone Center here.

Organized within the framework of the Medical Center and Shriners' Hos-
Herbert Lubowitz, M.D., co-head of the Division of Renal Diseases

Jean Russell, Ph.D., physiologist in the Division of Endocrinology

David Malone, M.D., instructor of medicine and co-director of the hemodialysis unit

Steven L. Teitelbaum, M.D., associate professor of pathology

The hospital, the center is one of the world's most comprehensive facilities to treat diseases affecting bone tissues, a problem which affects a significant percentage of the population at one time or another.

As metabolism fellow Michael Kleerekoper, M.D., put it, "No other medical center is as complete. Many studies and tests are being done at other hospitals, but no one unit has it all—the personnel, the equipment and the established therapeutic modalities."

Experts in endocrinology, pathology, internal medicine, radiology, nuclear medicine, medical genetics, pediatrics and orthopedic surgery pool their knowledge in both clinical and research areas.

"Our specialists are not called in for isolated consultations. They represent an interdisciplinary team working in unison to diagnose and treat bone diseases," explained Dr. Avioli, Shoenberg Professor of Medicine.

"Our success rate is so high because our ongoing research in bone metabolism is extensive. Here we also have the realization that experimental work in laboratory animals has a direct and meaningful clinical application in specific diseases," emphasized Dr. Avioli.

Combined support for the many ongoing research projects has amounted to approximately 2.5 million over the last ten years. Dr. Avioli and his associates have individually received grants from the National Institutes of Health, pharmaceutical companies, the Atomic Energy Commission, American Heart Association, March of Dimes, Shriner's Hospital and enumerable private donations from Jewish Hospital benefactors.

The researchers' investigations have generally shown that osteoporosis represents a variety of disorders. They also have found that heavy drinkers, post-menopausal women on estrogens, diabetics on insulin or oral hypoglycemic agents, individuals on tranquilizers, cortisone, anticonvulsants or barbituates for any length of time, all sustain significant bone loss which may be symptomatic.
Studies at the Bone Center also have relevance to the general public who rarely think of their bones. Dr. Avioli described some of the areas under observation. "We know that diet may play an important role in predisposing to the increased incidence of bone fractures in some people. Diets high in meat proteins and inorganic phosphates most probably contribute to increased bone loss as aging progresses and to increased fracture incidence. But more common are the problems of the elderly and cloistered individuals who are relatively deficient in vitamins D and C because they don't get enough sunshine and they can't afford a well-balanced diet. On the other hand, persons who take too many vitamin C tablets can increase their chances for kidney stones and may suffer alterations in brain activity. In addition we also know exercise contributes to good bone production. This, too, is vitally important as we get older.

One of the aspects that makes the Bone Center so special is the development of simplified bone biopsy procedures which can be performed under local anesthesia. Steven L. Teitelbaum, M.D., associate professor of pathology, was instrumental in developing this technique. As with many of the findings, journal exposure has attracted physicians from around the world who want to learn this latest technique.

"Using a specially designed biopsy needle, we remove a core of bone from the patient's hip. It's almost painless, and the patient doesn't have the expense of an overnight stay," Dr. Teitelbaum said. "This sample is then cut into tissue-thin sections by the Jung Sledge Microtome in the Department of Pathology at Jewish Hospital. This is also a breakthrough because most bone samples have to be softened to be cut and that involves taking out the minerals. Now, by maintaining the minerals we can vividly see any abnormalities at their earliest stages, and we can repeat the procedure to check the progress of our therapy."

Dr. Teitelbaum's bone biopsy studies are processed to show how much bone is being made at a specific time and the rate of bone resorption. This is extremely helpful in treating severe osteoporosis and also is useful in areas not thought to be serious. "Until recently we thought the bone and back aches of post-menopausal women were due to a failure of the bone synthesizing cells. We thought of it as one disease," explained Dr. Teitelbaum. "The bone biopsies showed us, however, that the symptoms are caused by a variety of bone problems. The investigators then developed widely accepted treatment protocols."

Another technique developed by Dr. Teitelbaum, using the scanning electron microscope, proved most effective in delineating the actual structural defect in the bone collagen of children with an inherited disorder of bone known as osteogenesis imperfecta. These studies were instrumental in detailing the specific cause for the many bone fractures experienced by these children.

The inevitable bone loss that is associated with chronic renal disease is another area in which the Bone Center has made some significant progress. "Over the last 15 years we have seen the advent of hemodialysis and transplantation. However, there are associated problems," explained Herbert Lubowitz, M.D., co-head of the Division of Renal Diseases. "One problem is renal osteodystrophy. Patients with chronic renal disease can be maintained in a reasonable state of health for an indefinite period of time, but the slow progression of bone disease is inevitable. This is sometimes reflected by bone pain and an increased number of fractures," Dr. Lubowitz said.

"It is a very complex problem," stated David Malone, M.D., instructor in medicine and co-director of the hemodialysis unit at Jewish Hospital, "because these patients develop secondary hyperparathyroidism as well as phosphate retention and vitamin D resistance. In addition they also may have systemic acidosis which leads to a decrease in the calcium content in their bones."

According to Dr. Avioli, "The development of a method to measure parathyroid hormone levels in blood by Eduardo Slatopolsky, M.D., professor of
medicine and director of the Chromalloy Kidney Center in Barnes Hospital, has contributed significantly to the management of these patients. His ability also to measure parathyroid hormone in the plasma of animals has led to research studies in this field and some exciting new concepts regarding the prevention of bone disease in humans by appropriate dietary manipulations which are now being applied worldwide."

In the laboratory, Jean Russell, Ph.D., a physiologist in the Division of Endocrinology, has analyzed the bones of rats with one-sixth normal kidney function. In studying the components of the bones, minerals and collagen fibers, she found there was an overabundance of immature collagen motties, which are associated with less structural integrity of the bone tissues. "By administering a vitamin D metabolite (referred to as 25-OH-D₃) over a long term, the bone collagen and mineral structure began to appear more normal," she explained.

After success with animals, the next step was to administer the 25-OH-D₃ to patients on chronic dialysis. In studying their bone, using the needle biopsy methods of Dr. Teitelbaum, the group found that there was definite evidence of improvement. The results of this study were reported at an international meeting in Liverpool, and at the World Nephrology Conference in Florence, Italy, last year and were published in the *Journal of the American Medical Association*.

"What we must remember," stressed Dr. Lubowitz, "is that not all the solutions are here, but the tools are. The milieu established by Dr. Avioli is very conducive to finding the solutions."

While tackling the major problems like renal osteodystrophy, there are occasionally spin-offs, which lead to discoveries in allied areas. For instance, specialized techniques developed to look at vitamin D, calcium and phosphate metabolism led to the development of assays which can be routinely applied to patients.

The assay of 25-OH-D₃ was developed

\[ \text{This patient in the renal dialysis unit is suffering from renal osteodystrophy. Bone Center researchers have found that patients with chronic renal disease undergo a slow progression of bone disease.} \]
at the Bone Center and it is now used by physicians worldwide. John G. Haddad, Jr., M.D., associate professor of medicine, who was most instrumental in its development, gave some of the background. "Vitamin D₃ is made in the skin and our diets are usually supplemented with vitamin D₂ which is made in plants. For years we have been studying the way the body converts vitamins D₃ and D₂ to more active forms and the manner in which these forms are transported in blood and stored in various tissues."

Using the specific assay for 25-OH-D₃ developed in this institution we have been able to study the relationship between maternal vitamin D stores and the level of 25-OH-D₃ in newborn babies, the effects of bowel surgery in obese patients on blood 25-OH-D₃ and the relation between vitamin D feeding and its biological activation. Research on tissue proteins which bind vitamin D and its metabolites has also given us significant insight into how the vitamin is stored in the body and how it controls calcium absorption by the intestine.

Another area of study for Dr. Haddad and the Bone Center is in treating Paget's disease, a bone disorder with an unknown cause. Paget's disease, which may affect over 10 per cent of the geriatric population, is characterized by an increase in bone turnover, bone deformities and fractures. Some patients with extensive disease also develop cancer of the involved bones. The hormone calcitonin, which comes from the thyroid gland and blocks bone resorption was first evaluated here in a recent study. When it proved to be capable of suppressing the bone disease without deleterious side effects, it was successfully administered to patients with the disease in a routine fashion.

Taking this newfound information on calcitonin, Dr. Avioli's team is now looking at osteogenesis imperfecta. As with Paget's disease, it is thought that an increased rate of bone resorption is the culprit causing the crippling deformities of legs, spines and arms. Treating these patients with calcitonin has led to an increase in the mineral content of their bones and a decrease fracture rate in some children, a promising sign for the future.

The Bone Center is one of the few places in the nation studying the effects of cortisone on bone metabolism. Cortisone and synthetic structurally related compounds such as prednisolone are being used by several million persons in the United States to combat rheumatoid arthritis, severe asthma, and other chronic disabling disorders.

"The cortisone is effective in reducing the inflammation and making the patient a lot more comfortable," explained Theodore J. Hahn, Jr., M.D., assistant professor of medicine, "but it also leads to bone loss. The cortisone blocks new bone formation and at the same time causes further bone breakdown by decreasing intestinal absorption of calcium from the diet."

"This information has been known for many years, but no one has found an effective way to reduce or control the bone loss," continued Dr. Hahn. "We found that by supplementing vitamin D and calcium in specific ways, we could decrease the rate of bone mass reduction and subsequently prevent many fractures and much pain."

As so often is the case in the Division of Bone and Mineral Metabolism, a parallel animal study is being conducted by Stanley J. Birge, Jr., M.D., assistant professor of medicine. Dr. Birge is investigating the biochemical aspects of intestinal absorption of calcium with specific emphasis on the influence of cortisone on calcium absorption and how the procedure can be reversed by doses of vitamin D.

"This is a unique area of study—the interaction of vitamin D and cortisone in intestinal cells used for absorption," Dr. Birge said. "We hope to demonstrate that vitamin D protects the pathways for calcium absorption from the deleterious effects of cortisone and prednisolone."

The relationship of vitamin D and bone loss is also the focus of other areas in which Drs. Avioli and Hahn are working: vitamin D resistant rickets, bone reduction in diabetic patients and in patients with chronic alcoholism, and vitamin D deficiencies which develop in patients on anticonvulsant medications.

Vitamin D resistant rickets is an inherited disease which causes weakened bone, bone deformity and growth retardation. "It occurs because the patient's kidneys leak phosphate, a substance necessary for bone growth," explained Dr. Hahn. "We have been able to treat this disease and help some children make dramatic changes from wheelchairs to normal walking and running."

Diabetes is another disease which can
have associated loss in bone mass. In collaboration with Dr. Avioli, Marvin E. Levin, M.D., recently completed a study wherein the bone mass of patients with diabetes mellitus were measured and compared to non-diabetic age-matched controls. The results, soon to be published in the *New England Journal of Medicine*, document for the first time a significant loss of bone in diabetics. They also revealed a greater loss of bone in diabetics taking oral hypoglycemic agents.

Vitamin D deficiencies also occur in patients taking anticonvulsants, drugs such as phenobarbital (used in seizure control), dilantin (prescribed for seizures and certain forms of heart disease) and various tranquilizers. Combined with low vitamin D intake, and low sunlight exposure, high doses of these drugs can result in bone fracture after minimal trauma. By using an osteodensitometer to measure the bone mineral content, a remedy involving supplemental vitamin D can be administered; the bone mass increases and the patient made a lot more comfortable.

As the broad range of research programs indicates, the Division of Bone and Mineral Metabolism researchers are people-oriented. They are interested in one thing: solving the medical mysteries of bone diseases and applying their knowledge to those who need it. While caring for individuals with a variety of bone disorders, they apply the most modern and specific diagnostic tools and therapeutic maneuvers. Simultaneously, they continue to probe into the mysteries of bone disease in a variety of ways, combining appropriate experimental animal models with the scientific expertise of qualified postdoctoral biochemists and physiologists. This unique combination of research, patient diagnosis and patient care represents the "gestalt" of the program according to Dr. Avioli and offers the incentive that has allowed the Bone Center at the School of Medicine to excel and to be able to help patients who come from all over the world.

Barbara Kennedy, technician, explains the Bone Mineral Analyzer to patient Todd Myerscough. This machine passes a beam through the radial mid-shaft of the arm and measures the amount of mineral content in the bone.
McDonnell Department of Genetics Established

Chancellor William H. Danforth, M.D., has announced the formation of the McDonnell Department of Genetics. Donald C. Shreffler, Ph.D., former professor of human genetics at the University of Michigan Medical School, has been appointed acting head of the department and professor of genetics.

The new department, established with a gift of $4 million from James S. McDonnell and family, will be housed in the McDonnell Medical Sciences Building in the WU Medical Center. Primarily a basic science department which will be engaged in research and teaching, the new McDonnell Department of Genetics will function as part of the Division of Biology and Biomedical Sciences.

"Thanks to the remarkable vision and generosity of James S. McDonnell and family, Washington University now joins a small group of universities which recognizes the significance of genetics as a fundamental and independent discipline," Chancellor Danforth said. "With the establishment of a separate department of genetics the University is building on an outstanding tradition in genetics research. Twenty years ago, while working at Washington University, Dr. Arthur Kornberg discovered a protein critical to the basic genetic process; his work brought him the 1959 Nobel Prize for Physiology and Medicine. Professor Shreffler is one of the world's foremost research scientists in the field of immunologic genetics. He has agreed, in addition, to assume the administrative responsibilities for the McDonnell Department of Genetics until a permanent chairman can be found. His addition to our faculty is a large step toward our goal of developing one of the finest and most well rounded centers for genetics in the world," Chancellor Danforth added.

James S. McDonnell said of his long-time interest in the field of genetics, "The past 25 years have yielded dramatic insights into the molecular basis of all living things. Year by year there is a growing list of diseases that can be detected, treated and even prevented as a result of findings in basic genetics. Beyond the field of medicine, a clearer understanding of the common genetic material of life enables mankind to creatively think in more concrete ways about the origin of life in our own and other worlds."

Dr. Shreffler and his two co-workers, who are the first faculty members in the McDonnell Department of Genetics, are specialists in the genetics of the immunologic system and in the genetic basis for organ and tissue transplant rejections. Dr. Shreffler's colleagues are Chella S. David, Ph.D., formerly assistant research scientist at the University of Michigan, now associate professor of genetics at Washington University, and Tommaso Meo, M.D., formerly of the Basel Institute for Immunology, Basel, Switzerland, now WU assistant professor of genetics.

Washington University already has a program in medical genetics with a clinical as well as a research orientation. This effort, located in the Department of Pediatrics, is headed by William S. Sly, M.D. It will work cooperatively with the new department.

"Further advances in genetics may assist clinicians in controlling not only metabolic and developmental defects, but also virus infections, cancer, and diseases which involve the immune mechanisms such as rheumatoid arthritis," Dr. Shreffler said. "In my own field of immunologic genetics, the last five years have been particularly dramatic. It has been possible in experimental animals and in man to demonstrate a number of very important genetic elements in the susceptibility to infectious diseases, autoimmune disease and cancer."

Dr. Shreffler, a native of Kankakee, Illinois, holds undergraduate and master's degrees from the University of Illinois, Urbana, and his Ph.D. in genetics from the California Institute of Technology, Pasadena. Associated with the University of Michigan Medical School from 1961 to 1975, he also was a National Science Foundation Research Fellow at the California Institute of Technology, and a Visiting Scientist at the Basel Institute for Immunology, Switzerland. He is a member of the American Association of Immunologists, the Transplantation Society, and the Genetics Society of America, and served on the National Institutes of Health Immunobiology Study Section from 1970 to 1974.

The author of more than 100 articles in his fields of research, Dr. Shreffler has served on the editorial boards of several scientific journals, including "Biochemical Genetics" and the "Journal of Immunology."

James S. McDonnell
(Left) John McCormick, technical assistant, checks data at the gamma counter.

(Below) Dr. Sheffler and Ron Jackson, laboratory animal supervisor, check progress in a current genetic research project.
Drs. Charles Anderson and Edward Etheredge, medical directors of Lila Line review a tissue sample in the Clinical Unit for the Recently Expired (CURE).
Life Line

Pilot Program Tests Effectiveness of Computerizing Organ Donors

By Sharon Stephens Murphy

There are more than 200 adults and children in the St. Louis area waiting for a kidney transplant. Although the transplantation of kidneys has become a routine surgical procedure, there are simply not enough donors to fulfill the need.

This is also the case with other transplantable organs. To combat the lack of organs for transplantation, Washington University Medical Center is sponsoring Life Line, a pilot program of recruitment and education to create a registered donor pool for tissue transplantation.

"Although the most urgent need is for kidneys, the blind and burned also must wait for donated corneas and skin," said Charles B. Anderson, M.D., associate professor of surgery and co-medical director of Life Line. "There is a critical shortage of fresh human pancreas to use in research for a cure for diabetes."

Research in transplantation of specialized tissue from the pancreas for treatment of diabetes, showing great promise in diabetic experimental animals, has been severely hampered by the lack of human tissue.

"The Lions Club and the Kidney Foundation have been leaders in the retrieval of corneas and kidneys," Dr. Anderson said. "However, people involved in transplantation feel an organization like Life Line to facilitate the retrieval of multiple organs is necessary."

A local volunteer, Mrs. Morton May, was the catalyst for the development of the program. Motivated by the need of a friend for a kidney transplant and seeking means of making needed organs more readily available, Mrs. May talked with members of the departments of surgery and pathology of the School of Medicine. Recognizing the problem, these two departments have organized and developed the Life Line program.

The initial project will be limited to Medical Center employees, students and their families.

The names of persons willing to donate their heart, kidney, eyes, skin, pancreas or other organs will be fed into a computer.

Pre-registration of the donor is one of the unique aspects of Life Line. It eliminates the emotional difficulty for the family and the physician of being involved in organ donations at the time of death and yet allows the donor's wishes to be carried out.

Members of the W.U. Medical Center community will be receiving explanatory brochures. This will include a detachable card which they can complete to become potential organ donors. Interested persons also may call Life Line at 454-3831 for further information.

A phone number which will be used by physicians to identify donors will be established in the near future. This will facilitate the immediate retrieval of organs, which in some cases in order to remain useful must be removed between a half hour and an hour after death.

"We hope to be able to see results in a year to 18 months," Dr. Anderson said. "Hopefully, with appropriate funding, Life Line then will develop quickly into a regional and national program with this pilot project serving as a model."

Initial support has been supplied by the departments of surgery and pathology, The Beaumont Foundation and the Women's Division of the Kidney Foundation. Additional funding will be sought in the community.

The most immediate requirement now is donors. "The recruiting of donors may represent an unusual challenge," Dr. Anderson said. "We will employ a variety of educational methods. We want to make people aware of the need for multiple organs, not just corneas and kidneys. We hope people are sophisticated enough to appreciate this."

A recent survey conducted in St. Louis disclosed that a majority of adults interviewed were in favor of organ donation at the time of death, but most did not know how this could be done.

Another positive factor is there are no major organizations, religious or otherwise, which are against the concept of organ donation. "In Scandinavia every person is a donor unless he specifies otherwise," Dr. Anderson said. "That is the kind of attitude we would like to see."

Marge Maeser, R.N., a nurse specialist, has been employed by W.U. School of Medicine as part of the educational program. "This is a unique position," Dr. Anderson said, "and an extremely important aspect of Life Line. M.S. Maeser will become an expert in identifying potential donors and will direct the education of medical, paramedical and lay persons. She also will work with families at the time of an impending death, notify physicians about a donor's wishes and facilitate hospital procedures.

The Clinical Unit for the Recently Expired (CURE) also will play a major role in Life Line.

CURE was opened early last year after two years of study and planning and is the only such unit in the United States. Envisioned by Paul E. Lacy, M.D., Edward Mallinckrodt Professor and Head of the Department of Pathology and Walter Ballinger, M.D., Bixby Professor and Head of the Department of Surgery, CURE is a combination au-
topsy suite, tissue and organ bank and transplant unit.

Many medical disciplines use the unit to study the processes of life and death and it is here healthy organs are removed for transplantation.

"CURE and Life Line compliment each other perfectly," Dr. Anderson said. "We couldn't ask for a better arrangement. CURE surgeons can retrieve organs under ideal conditions without inconveniencing operating room schedules."

"At this time we must think in an exciting fashion about the future," Dr. Anderson said. "We have to plan today for the needs of tomorrow. Who knows what kind of tissue will be needed five, ten or 15 years from now. The technology and need may not presently exist, but it may tomorrow.

"It's a real challenge and a tough project to get going," Dr. Anderson said. "It involves cooperation and a lot of hard work to have people think positively about donating organs.

"But it's necessary and it's needed now."

Samuel B. Guze, M.D., Vice Chancellor for Medical Affairs and president of the Medical Center is chairman of Life Line. Serving as medical directors for the project are Charles B. Anderson, M.D., and Edward E. Etheredge, M.D., Ph.D., assistant professor of surgery. Simon Igielnick, Ph.D., director of medical computing facilities is the consultant for computer data processing. Faculty members in the departments of surgery, medicine, pathology, pediatrics, ophthalmology and plastic surgery are on the advisory committee.

(Above) Don Schreiter, computer programmer, enters Mrs. Morton May and Dr. Anderson as the first two organ donors in the Life Line Computer terminal. (Opposite page) Drs. Etheredge, Ballinger and Anderson examine a perfusion unit in the CURE.
Heart

Researcher Finds Way to Identify Potential Victims of Sudden Death

By Sharon Stephens Murphy

The School of Medicine has received a three-year grant from the National Heart and Lung Institute for $287,169 to continue research on sudden death. G. Charles Oliver, M.D., head of the Division of Cardiovascular Diseases and professor of medicine, has found that it may be possible to identify persons who are potential victims of sudden death.

"This is a health problem of enormous magnitude causing the death each year of several hundred thousand people," Dr. Oliver said. "It often strikes unexpectedly, and in the prime of life. Researchers just recently have come to understand more about sudden death and have found it usually is caused by a condition known as ventricular fibrillation," he said.

"Ventricular fibrillation occurs when the heart's rhythm changes from its normal beat to extremely rapid, irregular and ineffectual contractions which are unable to pump blood to the body. Once this condition begins, the patient must be resuscitated within three to four minutes to avoid irreversible brain damage," Dr. Oliver said.

The current study is a continuation of a four-year effort during which several hundred patients, who recovered from heart attacks, have had their heart monitored for extended periods of time.

Dr. Oliver and his colleagues have made preliminary observations which indicate a relationship between these irregular heart beats called PVCs (premature ventricular contractions) and the subsequent occurrence of sudden death.

The researchers found that PVCs are common in heart attack patients but they (PVCs) normally tend to diminish during the first three months of recovery. Patients who continue to have frequent PVCs of a particular kind are more prone to sudden death.

Dr. Oliver and his colleagues have concentrated on the kind of arrhythmias which occurs after a patient has recovered from a heart attack and has left the hospital. "A great deal is known about the kinds of arrhythmias which occur when a patient is in a coronary care unit," Dr. Oliver said. "They have their heart rhythm monitored continuously and receive medication very promptly should they have any alarming extra heart beats. As a result of this, deaths from arrhythmias in CCUs are rare.

"However, once patients leave the hospital they normally go from constant monitoring of their heart to no monitoring at all," Dr. Oliver continued. "Little has been known about the kinds of arrhythmias which occur after a patient goes home. Yet the need for detecting and treating arrhythmias at this time may be as great, if not greater, as during the stay in the coronary care unit. Sudden death is all too frequent in people recovering from myocardial infarction," he said.

Patients who participated in the study are given portable tape recorders which are carried over the shoulder like a camera and record the heart rhythm for periods of 10 to 24 hours. A computer system for detecting PVCs was developed by Dr. Oliver and his colleagues at the Biomedical Computer Laboratory. Another system to analyze the recordings is currently under development.

"If we can identify patients at high risk for sudden death, then it becomes theoretically possible to institute treatment," Dr. Oliver said. "Although there is no treatment which is universally effective and nontoxic, various drugs can be used at times successfully."

Another possibility is vein bypass surgery. This is an operation which provides new blood flow to a heart which has been starved of oxygen. It is not yet clear whether this type of operation is effective in reducing these extra beats and a study of this question is underway.

Another treatment possibility, definitely for the future, is the automatic defibrillator. Researchers in Baltimore and in Columbia, Mo. are working on an electronic device which would be implanted under the skin and attached to the heart by a small tube which passes through a vein. This device would recognize the presence of ventricular fibrillation and shock the heart back to normal action when it occurred. At present this technique is definitely experimental.
Dr. Oliver and Newman discuss Newman's EKG printout.
School Ranked High by Journal

WU’s School of Medicine has been ranked among the top 11 U.S. medical schools in a survey conducted by Medical Economics Magazine. (The survey usually ranks the top 10 schools, but three tied for ninth place.)

The ranking, published in the magazine’s February issue, was based on 10 criteria including amount of research grants obtained from the National Institutes of Health, ability to attract applicants, numbers of graduates who pass state licensing exams, number of board-certified specialists, and number of medical school facility and deans produced.

A composite list of best schools was made from the rankings in the 10 categories. In addition to WU, the schools on the composite best list were: Harvard, University of Chicago, Columbia, Johns Hopkins, New York University, University of Pennsylvania, Cornell, Albert Einstein, University of Michigan, and the State University of New York at Brooklyn.

According to the article, WU also was ranked among the 10 best medical schools in a poll of medical school deans conducted by Columbia University sociologists.

Medical Economics is a nonclinical journal with a circulation of 173,000.

Executive Faculty Approves Scholar in Medicine Program

A joint bachelor and medical degree program has been approved by the Executive Faculty at the School of Medicine.

The new “Scholar in Medicine Program,” which was voted on by the department chairmen, will allow a limited number of high school students to be admitted into Washington University as undergraduates with a guarantee they will be accepted into medical school after three or four years.

The students in the program will have to meet three criteria: maintain at least a B average, meet the School of Medicine’s admission requirements, and fulfill the undergraduate distribution requirements. The students also would be expected to pursue at least one subject area of their choosing in depth.

The proposal was made by an ad hoc committee appointed last April by Chancellor William H. Danforth, M.D., on the recommendation of Deans M. Kenton King, M.D., Merle Kling and James McKelvey. The committee chairman was Lee Benham, Ph.D., of the Departments of Economics and Preventive Medicine.

The committee report listed two primary advantages of the program: 1) that it would reduce anxiety and encourage greater range and depth of education by allowing students to pursue educational objectives other than those related to gaining admission to Medical School, and 2) that it would attract additional outstanding undergraduate students, including some not enrolled in the program.

The proposal stated that “The competitive pressures of the Medical School admissions process place such excessive constraint (real or imagined) on a student’s undergraduate career that questions of academic validity or personal development all too often are relegated to second place as a student plans his or her undergraduate program. In short, premedical students are not now precluded from taking any particular curriculum, but the nature of the competition is such that they are reluctant to take on any rigorous program not directly related to the objective of gaining admission to medical school. This also means that many curricula which would be potentially useful for physicians are not developed by the faculty.”

Under the proposed Scholar Program, the B.A. or B.S. degree would be awarded after a total of four years at the University, including one year at the Medical School. The students also would have the option of taking four years of undergraduate training before entering the Medical School, and of changing from the Scholar Program to the regular B.A. or B.S. program if their interest or goals change. Admission would be handled by two committees, one in the undergraduate division and one in the School of Medicine.

In conclusion, the report stated that “Our over all impression is that while there are some uncertainties associated with this program, we have sufficient benefits from improved educational opportunities for the students and the benefits in recruitment to Washington University.

Renovation of Wohl Auditorium Complete

A complete renovation and modernization of Wohl Auditorium, made possible by a $150,000 grant from the Medical Alumni Teaching Fund, has been completed. Renovation of the 174-seat auditorium and its surrounding area was undertaken in order to make the facility more useful and attractive for continuing medical education seminars and other Medical Center functions.

Hoffmann Partnerships, Inc., architects for the renovation, used red oak ceilings, doors and benches, quarry tile, and natural yarn carpet, complementing white walls and bright colored trim, to
create a cheerful and inviting environment for auditorium functions. A small classroom adjacent to the auditorium area, also undergoing renovation, is scheduled for completion in the near future.

The renovation is just one of many projects supported totally or in part by the Medical Alumni Teaching Fund. In 1968, Chancellor William H. Danforth, M.D., then Vice Chancellor for Medical Affairs, created the fund to allocate alumni contributions to the School of Medicine. The University's $70 million fund campaign had greatly increased alumni donations to the School. A committee was established to insure a continuity of distribution of these alumni funds for the benefit of the School and in the areas of greatest interest to alumni.

In 1969, the Committee disbursed $100,000 from the Fund for the renovation of the anatomy laboratory. Because the Committee feels that the Washington University School of Medicine affords an opportunity for close personal relationships between students and faculty that is often lacking in educational institutions, major contributions have been made in recognition of teaching merit. In both 1968 and 1969, $50,000 was disbursed as awards to the departments of two faculty members honored as "Alumni Teaching Scholars." Since 1970, an annual $10,000 prize has been given to the departments of two faculty members, one preclinical and one clinical, selected by the senior students as outstanding teachers.

Because of the constant and accelerating expansion of medical knowledge and the increase in certification and recertification examinations, there has been a great demand from alumni for postgraduate programs. Since 1969, the Fund has subsidized alumni postgraduate seminars before the scientific sessions at the annual alumni reunions.

Since 1972, when a formal continuing education program was first approved by the School of Medicine, there have been more than 30 seminars. In recognition of the importance of these programs to the alumni, the Committee so far has allocated $190,000 for continuing medical education.

The Committee membership is comprised of the Vice Chancellor for Medical Affairs, the Dean of the School of Medicine, and three alumni appointed by the president of the alumni association. Current members are: Vice Chancellor Samuel B. Guze, M.D. '45; M. Kenton King, M.D., and alumni members Robert R. Anshuetz, M.D. '40; Virgil Loeb, Jr., M.D. '44, and Jack Barrow, M.D. '46.

Pulmonary Division Funded for Emphysema Research

Emphysema has become one of the major causes of disability. Although there is not yet a cure for the disease, researchers have found they can predict that persons who are deficient in a body protein will develop emphysema. Smoking, which alone causes 80 per cent of the disease, will speed up the onset of emphysema when coupled with this deficiency.

The deficiency of the protein, called \( \alpha_1 \) antitrypsin, has been associated with about one per cent of those suffering from emphysema. Researchers are studying what role intermediate levels of this protein plays in causing lung disease.

The School of Medicine's Division of Pulmonary Disease, under the direction of John A. Pierce, M.D., has been funded since 1971 by the National Institutes of Health to maintain one of two reference laboratories in the United States for testing and research of this protein. Robert M. Bruce, M.D., is principal investigator of the project.

One of the responsibilities of the reference lab is to train other investigators in the series of blood tests to determine \( \alpha_1 \) antitrypsin phenotypes. There are 30 known phenotypes.

Washington University's commitment to this project recently has been increased by a grant for $61,482 from NIH to write a definitive reference manual on the procedures.

Another function of the reference lab is to test blood samples sent here from all over the world. The third goal is to help scientists maintain quality control. Samples of unidentified blood are periodically sent to other labs which then label the samples with the proper phenotype and return them for verification.

"We also have studied the frequency of each gene in the population by testing thousands of blood samples," Dr. Bruce said. "We found the incidence of being deficient in this protein is more common in whites. The occurrence of the most deficient phenotype associated with emphysema is about 1 in every 5,000 in the white population and 1 in every 15,000 in the black population."

Swedish scientists Carl-Bertil Laurell, M.D., and Sten Eriksson, M.D., first discovered that people inheriting a low level of the protein are prone to emphysema.

Dr. Pierce has spent the past year in Sweden working with Dr. Laurell and much of their individual research is coordinated.

W.U. investigators have been pursuing the reason why people with this deficiency develop emphysema. "We think that the protein inhibits enzymes which are capable of destroying the connec-
tive tissue in the lungs." Dr. Bruce said.

Emphysema isn't the only disease caused by this deficiency. Liver diseases such as neonatal jaundice, cirrhosis and hepatoma can also develop.

What can be done to treat the potential victim once he is found?

"First we take steps to reduce the risk," Dr. Bruce said. "We insist they stop smoking. This can delay the onslaught of emphysema by ten years. We also encourage them to stay out of heavy pollution and we watch them carefully so we can get the jump on any lung infection.

"We offer genetic counseling to help parents determine the risk of having a child that will inherit this deficiency," Dr. Bruce said. "Ten per cent of newborns with inadequate antitrypsin will develop liver problems. One third of these will get better and not have any recurrence (although most will develop emphysema), one third will get better but have recurrent liver problems and one third will die."

A person with this deficiency can develop emphysema before he reaches his 20's.

A significant advantage to this procedure is that a baby who develops jaundice or other problems can be tested for this protein deficiency before exploratory surgery, which is traumatic and dangerous, is risked.

"In the future we hope to develop animal models which we can use to learn more about this protein deficiency and how to control the problems involved," Dr. Bruce said.

Jerry A. Johnson, Ed.D., O.T.R., will join the faculty July 1, 1976. She is currently professor and director of Graduate Studies at Colorado State University, Fort Collins.

"We feel fortunate to have such a dynamic person to mold a new and more professional teaching program for occupational therapy at this university," said Robert Shank, M.D., head of the Department of Preventive Medicine.

Dr. Johnson received the B.S. degree in occupational therapy in 1953 from Texas Woman's University and the M.B.A. degree from Harvard University in 1961. While serving as professor and chairman of the Division of Occupational Therapy at Boston University (1963-71) she received the doctorate degree in educational administration (1970).

Dr. Johnson has served as a lieutenant commander in the Medical Service Corps of the United States Navy, was Director of Occupational Therapy, and later became Executive Director of the Madison County Society for Crippled Children and Adults in Alton, Ill. She also established and developed the program in occupational therapy at Boston University. She has been active in many professional organizations and has served as a consultant to many universities both in the United States and abroad including the Hebrew University Medical School in Jerusalem.

In 1971 she was named professor and chairman of the Division of Graduate Studies and was later Associate Dean for Academic Affairs at the Sargent College of Allied Health Professions at Boston University.

The curriculum in Occupational Therapy at Washington University was one of the first to be established in the United States, and many distinguished individuals have been graduates of this program. It is anticipated that in the future the program will be strengthened and expanded by the addition of graduate programs and by renewed emphasis on research applicable to the delivery of health care and the resolution of medical and social problems by occupational therapists.

Dr. Johnson has been a member of the American Medical Association Advisory Committee to the Panel of Consultants on Allied Health Education. She is a recipient of the Eleanor Clark Slagle Lectureship Award, which is the highest academic honor bestowed by the American Occupational Therapy Association, and she has been named as a Fellow of the American Occupational Therapy Association. In addition, she is listed in Who's Who of American Women and in Who's Who, and she has played an active role in the development of innovative educational programs both in occupational therapy and schools of allied health. She has also published numerous articles and has served as writer, project director, and principal investigator of numerous federal and private foundation grants to educational institutions.

"Dr. Johnson contributed significantly to the changes in the Occupational Therapy curricula which were recommended by AOTA," Dr. Shank said.

"The University desires to follow these recommendations. More importantly it is convinced that under Dr. Johnson’s leadership new programs of graduate and undergraduate training will be developed that will contribute much needed new direction and emphasis to this important area of medical service.

Affirmative Action Officer Named

An affirmative action officer for non-academic staff has been named for the School of Medicine in keeping with the University's goal to maintain an effective affirmative action program.

Edith E. Banks has been appointed half-time officer while retaining her position in the Irene Walter Johnson Institute of Rehabilitation as administrative assistant to Lorraine Lake, Ph.D. Ms. Banks has been on the staff for 9½ years and has been a member of the Affirmative Action Committee since its beginning in 1971.
Her responsibilities will include implementing and monitoring internal reporting systems to measure the effectiveness of the affirmative action program, identifying problem areas, and assuring that current legal information is disseminated to responsible administrators.

Ms. Banks also will determine the number and percentage of minority and female employees in each division, office and major job classification, and report to the dean of the School on the progress of each unit.

24 Elected to AOA

Twenty senior medical students and four faculty members have been initiated into the Washington University chapter of Alpha Omega Alpha, a national honor society.

The society, which recognizes outstanding leadership and scholastic ability in medicine and related fields, is considered to be the profession's most prestigious honor society.

The seniors who were chosen by their classmates and the medical faculty are: John H. AufderHeide, Richard Baron, Paul V. Carlile, Thomas W. Cooper, James R. Douglas Jr., Wendy Eider, Diane L. Elliot, Colleen K. Flint, Daniel I. Goldman, Glenn T. Hammons, Ruth E. Hetland, Terry W. Hood, Monte T. Mellon, Kent R. Rasmussen, Lawrence E. Samuels, John P. Schilling, Beverly R. Shaheen, Lawrence E. Stempel, Kathleen Todd, and John Turk.

The newly elected student members have nominated and elected four faculty members to the society, three of whom are School of Medicine alumni.

The new faculty members are: Clifford A. Birge, M.D. '63, assistant professor of medicine; John O. Holloszy, M.D. '57, assistant professor of medicine; James P. Keating, M.D., associate professor of pediatrics; and George B. Rader, M.D. '51, instructor of clinical surgery and president of the Medical Center Alumni Association.

(Above) Claire MacConnell has been named the director for Alumni Affairs. She previously served as associate director.

(Above) This portrait of Mildred Trotter, Ph.D., by St. Louis artist Aimee Schweig, was unveiled at the first annual Mildred Trotter Lecture Dec. 4. The lectureship was established last year by the Alumni Association to honor Dr. Trotter, professor emeritus and lecturer in the Department of Anatomy, for her 55 years of service to the school.
Needleman Replaces Lowry As Pharmacology Chairman

Philip Needleman, Ph.D., professor of pharmacology at Washington University School of Medicine, has been named chairman of the Department of Pharmacology effective July 1.

Dr. Needleman will succeed Oliver H. Lowry, M.D., Ph.D., who will retire from his administrative duties but continue as professor of pharmacology.

Dr. Needleman received the B.Sc. degree in 1960 and the M.Sc. degree in pharmacology in 1962 from the Philadelphia College of Pharmacy and Science. In 1964 he received the Ph.D. degree from the University of Maryland Medical School.

From 1964 to 1967 he served as a postdoctoral fellow at Washington University School of Medicine. He joined the School of Medicine faculty in 1967 as an assistant professor of pharmacology. He became an associate professor in 1972 and professor in 1975.

In 1974, Dr. Needleman received the John Jacob Abel Award of the American Pharmacology Society. This research award, the highest in the field of pharmacology, is given to the outstanding young pharmacologist in the United States. Twice the recipient of the School of Medicine Teacher of the Year Award, Dr. Needleman views teaching as one of the most important aspects of his job. He has been honored as an Advanced Research Fellow (1966-68) and Established Investigator (1968-72) of the American Heart Association and has received a Research Career Development Award from the National Institutes of Health. Dr. Needleman also is a member of the Advisory Board of the Council for High Blood Pressure Research and is the editor of a volume of the "Handbook of Experimental Pharmacology."

Dr. Needleman's major research interest has been in the area of vasoactive hormone biosynthesis and the regulation of renal-cardiovascular function. He is the author of more than 60 papers.

26 Medical Students Honored

Twenty-six medical students were honored December 11 for scholastic excellence in the 1974-75 academic year.

Those honored and their awards are:

- Paul V. Carlisle, Jr., William A. Renie, Victor L. Schuster, Beverly Ringenberg Shaheen, Charles X. Stricker and Scott W. Younkin—Lange Medical Publications Book Awards;
- Kim D. Colter—an Antoinette Frances Dames Prize in Physiology and Biophysics, $100 for superiority in these fields;
- Diane L. Elliot—Dr. Robert Carter Medical School Prize, $250 for meritorious performance during the junior year;
- Mitchell P. Fink—Dr. Richard S. Brokings Medical School Prize, $200 for meritorious performance during the sophomore year;
- Colleen K. Flint—Roche Award, a gold wrist watch and scroll given to the student who best exemplifies the ideals of a modern American physician—a Brookings Prize, $250 for meritorious performance in the junior year;
- Pamela G. Freeman—Dr. Margaret G. Smith Award, $50 for outstanding achievement by a female student during the first two years of medical school;
- Robert L. Huck—a Carter Prize, $100 for meritorious performance during the freshman year;
- H. Michael Koller—a Carl F. and Gerty T. Cori Prize in Biochemistry for superiority in the field, and the Ciba Book Award for laudable extra curricular community service during the freshman year;
- Ellen Li—a Dames Prize, $100 for superiority in physiology and biophysics—Gill Prize in Anatomy, $50 for superior skill in anatomical work;
- Thomas Margulies and Janet Narkewicz Risch—Cori Prizes in Biochemistry;
- Timothy J. Ley—Edmund V. Cowdry Prize in Histology, $100 for meritorious performance in microscopic anatomy;
- Lee S. Portnoff—a Dames Prize, $100—a Chouke Prize, $50 for superior skill in anatomical work;
- Barbara J. Reynolds—the Louis and Dorothy Kovitz Fellowship in Surgical Research for superior scholarship in surgery;
- John J. Schier—a Carter Prize, $200 for meritorious performance during the sophomore year;
- James W. Steger—the Howard A. McCordock Book Prize for general excellence in pathology;
- Kathleen G. Todd—Medical Alumni Scholarship Fund Prize, $200 for scholastic excellence in the first three years of medical school;
- Stephen G. Young—a Brookings Prize, $100 for meritorious performance during the freshman year.
MEDICAL SCHOOL CLASS REUNION

May 12, 13 & 14, 1976


Wednesday, Thursday & Friday: "A Postgraduate Course in Cardiology." Staff members from the Medical Center, supplemented by guest experts, will present a 2½ day program in cardiology in conjunction with Alumni reunion activities. The first day will be devoted to an examination of various aspects of coronary artery disease. The remainder of the program will include sessions on hypertension and its management and a review of common clinical problems of current interest. The format will utilize lectures, panel discussions, demonstrations and small group seminars.

Wednesday evening: Welcoming Cocktail Party held in McDonnell Basic Sciences Bldg.

Thursday evening: Individual Class Dinners

Friday evening: Annual Alumni Banquet—Stouffer's Riverfront Inn Ballroom

September 28-October 8

Save this time for Washington University medical alumni's continuing medical education tour to LONDON

Details will follow
Gifts to the Library

Gifts to the Medical School Library, the Library Archives, and the Library’s rare book collection come from many and varied sources. The Medical Library Archives consists mostly of the scientific papers of faculty members who have especially distinguished themselves in the field of medicine, such as Joseph Erlanger, Evarts A. Graham, Robert J. Terry and Carl V. Moore.

Also included are some older records of the Medical School, Medical Library and records of Base Hospital 21 (World War I), General Hospital 21 (World War II) and the Washington University affiliated units.

Gifts to the Archives take many forms: scientific notebooks, correspondence, publications, card files, maps, recordings, photographs and other memorabilia. After these records are received, they are indexed and made available to scholars who wish to use them in their study of the history of medicine. The Archives also has an active program of oral history interviews with faculty and alumni.

The Medical Library’s Rare Book Collection, now numbering over 2,000 volumes, is the product of the library’s on-going tradition of acquiring the best medical literature. It is the result of the generosity of physician book collectors and friends of the School of Medicine who have given their personal libraries and financial support to the development of this historical collection. Many books acquired routinely by the library over the years as part of its commitment to provide the School of Medicine with essential literature have now become extremely scarce, and therefore valuable.

However, the greatest growth in the Rare Book Collection has been the result of generous gifts from faculty members, alumni and other friends of
The painting above is an illustration of an eyeglass maker by de Larmessin from a 17th century work entitled "L'Album de Metiers." The painting is from the Bernard Becker Collection. Pictured at left is one section of the Rare Book Collection in the Medical School Library annex.

The library. This tradition began with the gift of the "eye library" of Dr. John Green and the Rare Book Collection has since grown through the gifts of Dr. Adolf Alt, Dr. Frank Lutz, Dr. Bernard Becker and others.

The Library continues to build on the collection's strengths through selected acquisitions; however, substantial growth of the collection depends on the support of alumni and friends.

In the upper left corner is a picture of a Sinhalese Ola (book manuscript) which is written on strips of the Talipot Palm, dating from 1690-1720, A.D. It forms a collection of medical and surgical remedies for snake-bite, fractures, typhoid, cholera, etc. The Sinhalese Ola, which was the property of a native Ceylon doctor, is the gift of Dr. Casey Wood.

A Bausch and Lomb Hemoglobinometer is shown in the upper right corner. It dates from 1930-1940 and is a gift from the Carl V. Moore Collection.

The silver cup pictured in the center of the page is from Base Hospital 21, World War I. This English silver "mess cup" was presented to the Officers Mess of Base Hospital 21 of the Washington University School of Medicine by Col. Fred T. Murphy, professor of surgery 1910-1919, and the first commanding officer of "Unit 21." The cup was apparently made in 1882. The names engraved are those of the 51 American and 3 RAMC officers who served in World War I, fourteen of whom held professorships at Washington University School of Medicine.
Pre '20s and '20s

Charles Curtis Allen, '15, has just published a book entitled The Saga of a Mud Road Doctor.

Alfred G. Henrich, '27, Los Angeles, is treasurer of the Lutheran Hospital Society of Southern California which owns three hospitals and manages a total of nine.

Walter R. Jordan, '29, Long Beach, Calif., is semi-retired after 45 years of general and family practice.

Arthur E. Varden, '29, San Bernardino, Calif., is president of the San Bernardino County Employers Association and of the Tri-County Lung Association.

'30s

William M. Crawford, '31, Ft. Worth, Texas, had an article published in John Peter Smith Hospital Proceedings entitled, "The Genius of William Harvey."

Harry B. Stauffer, '31, won first prize for the most grandchildren at the 50-year reunion of the University of Kansas class of 1925.

Edward J. Kloess, '32, Belleville, Ill., is working as a volunteer for the Red Cross and the Retired Senior Volunteer Program.

George W. Winn, '32, Boonville, Mo., has discontinued hospital practice and limited his activity to his office practice in the Boonville Medical Group.

George H. Curtis, '33, Pinehurst, N.C., has retired from active practice.

William W. Gist, '34, Kansas City, Mo., has limited his general surgery practice to office procedures and some industrial work.

Merrill C. Davenport, '36, Shell Knob, Mo., who has retired from practice, sends greeting to all of his classmates.

Nathan R. Kahn, '36, West Palm Beach, Fla., is the pediatric consultant for the “Parent-Child Study Center” and medical director of the Substance Abuse Program at the Palm Beach County Community Mental Health Center.

'40s

Frederic L. Schoen, '40, Fort Wayne, Ind., has been elected treasurer of the American Academy of Family Physician's Board of Directors.

Elaine K. Pollit, '43 December, Beverly Hills, is in the private practice of psychotherapy with her daughter, Anita L. Green, L.C.S.W.

Bernard S. Lipman, '44, Atlanta, Ga., was promoted to clinical professor of medicine (cardiology) at Emory University School of Medicine.

James O. Davis, '45, Columbia, Mo., professor and chairman of the Department of Physiology, University of Missouri School of Medicine, was one of three recipients of the Council for High Blood Pressure Research's first CIBA Award for Hypertension Research. The award is a cash prize of $5,000 to each researcher for individual work toward improved treatment or a greater understanding of high blood pressure.

Purdue L. Gould, '48, Kingdom of Saudi Arabia, Riyadh, is the chief of neurosurgery at King Faisal Hospital.

James M. Stokes, '48, past president of W.U. Medical School Alumni Association, has been elected president of the St. Louis Medical Society.

'50s

Lucien B. Guze, '51, professor of medicine at U.C.L.A. School of Medicine, received the $1,000 teaching award in the clinical sciences.

W. Edward Lansche, '52, has been elected a member of the 20th Century Orthopaedic Association.

Donald B. Rinsley, '54, Topeka, Kan., has been named a Spencer Foundation Fellow in Advanced Studies in the Department of Education at the Menninger Foundation.

Harry A. Fozzard, '56, has been appointed Otho S.A. Sprague Professor of Medical Science in the Division of the Biological Sciences and The Pritzker School of Medicine at the University of Chicago.

John A. Headrick, '58, has been appointed to fill the new position of Vice President of Medical Affairs at Christian Hospital Northwest, St. Louis.

Richard H. Morrow, Jr., '58, is taking a two year leave of absence from his position as professor of tropical public health at Harvard to serve as senior health planning advisor to the Ministry of Health, Ghana.

Lyle Munneke, '59, Clara City, Minn., was appointed to the medical staff of the Brookings Clinic P.A., in Brookings, S.D.

'60s

Karl H. Muench, '60, Miami, Fla., professor of medicine at the University of Miami School of Medicine, served as the ship doctor for 200 crew members and 500 passengers on the M.S. Bolero which cruised to Cozumel, Montego and Port-au-Prince in November of 1975.

Boyd E. Terry, '60, Columbia, Mo., is director of the new George David Peak Memorial Burn Unit now under construction at the University of Missouri Medical Center.

Hillel Tobias, '60, assistant professor of clinical medicine at New York University Medical Center, specializing in diseases of the liver, is sharing a part time practice with David K. Sirota, '60,
a member of the faculty of Mount Sinai School of Medicine, specializing in endocrinology.


Michael W. Brown, '62, Ardmore, Okla., 1975 president of the medical staff of Memorial Hospital of Southern Oklahoma, is treasurer of the Oklahoma Chapter of the American College of Radiology.

Ernest L. Lewis, '63, Atlanta, Ga., has been promoted to associate professor of surgery (urology) at Emory University School of Medicine.

Don E. Cheatum, '64, Dallas, clinical assistant professor of medicine, University of Texas Southwestern Medical School, and director of the Rheumatology Program, Baylor University Hospital, has been elected to fellowship in the American College of Physicians.

Edward F. Ragsdale, '64, Godfrey, Ill., vice president of the Madison County Cancer Society, has been elected Republican committeeman from Godfrey and appointed as Madison County Coordinator for the Reagan for President Committee.

William M. Dyer, Jr., '65, Kingsport, Tenn., completed his tour of duty with the U.S. Air Force and is working for the Tennessee Eastman Company, a large organic chemical, plastic and synthetic fiber manufacturer. His duties will include clinical occupational medicine, multi-phase health screening and supervision of the industrial hygiene section.

Mark Gates, '65, Portland, Ore., is associated in partnership with Providence Hospital Department of Pathology with major responsibility in blood banking, hematology and coagulation.

Gilbert J. Gordon, '66, Middletown, Ohio, has designed the physical layout for an orthopaedic office.

Wayne A. Border, '68, LaJolla, Calif., has joined the faculty at U.C.L.A. as assistant professor of medicine, Division of Nephrology, Harbor General Hospital.

Steven B. Raffin, '68, Burlingame, Calif., will complete his tour of Naval duty in July and begin private practice in internal medicine and gastroenterology on the San Francisco Peninsula.

Wallace B. Mendelson, '69, has joined the staff of the National Institute of Mental Health and is doing sleep studies in the laboratory of clinical psychopharmacology. He is the first author of a book entitled, Biochemistry of Sleep, which will be published in the fall of 1976. He also received a grant from the Association for Psychophysiological Study of Sleep to attend and present a paper at the Second International Congress of Sleep Studies in Edinburgh, Scotland.

'70s

Bruce H. Becker, '70, Gainesville, Fla., following completion of his ophthalmology residency at the University of Florida in July, will do a one-year clinical retinal fellowship at the Bascom Palmer Eye Institute in Miami.

Lyle D. Pahnke, Jr., '70, New York City, will begin a private practice in general and vascular surgery in July in San Bernardino, Calif.

Robert M. Simpson, '71, presented a paper on "Iliopsoas Function and Hip Disease in Cerebral Palsy" at the Western Orthopedic Association Annual Meeting in San Francisco.

Kenneth J. Lisberg, '72, Wauwatosa, Ill., was chosen for a six month rotation in general surgery in Oxford, England, under the sponsorship of Professor Peter Morris, Nuffield Department of Surgery. Upon his return in July he will begin a year as senior resident in general surgery at Milwaukee County General Hospital and Wood, V.A.C. Hospitals.

Alan J. Tiefenbrunn, '74, and Sharon Frost Tiefenbrunn, '75, San Diego, Calif., will be returning to St. Louis in July. He will be doing a cardiology fellowship and she a residency in dermatology, both at Barnes Hospital.

Former House Staff and Former Faculty

Jesus Guerra-Medina, M.D., is the director of pathology laboratories at Hospital San Jose, Monterrey, N.L., Mexico.


Charles A. Johnson, M.D., chief of staff elect, Doctors Hospital, Sarasota, Fla., has been re-elected chairman of the Board of Trustees at Memorial Hospital.

Ronald E. Keeney, M.D., has assumed a new position as assistant professor of pediatrics at Southern Illinois University School of Medicine, Springfield.

Steven B. Lecchler, M.D., staff endocrinologist at David Grant Medical Center, Travis AFB, Calif., has received a research grant from the American Diabetes Association to study the effect of chloropropanide on heart cells, in vitro.

Jung Dal Lee, M.D., is the director of the Department of Clinical Laboratories, Korea General Hospital, Seoul, Korea.

John S. Metcalf, Jr., M.D., is in the private practice of psychiatry and consultative neurosurgery in Las Vegas, Nevada.


Occupational Therapy

Capt. Winona C. Williams, OT'73, is staff therapist at Brooke Army Medical Center, Fort Sam Houston, Texas.

Florence S. Cromwell, OT'49, past president of the American Occupational
Therapy Association and past chairman of the Coalition of Independent Health Professions, has been elected to the Institute of Medicine, National Academy of Sciences and to the Board of Directors of the National Health Council.

Mildred B. White, PT'43, Shelbina, Mo., has retired from her position in the admitting office at Barnes Hospital.

Dorothy Hash, PT'69, Santa Monica, a certified clinical specialist in the treatment of neurological disorders, has been appointed assistant professor of health science at California State University, Northridge.

Mildred B. White, PT'43, Shelbina, Mo., has retired from her position in the admitting office at Barnes Hospital.

Dorothy Hash, PT'69, Santa Monica, a certified clinical specialist in the treatment of neurological disorders, has been appointed assistant professor of health science at California State University, Northridge.

Physical Therapy

Arthur E. Coltin, HA'50, has been promoted to senior vice president at the Lutheran Hospital Society-Western Health Management Services Inc., Los Angeles, Calif.

Arthur Crandall, HA'56, has been named administrator of Santa Rosa Memorial Hospital, Santa Rosa, Calif.

Alva D. Hetchcock, HA'59, is the administrator of High Plains Baptist Hospital, Amarillo, Texas.


Nancy Craig, HA'63, administrative assistant, Mallinckrodt Institute of Radiology, St. Louis, has been named to the W.U. Alumni Board of Governors.

Donald Giesen, HA'64, has been named staff assistant to the hospital director at Veterans Administration Hospital, Iron Mountain, Mich.

Edward L. T. Lyon, HA'64, is the new chief of the Bureau of Health Planning and Resource Development for HEW, Boise, Idaho.

Lt. Col. Gary J. Pomeroy, USAF, MSC, HA'64, is the deputy chief of the Medical Services Corps in Washington, D.C.

Col. Burton Kaplan, USAF, MSC, HA'66, is the chief of Medical Systems in the office of the Surgeon General, USAF, Washington, D.C.

Gary Robinson, HA'67, has been appointed assistant administrator of the Dallas County Hospital District.

Ronald O. Ebersole, HA'69, is assistant administrator of St. Joseph Hospital, St. Joseph, Mo.

Charles R. Taylor, HA'69, has been named hospital administration consultant at the Acute Care Facilities Section of the Bureau of Health Facilities and Services, Madison, Wis.

Sister Janice Campbell, HA'70, has been named president and chief executive officer of the Sisters Mary and Elizabeth Hospital, Louisville, Ky.

Stephen C. Reynolds, HA'72, has been promoted to assistant vice president of Baptist Memorial Hospital, Memphis.

Michael Gelder, HA'73, is an administrative assistant in the Medichek Program for the III. Department of Public Health, Chicago.

Gordon L. Smith, HA'74, was appointed administrator of the Department of Surgery, Michael Reese Hospital and Medical Center, Chicago.

In Memoriam

Billy F. Bass, '57 June 10, 1975
Gaetano Bazzano, M.D. Dec. 29, 1975
Ajit Choudhuri, M.D. Nov. 19, 1975
James O. Cooper, M.D. Oct. 16, 1975
Bernard Friedman, M.D. Nov. 5, 1975
George W. Kling, '32 Nov. 22, 1975
Otto W. Knewitz, '05 Oct. 12, 1975
Forrest L. Martin, '25 June 18, 1975
John C. McKitterick, '21 July 28, 1975
John H. Savory, '40 July 22, 1975
Charles H. Shumaker, '12 Nov. 6, 1975
John Russell Smith, '34 Jan. 5, 1976
A. Jerome Sparks, '19 Date Unknown
Jacob Stolar, '28 Nov. 10, 1975
Frank K. Tatrum, '41 Oct. 30, 1975
Leo J. Wade, '38 Dec. 7, 1975

President's Letter

Dear Fellow Alumnus:

First let me thank you for your generous response to the dues notices. As you know, our dues support the various functions of the Alumni Association. Approximately 1,800 people attended activities held in St. Louis and around the country last year. I hope you were among those who enjoyed these gatherings.

This Spring we will be holding receptions at the Missouri State Medical Association Meeting, the College of Physicians' Meeting, the Society of Clinical Investigation Meeting. If you will be attending one of these be sure and come to the reception and meet old friends.

May is just around the corner, and with it our Annual Class Reunions. The classes holding reunions May 12, 13 and 14 are 1926, 1931, 1936, 1941, 1946, 1951, 1956, 1961, 1966, 1971. Of course all of you are invited to participate in the "Postgraduate Course in Cardiology" during these three days, and the Annual Alumni Banquet Friday evening at Stouffer's Riverfront Inn. This being my 25th Reunion, I am looking forward to seeing all old classmates, and meeting and talking with all of you. Plan to come back, you will enjoy it.

George B. Rader, M.D. '51
President,
Medical Center Alumni Association
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<tr>
<th>Month</th>
<th>Dates</th>
<th>Event</th>
<th>Program Chairman</th>
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<td>MARCH-MAY</td>
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<td>&quot;Internal Medicine Board Review,&quot; Jewish Hospital</td>
<td>Dr. Paul Stein and Dr. Diane Karl</td>
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<td>MARCH</td>
<td>4-5</td>
<td>&quot;Clinical Endocrinology&quot;</td>
<td>Dr. Philip E. Cryer</td>
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<td>11-12</td>
<td>&quot;A Postgraduate Course in Otolaryngology&quot;</td>
<td>Dr. Donald Sessions</td>
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<td>&quot;Medical and Surgical Aspects of Spinal Cord Injuries&quot;</td>
<td>Dr. Franz Steinberg</td>
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<td>25-26</td>
<td>&quot;Atherosclerosis—Reversibility of the Lesion&quot;</td>
<td>Dr. Gustav Schonfeld</td>
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<td>APRIL</td>
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<td>&quot;Rheumatology for the Practicing Physician&quot;</td>
<td>Dr. Bevra Hahn</td>
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<td>5-6</td>
<td>Third Annual Symposium on Obstetrics and Gynecology</td>
<td>Dr. George J. L. Wulff, Jr.</td>
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<td>&quot;Update in Gastrointestinal Diseases&quot;</td>
<td>Dr. Gary Zuckerman</td>
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<td>22-23</td>
<td>&quot;The Anxious Child&quot;</td>
<td>Dr. Doris Gilpin</td>
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<td>23-24</td>
<td>Radiation Therapy Techniques Workshop</td>
<td>Dr. Lily Hanes</td>
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<td>23-24</td>
<td>Washington University Eye Alumni Meeting</td>
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<td>Symposium on Depression</td>
<td>Dr. Paula Clayton</td>
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<td>MAY</td>
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<td>&quot;Current Concepts in the Practice of Medicine—1976&quot;</td>
<td>Dr. Jerry Meyers</td>
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<td>12-14</td>
<td>Washington University Medical Center Alumni Reunion— &quot;A Postgraduate Course in Cardiology&quot;</td>
<td>Dr. Burton Sobel</td>
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<td>&quot;Surgical Problems in Children&quot;</td>
<td>Dr. Martin J. Bell</td>
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<td>20-21</td>
<td>&quot;Radiation Safety and Quality Control in the Biomedical Environment&quot;</td>
<td>Dr. John Eichling</td>
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<td>&quot;The Diagnosis and Treatment of Neuromuscular Diseases&quot;</td>
<td>Dr. Michael Brooke</td>
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<td>27-28</td>
<td>&quot;Advances in the Diagnosis and Treatment of Surgical Diseases&quot;</td>
<td>Dr. John Halverson</td>
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For additional information, write:
The Office of Continuing Medical Education
Washington University School of Medicine
660 South Euclid Avenue
St. Louis, Missouri 63110
or telephone (314) 367-9673 or 454-3372