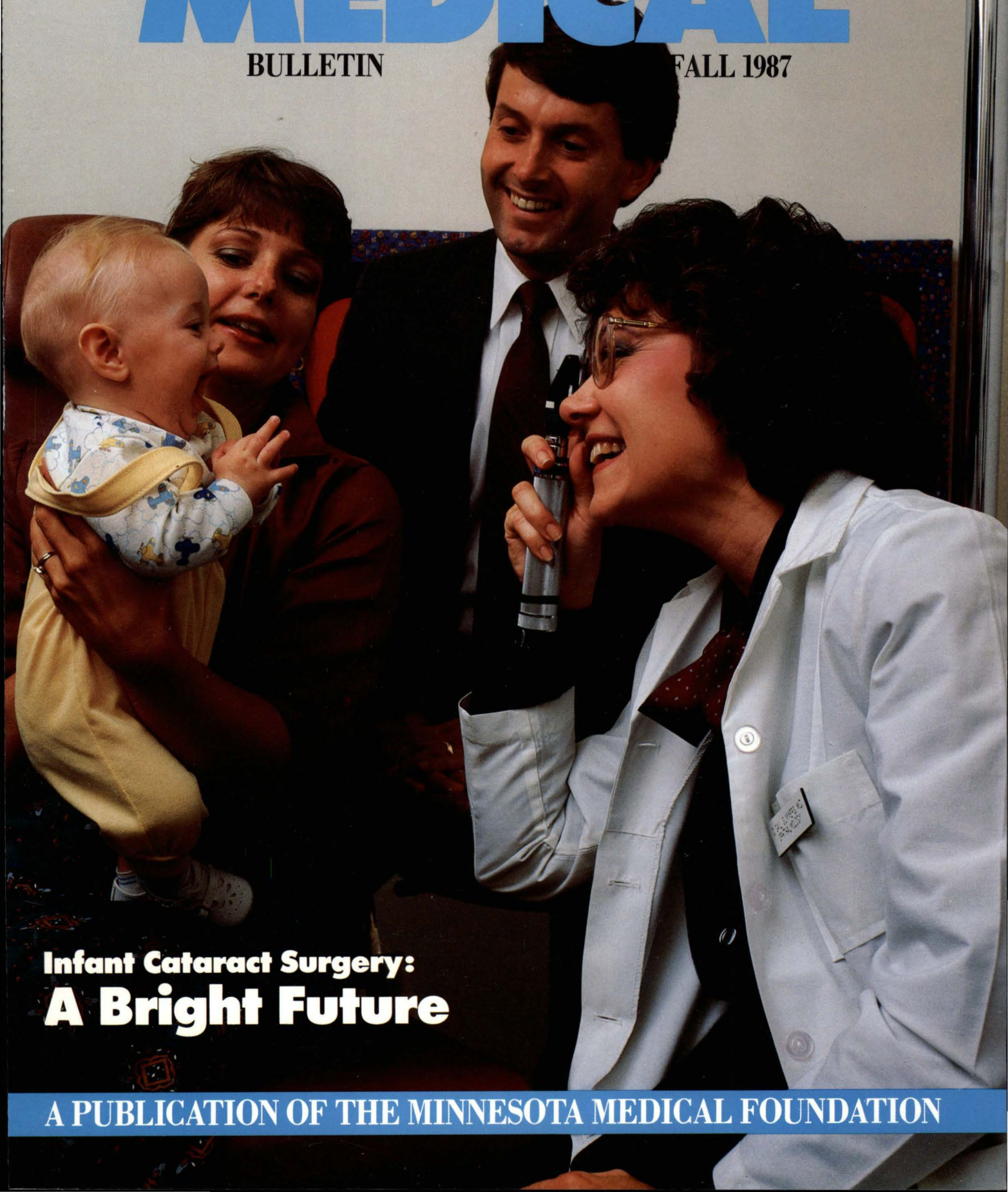


UNIVERSITY OF MINNESOTA

MEDICAL

BULLETIN

FALL 1987



Infant Cataract Surgery: A Bright Future

A PUBLICATION OF THE MINNESOTA MEDICAL FOUNDATION

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The Minnesota Medical Foundation was founded in 1939 by a dedicated group of faculty members and medical alumni who saw the need for private support to build a strong future for the Medical School. A non-profit organization, MMF raises and disburses funds for medical education and research at the University of Minnesota Medical Schools in the Twin Cities and Duluth.

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On the Cover: Cataract surgery patient J.J. Long is checked by Dr. Gail Summers while his parents look on. Photo by Nancy Mellgren.

The Minnesota Medical Foundation supports the research and educational missions of the University of Minnesota Medical Schools by encouraging private contributions.



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The Medical School: A Commitment to Excellence

The University's "Commitment to Focus" represents an imaginative and appropriate opportunity to improve the quality of the University's undergraduate, graduate, and professional programs. The "Strategy for Focus" analysis will help to identify programs which represent the institution's highest priorities. Some programs need strengthening, some require resource allocation increases or decreases, and some programs have resources which should be maintained but organization or program direction should be modified for optimal and effective use of resources.

The Medical School began to identify its highest priority programs three years ago, and has emphasized those programs within and among departments of the school as well as in conjunction with other Health Sciences and academic units throughout the University. Examples include the basic sciences, neurosciences, genetics, structural biology and biophysics, nutrition, cancer, biomedical ethics, diabetes mellitus, and cardiopulmonary disease. With each of these programs we have initiated reorganization and/or strengthening of the program. We have directed resources into those areas, we have increased faculty responsibilities, and we have initiated new recruitment.

The Medical School represents a vital and integral component of the academy of education and research in the University, with broad responsibilities for undergraduate, graduate, and professional spheres of the biological sciences; medical education spans basic and applied biology through the basic and clinical science departments. It is clear that the biomedical sciences represent a major portion of contemporary biology. This is demonstrated by the fact that the Medical School accounts for approximately 40 percent of all of the University's externally sponsored and funded research.

Wise and effective utilization of resources, including finances, faculty, and physical facilities, necessitates a close and interdependent relationship among all members of the community of teachers. This means that careful consideration of the allocation of resources in the biological sciences is imperative. Decisions resulting from such careful consideration affect the Medical School, all of the health sciences, agriculture, home economics, forestry, ecology, genetics, and chemistry throughout the University.

The Medical School is working with the University community of biological scientists to develop efficient and effective administration and functional mechanisms to assure improved communication, collaboration in faculty recruitment, shared educational responsibilities, joint program development and implementation, and resource utilization. The Medical School is committed to its responsibility to join in the concept of the academy to improve undergraduate education and to collaborate with other biological scientists to further strengthen our excellent record in education and research. These efforts will be widely beneficial to both students and faculty.

The people of the state of Minnesota will continue to benefit from the efforts the University is making. The vitality of the University of Minnesota and of the state's entire higher education system ensures the future economic vitality of the state. We are proud of the excellence of the University, and we are proud to serve the state of Minnesota well by our commitment to focus.

David M. Brown, M.D.
Dean
University of Minnesota Medical School

peek oao boo I see you!

Infant cataract surgery being performed by the University of Minnesota's Department of Ophthalmology means a brighter future for many babies and toddlers.

By Susan Dunlop

J.J. Long is only 6 months old, but in his short life he's already experienced eye surgery for a cataract and puts up with a contact lens and an eye patch throughout his day. But J.J. isn't complaining and neither are his parents, because his cataract was discovered early and his prognosis is good.

Visual rehabilitation of infants and young children with cataracts is a heartwarming challenge for the University of Minnesota Ophthalmology Department. Cataracts are opacities in the lens of the eye, and when large and dense, they can interfere with normal visual development. Congenital and developmental cataracts are a major cause of visual impairment in children. It has been estimated that some form of lens opacity occurs in one out of 250 births.

Cataracts occur for a variety of reasons. Sometimes they are inherited or they may be the result of trauma or inflammation. Others are related to a congenital abnormality involving several parts of the eye. However, in approximately half of the cases the cause is not apparent.

Dr. Robert Letson and Dr. C. Gail Summers, the eye department's pediatric ophthalmologists, offer very specialized and unique care for infants and children

with severe vision problems including congenital cataracts. They are anxious to expand the educational experiences in this program as soon as space and funding become available.

Jeffrey Long Jr. — J.J. for short — was born April 1 with a cataract in his left eye. Discovery of infant cataracts is difficult because babies, of course, can't verbalize vision problems, but J.J.'s pediatrician noticed a cloudy appearance in the baby's eye while he was still in the hospital following birth. J.J. was referred to the University of Minnesota, where pediatric ophthalmologists are trained to deal with the time-consuming and delicate visual problems of children.

On the first visit to the University at the age of 3 weeks, both eyes were thoroughly examined, and J.J.'s right eye was found to be completely normal. Because the cataract obscured the view of the back of the left eye, the B-scan — an ultrasonography machine donated by William Holcomb — was used. The B-scan is the most accurate way to provide information regarding the structure of the eye prior to surgery.

Dr. Summers explained to Jeffrey and Ina Long that the cataract would prevent vision from developing in J.J.'s left eye, and that the eye might eventually be lost

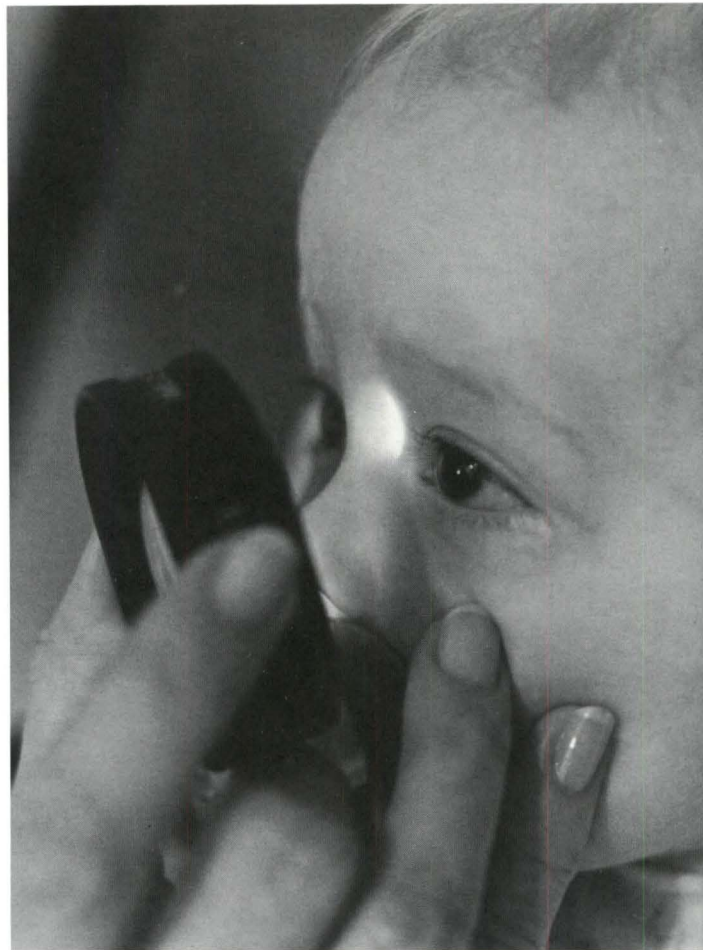
to glaucoma. Cataract surgery offered an opportunity for vision to develop. However, the visual outcome might be limited due to the nature of the cataract and the associated vitreo-retinal abnormalities that the B-scan detected behind the cataract.

Early surgery important

The Longs were shocked by their baby son's visual problem. "I envisioned the worst — the possibility of the total lack of vision in his left eye," recalls Ina. "I wondered if I had done something wrong during the pregnancy, and of course we wondered, 'Why my child?'"

"We don't know why J.J.'s cataract developed," says Dr. Summers. "Most parents can't believe cataracts can occur in babies, and they are surprised to discover that a contact lens may be used following their baby's cataract surgery. Initially the idea of eye surgery for their infant is overwhelming, and they come to realize the post-operative rehabilitation of that eye will be very demanding."

When Dr. Summers shared the alternatives and the prognosis for improved vision following early surgery, the Longs were anxious to proceed. J.J. had eye surgery at 2 months of age.





J.J.'s eyes must be examined regularly and the power of his contact lens adjusted as he grows.

"He bounced back in just two days and has been going strong since. Even patching hasn't slowed him down, as Dr. Summers had said it might," Jeffrey Long recalls.

Dr. Letson stresses: "The speed with which the cataract is discovered, its removal, and follow-up procedures are crucial for positive results. Time cannot be lost. Very important visual development is occurring every minute of a child's life. If time is lost, so is the child's vision, and it cannot be recovered."

Dr. Summers adds, "Pediatricians and family practitioners are identifying cataracts at earlier ages now. This is extremely important. Early referral is required to provide the best vision for these babies."

She continues, "Surgery can even be

performed on a 1-week-old baby with excellent visual outcome, if it is followed by aggressive visual rehabilitation. That's the challenging part for the family. Glasses, contact lenses, and patching for infants or small children requires huge doses of parental patience, love, and tenacity."

The rehabilitation process becomes an integral part of the family's life style. Ina Long remarks, "We are concerned about finding a baby sitter who can handle the contact lens if it becomes displaced or falls out and needs to be reinserted. Even J.J.'s grandmother feels helpless when the lens drifts off-center." In addition to the problems with losing the lens and inserting it, the lens has to remain clean.

"Parents who have gone through the process and are willing to talk about it

Dr. Summers and J.J. relax after the examination is over.





Dr. Summers explains the B-scan to Mr. and Mrs. Long. The machine provides information on the structure of the eye prior to surgery.

can really be a big help to new parents. They can share tricks they have learned, like what to do when J.J. rubs his eye while in the sandbox!" says Dr. Summers.

New techniques increase success rate

The operation is not the same as adult cataract surgery, because the infant's eye is so much smaller and visual development is occurring. Using adult cataract surgical techniques on an infant yields unacceptable complications.

Dr. Harold G. Scheie, an alumnus of the University of Minnesota Medical School, is known world-wide for his early surgical treatment of pediatric cata-

racts, the aspiration procedure. Building on Dr. Scheie's work, advances in ophthalmic surgical instrumentation now allow for complete surgical removal of an infant's cataract, and a reduced need for additional surgical procedures.

"We have two operating microscopes, contributed by the Minnesota Lions and Mr. Holcomb. They have opened the door for more successful treatment of children with cataracts," reflects Dr. Summers. "A newer method which we are currently using offers minimal trauma to the iris and cornea and results in quick and permanent visual rehabilitation. A small microsurgical instrument provides gentle aspiration and fine cutting features to allow more complete removal of the cataract with fewer complications."

Dr. Letson adds, "Microscopic work allows us to more accurately locate the cataract, remove it entirely, and seal the wound carefully and thoroughly. We are really pleased that we have never had an infection which has caused the loss of an eye."

"J.J.'s surgery was successful because of this equipment, and the fact that he had no intraoperative complications," remarks Jeffrey Long, "and we are grateful to the Department of Ophthalmology and to all those who have contributed to the Children's Eye Clinic."

"With babies who have had cataracts removed from both eyes, we notice a remarkable behavioral change," reports Dr. Letson. "After the cataracts are removed, they can see their world. They

look around curiously at everything. Of course, we remove one cataract at a time because we prefer to be extremely cautious with the baby's vision."

When the lens of an eye is removed during cataract surgery, another way of focusing vision is needed. Intraocular lens implants, which are helpful following cataract surgery in adults, are not routinely used in infants because a baby's eye continues to grow. However, careful optical rehabilitation is crucial if vision is to be restored.

Rehabilitation, which begins a week or two after surgery, calls for an optical device to focus the image for the eye. The device is either corrective spectacles, contacts, or epikeratophakia.

"Glasses are very thick and heavy, and require more than a button nose on which to perch. So we don't use glasses after cataract surgery in most cases," notes Dr. Letson.

Epikeratophakia, a new technique being investigated by Dr. Richard Lindstrom, director of the anterior segment service in the department, uses donor corneal tissue sewn on the front of the eye to provide the correction needed. This is a good method if the eye will not tolerate a contact lens.

"Contact lenses are the most commonly used treatment for us," says Dr. Summers. A loss of vision still can occur if the lens power is not increased at just the right time as the child's eye grows.

The pediatric ophthalmologists are challenged to stay on top of the baby's visual development and measure the power of optical correction that is needed. The combination of improved instrumentation, earlier surgery, and the availability of contact lenses for babies has allowed the pediatric ophthalmologist to be more optimistic regarding vision when a baby is found to have a cataract.

Follow-up vital

When glasses or contacts are used, frequent office visits for careful monitoring are mandatory. The power of corrective lenses usually has to be changed every two to four months in the first year of life, and every few months after that to keep up with the tremendous eye growth that is occurring during the first few years.

"Many parents ask how the power can be determined in a young child. Observing an image produced by directing the light of the retinoscope toward the eye allows the physician to determine whether a stronger or weaker lens is needed," says Dr. Summers.

In addition to changing the power, the curvature of a contact lens often requires alteration to provide the best fit for a growing eye. Like J.J., many babies and toddlers also need to have their good eye patched to encourage visual development

in the other eye. "The job of patching, monitoring a contact lens, and keeping track of follow-up appointments is a big task. These parents deserve a lot of credit," notes Dr. Summers.

After J.J.'s surgery, he immediately began a program of visual rehabilitation. In addition to a contact lens, patching of the good eye was important, forcing the operated eye to develop. "Within just a few weeks of surgery, J.J. was already looking at faces and toys with his operated eye," comments Dr. Summers.

However, patching can be rather difficult. "I feel terrible when I have to put his patch on every morning, but 10 hours later when I take it off I'm rewarded with a big smile," says Ina Long.

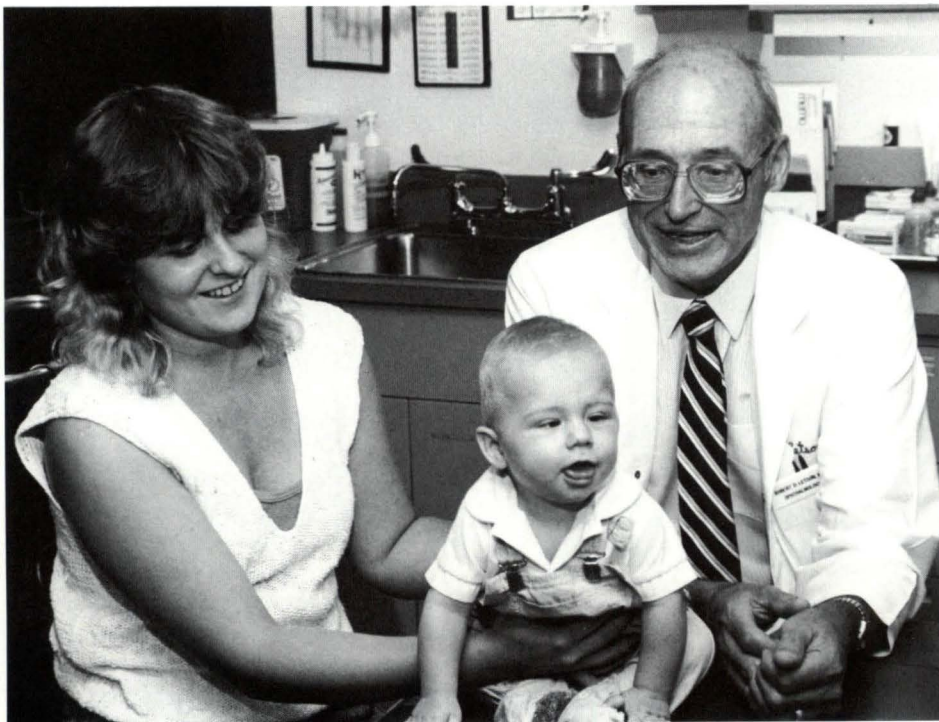
"We monitor patching carefully so that the normal visual development of the other eye is not limited by the patching," adds Dr. Summers.

Measuring a baby's response to visual rehabilitation requires thoughtful techniques. The ability to watch and follow bright and moving objects can provide an early assessment of vision. Other newer methods include the Teller Acuity Cards which determine the smallest size of stripes that a baby can see. Research continues to develop better methods to assess an infant's vision.

The Minnesota Lions and Lionesses have had a longstanding interest in infant vision problems. They've put up pictures of giraffes, lions, and tigers in the hallways and in the examining rooms; they've provided toys and visual assessment equipment, and educated the public about resources available through the pediatric ophthalmology program at the University. Drs. Letson and Summers feel that this has allowed them to provide up-to-date care for children with vision problems, in an environment that children can enjoy.

Knowing the time and emotional investment required for visual rehabilitation of J.J.'s left eye, would Ina and Jeffrey Long do it all over again? "Definitely," says Ina. "I'm convinced J.J. can see with that eye. He deserved a chance to have better vision, and we're very thankful to Dr. Summers for giving him that chance."

Jeffrey Long concludes, "We're taking it step by step and looking for positive signs each visit. Yes, we'd do it all over again because J.J. is dealing with this problem with a positive and indomitable spirit and we will too." ☀



Dr. Letson with a pre-operative patient and his mother.

AN UNFORGETTABLE EXPERIENCE

PAPUA NEW GUINEA



By Ralph Bovard, M.D.

In the fall of 1986, I mailed a form letter to some 25 overseas mission hospitals. Of the respondents, the most intriguing was from a Dr. John Hershey at the Braun Health Care Centre in Papua New Guinea . . . certainly the stamps on the letter were the most beautiful.

At the time, all I knew about the country was that it was near Australia and that Margaret Mead had done anthropologic studies there. Actually, I had also heard something of the inhabitants' penchant for cannibalistic appetites in a speech by a Dr. Gadjesek about his Nobel prize-winning research on kuru and slow viruses.

Whatever, here was a distant, primitive culture, an "anthropologic wonderland," and it seemed a wonderful adventure and a chance to do something medically useful at the same time.

Because this was a Lutheran-affiliated hospital, my visa and licensing paperwork was coordinated by their church offices. I was fortunate also to receive a grant from the Metropolitan Medical Center Foundation (where I had worked in the emergency department the previous year) to help defray travel expenses which, as a short-term volunteer worker, the church couldn't cover.

In November of 1986, I flew to Sydney by way of San Francisco, and then

(despite the lure of the "Americas Cup" fray, warming up at that time in Perth) proceeded on to Port Moresby, the capital of Papua New Guinea (PNG). New Guinea is divided into the eastern Papuan half and the western portion called Irian Jaya, formerly a Dutch protectorate and now controlled by Indonesia.

The island of New Guinea is the second largest island in the world; it is 3.6 times as large as Great Britain and about a tenth the size of the continental United States or Australia. Papua New Guinea, the eastern portion, is slightly larger than California and has about three million inhabitants.

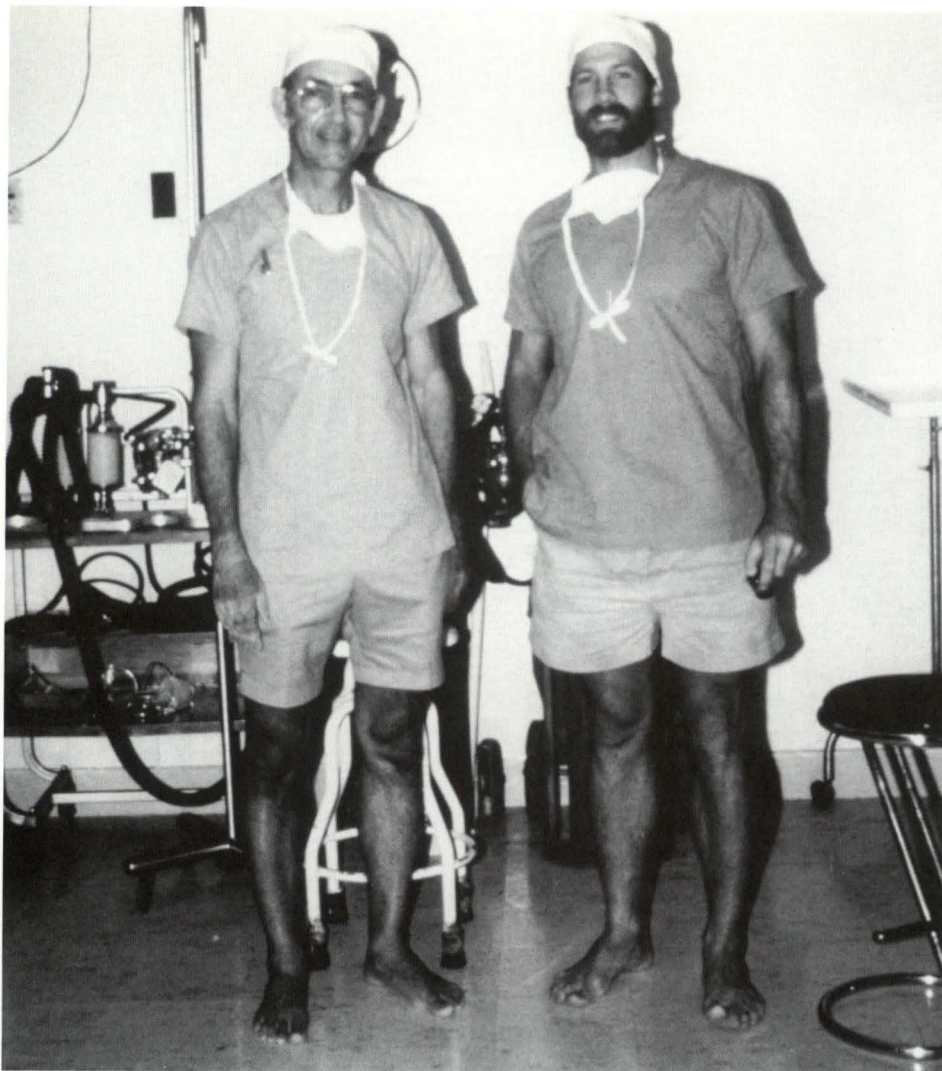
The Papuan ("wooly," after the men's bushy beards) side had been divided between the Germans and the British, but following World War II had been governed by Australia in a colonial fashion

Dr. Ralph Bovard graduated from the University of Minnesota Medical School in 1984. The extensive diaries kept during his three-month stay in Papua New Guinea provided the material for this article. Dr. Bovard is currently serving a four-year radiology residency at the University of Minnesota.

ion until 1975, when PNG became independent. The political system is parliamentary and democratic in design, and although the government does not run smoothly — and whose does? — at least the native people are making their own mistakes. The attempt to balance the cultural traditions of some of the most remote and primitive tribes on the face of the earth with the glitter of 20th century technology is an enormous challenge indeed.

From Port Moresby I flew to Lae, site of a World War II botanical gardens memorial, but sadly, like Port Moresby, a city of high unemployment and a notable "rascal" problem. (In the U.S. a rascal is a freckle-faced kid who pulls little girls' pigtails; in PNG a "rascal" is a robber/rapist/criminal type.) Because there are no roads into Finschhafen from Lae, I flew on in a small plane over the rugged mountainous jungle of the interior and then skirted the northeast coast to my destination.

The Braun Health Centre (BHC) — named aptly after Dr. Braun, an early American missionary surgeon — is a 150-bed hospital in a village called Butaweng in the district of Finschhafen. It is on the east coast of PNG, about 50 miles west of the island of New Britain. The hospital is coordinated by the



Dr. Ralph Bovard, right, and Dr. John Hershey perform barefoot surgery in Papua New Guinea.

Lutheran Church, as this area was first settled by German Lutherans in the late 1800s. The expatriate workers in the PNG Lutheran consortium are an amalgam of 40 percent German, 30 percent Australian, and 30 percent American.

Most of the local people in this district are Lutheran too, or at least that is what it says on their admission sheets . . . for better or worse. Their animistic/pantheistic heritage still holds sway, and is a beautiful cultural existence in many ways. I have never felt that any one faith necessarily had all the answers; reciting the Lord's Prayer in Pidgin, however, is exciting: "Bigpela papa God, pikinini, na holi spirit," i.e., Father, Son, Holy Spirit. There is a Lutheran seminary for native PNG pastors on the hill overlooking Finch and the seacoast. The immediate Finch area has about 1,000 people, perhaps 30 to 40 of whom are "white-skins"; most are here on one-to-two-year contracts with the government or church.

The hospital serves the entire Morobe province, which has about 40,000 people, so we have villagers coming down from the highlands some 100 kilometers

away, as well as from up and down the coast, with their various medical problems. Some of these villages are at 3,000 to 5,000 feet; the highest point in the country is Mt. Willheim at 15,000 feet (snow at 6 degrees south of the equator). There is little that is horizontal here.

Tropical paradise

I live in a bungalow adjacent to the Hershey's house and next to the Mape River. We are three minutes from the hospital by Schwinn Typhoon or two minutes by car. On a bike one saves time by cutting across a 50-yard steel suspension footbridge which was built using cut up sections of World War II bomber landing strip grids.

I have a shower, small refrigerator, and a propane table-top small burner stove. The water is piped from the river, and there is one faucet because there is one temperature, and that's whatever happens to be in the river, usually nice and cool and refreshing. It's clean and palatable — no naegleria or bilharzia.

I haven't been sick yet. Knock on

wood! We drink rain water for the most part, however. I take weekly chloroquine 500 mg as malarial prophylaxis. Mansidar, primaquine, and quinine are reserved for active disease or chloroquine-resistant attacks.

There is a beautiful natural swimming hole 100 yards from the house where a mountain stream brings us fresh water. It has a storybook 10-foot waterfall and a rope swing, for "the kids." There is another waterfall below this one so no "pukpuks" (crocodiles) can get up there — natural defenses!

We go to the pool most every day after work, and to rinse the brine off after snorkeling or diving. There is a crushed coral lane from the houses to the road and the pool which is lined with fragrant franjaponi trees. Broadleaf banana and coconut palms surround the yard.

The coral reefs are delightful and the sea critters and coral life are fascinating. Glamorous 18-inch royal blue starfish, 2-foot-long red, black, and white mottled sea cucumbers, a large puffer fish which I mistook for a pale seal at first from the backside, golden and jet-black angelfish with dorsal fin streamers, a fair number of sea turtles, cuttlefish, a local octopus (whom I've not yet met), a big grouper, and a kaleidoscope of enchanting small fry such as the wrasse, clownfish hiding in the poisonous anemone (my favorites . . . cunning little buggers and aggressive too), and too many others to name.

Today, diving off the point at Nugidu I petted a cuttlefish as long as my arm. My friends and I encountered three of them at 60 feet and I think they were as taken with our appearance as we with theirs. They are squid-like invertebrates with short tentacles in front beneath two knobbed yellow eyes. They propel themselves through the water with a frilled skirt-like appendage that encircles the lower part of the body. They were like small hovercraft and actually allowed us to stroke their backs . . . more velvety than slippery. And they would change from a mottled cream color with brown and black markings to bluish to nearly black.

There is a local avian-type critter called the bower bird (looks like a crow but has blue eyes) that has a voice like that of Snoopy on the TV version of *Peanuts*. He calls in sighs and "arghs" all day long, usually ending in a decrescendo as if falling off the branch — it cracks me up. I am hoping to get a small

hand-held tape recorder to capture all the amazing sounds. The cicadas hum and buzz day and night while the "krokrok" frogs dominate in the evening orchestra. The flying foxes "black bokis" (i.e. fruit bats) flap across the sky at sunset like great pterodactyls.

It is said that there are some 750 distinct languages in New Guinea, having developed due to the geographic isolation of the individual tribes. As such, a common language has evolved to bridge this communication gap.

Pidgin is this "lingua franca." It is a confounding and fascinating hobbledegobble of English-German-Malaysian and who knows what. It is descriptively creative and phonetic: "Mi kutim mausgras" means "I shaved" or literally "I cut my mouth grass." "Pikinini bilong diwai" means "fruit," literally "children of the tree." "Skrubilong lek" means "knee," literally "screw joint which belongs to the leg."

An old-fashioned G.P.

The beauty of working in a Third World hospital is that one gets the opportunity to really be an old-fashioned G.P. You get to — rather have to — do everything whether you have done it before or not. The Braun Health Centre is fortunate to have Dr. John Hershey, a general surgeon from Spokane, Washington, as one of its full-time M.D.s. He and his wife and three children have spent six of the past 10 years at Finch. He provides needed surgical expertise and gives me excellent crash-course instruction. Our other mission doctor, Herman Munsel, is a German pediatrician with a special interest in tropical diseases. I have learned a great deal from both.

The hospital has five patient wards, in addition to five buildings for administration and nursing students/native staff housing. Each ward has 30 beds. I have the men's ward, Dr. Hershey covers the women's ward and the TB ward, and Dr. Munsel has the pediatrics and maternity wards. Actually, the nurses/midwives do all the normal deliveries and we are only called for breech/abnormal presentations or complications requiring C-sections.

Our average day starts at 7:30 a.m. with a short prayer and song and reading from the Pidgin Bible. Monday and Thursday mornings we round officially and write chart notes on all patients, although we see new patients each morning.



For the most part, the nursing staff admit, make a provisional diagnosis, and institute treatment, and call us only for seriously ill patients. Tuesdays and Wednesdays we do elective surgery. Tuesday afternoons and Friday mornings are clinics. We have an hour off for lunch and finish at 4:00 p.m. It is difficult returning in the afternoon because of the heat and humidity. Each of us has an afternoon off each week. We rotate call for a full week from Monday to Monday, so are on every 3rd weekend.

Medically, the most common ailments are: 1. bronchopneumonia, 2. malaria, 3. gastrointestinal and liver disease, 4. pregnancy complications, 5. malnutrition, 6. tuberculosis, 7. accidents, 8. sexually transmitted diseases, 9. leprosy, 10. skin diseases, 11. psychosocial problems, 12. dental problems, 13. neoplastic and degenerative conditions. All patients admitted to the hospital are treated for



malaria and hookworm prophylactically with chloroquine and mebendazole respectively. Over 100 cases of confirmed malaria occur per month.

Based on 1971 and 1980 national censuses, there has been a marked improvement in the health of the population. In that decade infant mortality decreased from 134 per thousand live births to 72 per thousand. Life expectancy at birth rose from 40.4 to 49.6 years. However, there was little improvement in maternal mortality, which in 1980 was estimated to be eight per thousand births in cities and up to 20 per thousand in remote rural areas.

Pneumonia remains the main cause of serious illness and death in all parts of the country. Diarrheal disease is the second most common cause of hospital admission for children under 5 years, and accounts for about one-third of all deaths in that age group.

Malaria is the third most frequent cause of hospital admission and hospital deaths, with both plasmodium falciparum and vivax endemic to the country. Approximately 40 percent of the cases of malaria on the coast are of the chloroquine-resistant plasmodium falciparum variety.

One of the most difficult diagnoses for the Third World M.D. is to differentiate cerebral malaria from meningitis. It is at times like these that one most fully appreciates the laboratory facilities and technicians back home. Our lab is good by jungle standards. The techs are quite skillful at diagnosing malarial ring forms and other blood parasites, although due to staffing problems we sometimes go for a few days without even routine labs. There is a shortage of medical instruments and suture, needles, tape, etc. but we get by.

Open-door surgery

There are two operating suites, one for major and one for minor cases. We operate in bare feet and the patient's family and friends watch the surgery through a large window 10 feet from the OR table. Our surgical gloves are re-washed after each case, dried on a clothes line, powdered, re-sterilized in a wood-burning autoclave, and reused until they fall apart. Our facemasks and white "Hawkeye" type cloth surgical caps are, of course, reused too.

Our electrical power isn't always reliable, so there is an auxiliary light stand

powered by two motorcycle batteries in the OR. Yet even that isn't foolproof. Once, when it had not been recharged, Dr. Hershey and I did a hernia repair under a flashlight beam held by the circulating nurse.

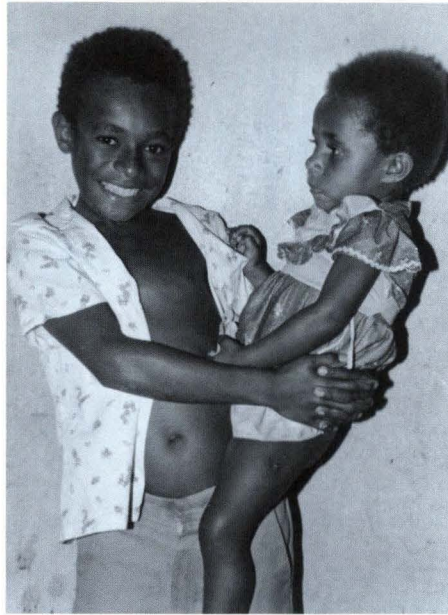
My most interesting cases thus far have been the vaginal delivery of breech twins (the first "frank" breech and the second followed vertex and was smaller but needed vacuum extraction — single placenta); doing the second C-section (after assisting in one) under Dr. Munsel's watchful eye; several retained placentas; abdominal paracentesis; and several liver biopsies (hepatomas are common, probably a complication of malaria). We had a 23-year-old woman teacher die in 24 hours (two weeks after delivery) of probably septic shock and/or pulmonary embolus. No dopamine or heparin. Very sad — left two babies.

Unlike in a civilized society, when people here have a terminal or serious illness they don't say, "Why can't you do something?" — but rather, "Thank you for doing what you could do." Then they go home to their village to die with their family and friends nearby.

We had a 25-year-old man with hypertensive nephropathy/nephrotic syndrome with massive proteinuria die suddenly while I was on call last weekend. After I had talked to the family, said I was sorry, and had walked to the end of the ward to see another patient, the family and villagers gathered around him, touching and caressing. And, with the other ward patients (lying in their cast-iron beds stretching the length of the narrow building) joining in, sang a death song on this bright, still Sunday afternoon. It was haunting and beautiful.

We have had a case of leprosy in a woman who died of an apparent Stevens-Johnson-like reaction to the sulfa drug dapsone, several cases of advanced elephantiasis, and a number of other filarial cases. There is an occasional snake, scorpion, or centipede bite; a 14-centimeter specimen of the latter group attempted to ambush me in my own bungalow early one morning. Yet despite all the horrific and media-famous marine and jungle beasts which frequent these tropical areas, the microbes, viruses, protozoa, and our fellow bipeds do far more damage to the people than all the crocs, sharks, sea and land snakes, sea wasps and scorpions combined.

We see 5-to-8 foot sharks regularly while scuba diving, and Dr. Hershey



caught two 9-foot tiger sharks in the river behind our houses (I helped land one with a daring tail grab I learned reading Thor Heyerdahl's *Kon Tiki*), but there have been no "Jaws" episodes on the PNG coast.

The crocodiles are a different matter, and there have been several 7-to-10 footers seen in our river. PNG was known for its 15-to-20-foot monster crocs of the coastal river areas in the old days. There have been several snake-bite fatalities in the past few years, but none thus far during my stay. Still, the lethal puff adders, brown snakes, and taipans are a genuine threat and antivenom is kept refrigerated and up-to-date at the hospital.

On the other hand, we have had several motor vehicle fatalities, numerous compound fractures and lacerations from domestic squabbles, a tomahawk murder, two young brothers blown up by a World War II land mine or grenade

accidentally set off by a garden fire, and a man purportedly killed by sorcery. This latter case was "linked" to the 7.4 Richter-scale earthquake which struck the PNG coastline in early February and therein lies a tale. To explain:

In 1985 a man, prominent in the Finch district for government work, was indirectly responsible for the death of another man from an offshore island called Malai in a boating accident caused by the former's intoxication. This prominent man, who had a known drinking problem, was from another island just off the coast called Mandok. The people of both these islands — as well as many areas in PNG — still believe in sorcery and motions-potions sorts of things, and it was suggested that the Malai islanders would resort to sorcery to retaliate for their man's death.

So when, approximately one year later, this prominent 40-year-old leader of the community died suddenly of unclear causes while in bed, eyebrows were raised. Those of us at the hospital who knew of his long history of excessive alcohol and cigarette abuse assumed a cardiac event or even an aneurysm.

The corpse had been frozen in the morgue and then re-thawed on a police order for an autopsy, which Dr. Hershey and I performed. It was a vividly memorable experience . . . one of the two "public" autopsies in which I've participated.

We did the post mortem in a 10-by-12 room which was sweltering. In addition to the patient's family, the police official, other hospital "watch-patients," nursing staff, and sundry passers-by, a generous crowd stood milling about in the door-



way and in the room itself; others were packed outside, peering in the window, while we went about the grisly business of intimately examining the poor ignoble remains. Doing a craniotomy in the midst of such an attentive throng with a dull handsaw is a memorable if slightly unnerving feat.

Unfortunately, the autopsy didn't prove much, except that he had a perfectly smooth, normal-appearing liver, coronary arteries that were clean as a whistle, and no sign of an intracranial aneurysm or bleed. A mutter of "poison" went through the crowd — a euphemism for sorcery or magic — and since we were unable to prove otherwise, the flame of suspicion which had until then only smoldered now blazed up. (A year earlier members of the men's soccer team, many of whom were educated nursing staff, had filed a lawsuit against the team that had beaten them, with a formal charge of sorcery.)

The deceased's father, who was the chief shaman on the isle of Mandok and who was reputed to have power over the "earth, wind, and seas," declared that he would punish the Malai islanders who had supposedly done in his son. I've not given necromancy much thought, but the subsequent events had me looking over my shoulder. Because one week later, the earthquake struck the PNG coast with its epicenter in the islands in question, some 60 miles offshore from our hospital.

I was jounced from bed at 3 a.m. and heard the eerie call of the normally diurnal bower birds and cicadas. We had roughly 30 tremors over a three-day period, which shook the islands area off our coast and us as well. It cracked the hospital foundation, shook over 500-gallon water tanks, and toppled bookshelves and lamps.

A family event

The pediatrics ward is my favorite place. The children are endearing — big brown eyes and beautiful smiles. They do not yet have the reddish brown, betel nut-stained teeth of their elders, and have a simple shyness but are curious and quick to make friends. Cerebral malaria and meningitis are the big cripplers for the kids. The anti-malarias and chloramphenicol are the only big guns against them. We need cephalosporins.

The wards have concrete floors and screens on the upper hall of the buildings on all four sides, with 15 beds along each



side. The beds are metal with the white paint chipping off, and are without mattresses or cloth sheets or pillows. A plywood sheet only — no bed springs either. Most sit on woven grass mats laid atop the plywood. Some have sticks tied to the frame with wires for a mosquito net support, as the doors are often opened to the outside.

"Bilums" (woven bags used by the women to carry food and possessions) hang from the walls at the head of the bed with each patient's meager belongings.

In the pediatrics ward either the mother or father is always at the bedside resting with the child, the mothers commonly breastfeeding the younger children. The women wear floor-length colorful lap-laps, and the men shorts and a sometimes-laundered cotton shirt. Sometimes they wear lap-laps too. There is a 4-foot tall black and white panda, slightly scuffed and faded, hanging from the ceiling in the children's ward.



Alongside each ward are covered verandas where families, or a "watch patient," remain during the duration of the patients' confinement to feed them, care for their bedding, and provide solace and support. Stacks of firewood and piles of taro root, sweet potatoes, greens, and bags of rice line the wall between small clusters of breastfeeding women. They prepare the food over pit fires in a small enclosure between the wards.

The women breastfeed the children for several years, and although they generally don't start families until the late teens or early 20s, they seem to age quickly during their childbearing years. The women do the majority of the manual work, particularly carrying of heavy loads of firewood, vegetables, etc. in their woven bilums, carried by a head tump-line. The men traditionally carry only a weapon to "be ready for defense" . . . this custom is changing only very slowly.

Nutrition is not an extreme problem in PNG. Food grows everywhere. Coconuts abound and line the roads; broadleaf bananas are ubiquitous. We often buy mangos from the villagers for 60 cents a dozen by the boxload and sit in the warm ocean shallows to eat them with the juice dribbling down the chin. There is a lemon tree outside my door — I learned to juggle with its fruit. Taro root, kaukau (sweet potato), peanuts, cucumbers, small tomatoes, spinach, watermelon, sweet sugar-cane, and pawpaw (papaya) are abundant. In the highlands, coffee and tea are major crops.

The chewing of betel nut is the Papuan national pastime. Called "buai," it is said to be a hallucinogen, sedative, and stimulant all rolled into one, and it grows on trees. The bad news is that it produces a bright red, acidic juice that discolors and etches away the teeth and gums — a dentist's nightmare. Men, women, and children alike all chew it with a bean-like substance called daka root (which I mistakenly bought my first day at market thinking it was green beans) and a lime powder to moderate the acid taste.

The more unfortunate consequence is the high incidence of squamous cell mouth and tongue cancers, often presenting too late for effective treatment. Like our "no smoking" areas there are "no kan kaikai buai" (no can chew betel nut) signs in public areas such as the markets; where we have cigarette butts and smoke they have puddles and splatters of the orange juice on sidewalks and floors.

A unique opportunity

The Third World countries offer a unique opportunity for medical students, physicians, and nursing personnel to gain valuable hands-on experience and to do that something "useful" that most of us were pursuing when we went into medicine. Many Commonwealth medical students spend two or three months in overseas clerkships in hospitals in Africa, India, Nepal, PNG, South America, and the Caribbean as a regular part of their training.

The opportunities are many and the experience is certain to be an unforgettable one. My only regret is that I did not do it sooner or stay longer.

Although it is not always easy to take blocks of time away from one's profession, I think that the notion of a "sabbatical" every five to seven years is a healthy one; the "alchemy of perspective" which develops from living in a different culture has its own rewards.

The only catch to these short-term volunteer positions is that unless you commit to a one-or-two-year period you often need to provide your own financial coverage for transportation and sometimes partial living expenses. Still I wouldn't trade the experience I had for anything . . . despite the threatening letters regarding my swollen Visa and American Express accounts.

The Readers Digest has grants that are specifically designed to help medical students travel and work abroad, while various church groups are often willing to help in a good cause. I was fortunate to have the Metropolitan Medical Center Foundation assist me this time, as the Minnesota Medical Foundation had done four years ago on another medical adventure in Alaska.

Sometimes it takes a bit of persistent letter writing, digging through foreign medical journals, or pestering your medical school dean or church office to ferret out the address or contact in that long-lost clinic in Timbucktoo. Persevere. Take a chance. It's a short life. I like Beryl Markham's philosophy:

"I saw the alchemy of perspective reduce my world, and all my other life, to grains in a cup. I learned to watch, to put my trust in other hands than mine. And I learned to wander. I learned what every dreaming child needs to know . . . that no horizon is so far that you cannot get above it or beyond it."

West with the Night ☂

A Global Concern

By Neal Gault, M.D.

On reading Dr. Bovard's account of his medical experiences in a mission health center in Papua New Guinea, my belief in the significance and importance of international medical experiences was intensified. No one, after reading about his adventures, can doubt the contribution of his Odyssey to his overall liberal education, as well as to his better understanding of the role of physicians in administering to the ill.

It is not necessary to spend time in a Third World country, although doing so presents the greatest contrasts. Any social setting different from our own will provide the diverse medical practices demanded by cultural mores and the degree of technological advancement of the setting.

Technological changes have rapidly reduced the size of our global world to the point where we can no longer live without concern for our neighbors, whether near or far away. To live and work among medical colleagues in non-familiar settings promotes communication skills, understanding of the significance of history and geography as they impinge on peoples' lives, promotes tolerance and mutual respect, and expands knowledge and skills in medical care.

The world extends its passport to those in the medical and health fields. Perhaps no other vocation or occupation can enter a foreign community

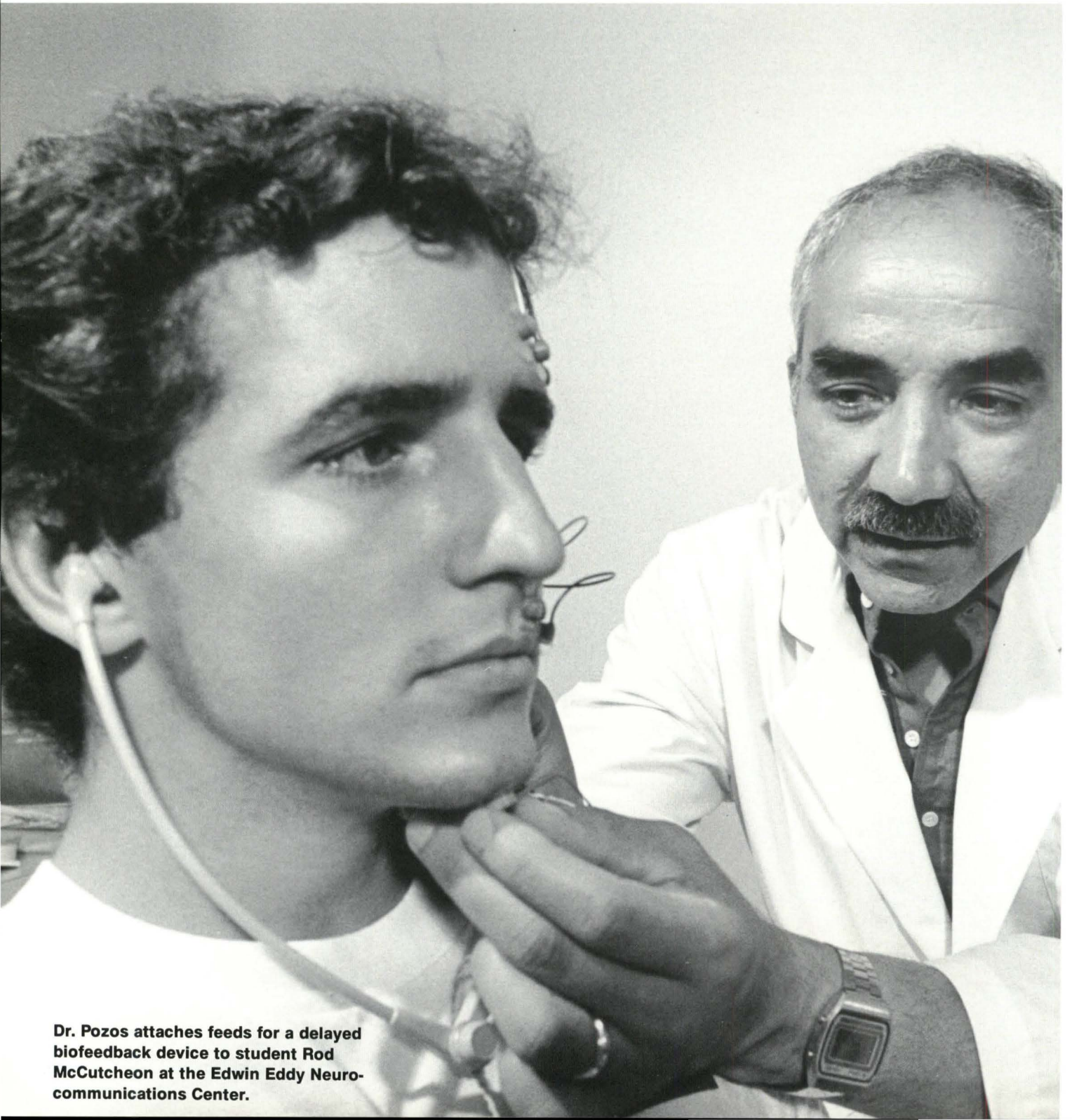
with less conflict or suspicion. Medicine is a superb instrument to foster international understanding.

My wife, Dr. Sarah J. Gault, and I have benefitted greatly from our international medical experiences in eastern Asia. We believe it is important for medical students — who have the motivation to spend time abroad as part of their undergraduate medical education years — to have that opportunity. To assist an ongoing program at the University of Minnesota Medical School promoting such educational experiences, we have established an endowment fund — The Medical Student International Study Fund — with the Minnesota Medical Foundation. Annual interest from this Fund will partially defray expenses of medical students who arrange acceptable medical educational experiences abroad.

Dr. Neal Gault is former dean of the University of Minnesota Medical School, and is currently professor of medicine and senior consultant to the Minnesota Medical Foundation. For more information about participating in or supporting the Medical Student International Study Fund, contact the Minnesota Medical Foundation.



UMD CENTER OFFERS



Dr. Pozos attaches feeds for a delayed biofeedback device to student Rod McCutcheon at the Edwin Eddy Neurocommunications Center.

HOPE FOR STUTTERERS

New professorship fulfills last wishes of Duluth man who suffered throughout his life with a communication disorder

By Patricia Miller

Often debilitating, always a disability, the little-understood speech disorder of stuttering makes daily life a struggle for nearly 1 percent of the world's population.

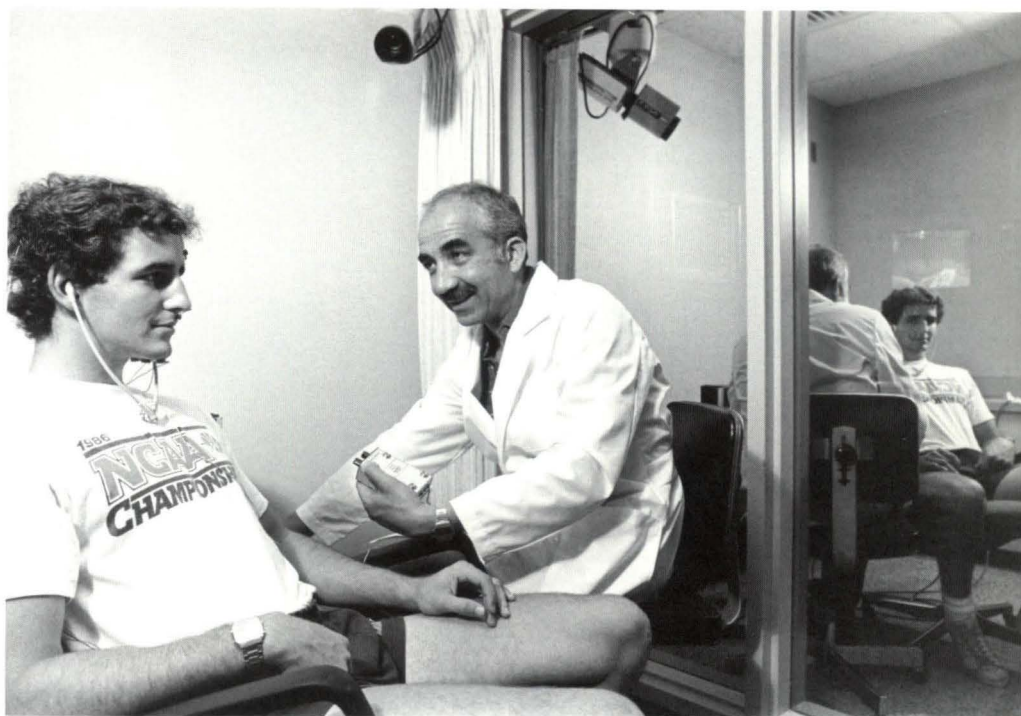
But a new program at the University of Minnesota, Duluth (UMD) School of Medicine could move to the forefront in researching causes and possible solutions for this widespread affliction for which there are treatments, but no sure cure.

The Edwin Eddy Professorship in Neurocommunication Disorders was recently established in the school's Department of Physiology. Dr. Robert Pozos, associate professor and head of the department, has been named the first Edwin Eddy professor and director of the newly formed UMD Neurocommunications Center. Although the center's focus is on stuttering, other speech disorders such as aphasia, frequently seen in stroke victims, will be studied there as well.

Funded by a \$250,000 contribution from the Edwin Eddy Family Foundation of Duluth to the Minnesota Medical Foundation, and matched with an additional \$250,000 from the University's Permanent University Fund, the professorship fulfills the last wishes of Edwin Eddy, a Duluth man who suffered much of his life because of a disabling stutter.

The Eddy Foundation was established in September, 1982, as a provision of Eddy's will. His goal was to promote the treatment and rehabilitation of people suffering from communication disorders. It is supported by a \$2 million trust started by Eddy, who died in 1981, and is administered by Norwest Bank of Duluth.

Pozos, well-known for his hypothermia research, became interested in stuttering when he discovered that the electrical activity of the muscles of speech in non-stuttering people — who were induced to stutter by means of delayed feedback techniques — was remarkably similar to that of stutterers. Pozos is empathetic toward people with speech



Two-way mirrors and the video camera provide a means to record and observe the sessions.

disorders, and committed to producing results.

"We take speech for granted. All you have to do is talk to a stroke victim or a stutterer and you realize how debilitating speech problems are," Pozos says. "It makes life a real challenge."

He relates an occurrence in which a stutterer was with a friend who suffered a heart attack. The stutterer was unable to talk clearly about what had happened, and finally had to relay the information in writing. Pozos notes that stress often makes stuttering more pronounced.

"The primary way we communicate is through speech. Even recovered stutterers often feel they have a disability they will

have to cope with on a daily basis for the rest of their lives."

The Neurocommunications Center is unique in that it combines the expertise and personnel of the physiology and behavioral sciences departments of the School of Medicine with the communication disorders program of the Department of Allied Health at UMD.

Pozos emphasizes the unique, joint-project nature of the Eddy program, and explains that the center will also be involved in promoting interaction between graduate students in communication disorders and medical students from the School of Medicine. They will work together on projects dealing with identification and treatment of stuttering and other neurocommunication disorders.

"Many clinicians have emphasized to me that health science professionals need to be made aware of the important aspects of stuttering and other neurocom-

Patricia Miller is senior information representative at the University of Minnesota, Duluth, School of Medicine.



The Eddy Neurocommunications Center laboratory consists of three rooms, two for treatment and one for observation. The observation room, pictured at right,

contains video cameras, monitoring equipment, and recorders. It has clear vision into the treatment room at left through a two-way mirror.

munication disorders, and it should start as soon as possible in their education," Pozos says.

To achieve this, faculty members involved in the project plan to modify some aspects of the behavioral sciences and physiology curriculum at the School of Medicine to give medical students a better awareness of the identification of stuttering and neurocommunication disorders and their physiological and psychological components. Staff members from both departments will work together to present various aspects of the physiology and psychology of communication disorders to undergraduate and graduate students.

The program's working organization is complex. Because stuttering has multiple components — from the psychophysiological to the strictly physiological — the center will assess stuttering from three perspectives: clinical, psychophysiological, and physiological. The program will include the work of a wide range of professionals including clinicians, physicians, psychiatrists, neurologists, and

allied health professionals, as well as basic scientists.

"This is the chance of a lifetime to bring people together from a variety of disciplines to study and treat stuttering," Pozos says.

Clinical studies will evaluate new treatments and those already in use for stutterers, aphasics, and cerebral palsy victims. At the Edwin Eddy Neurocommunication laboratory at the School of Medicine, 50 to 100 patients annually will be studied and treated. Patients will participate based on referrals by area physicians, support groups, and the Communication Disorders Program at UMD.

The laboratory consists of three rooms, two for treatment and one for observation. Mirrors, video cameras, and physiological monitoring equipment are used for treatment and for making visual recordings of sessions with patients.

"Some treatments have already proven promising, although they are in the experimental stages," Pozos says. He described one experimental protocol to

be tested where novocaine is applied topically to a patient's face because it is thought to affect facial nerves and reduce stuttering frequency. In a previous study, this method decreased stuttering from 75 to 80 percent. However, Pozos cautions that the experiment has only been tried on a few people, and the results possibly could be a placebo effect.

Pozos also will work with regional clinicians to evaluate treatment methods for stuttering and other types of neurocommunication disorders. Dr. James Brueggeman, neurologist at the Duluth Clinic; Dr. Steve Goff, psychiatrist; and Dr. Rick Freeman, neurosurgeon at the Neuroscience Institute, have expressed an enthusiastic willingness to work on the project.

The psychophysiological aspects of stuttering will be investigated by Dr. Richard Hoffman, assistant professor of behavioral sciences at the School of Medicine. One control component of stuttering involves increased tension and imbalances in the muscles of the face and throat which will be reflected in the

patterns of electrical activity seen in electromyogram (EMG) readings. Stutterers will be shown EMG readings to illustrate their patterns of stuttering and will be taught to modify the EMG response patterns by relaxing facial muscles involved in the stuttering response.

"We show the patients, whose EMGs are monitored, what they are doing and coach them as to how we want their readings to look," Hoffman says. Through this technique — which is similar to biofeedback — inappropriate muscle actions, such as those surrounding the larynx, can be controlled.

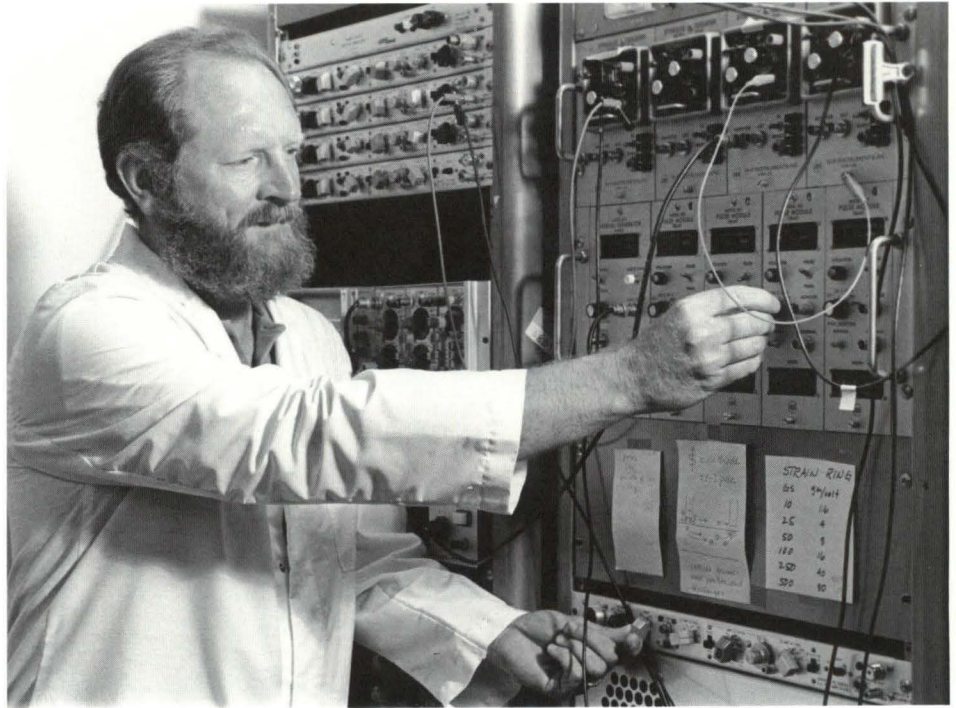
Hoffman also will investigate the effect of changing the speech rhythms of stutterers in an attempt to gain a better understanding of the relationship between these rhythms and the neuropsychology of stuttering.

The physiological aspect of stuttering will be investigated by Dr. Edward Stauffer, associate professor of physiology at the School of Medicine. Although the focus of the center's research will be on humans, Stauffer will use animals to study the physiology of motor control in the larynx. He also will characterize the differences and similarities between the electrical brain patterns in stutterers and non-stutterers. Dr. Lorentz Wittmers, associate professor of physiology at the School of Medicine, will study the respiratory and breathing patterns of stutterers.

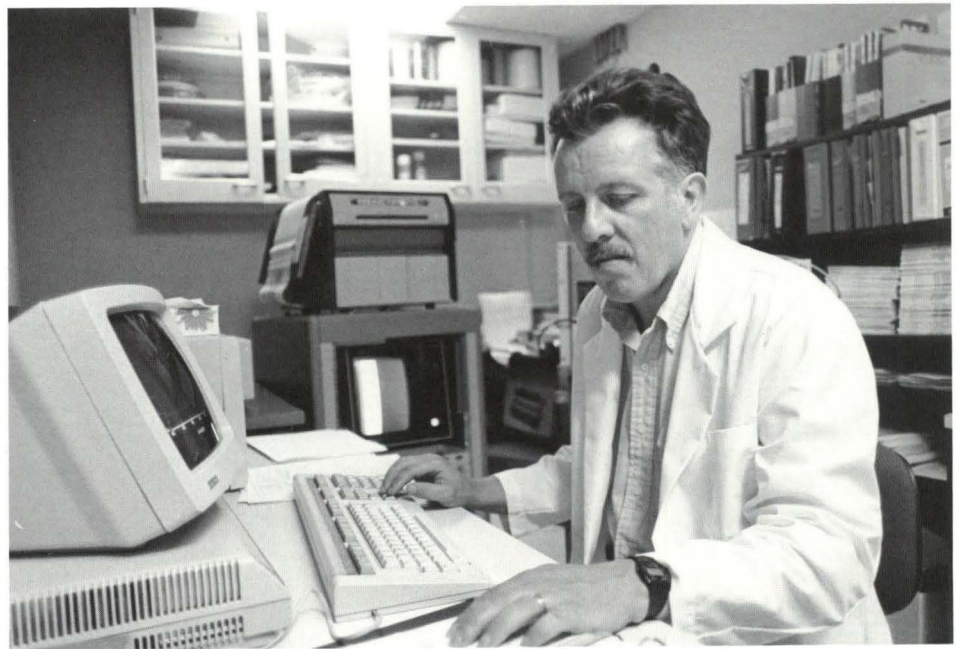
Most patients involved in the studies and treatment are expected to be children, because the disorder usually becomes evident between the ages of five and seven with the development of advanced language skills. Many children recover from the disorder as they get older.

Demographic studies also indicate that males are much more likely to be stutterers than females. The disorder also tends to occur in several family members, although Pozos points out that this does not necessarily indicate a hereditary affliction.

The Edwin Eddy Foundation has made possible a multidisciplinary approach to the study of the complex pathophysiology of stuttering and other communication disorders. Pozos and others involved hope the Edwin Eddy Neurocommunications Center will open doors in the treatment of stuttering and contribute to the existing knowledge and understanding of the affliction. ☸



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Dr. Lorentz Wittmers, associate professor of physiology, will study the respiratory and breathing patterns of stutterers.

FROM TEXAS WITH Love

Texas barbeque aids University physicians working to give special children a chance at life.

By Jean Murray

When folks in Texas hold a barbeque, they do it right. From the donated auction items of an Angus steer and a purebred Arabian horse to the foot-stompin' dance band to the mouth-watering Angus burgers, a May 16 fundraiser for children with MPS (mucopolysaccharidosis) was a Texas-style success.

Held at the Strouds Creek Ranch near Tolar, Texas, and hosted by Elizabeth and Russell Arnold, the two-day event raised \$33,000 for gene therapy research being conducted by Dr. Chet Whitley of the University of Minnesota. An additional \$2,385 has since been donated, and money is still coming in.

Preston Arnold, Elizabeth and Russell Arnold's two-year-old son, has the rare genetic disorder, Hurler syndrome, a form of MPS. Preston had a bone marrow transplant last year at the University of Minnesota, but he rejected the donor marrow and grew back his own, leaving him with his original disease.

The prognosis for Preston and other Hurler and MPS children is severe deterioration of the brain, heart, lungs, bones, liver, spleen, and all major organs, along with blindness and deafness. The life expectancy of these children is less than 10 years.

University of Minnesota pediatrics professor Dr. William Krivit pioneered application of bone marrow transplantation for Hurler syndrome after visiting physi-

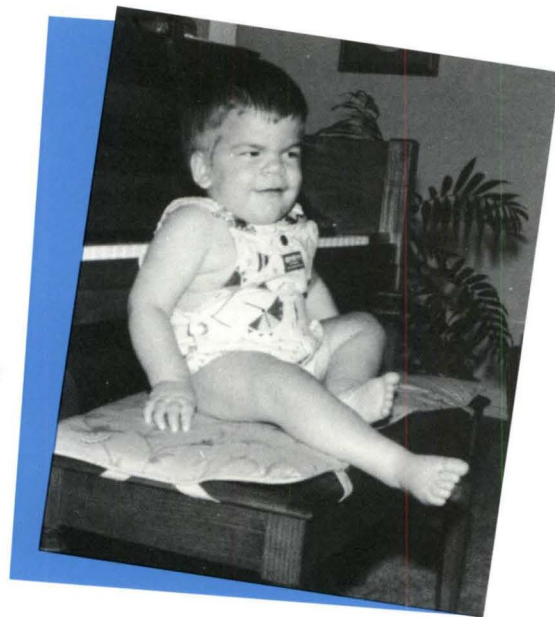
cians in England who were investigating the therapy. The bone marrow transplantation team, headed by professors Norma K.C. Ramsay, M.D. and John H. Kersey, M.D., performed its first bone marrow transplant on a Hurler patient five years ago.

The University of Minnesota was the first medical center in the country to perform bone marrow transplants on MPS children, and has done the procedure more often than all other U.S. medical institutions combined. Of the 14 bone marrow transplants performed here, 12 have been successful. One child died, and Preston Arnold experienced a rejection.

An article in the Winter 1987 issue of the *University of Minnesota Medical Bulletin* detailed the work being done by Whitley and others to give MPS children a chance at life. Matthew Smith, pictured on the cover of that issue, also had a bone marrow transplant at the University, and his brother's bone marrow was a perfect match.

Matthew lives in Texas and attended the barbeque with his parents, Debbie and David, who are thrilled with his remarkable progress since the transplant. Matthew has grown about three inches, his legs have straightened out, and he walks and runs like a normal child his age. Matthew's prognosis is good.

But for many others, like Preston Arnold and the group of MPS children



Preston Arnold received a bone marrow transplant at the University of Minnesota, but he rejected the donor marrow.

who gathered in Texas in May, the prognosis is not good. Bone marrow transplantation can be successful, as in Matthew's case, but a perfect donor tissue is usually required. However, researchers at the University are looking for ways to accomplish bone marrow transplants with partially mismatched donors.

Whitley is committed to pursuing genetic engineering as an alternative door to treatment for Hurler and other MPS children. The first step is to identify and clone the single normal gene which is abnormal or mutant in Hurler children — then experiments in gene therapy can be started. This procedure must be done successfully in the laboratory before an attempt is made to transplant the gene into children. The research and experimentation takes a long time and is very expensive.

Whitley is also working on developing an early diagnostic test for MPS, with the goal of diagnosing MPS as soon as possible after birth and transplanting those children who test positive before the degenerative disease process begins.

The Arnolds, the Smiths, and parents of other MPS children are well aware that because of the rarity of the disease, there is little public financial support. Almost all funding for research must come from the private sector. Gifts contributed to the Preston Arnold Fund, the Bone Marrow Transplant Fund, and the



Dr. Chet Whitley, right, with Debbie and David Smith and their son, Matthew. Matthew appeared on the cover of the Winter 1987 issue of the *Medical Bulletin*.

Children's Cancer Research Fund — through the Minnesota Medical Foundation — have been a vital part of the ongoing program at the University.

Spearheaded by Elizabeth Arnold, the Texas barbeque benefit garnered generous support from the community: local hotels donated space for visiting MPS families; restaurants and merchants provided food and beverages; a bus was donated to take the children to a nearby wildlife zoo; high-quality auction items were donated; and community newspapers gave considerable coverage to the event. A number of pre-barbeque functions were held locally to raise money, including a golf tournament, a dance put on by area teenagers, and a neighborhood carnival.

Dr. Chet Whitley was the featured speaker at the barbeque. Decked out in cowboy boots and a 10-gallon hat to fit the occasion, he told the approximately 450 people in attendance how their gifts would aid his work, and that of many others at the University of Minnesota who are committed to finding an answer to the tragedy of MPS.

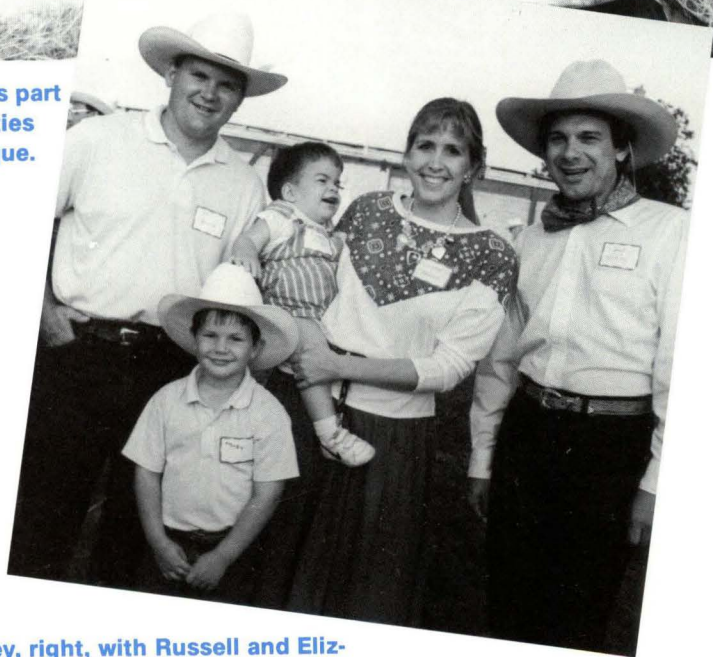
Painstaking research must take place before the questions are resolved. For the Arnolds, the answers may not come in time. But they, along with the generous people in a small town in Texas, are doing all they can to give children like Preston a future. 🍷



MPS children and their families gathered in Texas for the barbeque benefit.



A hayride was part of the festivities at the barbeque.



Dr. Whitley, right, with Russell and Elizabeth Arnold and their children, Austin (standing) and Preston.

Lifelong Learning: **A GOAL** FOR PHYSICIANS

"We should be very proud of all that we know, but we should be equally forthcoming with all that we don't know."

By Charles Stevens, M.D.



As president of the 4th year class, Chuck Stevens was asked to speak at the graduation ceremony for the Medical School Class of 1987. Stevens was class representative in both his third and fourth years, and served on the Medical Student Council. He was involved in planning senior class activities, the First Reunion Celebration of the Class of 1987, and the graduation ceremony. Stevens received his B.A. in humanities from St. John's University in Collegeville, Minnesota, in 1981, and is serving his residency in internal medicine at Abbott-Northwestern Hospital in Minneapolis. Stevens' wife, a nurse, is also at Abbott-Northwestern. The couple has one daughter.

Abraham Lincoln once said, "It is better to be thought a fool than to open your mouth and remove all doubt." It is true, words we speak can betray our knowledge or our ignorance and in the latter case, silence becomes an attractive option. Occasionally, remaining silent to avoid self-incrimination as guaranteed by the fifth amendment is in our best interest. But what place does this unwillingness to reveal our knowledge or lack thereof have in medicine, or more specifically, medical education, the four-year culmination of which we are here to celebrate?

Lincoln's witty phrase does not really apply to us as students of medicine. Rather, in medical spheres the premise has been adapted and the phrase goes more like this: "It is better to appear educated than to open your mouth and reveal your ignorance."

And so it is, in the lecture hall, at the conference, on the wards — we are attentive pupils nodding in agreement while inside our heads the seeds of doubt or confusion are sown. Our teachers proceed, rightfully, with the assumption that knowledge is being transferred flawlessly to the infinitely educable student of medicine who, although mute, proudly maintains his or her claim as a possessor of great knowledge.

It is not only that others assume we have achieved a mastery of such a large body of medical information, but we burden ourselves with the myth — we should know it all. Consider this for a moment — medicine, with its almost endless ocean of facts and data, filling

libraries with texts and journals, expanding with a doubling time said to be less than five years, and yet we heap upon ourselves the expectation of grasping it all.

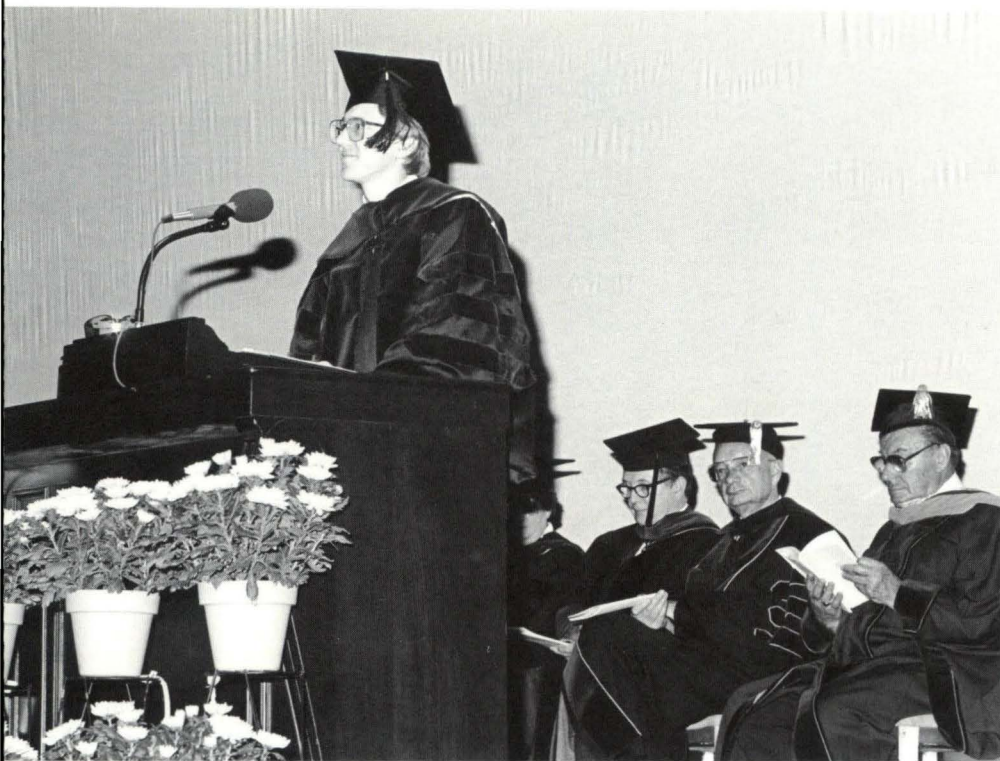
I'm exaggerating of course. Nobody in this auditorium would claim to have mastered the existing body of medical knowledge. However, the underlying principle remains. Almost unrealistic expectations are ingrained in us, and although intellectually we know better, in the pits of our stomachs we feel failure for each slip of memory. It seems a little absurd to me — I think it's amazing that we remember as much as we do.

But what is wrong with high expectations? It could be argued that they motivate us to greater levels of achievement.

Sometimes, but more often we credit our colleague with the mastery we cannot achieve and proceed with our educational covert operations preferring to play the *role* of the master while concealing our shortcomings and struggling privately with what we don't know. We think to ourselves, "I don't understand this but I should be able to . . . I'll try to unravel it later, alone, ego intact."

And so, teacher at hand, educational opportunities often slip by. It is ironic that in trying to look informed we remain uninformed. Nevertheless, as students of medicine we learn not to admit our ignorance, especially to our patients.

It is, undeniably, uplifting to one's self-esteem to be a physician, to be perceived by most people as a very intelligent person with great insight into the workings of the human body and the causes



Chuck Stevens delivers the commencement address to the new physicians.

of disease. We should be very proud of all that we know, but we should be equally forthcoming with all that we don't know. The physician and the student do little to dispel the myth that they possess the answers.

And so a pattern develops as we progress through medical school, and as our years in the profession increase, it becomes less and less acceptable to confess ignorance of some fact or principle that by all indications is well-known among our peers. This intellectual posture is an impediment to developing the habits of lifelong learning which are crucial in a profession such as ours, and it also contributes, I believe, to the growing malpractice crisis which threatens our profession.

Dr. Thomas Ducker, a neurosurgeon from Baltimore, Maryland, wrote an editorial this past year entitled, "A doctor who wishes he could talk about mistakes." He laments the decline of productive morbidity and mortality conferences — the place where doctors formerly discussed cases with bad outcomes, where mistakes were admitted and learned from, where not only the person who committed the error but all others who might repeat it received some warning.

Dr. Ducker indicates the tone of these conferences has changed now that we have entered into this litigious phase of medicine, and he says "the discussions are sullen and unproductive, because any mistake, no matter how innocuous, is

lawsuit material. The exchange of information only about medical successes leads to a false pretense of medicine as a perfect discipline."

"This intellectual posture is an impediment to developing the habits of lifelong learning which are crucial in a profession such as ours."

Supporting this false picture of medicine, or adding to it, is the media's portrayal of us. The media dwells on, embellishes, and mystifies each medical advance. They are not really to blame. Medical breakthroughs are news and the public seems to have an insatiable appetite for any story adding to the myth that medicine has won another battle and is now one step closer to holding death and disease at bay, indefinitely.

We see medicine doing great things — doctors making brilliant discoveries — and this heightens patient expectations of every physician while obscuring the reality that medicine is still an art practiced by humans in a very human and fallible way. It is not surprising, then, that when an error is made that the patient or patient's family may be intolerant and feel wronged by the science which has given them such great expectations.

So what of a solution to this problem? We as physicians must become more

forthright in sharing our ignorance as well as our knowledge. We need to transform the words "I don't know" from an embarrassing admission of failure to a stepstone for further learning.

The best place to work on this transition — and establish habits which not only make acceptable, but encourage a willingness to admit one's ignorance as a path toward greater understanding — is in medical school, if not before.

The only place I was able to experience this type of freedom from expectations or pretense was in a small study group formed by myself and three classmates. It was in our first year at the suggestion of Dr. Gerhard Brand, course director for microbiology, who is now retired. He advocated this experience as one of the most valuable learning tools he had in medical school, to learn from one another, as he said: "What you don't know the one next to you will, and in the free exchange, you learn together."

If this atmosphere could be achieved on a grander scale by the profession, we would all benefit academically, emotionally, and probably legally as well. I believe the small-group sessions which are now part of most courses in the first two basic science years are both a good first step and an opportunity to nurture openness and intellectual honesty.

And what is the challenge to us as medical graduates, doctors with new and higher expectations, as we enter into our residencies? It is two-fold at least.

As residents we have a kind of limited immunity from litigation in our practice of medicine, and as such there is no better time to establish the habit of openness about our limits and errors so we can more readily learn from others and they from us.

And beyond that, in our new role as teachers of the medical students who follow us, we are challenged to provide for them an example of honesty and a willingness to let down our intellectual defenses. In so doing, we can create a learning atmosphere where there is a clear understanding that our common goal is the improvement of medicine for the benefit of all patients.

I'll leave you with a short quote from William Cowper, a 17th century British physician . . .

Knowledge is proud that he has learned so much;
Wisdom is humble that he knows no more.

Thank you and God be with you. ☮

MEDICAL SCHOOL NEWSBRIEFS

New director for U of M Hospital



Robert M. Dickler

Robert M. Dickler, former director of the University of Colorado Hospitals, has been named general director of the University of Minnesota Hospital and Clinic and assistant vice president for health sciences. He replaces C. Edward

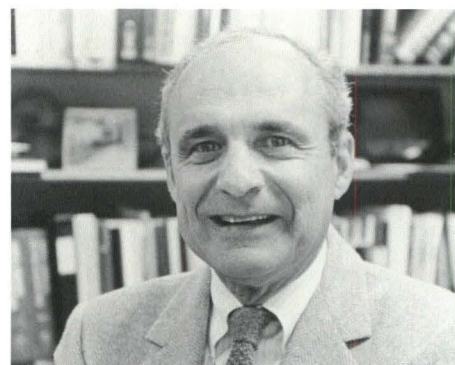
Schwartz, who resigned in February to become director of the University of Pennsylvania hospital.

Dickler was an administrative resident, assistant director, and associate director at the University of Minnesota Hospital between 1971 and 1981, and senior associate director from 1978 to 1981. He was on the faculty of the program in hospital and health care administration. He was an assistant professor in the University of Colorado's schools of medicine and business.

"I plan to do whatever I can to ensure the continued success of the University of Minnesota Hospital and Clinic, a center that ranks among the world's finest in patient care and research innovation," says Dickler.

A 1967 graduate of Case Western Reserve University, Dickler received a master's degree in hospital and health care administration from the University of Minnesota in 1972. He is a doctoral candidate in hospital and health care administration at the University of Colorado. □

Dr. Royce resigns as dean of UMD School of Medicine



Dr. Paul C. Royce

Dr. Paul C. Royce, dean and professor of physiology and clinical sciences at University of Minnesota, Duluth (UMD) School of Medicine, has announced his resignation. He has accepted a position at Monmouth Medical Center in Long Branch, New Jersey.

Royce recently was named vice president for medical affairs at Monmouth, a 500 bed acute-care hospital. A major teaching hospital, Monmouth is also known for its affiliation with Hahnemann University School of Medicine in Philadelphia, and for its comprehensive care including major geriatric programs, infant intensive care, and sophisticated therapeutic care.

Dean of the School of Medicine since January, 1982, Royce has a number of accomplishments to his credit, including instituting long-range plans for the School of Medicine and working with the community and Legislature to forward the school's interest.

Under Royce's leadership, research grants increased substantially, and the School of Medicine continued to fulfill its founding mission — producing qualified students for the area of family practice.

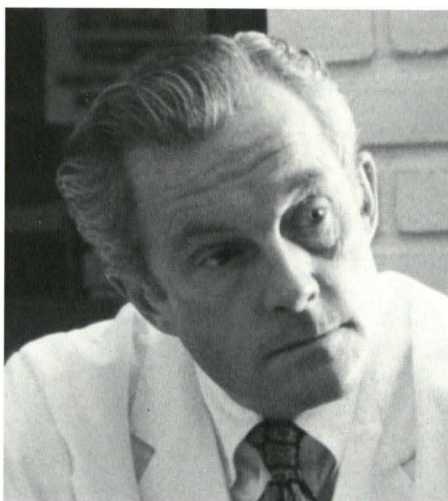
Royce also was producer and moderator for "Doctors on Call," WDSE-TV's locally-produced weekly show that features three area physicians — one from the Iron Range, one from St. Louis County, and one from Douglas County — who joined Royce in a discussion of a medical topic.

A Brainerd native, Royce received his B.A., B.S., and M.D. degrees from the University of Minnesota and a Ph.D. in physiology from Case Western Reserve University, Cleveland, Ohio. □

Department of Medicine honors given

On June 13, the annual Department of Medicine Fellows Research Conference was held. Nineteen research papers were presented. Dr. Norman Wong from the Division of Endocrinology was awarded first prize for his study, "T₃ Regulates the Methylation of a Specific Cytosine Residue in Rat Hepatic S14 Gene"; Barbara Daniels of the Nephrology Division received second prize for her paper, "Experimental Galactosemia Induces Proteinuria and Glomerular Morphometric Abnormalities"; and Dusan Kotasek from the Hematology Division received third prize for "LAK Cell Mediated Endothelial Cell Injury."

At the Johns Hopkins Commencement on May 28, Dr. Thomas F. Ferris was inducted into the Johns Hopkins Society of Scholars. This society recognizes individuals who have received post-graduate training at Johns Hopkins University. Four of the nine awardees were in the field of medicine. In addition to Dr. Ferris, Dr. Denton Cooley, director of



Dr. Thomas F. Ferris

the Houston Heart Institute; Dr. Samuel Wells, chairman of surgery, Washington University School of Medicine; and Dr. Thomas Stamey, professor of urologic surgery at Stanford University were recognized. □

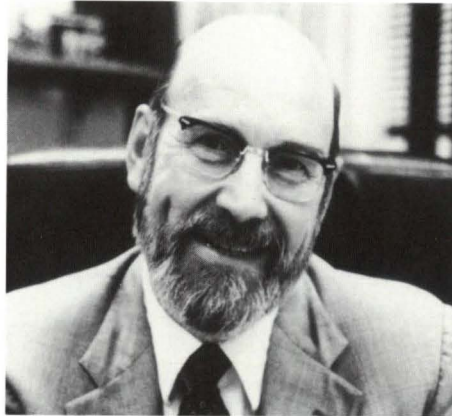
Dr. Ciriacy receives grant to study high-risk pregnancies

In an effort to alleviate problems related to medical malpractice, The Robert Wood Johnson Foundation has announced \$3.2 million in grants to 14 projects whose efforts will advance knowledge about what constitutes malpractice, what causes it, and how it can be prevented.

Dr. Edward W. Ciriacy, professor and head of the Department of Family Practice and Community Health, will receive \$296,027 over a period of 30 months. The grant will fund a two-part project that will first collect and analyze data from the Twin Cities to determine the true incidence of high-risk pregnancies in Minnesota and evaluate their medical outcomes, and then analyze state-wide hospital and physician data to target areas for improvement for continuing medical education in obstetrics. Dr. Doris C. Brooker, assistant professor of OB/GYN, will work with Dr. Ciriacy on the study.

Selected from nearly 300 responses to the request for proposals, the projects will each receive up to \$300,000 for a one-to-three-year period. A second round of grants will bring the total funding for both rounds to as much as \$6 million.

The projects funded under the Foundation's Medical Malpractice Program aim to: (1) determine whether there are identifiable factors in medical practice or among medical practitioners that can help predict malpractice; (2) improve risk management; (3) assess alternative methods of setting malpractice insurance premiums, including both experience-rating systems and no-fault systems; and (4) evaluate the effectiveness of efforts to reform state tort law.



Dr. Edward W. Ciriacy

According to Leighton E. Cluff, M.D., president of the Robert Wood Johnson Foundation, "The high cost of insuring physicians against medical malpractice liability causes several problems for the public. First, it may deprive patients of access to care by some specialists. Second, it contributes to increasing health care costs as physicians raise their fees to cover insurance premiums. And third, it may detract from the quality of care provided, because physicians and hospitals often subject patients to excessive tests or deny them high-technology diagnostic or treatment procedures, in order to protect themselves from potential malpractice charges.

"While the Foundation is not prescribing or endorsing any particular solution, we hope that these research projects will offer alternative approaches to handling this serious national problem."

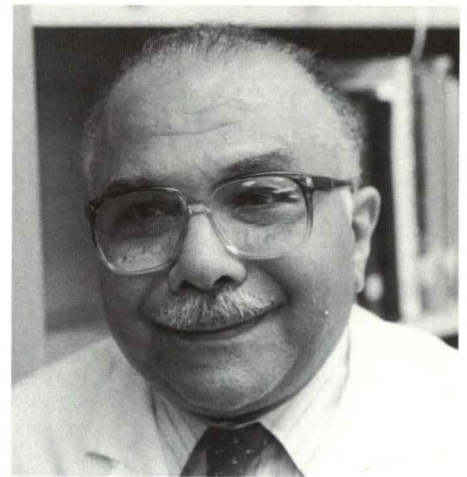
The Robert Wood Johnson Foundation became a national philanthropy in 1972. Since then, grants in excess of \$750 million have been made to improve health care in the United States. □

New clinical chief in Physical Medicine/Rehabilitation

The Department of Physical Medicine and Rehabilitation has a new clinical chief, Dr. Essam Awad, professor of physical medicine and rehabilitation. Dr. Awad comes from United Hospital in St. Paul, but trained at the University of Minnesota Hospital and Clinic.

His objectives for the department include enhancing the services currently available to patients to both attract new rehabilitation inpatients and to better serve other UMHC patients needing therapy. Awad is also making some modifications to the teaching programs for physiatry residents and plans to expand the research efforts currently underway.

Awad assumed his position as clinical chief on July 1. Dr. Roby Thompson, head of the Department of Orthopaedic Surgery, continues to serve as interim head of the Department of Physical Medicine and Rehabilitation. □



Dr. Essam Awad

Medical students named as Hughes-NIH Research Scholars

Third-year medical students David Bradley, Mark Holm, and Jeff Balke are among 30 medical students from throughout the United States to have been named Hughes-NIH Research Scholars for the 1987-88 academic year. They are the first students from the University of Minnesota to have ever received this prestigious scholarship.

Each year the National Institutes of

Health invites a select group of medical students from among the nation's medical schools to participate in one year of basic research at the NIH campus in Bethesda, Maryland. Selection is based on prior academic achievement and interest in research. The Research Scholars program is designed to encourage future physicians to pursue careers in academic medicine. Generous support for each student

is provided by the Howard Hughes Medical Institute in the form of a scholarship worth over \$25,000 in stipend and benefits.

Hughes Scholars may choose to study one of five areas: Genetics, Immunology, Cell Biology, Neuroscience, and Structural Biology. Students are free to arrange to work in any laboratory at the NIH. □

Transplants using own bone marrow studied

Acute lymphoblastic leukemia patients who received their own cancer-purged bone marrow had cure rates that were statistically indifferent from those who received marrow from siblings, according to University of Minnesota researchers.

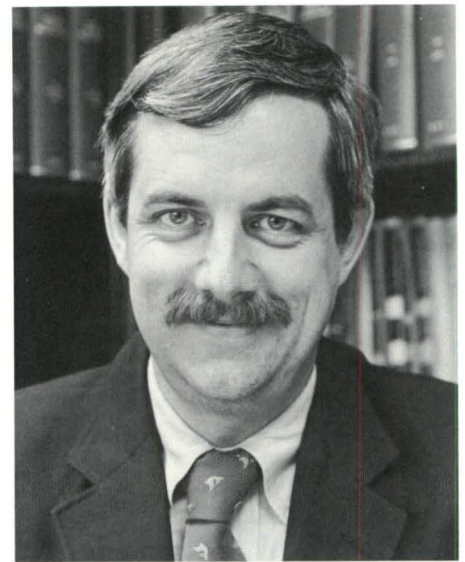
In a study of 45 patients who received their own marrow in a procedure called autologous transplantation, 20 percent were considered cured five years after the transplant. Of 46 patients who received the marrow of a sibling in a process called allogeneic transplantation, 27 percent were considered cured five years later. Both children and adults were included in the study; standard treatment such as chemotherapy and radiation had failed on all those in the study. Study results were published in the August 20 issue of the *New England Journal of Medicine*.

"The importance of these findings is significant for several reasons," says Dr. John Kersey, bone marrow transplantation director at the University, laboratory medicine and pathology and pediatrics professor, and the study's first author. "Before we used bone marrow transplantation as a treatment, a mere 5 percent of these patients would have survived five years after the failure of their treatment. Additionally, it is especially encouraging to see such promising results among

those receiving autologous transplants, since only one-third of the total population has a sibling who would be considered a good donor match. Advancements in the monoclonal antibody treatments used to rid marrow of cancer cells make autologous transplants a viable form of treatment for not only this disease, but for other leukemias and cancers as well." Kersey also says that rates of death and complication were lower among autologous transplant patients.

Kersey says he and fellow researchers Drs. Norma K.C. Ramsay, pediatric bone marrow transplantation director and pediatrics professor, and Tucker LeBien, laboratory medicine and pathology professor, are working on improving immunological, chemotherapy, and radiation treatments used on patients before and after bone marrow transplantation. "We would like to improve on the number of patients cured by improving bone marrow transplantation. Eventually, we would like to simplify the procedure by reducing the side effects of current methods," says Kersey.

The University of Minnesota performed the world's first bone marrow transplant in January 1968. As of July 31, 1987, the University had done 768 bone marrow transplants on both children and adults. □



Dr. William M. Thompson

Dr. Thompson installed as officer of Association of University Radiologists

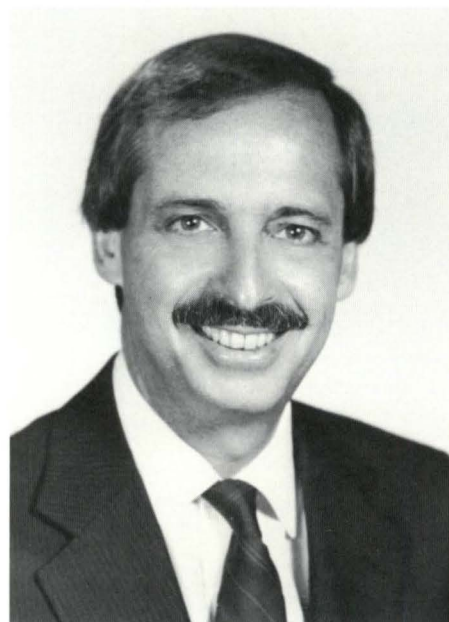
Dr. William M. Thompson, professor and chairman of the Department of Radiology at the University of Minnesota Medical School, has been installed as secretary-treasurer of the Association of University Radiologists.

The 1,500-member association promotes full-time academic radiology and encourages research and teaching. It seeks to advance radiology as a medical science. Members are physicians or non-physician scientists who have a university-granted faculty appointment in a department of radiology, diagnostic radiology, radiation oncology, or nuclear medicine. □

Dr. McCullough recognized by St. Paul Chamber of Commerce

Dr. Jeffrey McCullough, professor of laboratory medicine and pathology and director of the Blood Bank, University of Minnesota Hospital and Clinic, has received a Non-Profit Person of the Year award from the Small Business Council of the St. Paul Area Chamber of Commerce. McCullough is deputy executive director of the St. Paul Red Cross.

Four executives from small businesses and two from non-profit organizations received awards from the chamber. Selection criteria for the awards included the history of the business or non-profit organization as an established, successful operation, innovativeness of its products or services, response to adversity, and community contributions. □



Dr. Jeffrey McCullough

University designated "approved heart transplant center"

The University of Minnesota Hospital has been designated an "approved heart transplant center" for patients covered by Medicare, the federal insurance program for the elderly and the disabled.

The Health Care Financing Administration, the agency that runs Medicare, will pay for heart transplants for Medicare-eligible patients only at designated centers.

The University, the site of 130 heart transplants and four heart-lung transplants, is the only heart transplant center in the state to meet Medicare's standard of having done at least 12 heart transplants in each of the past two years and at least 12 before that. □

Wangensteen Library receives \$1 million endowment

The Owen H. Wangensteen Historical Library of Biology and Medicine in Diehl Hall has received an endowment of over \$1 million from the estate of George D. Eitel. The endowment was made to support the acquisition of rare surgical books.

Eitel was born in Seattle, Washington, in 1898. In October 1920, he entered the University of Minnesota Medical School where he formed a close friendship with Owen H. Wangensteen. In June 1922, Eitel began his internship at Minneapolis

General Hospital.

After a year-long assistantship in surgery in Fritz de Quervain's surgical clinic in Berne, Switzerland, in 1927, Eitel visited other European clinics, including that of pathologist Leon Ashoff in Freiburg, Germany.

With the death of his uncle and founder of Eitel Hospital, George G. Eitel, Eitel returned to America to begin his research and medical practice. Eitel's primary research focused on the thymus gland and magnesium metabolism and its

relationship to cell growth and cancer.

As a close friend, Eitel supported Wangensteen's dream of establishing a library for the history of medicine. He assisted the library at its inception by establishing the George D. Eitel Fund for Surgical Historical Books. His generosity also extended to the donation of numerous books from his personal collection to the library.

The Wangensteen Historical Library has recently acquired an important 16th century surgical work with funds from the George D. Eitel Surgical Rare Book Endowment. *Chirurgicorum Omnium Primarii, Lib. Tres*, by Abu Al-Qasim Khalaf Ibn Abbas Al-Zahrawi, was published in Argentorum by Ioannem Schottum in 1532. It is the only complete and the most fully illustrated ancient Arabic surgical book in any language, and contains over 200 woodcuts of surgical instruments and eight woodcuts of operations. □



Dr. George D. Eitel and Dr. Owen Wangensteen.

Dr. Garfinkel receives Shneidman Award

Dr. Barry Garfinkel, associate professor and director, child and adolescent psychiatry, has won the Edwin Shneidman Award from the American Association of Suicidology (AAS). The award is given for significant scholarship and contributions in suicide research.

Dr. Garfinkel's clinical and research interests are focused on depression and suicide in children and adolescents, anxiety disorders, and medication research in children and adolescents. He is currently studying suicide risk factors in youth, the prevalence of suicide, and suicidal communication. Other research includes the metabolism of Ritalin and the computer-assisted assessment of children and adolescents.

Development and review of school suicide prevention programs has also been an important area of study for Dr. Garfinkel. He recently addressed the AAS conference on "School-Based Suicide Prevention Programs"; much of the informa-



Dr. Barry Garfinkel

tion in his paper was used for resource material at the AAS "Wingspread" School Task Force meeting. □

Alzheimer's drug to be tested at University

The University of Minnesota Hospital is one of 17 medical centers across the nation that will test a drug that researchers hope can delay or possibly reverse some of the memory loss of Alzheimer's disease, according to federal health officials.

Plans call for 300 Alzheimer's patients to be given tetrahydroaminoacridine (THA) at the 17 centers participating in the two-year study. Eighteen patients at the University will receive the drug.

The theory is that THA helps by blocking the brain's normal breakdown of acetylcholine, a chemical messenger that may be involved in sending memory-related messages between nerve cells in the brain. But other brain chemicals also are affected by Alzheimer's, and some brain cells may be so damaged by the disease that the drug can't help, said Dr. David Knopman, associate professor of neurology at the University of Minnesota.

The \$5 million cost of the two-year test is being paid by the federal National Institute on Aging, the non-profit Alzheimer's Disease and Related Disorders Association, and Warner-Lambert Co., which is supplying the drugs. □

MMF REPORT

President Keller to speak at MMF Annual Meeting

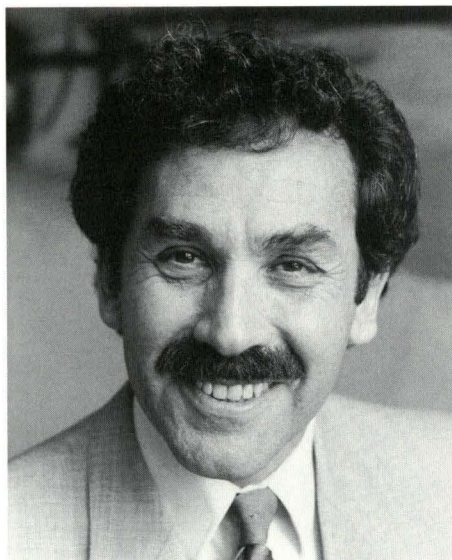
The Minnesota Medical Foundation will hold its Annual Meeting on October 28, 1987, at the Minneapolis Club. Featured speaker will be Dr. Kenneth H. Keller, president of the University of Minnesota.

Dr. Keller was appointed as twelfth president of the University of Minnesota in March 1985. He had previously served as vice president for Academic Affairs from June 1980 until November 1984, when he was named interim president.

Dr. Keller was born in New York in 1934. He attended Columbia University and received undergraduate degrees both in liberal arts (1956) and in chemical engineering (1957). He then entered the U.S. Navy as a commissioned officer, serving for four years under Admiral H.G. Rickover in the Naval Reactors Branch of the Atomic Energy Commission. During those years he was involved in the development of nuclear power plants for naval vessels and for land installations.

In 1961, Dr. Keller returned to graduate school on a full-time basis, earning both a master's degree and Ph.D. degree at Johns Hopkins University. In 1964, he joined the faculty of the University of Minnesota in chemical engineering, and has remained there throughout his academic career. His research interests during that entire time have been in the application of engineering science to problems in medicine and biology. He has worked on problems of blood-surface interaction in artificial organ design, diffusion and reaction in blood flow, fluid mechanical factors in such diseases as atherosclerosis and sickle cell anemia, and mechanisms of motility in bacteria. He has published extensively on these topics, has supervised the master's and Ph.D. theses of more than 20 students, and, in 1980, received the American Institute of Chemical Engineers Food, Pharmaceutical, and Bioengineering Award for his research.

During the course of his academic career he has held a number of administrative posts, chairing the biomedical engineering program at the University in its first years (1971-1973) and serving as associate dean (1973-1974) and acting dean (1974-1975) of the Graduate School. He was head of the Department of Chemical Engineering and Materials Sci-



President Kenneth H. Keller

ence from 1978 to 1980, at which time he assumed the position of academic vice president.

Dr. Keller has been active in several professional societies, but particularly so in the American Society for Artificial Internal Organs. He has held many positions in the Society, including its presidency during 1980-1981. He has also served on a number of committees and study sections of the National Institutes of Health.

In addition to his direct educational and professional activities, Dr. Keller has served on the boards of the American Council for Emigres in the Professions, the Program for Soviet Emigre Scholars, and the Argonne National Laboratory. He is presently a member of the boards of the Walker Art Center, the Minneapolis Institute of Arts, and the North Star Research Institute.

For more information on the Annual Meeting, call the Minnesota Medical Foundation, (612) 625-1440. □

MMF approves \$181,500 in research grants

The Minnesota Medical Foundation Board of Trustees approved \$181,500 in research grants at its summer quarterly meeting. The amount includes \$74,700 in faculty research grants, \$10,800 in student research grants, and \$96,000 in spe-

cial grants for research equipment and salary support.

Faculty grants include: **Paul Anderson**, biochemistry/Duluth, \$5,000 to acquire UV and fluorescent detectors for HPLC system; **James Bodley**, biochemistry, \$10,000 to study the mechanisms of plant ribosome in activating proteins; **Timothy Bunchman**, pediatrics, \$4,000 to study the effect of cyclosporin A(CSA) on human endothelial cells in culture; **Timothy Ebner**, **Stephen Haines**, and **Dennis Turner**, neurosurgery, \$7,000 to study adrenal medulla brain implants for parkinsonism in the primate; **Stanley Erlandsen**, cell biology and neuroanatomy, \$7,500 to determine the viability of *giardia* cysts in lake, river, and tap water; **Stanley Finckelstein**, lab medicine and pathology, \$5,000 to study an expert system for monitoring cystic fibrosis patients; **Larry Lasky**, lab medicine and pathology, \$4,000 to study the characterization and use of peripheral blood stem cells; **John Lesser**, medicine, \$2,500 to study fibroectin: a potential component of arterial restenosis; **Jack Lewis**, orthopaedic surgery, \$7,500 to study ligament innervation: function and repair; **Gundu Rao**, lab medicine and pathology; \$7,000 to study the origin and role of calcium in platelet activation; **Barry Rittberg**, psychiatry, \$4,500 to study post receptor second messenger systems in an affectively ill population; **Leon Sabath**, medicine, \$4,000 to develop a comparison of immunological response to vaccines and to actual infection; and **Linda Snyder**, medicine, \$6,700 to study PDGF: role in lung fibrosis following acute lung injury.

Student grants include: **Karen Bruggemeyer**, year 3, \$1,200 to conduct a retrospective case control study of comparison of child abuse homicides and Sudden Infant Death Syndrome; **Susan Czapiewski**, year 4, \$1,200 to study the effects of acupuncture in the treatment of depression; **Julie Happe**, year 2, \$1,200 to study the cuff-occluded rate of rise of peripheral venous pressure in states of hypervolemia and sepsis; **Michael Lutarewch**, year 3, \$1,200 to study the effect of dietary methionine supplementation in established renal injury in the rat; **Thomas Rice**, year 3, \$1,200 to study the management of combined cataract and glaucoma; **Paul Rud**, year 3, \$1,200 to study the use of porous ingrowth

prostheses in revisions of total hip arthroplasties; **Lynne Steiner**, year 4, \$1,200 to study the effect of chlorpromazine on skin flap tissue pressure and viability; **Scott Tongen**, year 3, \$1,200 to develop computer aided instruction through the use of clinical patient problem stimulations; and **Marie Welshinger**, year 3, \$1,200 to study characterization of anti-human papillomavirus type 16 immunoglobulins secreted by cloned hybridoma cell lines.

Faculty special grants include: **Alejo Erice**, lab medicine and pathology, \$10,000 for equipment to use in development of in vitro assays for anti-HIV activity testing; **Daniel Gilboe**, biochemistry, \$15,000 to study a possible biochemical mechanism for regulation of liver glycogen metabolism by insulin; **James McCarthy**, lab medicine and pathology, \$15,000 to conduct functional studies on proteoglycans involved in tumor cell adhesion and metastasis; **Robert Nelson**, surgery, \$11,000 to study mannose oligomers mediate anergy associated with chronic candidiasis; **Sally Palm**, lab medicine and pathology, \$20,000 to provide matching funds for an ultracentrifuge; **Winfried Raabe**, neurology, \$6,000 to study chloride channels in nerve cells; **Roby Thompson**, orthopaedic surgery, \$5,000 to fund a multiple viewer microscope; and **Fatih Uckun**, therapeutic radiology, \$14,000 to study B43-PAP, a novel anti-leukemic agent. □

UMD awards announced

At the end of each school year, awards of excellence are presented to faculty and students at the University of Minnesota, Duluth (UMD) School of Medicine.

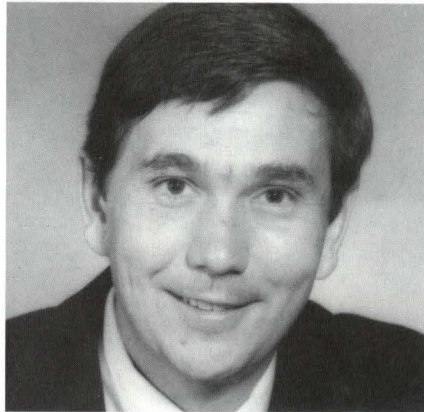
Winner of the Basic Science Teacher of the Year award was **Arlen R. Severson, Ph.D.**, professor of anatomy. Named as Clinical Teacher of the year was **Norman Yunis, M.D.**, pulmonary medicine, The Duluth Clinic, Ltd. The two winners received checks for \$500 from the Minnesota Medical Foundation.

Four student awards were presented.

Winner of the Reino Puumala Award was **Gary J. Kerkvliet**. The \$100 award is presented to the student who best exemplifies the ideal characteristics of the family physician.

The Memorial Award was presented to

Timothy J. Ebner: MMF Grant Recipient



Dr. Timothy J. Ebner

Dr. Timothy J. Ebner, associate professor of neurosurgery, was one of 15 faculty members approved for a research grant at the Minnesota Medical Foundation's summer meeting of the Board of Trustees. In all, the MMF board allotted more than \$181,000 in faculty research grants, student research grants, and special grants (see accompanying list).

Ebner received \$7,000 for his project entitled "Adrenal medulla brain implants for parkinsonism in the primate." Working with Ebner on the project will be Drs. Stephen Haines, associate professor, and Dennis Turner, assistant professor, in the Department of Neurosurgery.

"The potential to graft or transplant brain tissue to alleviate nervous system disorders has been realized in the last few years," writes Ebner. His work will consist of an initial series of brain implants of adrenal medullary tissue for parkinsonism in primates.

According to Ebner, parkinsonism is the ideal disease process for initial grafting studies since the deficit — loss of the dopamine pathways from the substantia nigra to the neostriatum — can be improved by replacement with exogenous dopamine. Ebner's working hypothesis is that the transplanted adrenal medulla cells which are adrenergic can provide a new internal source of dopamine to the denervated striatum.

Ebner will evaluate Rhesus monkeys in his program, which is planned as a complementary program to a human brain implantation program to be developed at the University of Minne-

sota, directed by Turner. The monkeys will be examined extensively to obtain control data on voluntary motor control and hand trajectory kinematics. Following the collection of data, the monkeys will be injected with MPTP which produces an anatomical, biochemical, and clinical disorder which matches the major, as well as minor, aspects of human parkinsonism. This will be a unilateral parkinsonian syndrome which has the advantage of preserving motor function on one side of the body so it can be used as a control. Subsequently, each animal will be re-evaluated emphasizing quantification of the deficits in voluntary movements and the degree of bradykinesia, tremor, and stiffness produced.

After a month-long period of observation, the animals will undergo an autologous transplant of adrenal medullary tissue onto the caudate nucleus. Each animal will then be restudied over a period of six months to one year using the same motor function evaluation. During this time, investigators will perform biochemical studies to determine dopamine and its major metabolites, electrophysiological evaluations of the transplantation to see its effects on the neostriatum, and anatomical investigations to determine size and position of the implant as well as changes in the neighboring striatum.

"Since this primate program will complement a planned human transplant series," concludes Ebner, "a comparable series of studies including motor function testing, CSF analysis, and brain imaging is proposed for the human studies. Hopefully, this will maximize the quantity and quality of directly transferable information obtained in the primate to the human studies."

A native of Minneapolis, Ebner received his medical training at the University of Minnesota, graduating in 1979. He has held a variety of appointments at the Medical School since 1976 including teaching assistant in the Department of Physiology, and research specialist, assistant professor, and laboratory director, all in the Department of Neurosurgery. □

Kathryn S. Kramer. The \$500 award goes to a student who has exhibited the characteristics of generosity and kindness to others, has helped his or her classmates to achieve, and who has exhibited the ability to interact with others in a positive and pleasant fashion.

Two Herbert G. Lampson Awards were given this year in recognition of outstanding contributions to the class. Winners were **Sarah J. Nelson** and **David K. Kaufman.** The \$100 awards are given in memory of Dr. Herbert G. Lampson, a former St. Louis County health officer who was one of the first physicians to effectively study the incidence and epidemiology of tuberculosis in Minnesota. □

Gordon L. Starr contributions to University recognized

Gordon L. Starr, former director of planning for Coffman Memorial Union at the University of Minnesota, has been active in developing student scholarships and cultivating student leaders for 30 years. The Gordon L. Starr awards commemorate his longtime dedication to serving students at the University, and provide meaningful recognition to faculty and staff who recognize the importance of faculty/staff participation in the educational process.

Dr. Harold C. Seim, assistant professor of family practice and community health, is a 1987 Starr award winner, as is Patricia L. Solberg, senior student personnel worker in laboratory medicine and pathology.

Gordon Starr is also actively involved with the Minnesota Medical Foundation in raising funds for the Minnesota American Legion/American Legion Auxiliary Brain Science Chair. A \$1 million fundraising drive by the organizations will be matched by the Permanent University Fund to establish a \$2 million Brain Science Chair.

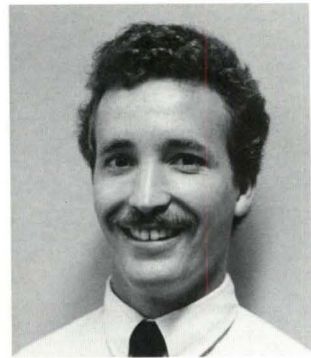
To be located at the new Minneapolis Veterans Administration Medical Center, the brain science center will involve both basic laboratory research and clinical studies. Researchers will focus particularly on disorders associated with aging such as Alzheimer's disease. □



Gary M. Bartlett



Gerald D. Bjelde



Mark A. Holman

MMF names new staff members

The Minnesota Medical Foundation has recently added three development officers to its fundraising staff, according to David R. Teslow, executive director.

Joining the Foundation are Gary M. Bartlett as development officer for the School of Public Health, Gerald D. Bjelde as development officer for the Department of Family Practice, and Mark A. Holman as assistant to the director of annual giving and alumni relations.

Bartlett comes to the Minnesota Medical Foundation from the Academy of Holy Angels where he has worked since 1981, first as a teacher and then as director of development. He has an extensive background in education, having taught at Spring Lake Park High School, St. Anne's School, and Howard-Lake Waverly High School.

As director of development for the School of Public Health, Bartlett will be responsible for implementing and maintaining a development program that will generate major gift commitments from private sources to fund priority needs within the School of Public Health.

Bjelde comes to the Foundation from the American Lutheran Church where he held positions as assistant to the national director and director of major gifts for commitment to mission. Prior to that, he held development positions with Augsburg College, William Mitchell College of Law, Minnesota Independent Republican Finance Committee, and Concordia College.

In his new position, Bjelde will plan and direct the fund raising program of the Medical School's Department of Family Practice, which will include iden-

tifying priorities, soliciting gifts, training volunteers, and developing promotional materials.

As an assistant to the director of annual giving and alumni relations, Holman will be involved in planning events for Medical School alumni, coordinating annual fund solicitations, and processing memorial and corporate matching gifts.

Prior to joining the Foundation staff, Holman served as a supervisor for the Summer Youth Employment Program. He has also held positions as an admission and financial aid counselor for Claremont McKenna College in Claremont, California, and as a credit checker for Mortgage Services in Mission Viejo. □

MMF teaching awards for 1987 announced

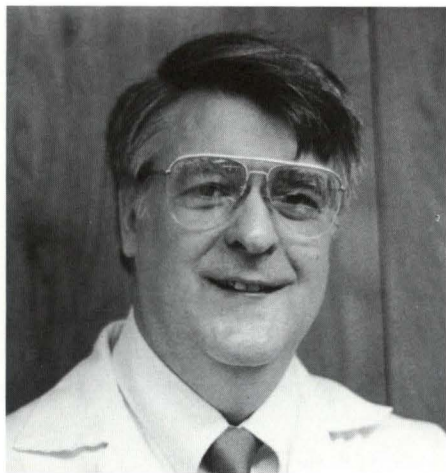
The Minnesota Medical Foundation presents \$500 cash awards each year to Medical School faculty members who have been selected for this distinction by the medical students.

Distinguished Teaching Awards for 1987 go to **Dr. Patrick Schlievert**, associate professor, Department of Microbiology, elected by first year students; **Dr. Bruce C. Wilson**, instructor of cardiology, elected by both the second year students and the third and fourth year students; and **Dr. Barbara Armstrong**, surgical pathology fellow, also elected by the third and fourth year students.

Dr. James H. Moller has been selected by the Honors and Awards Committee of the Minnesota Medical Foundation to receive the award of Outstanding Medical School Teacher of 1987. He was chosen from a group of outstanding educators nominated by faculty

and other members of the medical community. Dr. Moller is a professor of pediatric cardiology. He receives a \$1,500 cash prize as part of the award. □

Dr. Hartman named to Hastings Psychiatry Chair



Dr. Boyd Hartman

Dr. Boyd Hartman, faculty member at the Washington University School of Medicine in St. Louis for 15 years, has been named the incumbent of the Donald W. Hastings Chair in Psychiatry.

Hartman received his M.D. degree at the University of Kansas. He did a pathology internship at Washington University in St. Louis and then became a resident in psychiatry. He joined the faculty at the end of his residency in 1972 as assistant professor. He was promoted to associate professor in 1975 and professor in 1978.

He has made original contributions to basic brain science, and has had a major impact on biological psychiatry. His research has involved the use of immunohistochemistry to localize cell bodies and tracts in the brain. He has worked on the adrenergic system and more recently on the cholinergic system. He will continue his work in this area, as well as supervise basic research for residents and faculty members in the Department of Psychiatry.

The Donald W. Hastings Chair in Psychiatry commemorates Dr. Hastings' accomplishments on behalf of the Department of Psychiatry and the University. Dr. Hastings was head of the department from 1946 to 1969, and served as chief of staff at University Hospitals from 1972 to 1974. As head of

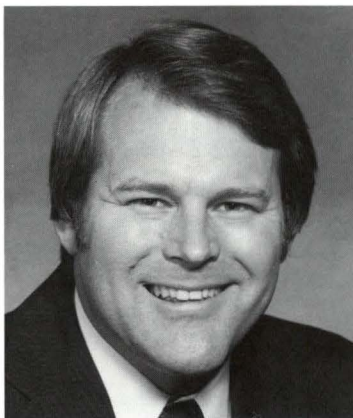
the department, he developed and supported the Psychiatry Research Unit.

The Department of Psychiatry currently conducts research in mood disorders, Alzheimer's disease, alcoholism and drug abuse, eating disorders, and smoking cessation. □

Students selected for Zagaria Fellowships

The Zagaria Fellowships are given to help provide training to promising medical students who show interest in and an aptitude for research in cardiology and oncology. The program was established in honor of Dr. James F. Zagaria, a 1940 graduate of the Medical School who died in 1973, and his brother, Samuel Zagaria. Winners of the 1987 \$1,200 awards are **Marie S. Askegaard** for cardiology, and **Carol Ann Michael** for oncology. □

Dr. Lindstrom named to Scheie Chair in Ophthalmology



Dr. Richard L. Lindstrom

The Department of Ophthalmology at the University of Minnesota has announced the appointment of Dr. Richard L. Lindstrom to the first Harold G. Scheie Chair in Ophthalmology.

Dr. Harold G. Scheie is a distinguished graduate and friend of the University of Minnesota. A native Minnesotan, he received his baccalaureate and medical degree from the University.

As chairman of the Department of Ophthalmology at the University of Pennsylvania from 1960 to 1975, he built an international reputation in the surgical

treatment of glaucoma and cataracts. In 1972 the prestigious Scheie Eye Institute was opened in Philadelphia. Since 1975 Dr. Scheie has served as the founding director of the Scheie Eye Institute and as chairman emeritus.

In directing major gifts to the Minnesota Medical Foundation, Dr. Scheie made possible the establishment of the research chair that is named in his honor.

Dr. Lindstrom joined the University of Minnesota faculty in 1980. He is internationally known for his work in lens implantation, refractive surgery and corneal transplantation. □

Minnesota Campaign Tally

As of August 3, the Minnesota Campaign had raised \$268,697,206 in gifts and pledges to support University of Minnesota priorities in the areas of endowed academic chairs, student scholarships, minority programs, and quality academic programs.

Thus far, the Campaign has resulted in the establishment of 97 new endowed faculty positions throughout the University, most of which have received matching funds from the Permanent University Fund. The Medical School claims more than 15 of these 97 endowed positions, including two recent additions — the Maurice Visscher Memorial Chair in Physiology and the Edwin Eddy Professorship in Neurocommunication Disorders at the University of Minnesota, Duluth (UMD) School of Medicine.

As the Minnesota Campaign continues, several key volunteers have been recruited. Appointed to head the leadership gifts division was Thomas A. Keller III, senior partner of O'Connor & Hannan law firm. Said Keller of his appointment, "I've never attended the University of Minnesota, but my father did. He loved the place. He developed lifelong interests and values that helped him become the person he was, which greatly influenced my life."

As leadership gifts chairman, Keller and his division of volunteers will call on 100 to 123 prospects identified for gifts of \$250,000 to \$1 million. He will play a pivotal role in helping the Campaign reach its goal of \$300 million. □

ALUMNI UPDATE

Dear Colleagues:

I am honored and pleased to address you as your new University of Minnesota Medical Alumni Society president. I have been involved with the Alumni Society for several years, and am familiar with the fine services it traditionally provides. I feel that this coming year will be an excellent opportunity to build on last year's success.

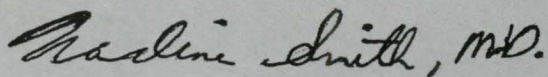
Recently, the officers of the Medical Alumni Society (MAS) met to schedule activities for this year. Included are class reunions, seminars, and presentations for outstanding alumni achievement, as well as all the activities organized by the larger University of Minnesota Alumni Association. I encourage all of you to participate in an alumni activity of some sort this year, whether it is Homecoming, New Horizons in Minnesota Medicine, or a class reunion.

Speaking of reunions, the classes of 1938, 1948, 1958, 1963, 1968, and 1978 will have their respective reunions June 3 and 4. Mark your calendars now and plan to attend. The reunion activities this past June were a big success, and a comment echoed by many was that such a wonderful evening should be enjoyed by the entire class. In other words, come to your class reunion. Don't be shy. You will have a wonderful time!

Presently, the Minnesota Medical Foundation is preparing a directory of Medical School alumni. If you have received a questionnaire and have not yet completed it, please do so as soon as possible. The directory will be distributed next year as part of the Medical School's 100th anniversary, and will be a helpful tool for catching up on your fellow classmates and U of M medical colleagues.

Once again, I look forward to serving you — the alumni of the University of Minnesota Medical School — this coming year. Please feel free to provide suggestions on how the MAS can better meet your needs as well as updates on your professional achievements. Questions or comments can be directed to: Medical Alumni Society, Minnesota Medical Foundation, Box 193 UMHC, University of Minnesota, Minneapolis, Minnesota 55455.

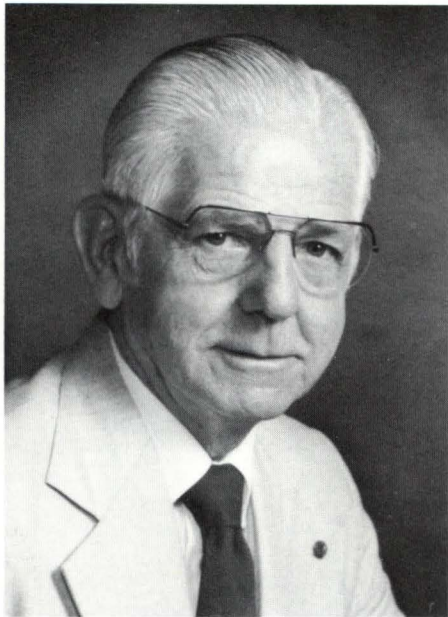
Sincerely,



Nadine G. Smith, M.D. '52
President
Medical Alumni Society

P.S. For those of you who are not yet members of the Medical Alumni Society, joining the Minnesota Alumni Association provides automatic inclusion in the MAS.

Alumni Profile



Dr. Kristofer Hagen

Name: Kristofer Hagen, M.D.

Class Year: 1942

Specialty: Family Practice

Hometown: Elbow, Saskatchewan, and Minneapolis, Minnesota.

Family: Wife, Bertha, married 53 years; daughters, Muriel, Richmond, Virginia; Katherine, Alexandria, Virginia; and Janet, Madison, Wisconsin.

Hobbies: Skiing, singing (Norwegian music), travel.

Medical Practice: Received M.B. in 1942 and M.D. in 1943; served as United States Army Captain in the Medical Corps, 78th Division, in World War II;

Lutheran Church of America medical missionary in India, 1946-52 and 1960-62; family practice in Edina, Minnesota, until retirement in 1984.

Current Volunteer Position: Secretary/Treasurer, Medical Alumni Society.

Awards and Projects: Harold S. Diehl Award for outstanding medical service, 1984; Medical advisor for Lutheran Church of America/Board of World Mission and Ecumenism, 1964-71; author of *Faith and Health*, 1961.

Memories: The challenging and friendly relationship between family practitioners and specialists at Fairview-Southdale Hospital.

The lack of even the most basic health care in many countries. In Ethiopia, Dr. Hagen was the sole physician for one million people. Because of the lack of medical knowledge and exposure, patients often viewed doctors as miracle workers or divine healers.

Advice: Americans have made worthy contributions to the field of medicine, but on a global scale, the effort is far short of the need. The ratio of doctor to patient in many countries is poor — leading to a very low quality of health care. Additional leadership from the United States is needed to improve worldwide health care.



Kristofer and Bertha Hagen

CLASS NOTES

1944

Dr. Claude Hitchcock, chief of surgery at Hennepin County Medical Center in Minneapolis since 1955, was honored during HCMC centennial activities for his contributions in medical service, education, and research. The Hitchcock Research Laboratories were dedicated as part of the celebration. Under Hitchcock's leadership, the Minneapolis Medical Research Foundation, which incorporates the laboratories, the Regional Kidney Disease Program, and the hyperbaric chamber, developed from a fledgling organization in 1952 into a major research facility. Hitchcock performed the first kidney transplant in Minnesota in 1963, and brought the first renal dialysis machine to Minnesota the same year. He established the first renal dialysis program in Minnesota in 1966, which has grown into the internationally renowned Regional Kidney Disease Program, the largest non-commercial dialysis program in the country encompassing center and home dialysis and transplantation.

1952

Dr. Richard A. DeWall, clinical professor of surgery at Wright State University School of Medicine in Dayton, Ohio, has received the Wright State University Academy of Medicine's award for Professional Excellence in Surgery. The award recognizes the efforts of clinical faculty members who serve the School of Medicine on a voluntary basis. In the 1950s at the University of Minnesota, Dr. DeWall was a part of the heart surgery team of Drs. Lillehei, Varco, Cohen, and Warden which pioneered heart operations using cross-circulation. With Lillehei's collaboration, Dr. DeWall developed a simplified version of the heart-lung machine, the bubble oxygenator, for use during heart surgery.

1959

Dr. Charlotte W. Hill, Department of Ophthalmology, University of Minnesota, has retired as executive director of the Minnesota Lions Eye Bank. She has held the position for four years. The Minnesota Lions Eye Bank at the University of Minnesota collects corneas for transplant and research.

1974

Dr. Craig Anderson, a family physician practicing in Proctor, Minnesota, was named medical director for the 1987 Grandma's Marathon and the U.S. Women's National Marathon championships. Dr. Anderson has participated in all 11 Grandma's marathons, three as a runner and eight as a medical volunteer and spectator. The medical director is responsible for providing medical service to participants and supervising a team of first-aid volunteers and physicians.

1980

Dr. Thomas M. Pisansky, Rochester, Minnesota, has been appointed to the staff of Radiation Oncology at the Mayo Clinic. Dr. Pisansky recently completed a residency in therapeutic radiology at the Mayo Graduate School of Medicine.

1985

Dr. Rita Simon, second-year resident at St. John's Hospital in St. Paul, Minnesota, is the recipient of a \$1,500 Mead Johnson Award for Graduate Education in Family Practice. The Mead Johnson Awards are given annually to 20 family practice residents nationwide, selected on the basis of outstanding scholarship, leadership qualities, and commitment to family practice.

IN MEMORIAM

Charles J. Beck, M.D.,

Class of 1940, died July 28 at age 76. Dr. Beck, a native of Mountain Iron, Minnesota, was a longtime family physician in North St. Paul. After interning in Butte, Montana, he served with the Army Medical Corps during World War II, and opened a private practice in Harvey, North Dakota, in 1945. Dr. Beck moved to North St. Paul in 1954, where he practiced until retiring in 1983. He is survived by his wife, Gertrude, and three sons.

Edward Bratrud, M.D.,

Class of 1913, died May 18 at age 98. Dr. Bratrud was former chief of staff at St. Luke's Hospital and the Bratrud Clinic in Thief River Falls, Minnesota. He served his internship at City and County Hospital of St. Paul, where he met Charles Mayo. He turned down an opportunity to practice at the Mayo Clinic to practice with his brothers, Drs. Theodor and Arthur Bratrud in Fertile and Warren, Minnesota. The Bratrud Clinic was started in Warren by Theodor Bratrud, who later financed and built St. Luke's Hospital in Thief River Falls. Edward Bratrud became chief of staff at the clinic and hospital until retiring in 1956. He is survived by five grandchildren and 11 great-grandchildren.

Llewellyn E. Christensen, M.D.,

Class of 1943, died August 13 at age 70. Dr. Christensen, Edina, Minnesota, was a retired ophthalmologist and former instructor at the University of Minnesota. He served on the staffs of the University of Minnesota and Abbott Northwestern hospitals and the Veterans Administration Medical Center. During World War II, Dr. Christensen was an Army surgeon and received a Bronze Star and a Purple Heart, among other decorations. He is survived by his wife, Ardis, a daughter and two sons.

Joseph E. Henry, M.D.,

Class of 1945, died August 11 at age 65. Dr. Henry was a general practitioner in Milaca, Minnesota, for 30 years. He joined his brother, Dr. C.J. Henry, at the Henry Clinic in Milaca in 1947, and retired in 1976. Dr. Henry is survived by his wife, Dolores, two children, and six grandchildren.

Samuel M. Herman, M.D.,

Class of 1932, died in July at age 80. Dr. Herman lived in West St. Paul, Minnesota, and was in general practice. He is survived by his wife, Frances, and three children.

Lenore A. Nimlos, M.D.,

Class of 1945, died June 29 at age 65. Dr. Nimlos completed her training in psychiatry at the University in 1973, and had a private practice in St. Paul and Little Canada, Minnesota. She was a clinical professor at the University from 1981 to 1986. Dr. Nimlos was president of the St. Paul Society of Psychiatry and Neurology in 1979-80, and secretary-treasurer of the Minnesota Psychiatric Society in 1981-82. Dr. Nimlos is survived by four sons, a daughter, and nine grandchildren.

Stuart A. Olson, M.D.,

Class of 1935, died February 5, 1986, at age 77. Dr. Olson practiced medicine in Glendive, Montana, for 34 years, serving as chief surgeon of Northern Pacific Hospital from 1958 until retiring in 1970. He then entered Republican politics, serving in the House of Representatives from 1971 to 1976 and in the Senate from 1976 to 1982. Dr. Olson is survived by his wife, Barbara, two sons and three stepsons, a stepdaughter, four grandchildren and seven stepgrandchildren.

Paul F. Rick, M.D.,

Class of 1936, died August 13 at age 75. Dr. Rick was a practicing physician in St. Paul, Minnesota. He is survived by his wife, Martha, one daughter and two sons.

Hobert J. Setzer Sr., M.D.,

Class of 1924, died July 12 at age 91. Dr. Setzer was a general practitioner in St. Paul, Minnesota, for 60 years. He was president of the Minnesota Academy of Family Physicians in the early 1960s, and was an original staff member of the Children's Hospital and Midway Hospital of St. Paul. Dr. Setzer is survived by his wife, Delia, three sons, eight grandchildren, and three great-grandchildren.

Vernon D.E. Smith, M.D.,

Class of 1931, died July 12 at age 82. Dr. Smith was a founder of the Minnesota Medical Foundation, and a general surgeon and physician in St. Paul for 50 years. A native of Granite Falls, Minnesota, he graduated from the Medical School with highest honors.

In 1939, Dr. Smith and about 10 other physicians started the Minnesota Medical Foundation. He held many offices in MMF, and was president in the mid-1960s. He also was the first person named an honorary trustee. A staunch supporter of the University of Minnesota, Dr. Smith was heavily involved in generating scholarship and loan dollars for needy medical students.

Dr. Smith was an enthusiastic hunter, fisherman, skier, and photographer. He flew his own plane and hunted in such places as Alaska and British Columbia, fished in Labrador and British Honduras, and skied in Switzerland and Austria.

Dr. Smith was former president of the Northwestern Medical Association, the Minnesota Academy of Science, the national Nu Sigma Nu medical fraternity, and the St. Paul Surgical Society. He is survived by his wife, Florence, two children, five grandchildren, and one great-grandchild.

We have also received notice of the following deaths:

Raymond W. Darland,

provost of the University of Minnesota-Duluth (UMD) died June 21 at age 76. He was provost of UMD from 1953 until retiring in 1976. He was a board member or head of more than 20 Duluth-area organizations at various times. The present UMD campus grew from two to 29 buildings during his years as provost, and enrollment increased from 1,300 to 6,200. Darland was instrumental in getting UMD a medical school, the Tweed Museum of Art, the Marshall Performing Arts Center, Griggs Stadium and Field, and the Kirby Student Center. He is survived by two children and two grandchildren.

John P. Knoedler Sr., M.D.,

a longtime Duluth, Minnesota, pathologist and leader in medical education, died May 18 at age 65. He was an instructor in the Department of Pathology at the University of Minnesota from 1952 to 1955, and had been an assistant professor of pathology at the UMD School of Medicine since 1972. He served as chief of pathology at St. Mary's Medical Center in Duluth, and was director of medical education there. Dr. Knoedler is survived by his wife, Mary, five sons, five daughters, and 12 grandchildren.



Dr. Vernon D.E. Smith

The Charitable Gift after the 1986 Tax Reform Act

The Tax Reform Act of 1986 has been called the most significant tax legislation in more than 30 years. With most deductions gone or reduced, *charitable planning* is one of the few discretionary ways left to control taxable income.

Except for minor changes, persons who itemize their deductions can still expect some or all of the traditional benefits of thoughtful charitable giving.

- *Income tax savings* through the charitable deduction for the value of the gift.
- Avoidance of tax on *long-term appreciation* of contributed property.
- *Retained income rights* for the life of a donor and/or other beneficiaries.
- Possible *increased spendable income* with certain arrangements.
- *Elimination of federal estate tax* on the value of interests in property passing to charity upon the donor's death.
- *Reduced* estate settlement costs.

For a more complete statement on "Charitable Planning After Tax Reform" please return the reply below.

Please send me the following information:

_____ Charitable Planning After Tax Reform

_____ How to convert appreciated property into a life income contract

_____ Estate Planning

_____ Wills

Name _____

Address _____

City, State, Zip _____

Return to:
Minnesota Medical Foundation
Attention: Gary G. Hargroves
Box 193 UMHC
University of Minnesota
Minneapolis, MN 55455
612-625-5463

HISTORICAL PERSPECTIVE

Thomas George Lee: Founder of Research in the Medical School

By Leonard G. Wilson, Ph.D.

Today Thomas George Lee is forgotten in the Medical School. Yet faculty members and students who have never heard his name work in laboratories that he planned, and use a biomedical library that he founded. They are also influenced by a tradition of medical research at Minnesota that Lee originated and inspired.

In 1894 Lee helped to plan a new Laboratory of Medical Sciences (now Wesbrook Hall), and during the summer of 1895 gave up his vacation to oversee the interior finishing and equipping of the building. In 1910 Lee spent a sabbatical year in Europe studying the facilities of anatomical laboratories in France, Germany, and Great Britain to guide him in planning the new Institute of Anatomy at Minnesota.

When the Institute of Anatomy was completed in 1912, Professor Charles S. Minot of Harvard University declared it to be the finest anatomical laboratory in the world. For almost half a century, Minnesota medical students studied anatomy, histology, and embryology in the Institute of Anatomy (now Jackson Hall) in laboratories that remained essentially as Lee had planned them. In the late 1950s the teaching laboratories were altered to accommodate larger classes, but even today the Department of Anatomy (now called the Department of Cell Biology and Neuroanatomy) remains in Lee's building.

But Lee's influence on the Medical School was more than material. When he began teaching histology and embryol-

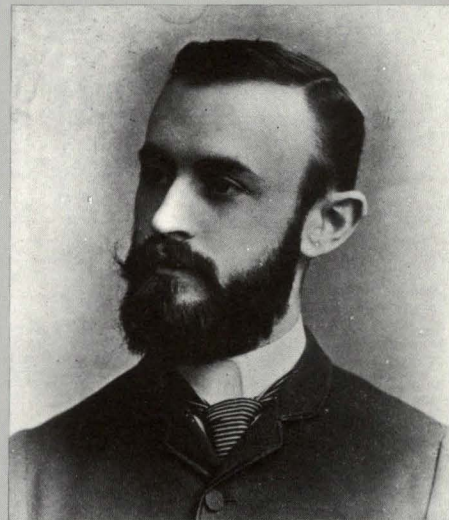
ogy at Minnesota in the fall of 1892, one of his first students was Louis B. Wilson, whom Lee encouraged to study the embryology of the kidney in the gopher. Lee thereby started Wilson on a career of medical research that was to make him famous at the Mayo Clinic. Lee also encouraged Hal Downey in his early investigations in hematology, and Downey — who became the father of American hematology — laid the foundations for the more recent work at Minnesota of Robert Good and others on immune deficiency diseases.

Lee stimulated research at Minnesota. Between 1898 and 1911 Lee and his colleagues published 33 scientific papers on a wide variety of subjects. Lee's own papers on placentation of the ovum in mammals appeared in leading American and British scientific journals.

Lee might have accomplished even more research if he had not expended so much of his time and energy in providing for others the things he knew to be essential for research. In addition to laboratories equipped with microscopes, microtomes, and other equipment, Lee knew the investigator must have access to scientific books and journals.



Institute of Anatomy, 1920



Professor Thomas G. Lee, 1895

For more than 20 years after its founding, the Medical School had no budget for a library. Nevertheless, as chairman of the library committee, Lee created a medical library. By appeal to the faculty he obtained gifts of books and journals. At his death in 1897, Dean Millard left his considerable library to the school, and two professors of surgery, Charles A. Wheaton and James E. Moore, each contributed their collections of surgical books.

Lee's success in the development of the library may be gauged by the fact that when Hal Downey was doing research in Berlin in 1910, he wished he could board a dirigible balloon to waft him back to Minnesota, where, said Downey, "I could have my literature looked up in a short time."



Leonard G. Wilson, Ph.D., is chairman of the History of Medicine Department at the University of Minnesota.



Minnesota Medical Foundation

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Managing Childhood Lung Disease

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Minneapolis
CME (612) 626-5525

Workshop on Fine Needle Aspiration Cytology

Bell Institute, University of Minnesota, Minneapolis
CME (612) 626-5525

Laser Surgery in Dermatology

Site to be Determined
CME (612) 626-5525

Third National Behavioral Pediatrics Conference

Radisson University Hotel, Minneapolis
CME (612) 626-5525

Annual Internal Medicine Review

Mayo Memorial Auditorium, University of Minnesota,
Minneapolis
CME (612) 626-5525

Teenage Pregnancy

Site to be determined
CME (612) 626-5525

E.T. Bell Pathology Symposium:

Application of Diagnostic Histochemistry to Surgical Pathology

Holiday Inn Crowne Plaza Metrodome Hotel,
Minneapolis
CME (612) 626-5525

Nutrition in the 80s

Earle Brown Center, University of Minnesota, St. Paul
CME (612) 626-5525

Growth in Children

Radisson University Hotel, Minneapolis
CME (612) 626-5525

October 9

October 12-16

October 15-16

October 22-24

October 28-30

October 30

November 6

October 6-7

November 18

Mark Your Calendars!

You are invited to
The Minnesota Medical
Foundation's 49th
Annual Dinner Meeting
on the evening of

Wednesday, October 28, 1987

at the

Minneapolis Club
729 Second Ave.
Minneapolis, Minnesota

Featured Speaker:
Dr. Kenneth H. Keller,
President of the
University of Minnesota

6:30 p.m. Reception
7:30 p.m. Dinner and Program
Awards Presentation
Election of Trustees

Cost: \$25 per person

RSVP to 625-1440