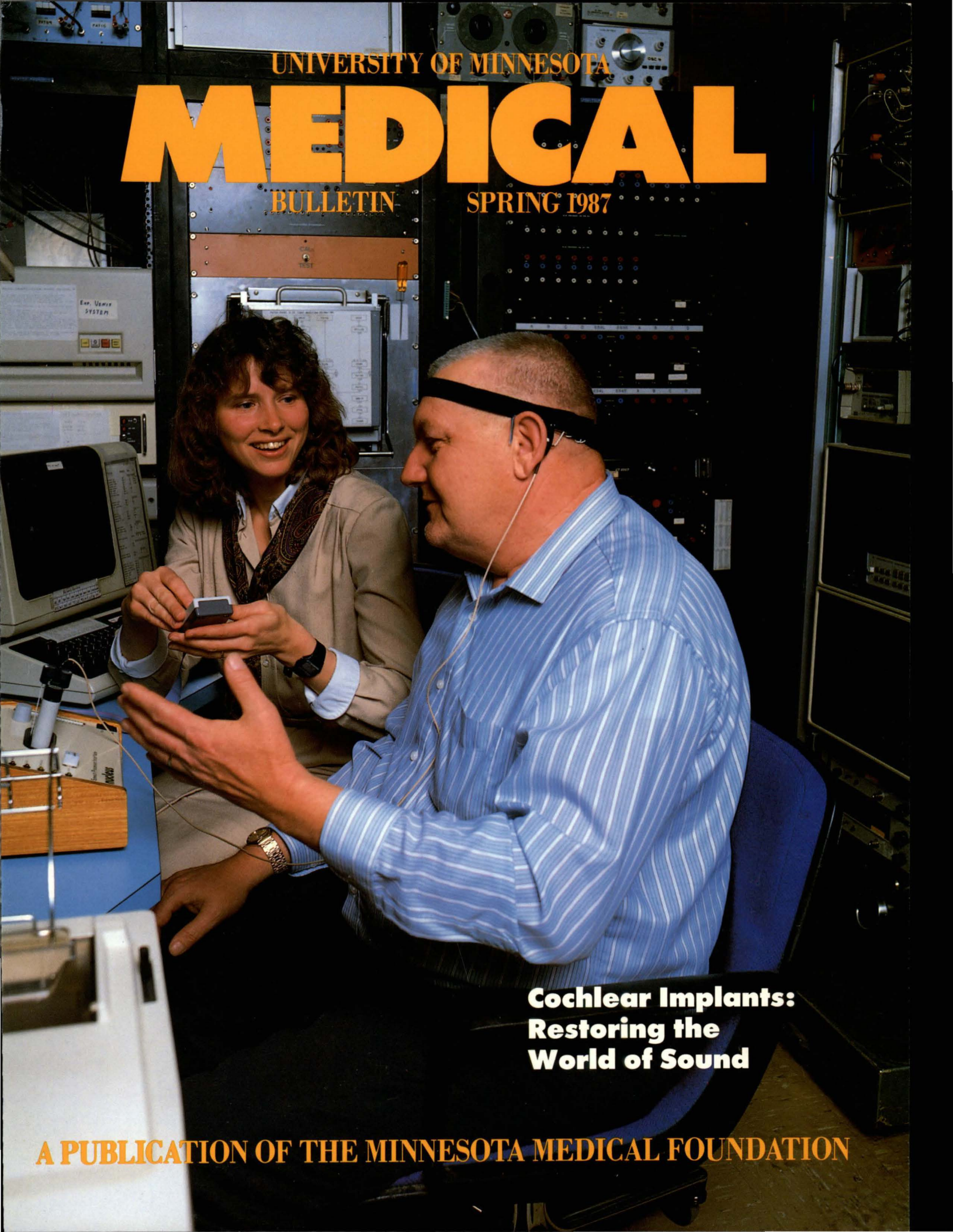


UNIVERSITY OF MINNESOTA

MEDICAL

BULLETIN

SPRING 1987



**Cochlear Implants:
Restoring the
World of Sound**

A PUBLICATION OF THE MINNESOTA MEDICAL FOUNDATION

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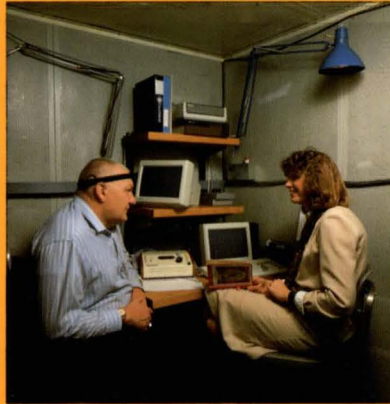
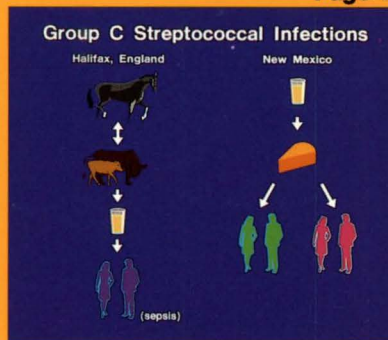
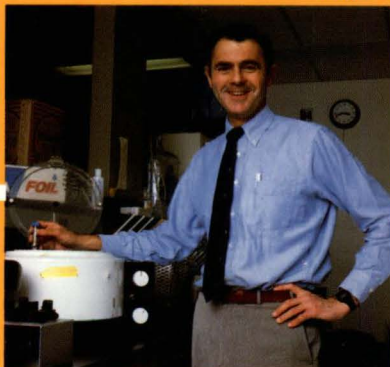
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The Minnesota Medical Foundation

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: Audiologist Liz Crump works with Jim Butzer, the University's first recipient of a multichannel cochlear implant. Photo by Dan Kieffer.

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



Community Doctors As Teachers

The School of Medicine at the University of Minnesota in Duluth is deeply rooted in the ancient tradition of practicing physicians teaching future physicians. Although the school provides students with just the first two years of medical education, the curriculum includes a great deal of clinical teaching. In addition to physical diagnosis and introduction to clinical medicine, which are traditionally taught in the first two years, preceptorships in family medicine are part of both the first and second years. These preceptorships are important because they help the school fulfill its mission of preparing young men and women for careers in family practice.

Clinical teaching is accomplished with the equivalent of two full-time physicians and without the benefit of a medical school hospital, an impossible task were it not for utilization of community resources. Community hospitals and other health facilities are the site of much of this clinical teaching. Community doctors are the teachers. Not all teaching by physicians is done at the bedside. Surgeons and radiologists bring a different outlook to the gross anatomy laboratory and clinicians regularly teach in other basic science courses. Of course, it is in the clinical areas where physicians are most utilized. They present material from their specialties in the classroom and they guide students through their very first patient contacts on mini-clerkships in medicine, surgery, obstetrics/gynecology, and pediatrics.

Family practitioners in the Duluth-Superior area are preceptors to first-year medical students in their offices for ten half-day sessions. The community-based concept is considerably enlarged by the second-year family practice preceptorship. In the second year, students spend three, three-day periods totally immersed in the practices and family lives of family practitioners primarily in the northern half of Minnesota in an area roughly bounded by International Falls and Cambridge, Minnesota, Ashland, Wisconsin, and Fargo, North Dakota.

The community doctors who give so generously of their time to educate their future colleagues are a constant reminder that the word "doctor" is derived from the Latin word "teacher."

Paul C. Royce, M.D.
Dean
University of Minnesota, Duluth, School of Medicine

Those Beautiful Sounds

A cochlear implant at the University of Minnesota
has brought the world of sound back
to Jim Butzer.

By Elaine Cunningham

Jim Butzer claims he doesn't talk much anymore. He's too busy listening — listening to sounds that he hasn't been able to hear for a long time.

Butzer, 51, slowly lost his hearing over a 25-year period. For the last four years, he has been totally deaf, unable to hear with the aid of even the strongest hearing aid.

Today, thanks to the University of Minnesota's cochlear implant program, Butzer can hear dogs barking, telephones ringing, doorbells buzzing, and many other beautiful sounds.

Cochlear implants are surgically implanted devices that stimulate nerve fibers in the cochlea, or inner ear, so that some degree of hearing is restored to profoundly deaf people. Butzer became the first patient at the University of Minnesota to receive a multichannel implant which enables him to detect and recognize many sounds.

"He (Butzer) doesn't hear what you and I hear," explains Dr. David Nelson, associate professor of otolaryngology and director of the University's cochlear implant program. "But he does hear and can differentiate between certain speech sounds."

Cochlear implants have been around in one form or another for the past 10 years, according to Dr. Nelson. More than 1,000 people worldwide have them. The University of Minnesota performed a half-dozen single-channel implants five years ago. The procedure was discontinued, however, when the ear surgeon left.

Improved technology, like the multichannel implant Butzer received, FDA approval of the multichannel device, and a strong interest in cochlear implant research, motivated Dr. Nelson to organize the current cochlear implant program about a year ago. The cochlear implant



Dan Kieffer

Mary Lou Butzer shares Jim's excitement at his partially restored hearing ability.

team includes a psychophysicist, two audiologists, and two ear surgeons.

So far, Butzer is the only patient with a working implant. One other patient has the device surgically implanted but not yet operating, and another patient is scheduled for surgery in a few weeks.

Although no two cochlear implant patients have exactly the same hearing success, according to Dr. Nelson, most report a restored sensation of sound. The multichannel device the University of Minnesota now uses allows patients to hear sounds within a frequency range of 60-3000 Hz at about 50 dB HL (hearing level). In other words, they are able to hear moderately loud conversational voices and some environmental sounds such as a knock on the door, a telephone ringing, a car horn, or background music. The most significant result of the cochlear implant is that it usually enables

patients to hear the rhythm and intensity of voices so that their recognition of speech with lipreading is greatly improved.

"We don't expect patients to gain enough hearing to understand speech without lipreading," Dr. Nelson says. "Implants do help them modulate their voices and recognize extended vowel sounds."

For Butzer, who admits he was always a terrible lipreader, the cochlear implant has greatly aided him in understanding speech. Before the implant, he lipread at about 10 words a minute. Now he lipreads more than 60 words a minute.

Although the cochlear implant aids in lipreading, Dr. Nelson is quick to point out that it is not considered a hearing aid.

"Hearing aids help by amplifying sound," he explains. "The cochlear implant isn't a hearing aid because it doesn't aid. It attempts to replace what the patient doesn't have."

What does the cochlear implant replace? The electrical currents, says Dr. Nelson, that are needed to transmit signals to the brain where they are interpreted as sound. Normal hearing occurs when fluid in the cochlea is set in motion, stimulating tiny hair cells. These hair cells generate electrical currents that stimulate auditory nerve fibers. The nerve fibers then transmit information to the brain.

When the tiny hair cells are damaged, they are incapable of producing those electrical currents. A cochlear implant attempts to provide those electrical currents. But it is essential, Dr. Nelson points out, that a patient's nerve fibers be intact before the cochlear implant will be of much benefit.

The multichannel, 22-electrode coch-



Audiologist Liz Crump directs Butzer's "relearning" sessions.

lear implant that Butzer received has both external and internal parts. The external parts include:

- a microphone, worn next to the ear to pick up sound;
 - a speech processor, worn in a pocket or on a belt, that codes sounds into electrical signals; and
 - a transmitter coil that transmits the signal to the implanted part of the system. This coil is worn near the ear and often held in place by a headband.
- The internal parts of the cochlear implant are:

- a receiver-stimulator, implanted into the bone behind the ear, that receives the signals and relays them to the implanted electrode array; and
- a 22-channel electrode array that is surgically threaded into the cochlea and then carries the signals to the nerve fibers. Each of the electrodes stimulates a different group of nerve fibers.

The surgery required for a cochlear implant usually takes about two to four hours. Butzer was scheduled for surgery in June of 1986. A CAT scan revealed that Butzer had dense bone around the cochlea which needed to be drilled out in order for the electrode array to be threaded into the cochlea. After eight hours of surgery, Dr. George Adams,

one of the implant program's surgeons, decided it was too risky to continue drilling and closed Butzer without the implant.

"It was terribly disappointing," Butzer's wife Mary Lou recalls. "Jim was so excited about the implant and then he didn't get it after all that surgery."

But the cochlear implant team didn't give up. After studying additional x-rays, the team agreed that a second surgery would be worthwhile. On September 24, Butzer underwent surgery again. This time the bone was successfully drilled away, allowing the electrode array to be implanted into the cochlea.

Dr. Nelson says they weren't sure at the time if they had managed to get all 22 electrodes into the cochlea. They had to wait to find out for about three weeks while Butzer healed from the surgery.

Liz Crump, the audiologist on the cochlear implant team, had the honor of first testing Butzer's hearing after "hooking up" his speech processor.

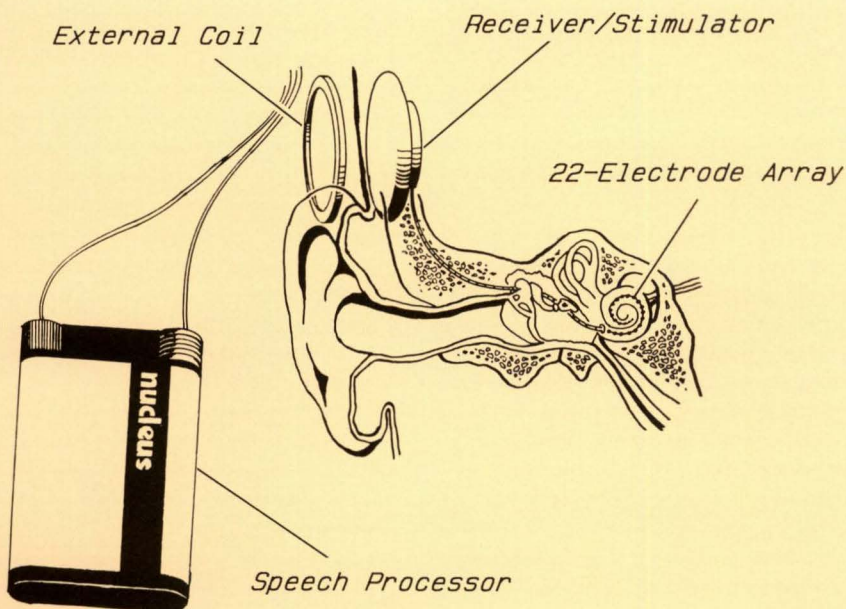
The first sounds he heard, she says, were mechanical tones produced to determine the patient's dynamic range for electrical stimulation.

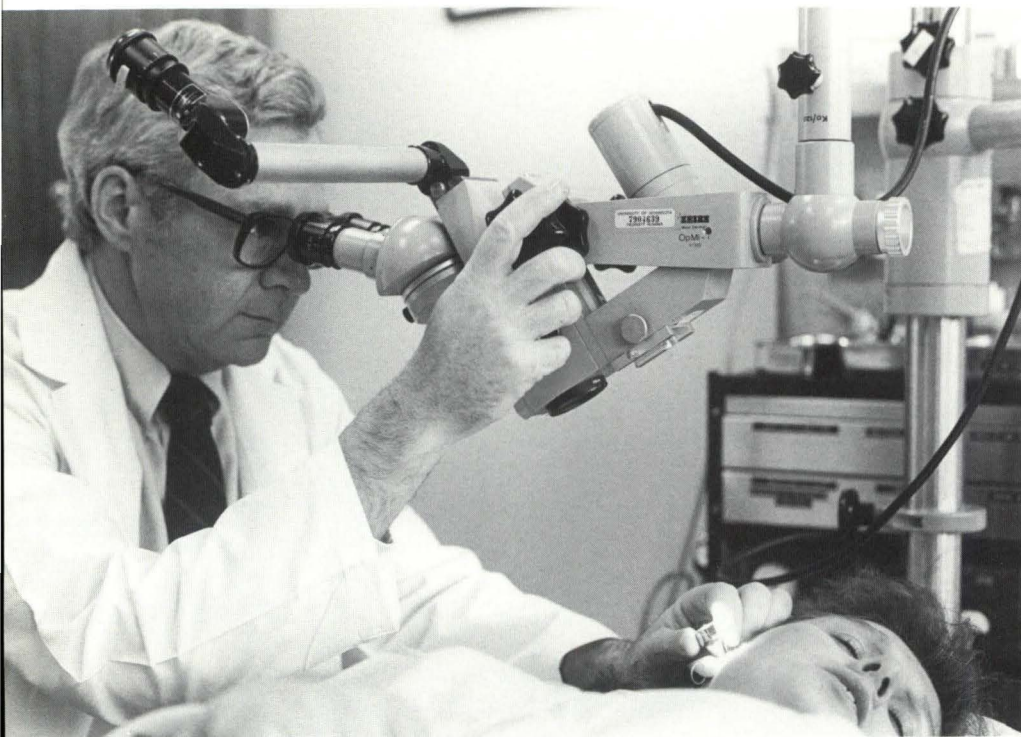
"We take each electrode," Crump explains, "and determine how much electrical current is needed to stimulate barely audible sounds and how much it takes to make sound levels that are uncomfortably loud."

After going through all the electrodes, Crump found that one of Butzer's electrodes stimulated a facial nerve which caused a slight twitch, and two others weren't actually in the cochlea and didn't respond no matter how high the level of current. In all, Butzer had 17 working channels.

Each electrode responds to different sound frequencies, Crump explains, and stimulates a different group of nerve fibers. Depending upon which group of fibers is stimulated, Butzer hears different pitches which he perceives as sounds. In speech, the vowel sound "e" contains

The multichannel, 22-electrode cochlear implant has both external and internal parts.





Dr. George Adams is one of the implant program surgeons.

Nancy Mellgren

higher frequency information than "o" and thus stimulates a different group of nerve fibers. Butzer needed to learn to interpret the different pitches he was hearing.

Most patients require 18 to 30 hours of rehabilitation sessions after the implant to "relearn" hearing, according to Crump. During Butzer's sessions, his speech processor was reprogrammed as he became more familiar with the electrically stimulated sounds. Crump also tracked his speech to determine how much Butzer could understand with lipreading and without.

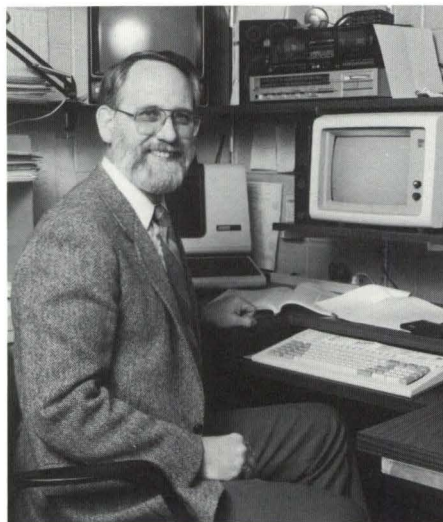
"He's doing much better than we hoped," Crump says of Butzer. "He can understand some speech without lipreading. He can differentiate his wife's voice from his daughters. In fact, he says his wife sounds just the way he remembers."

Crump even tested Butzer to see if he could understand speech over the telephone.

"I called him," Crump says, "and said 'How are you?' He responded 'Fine.' I said a few more words and he responded correctly."

At home, Butzer learned to recognize a host of other sounds.

"It was funny," Mary Lou recalls. "One day I was getting ready to take a bath when the doorbell rang. When I came out with my housecoat on, Jim was rushing around trying to find out where the noise came from. It rang again and



Dr. David Nelson is director of the University's cochlear implant program.

Dan Kieffer

he discovered the doorbell."

Crump says the cochlear implant is primarily designed to encode speech sounds, and its most important benefit is as an aid to lipreading. "Environmental sounds may or may not be identifiable without relearning," she explains. "But the detection and awareness of those sounds, like a fire alarm, may be helpful."

Butzer couldn't agree more.

"I'm not interested in (distinguishing) environmental sounds," he says. "I want to hear conversations!"

Not all cochlear implant patients experience

the dramatic results that Butzer has, according to Crump. Several factors influence the results. The most important one is how many nerve fibers are intact.

"Unfortunately," says Dr. Nelson, "we don't have a diagnostic test that can accurately tell us that."

Research has shown that the people most likely to benefit from a cochlear implant are those who lack useful hearing in both ears, cannot be helped by hearing aids, were once able to hear, do not have ossification of the cochlea (hardening of the tissue), and have family support.

Since the implant does not duplicate normal hearing, Dr. Nelson says postlingually deaf people (those who lost their hearing after learning to speak) have better success in learning to interpret the electrically stimulated sounds.

"If they can remember what speech sounds like," he says, "they have a basis for identifying these new sounds."

As part of the University's cochlear implant program, Dr. Nelson conducts research which he hopes will lead to new technologies which will make cochlear implants viable for a wider population group, such as children and those who have been deaf since birth.

"We're shooting for better speech processors," he says, "that can take speech and break it apart and send it to the different electrodes. We're looking at how the sensory system responds to electrical stimulation. If electrical stimulation becomes more intense, how does this affect loudness? What auditory perceptions are related to electrical stimuli?"

Dr. Nelson's research may open up a world of sound to those who live in silence. That's a world Butzer loves.

"You cannot imagine what life was like for me," he says. "I was so tired of all the lipreading and asking people to repeat everything so I could understand. You end up withdrawing."

Now, the people Butzer works with at Unisys in Eagan don't have to write on a blackboard to communicate with him. Mary Lou Butzer doesn't have to write notes to him all the time. Most importantly, he can hear his youngest daughter and his three-year old grandson for the first time.

"It's beautiful," he says. ☔

Students And Seniors: A Cooperative Effort At UMD

Apprenticeship in the art of giving physicals turns a routine experience into a lesson in human relationships.

By Nancy Berini



Dr. Gene Cotton is principal teaching physician in clinical practice at UMD.



Esther Minter helped organize the senior volunteer program.

In the small examination room in the health center of the senior citizen high-rise, the young medical student examines his 65-year-old patient studiously, with an earnestness and professional deliberateness that reveals just how new this situation is to him. In turn, she examines the student. Her gaze is full of tolerance that is mostly generous and a little bit shy. At times, the two smile at each other, even engage in repartee. At times, there's an awkward silence. Nevertheless, the careful meeting goes on, week after week, one new patient and young medical student after another, creating a very special learning situation for all participants.

Since 1982, second-year medical students at the University of Minnesota, Duluth, (UMD) School of Medicine and volunteer senior citizens have collaborated in these Friday physicals called the Senior Volunteer Clinical Program. Here the seniors volunteer themselves to be students' first physical exam patients.

The program is one of three rotations for second-year medical students at UMD, providing hands-on experience in clinical practice. It has become a model for other programs in medical schools across the country.

Dr. Gene Cotton, professor and head of the Clinical Science Department at the UMD School of Medicine and principal teaching physician in clinical practice, describes the program:

"Usually two patients are scheduled to be examined, each by a different student, on Friday afternoon. Afterward, the student makes an oral presentation to the teaching physician who then, with the student, re-examines the patient. If there is need for medical attention, the patient's physician is informed. If the patient has no physician, he or she is referred to the Family Practice Center, an arrangement which is endorsed by the county medical

society," he adds.

Dr. Cotton describes the experience for students as "learning the art of taking histories and giving physicals," placing emphasis on the word art. For patients, he says, comes a feeling of being valued, of contributing meaningfully to the education of the students.

A soft-spoken man, Dr. Cotton feels it is important to give students the chance to develop a sensitive and precise examination technique well before they are thrust into the diagnostic aspects of clinical practice in the coming years. He allows them lots of time, up to two hours for each patient, emphasizing thoroughness and careful listening. He notes that an offhand comment about a family member or an incident may become a clue to a physical problem.

"By the time students leave here, they are somewhat comfortable with clinical practice," explains Dr. Cotton. "This is unusual for second-year students. Even things as simple as routine exams usually don't begin until the more advanced years of medical school."

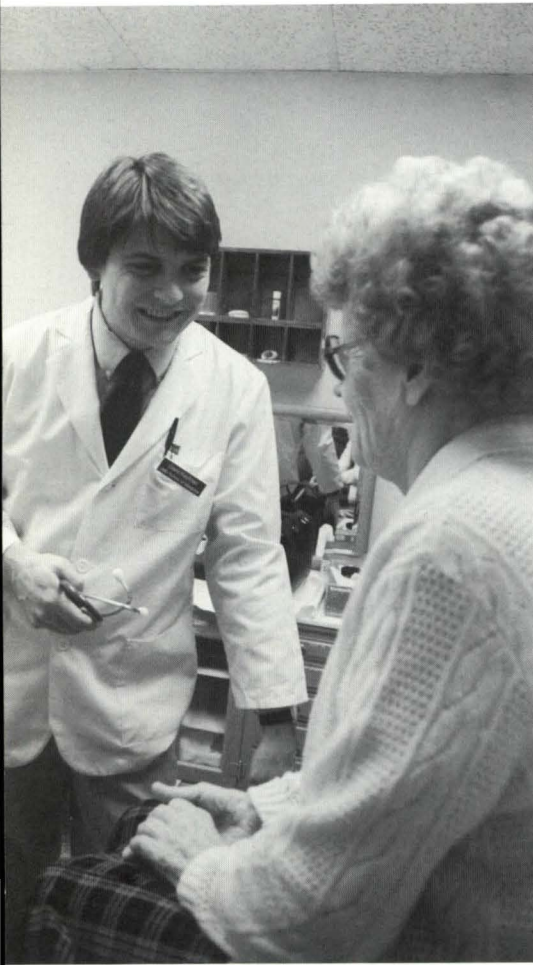
New perceptions on aging

Fine-tuning skills is only part of the picture. This rotation also brings, often for the first time, the aging process into close focus.

"My view of older people has changed." This observation is by far the most common statement students make about themselves during this rotation. The experience, many students say, has given them an appreciation of the aging process.

"Almost always," explains Dr. Cotton, "a medical student's first experience with senior citizens is in the hospital where they're sick or about to die. Here, at the center, they see them alive and well."

The program . . . has become a model for other programs in medical schools across the country.



Ken Moran

David Kaufman talks with volunteer Ann McClelland.

"I began this rotation talking loudly and simply," says Kathy Kramer, 22, "expecting them (the seniors) to be hard of hearing and a little senile." Not surprisingly, Kramer's first impression echoes that of most of her peers. "After this experience, however, I'm surprised how much I've enjoyed being around older people . . . hearing about a life that's been so long." She then cited one patient who described her experience years ago helping a doctor deliver babies.

Other students, like Mark Holub, 32, have been impressed with the agility and independence of some of their patients. "There was this Norwegian sailor who had sailed three-masted schooners when he was young. He came in for a physical during the time he was preparing to sail to Norway. He was 65. I'd like to be like that when I'm his age."

"One of the more difficult things in medicine to learn in general," says Dr. Cotton, "is where normal leaves off and

abnormal begins. With the elderly, students must learn to modify their understanding of normal to include the myriad aches and pains with which many of the elderly live."

Also, says Dr. Alan Johns, a Duluth internist and one of the clinical staff, is the fact that hospitals don't keep patients as long anymore, so there are a lot of older people with chronic problems. "This program allows students to see patients who are still relatively healthy, unlike many in hospitals who are severely ill." At the same time, speaking from a medical point of view, the seniors are good patients because they usually have something wrong with them, he says.

"In the hospital, most patients say yes to a physical because their doctor has asked them to, not necessarily because they want me to give them another one," says Kramer, who says she feels constrained by the patient's illness and the probability that a hospitalized patient has already answered half-a-dozen questions from twice as many people. Because patients at the center are volunteers and not "captives who aren't feeling well," it's easier to communicate with them, adds Dr. Robert Wahman, another Duluth internist and clinical teacher.

Adding to that is the "fringe benefit" keenly appreciated by students on this rotation — the chance to practice their skills in a private, fully equipped office at the center, where students can spend the whole afternoon with the patient. "As students," Dr. Cotton says, "you can't help but appreciate not being lowest on the totem pole here as you are in the hospital."

"After doing nothing but stare at books for months on end, I was beginning to wonder why I ever wanted to become a doctor in the first place," says Kramer. "Then after the first physical, or maybe it was the second, I said to myself, 'Now I know. This is why I wanted to become a doctor.'"

Educating seniors and students

The senior program began in 1982 when a retired physician active in local senior citizen affairs observed that a recently constructed high-rise apartment complex for senior citizens contained complete examining room facilities, a waiting room, and adequate equipment for medi-

cal and dental evaluation and treatment. He urged that the facility be used for student teaching, coupling senior citizen volunteers with sophomore medical students. Today, this part of the student's initial internal medicine experience has become the rule rather than the exception.

Esther Minter, 77, helped organize the program at the West End Senior Center, where she has been a volunteer for seven years. For the past two years, she has chaired the center's health advisory board which, among other things, schedules seminars on diseases and other health concerns pertinent to the elderly. The seminars are conducted by local health care professionals.

"We decided we needed to educate ourselves, so we set up the seminars," says Minter, a retired teacher. "Then, after seeing another senior center implement the volunteer program, we thought we, too, could help ourselves and the medical school."

On this day, Minter volunteered to fill in for a cancellation and be examined. "I don't mind it," she says. "It's helping them in the learning process, helping them to feel at ease. There's a lot about aging they don't know about, I suppose. It's a very important thing, the relationship between a doctor and a patient."

The patient/physician relationship is precisely the reason why they want to become family practitioners, say the students. It begins with taking the patient's history which will, hopefully, lead the student to meaningful medical understanding and some insight into human nature.

"I think it helps, when you first hear about a person, to know what they do, whom they live with, or whether they live with anyone," says Dr. Cotton. In the early stages of history taking it's difficult to know which questions are pertinent and right to pursue and which aren't, he says, so he tells students more is better.

He speaks reassuringly to students while they present the patients' histories, demonstrating the importance of certain questions by referring to those which went unasked: Why did the patient quit smoking — does he have a bad cough? Did a patient quit drinking because he joined AA? What kind of cancer did the patient's mother die from? It could be hereditary.

Caring for the whole patient

The social history is particularly important in geriatrics, adds Dr. Johns, who has been working with students on clinical rotations for two years. "Geriatrics is more than finding the problem, or seeing the patient in the hospital," he says. "The more I've gotten into this, the more I see that the elderly's other needs are just as important as their medical needs. Their housing, transportation, and nutrition all affect their health. Sometimes it's hard for families to realize that different situations may require special care.

"When I began in medicine," says Dr. Johns, "you didn't ask questions unrelated to the medical problem. Now I tell students that when they see seniors to ask where they live, who does the shoveling, who cooks. You'd be surprised how many senior citizens don't realize there is help when they need it."

Most senior citizens who are part of the program have medical problems which are ordinary or they volunteer to come in "for the heck of it," as Frank Cravens and Bernie Guitar did.

Cravens, 62, has high blood pressure and thought he would have it checked, as he regularly does — every three years. As a first-time participant he was unaccustomed to the length of time the student took with him. He said he was hopeful that, in time, the students would "learn some of the shortcuts the other doctors take."

Guitar, 67, who hasn't been sick enough to see a physician in six years, left feeling reassured that he was in good health.

Of all rotations, many students say they prefer this one.

"I just left pediatrics," says Ken Mitchell, 34, who is also an ordained minister. "These patients are 100 percent easier to work with. They're also willing to talk about their health openly and let you do just about anything."

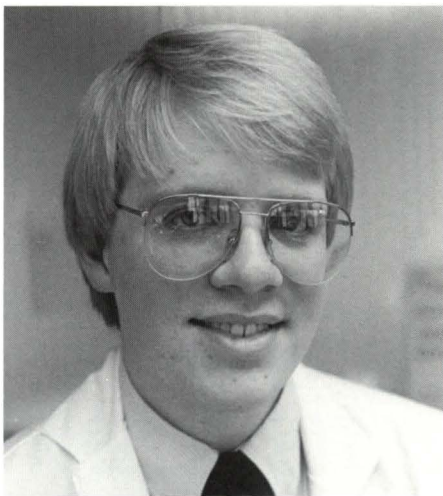
Open as the patients may be, students' greatest difficulty, they admit, comes when asking about the intimate aspects of a patient's life. By contrast, it's a point of amusement for the seniors, they say, to learn of the students' surprise that they are still sexually active.

One student says she is surprised when her voice doesn't crack now when asking to do a certain part of the physical. On the other hand, other students talk about

Ken Moran



Kathy Kramer examines Frank Cravens under the watchful eye of Dr. Wahman.



Ken Moran

Student Gary Kerkvliet says the volunteers are enthusiastic about helping the students learn.

taking a long time before they feel comfortable touching people.

"The volunteers are enthusiastic in helping me learn," says Gary Kerkvliet, 22.

At the end of the rotation or by the end of the year, confidence does come, modestly and maybe not always gracefully, to the second-year medical students.

"Students on this rotation often feel they are providing a useful service at the

senior centers, contrary to their experience with hospital patients," explains Dr. Cotton. In fact, they have detected a few significant medical problems like aneurysms, a case of lung cancer, and several prostate cancers.

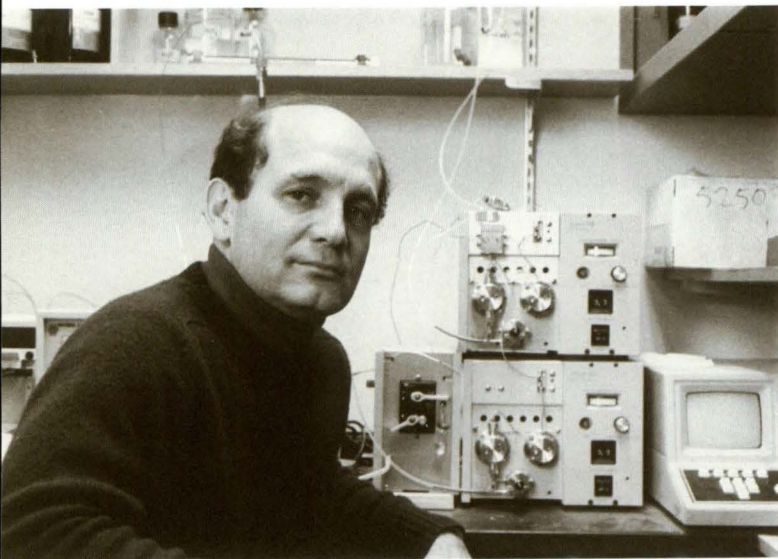
Statistics show that the senior citizen population is the fastest growing in the United States, and has a greater incidence of illness than other groups. The volunteers have a few unique problems, but most have the medical problems that are common to the elderly, making this rotation a valuable program for students.

"It gives students a chance to see people who still enjoy being alive after living a long time," says Dr. Wahman.

Just before leaving, one senior volunteer walked up to Gary Kerkvliet and asked him, "When are you going to be ready to have your own practice?" He answered, "Five years."

"When you start your practice," she said, "if I'm still here, I'll be with you." ☂

Nancy Berini is senior information representative at the University of Minnesota, Duluth, School of Medicine.



Michael Moore

Fingerprinting An Elusive Organism

University microbiologist Pat Cleary is part of a worldwide network involved in tracking streptococcal diseases.

By Michael Moore

Pat Cleary uses high-tech equipment to help track and compare strains of streptococci.

The suspects enter to be fingerprinted, but the setting is not a jail, it is a microbiology laboratory. The suspects are streptococcal strains responsible for recent outbreaks of rheumatic fever and rheumatic heart disease, thought to be diseases of the past in the United States. The fingerprints are DNA fingerprints, and the detective tracking down the guilty organism is Professor P. Patrick Cleary of the University of Minnesota Department of Microbiology.

Cleary is one of a group of streptococcal disease experts who gathered in Salt Lake City in November 1986 to puzzle over the 105 cases of rheumatic fever in that city since January 1985. They also discussed alarming increases in Ohio (where a 15-year-old boy died of heart failure) and Philadelphia, as well as isolated cases in Colorado, Kentucky, Maryland, New York, and Texas. Prior to these outbreaks, rheumatic fever had gradually decreased to insignificant levels in the United States and most industrial nations since the widespread use of penicillin in the 1940s.

Is the United States facing the return of rheumatic fever and possibly rheumatic heart disease, a result of damage done to heart valves by the fever?

Probably not, the medical experts concluded, as long as we continue to aggressively use antibiotics to treat strep throat, the origin of rheumatic fever. But Cleary and the other microbiologists were intrigued by the outbreaks. Were they caused by a single strain, or by subspe-

cies of streptococci? "We raised the possibility that rheumatic fever is strain specific, and that perhaps there is a unique strain causing these recent outbreaks," Cleary reports.

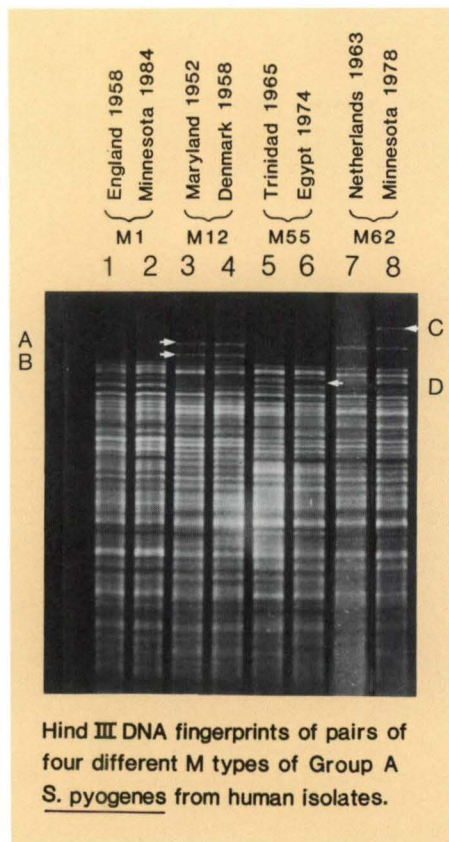
Cleary is now investigating those possibilities, using a grant from the Minnesota Heart Association to analyze the

DNA patterns, or fingerprints, of samples taken from rheumatic fever patients. He has the benefit of the latest laboratory technology for comparing the genetic structure of many strains. In fact, you've probably seen something similar in your supermarket.

Confused? That's understandable, because Cleary's high-tech, busily chaotic research laboratory seems as far removed as possible from the world of grocery sales. But when Cleary displays a print comparing DNA patterns of streptococcal strains (see insert), the supermarket analogy becomes clear. Not only do the DNA patterns closely resemble the now-familiar bar code computer-checkout system, they can be read by the same laser-scanning technology used in modern supermarkets.

Cleary recently began using a computerized soft laser scanner to help him track the origins of strep outbreaks based on the genetic patterns of strain samples sent from all over the world. What used to take months now takes days, and the comparison is more rigorous, he says. "Rather than looking at one or two markers, it allows us to look at the whole chromosome for signs of relatedness," says Cleary. "And by automating the process we can look at many more strains much more quickly than we could analyze manually."

Besides tracking the origin of an outbreak, the scanner will allow quicker identification of new strains of streptococci. "A totally computerized system



Hind III DNA fingerprints of pairs of four different M types of Group A *S. pyogenes* from human isolates.

In 1985, the World Health Organization (WHO) designated the University of Minnesota as one of two collaborating streptococcus centers in the world.

would allow us to keep track of strains as they arise throughout the world," Cleary says.

Being able to quickly and accurately compare strains is a great asset in controlling outbreaks of streptococcal diseases. Streptococci rapidly evolve new strains and subspecies, which, if not quickly identified and treated with the most effective antibiotic available, can lead to outbreaks like the U.S. rheumatic fever experience. The urgency is even greater in developing nations.

Streptococcal sore throat is one of the most common infections of children all over the world. In developing nations, which often lack diagnostic laboratories and antibiotics, it often leads to rheumatic fever and rheumatic heart disease. These account for more than half the incidence of cardiovascular disease among the two-thirds of the world's population living in developing nations.

Cleary's research and DNA fingerprinting are one part of the University's service as an international reference center on streptococcal diseases. In 1985, the World Health Organization (WHO) designated the University of Minnesota as one of two collaborating streptococcus centers in the world; the other one is in Prague, Czechoslovakia. The University's WHO Collaborating Center for Reference and Research on Streptococcal Diseases is directed by Edward Kaplan,

professor of pediatrics, who has worked extensively with WHO on streptococcus research.

The WHO center's role is to collect and disseminate information on these diseases, standardize the methodology for diagnosis and treatment, train professional and technical personnel from laboratories throughout the world, and participate in WHO research on streptococcal disease and resulting conditions.

Molecular hide-and-seek

Besides tracking the origins of strep infections, Cleary is heavily involved in the use of DNA technology to unravel the process by which streptococci invade a host and evade the immune system long enough to establish an infection. Streptococci are especially challenging in this respect because of their ability to "hide" from white blood cells.

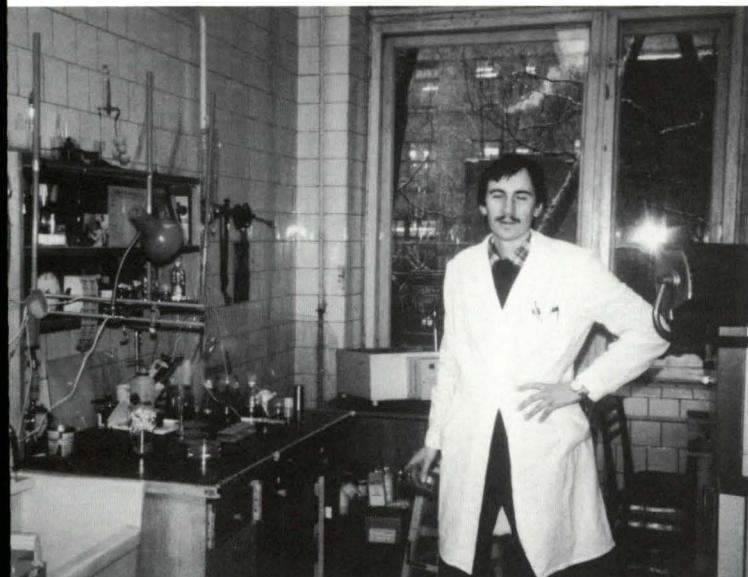
They do this by constantly changing their M protein, a surface antigen that is recognized by a strain-specific antibody. Streptococci can produce more than 80 antigenically distinct M proteins, in effect allowing the organism to overcome the host's immunity by playing a game of hide-and-seek with the white blood cells.

Cleary's research strategy is to use

DNA technology to analyze the M protein defense, and then turn it against strep organisms. "If we can understand the genetic basis for streptococcal antigenic diversity, we might be able to recombine cloned M protein to produce hybrid M antigens, which would be the basis for a vaccine against multiple streptococcal strains," he says.

Cleary's research is primarily directed at the group A streptococci, the kind that are almost exclusively associated with human infections. However, with the help of a recent grant from the Minnesota Medical Foundation, he has begun comparing group A and group G streptococci, which are usually isolated from animals. There is some animal-to-human crossover in the two groups, as dogs and cats occasionally have symptomless group A infections that can cause recurrent strep throat in humans, and dogs can carry group G infections that can be transmitted to humans.

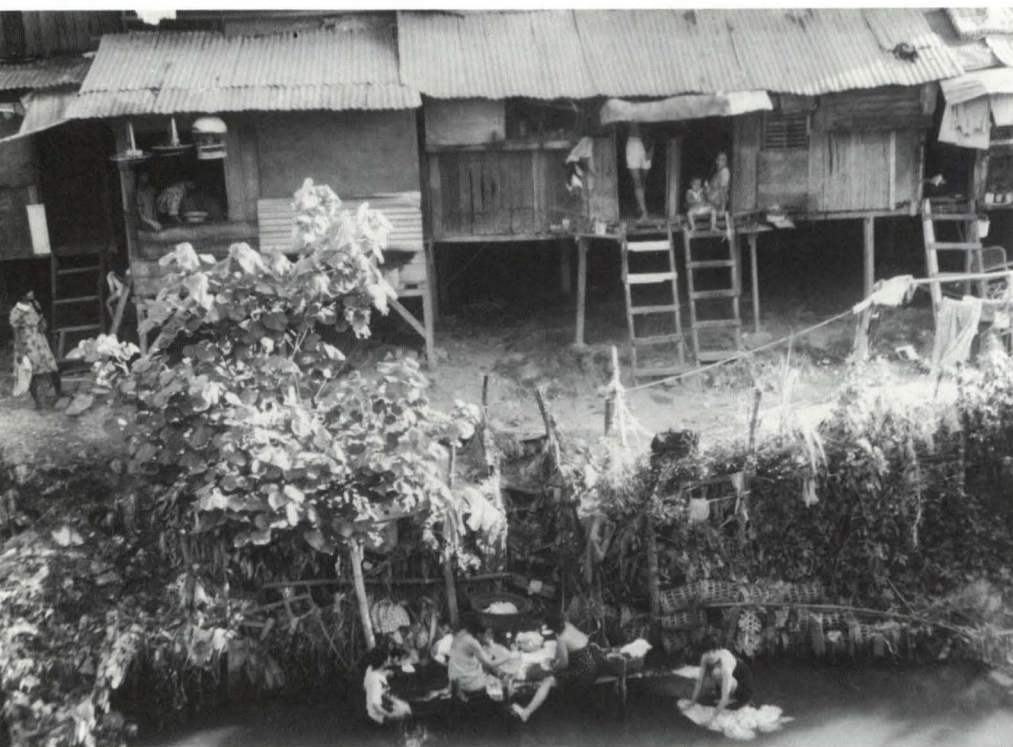
Cleary is studying a DNA segment shared by group A and group G streptococci, trying to determine if it is the antigen that permits the organism to infect human beings. If so, he believes it could provide a new strategy for vaccine development. Also, a probe for this DNA segment could then become a useful diagnostic tool for identifying group A and G streptococci that are capable of infecting humans.



A Soviet medical student works in a lab at the Pavlov Institutes in Leningrad.



Soviet lab techs and scientists take a break from their research at the Pavlov Institutes.



The main river in Medan is used for bathing, as a toilet, and as a water supply.

International travels

Cleary enjoys the advantages of working with the leading edge of instrumentation and laboratory technology, but he knows what it is like to work without those advantages. Last summer he helped develop immunology laboratories and a medical curriculum during a 7-week stay in Indonesia, at the University of North Sumatra. The University is located in the city of Medan, which has a population of 1.5 million, many of whom live in shacks and use the city's main river for bathing, as a toilet, and as a water supply.

"I was flabbergasted at what real poverty is," Cleary says.

Like much of the developing world, the city's main health problem is infectious disease. Cleary says that 2 percent of the children under age 5 who live in rural provinces die of tetanus, a rare disease in this country. The country passed an immunization law and vaccines are available, but much of the rural population is suspicious of modern medicine.

Cleary worked with the University's medical faculty as a consultant for the Midwest University Consortium for International Activities (MUCIA). He made suggestions for research and diagnostic equipment needed to control the

country's infectious disease problems. The Sumatrans' general poverty and economic difficulties — a consequence of the oil glut — are a major drawback for the work that needs to be done at the University, he says. "The standard wage for faculty members is \$150 plus 40 kilograms of rice per month. Many of them need to work other jobs to support their family and relatives." The school's



Immunology labs at the University of North Sumatra function with limited facilities and equipment.

library is very poor, not having added a new book or journal since 1979.

Despite the poverty in Sumatra, "They are proud people; they know what they don't have, but they are very hard working and very spiritually alive. The Indonesian government is borrowing millions of dollars to invest in the expansion and improvement of higher education," Cleary says.

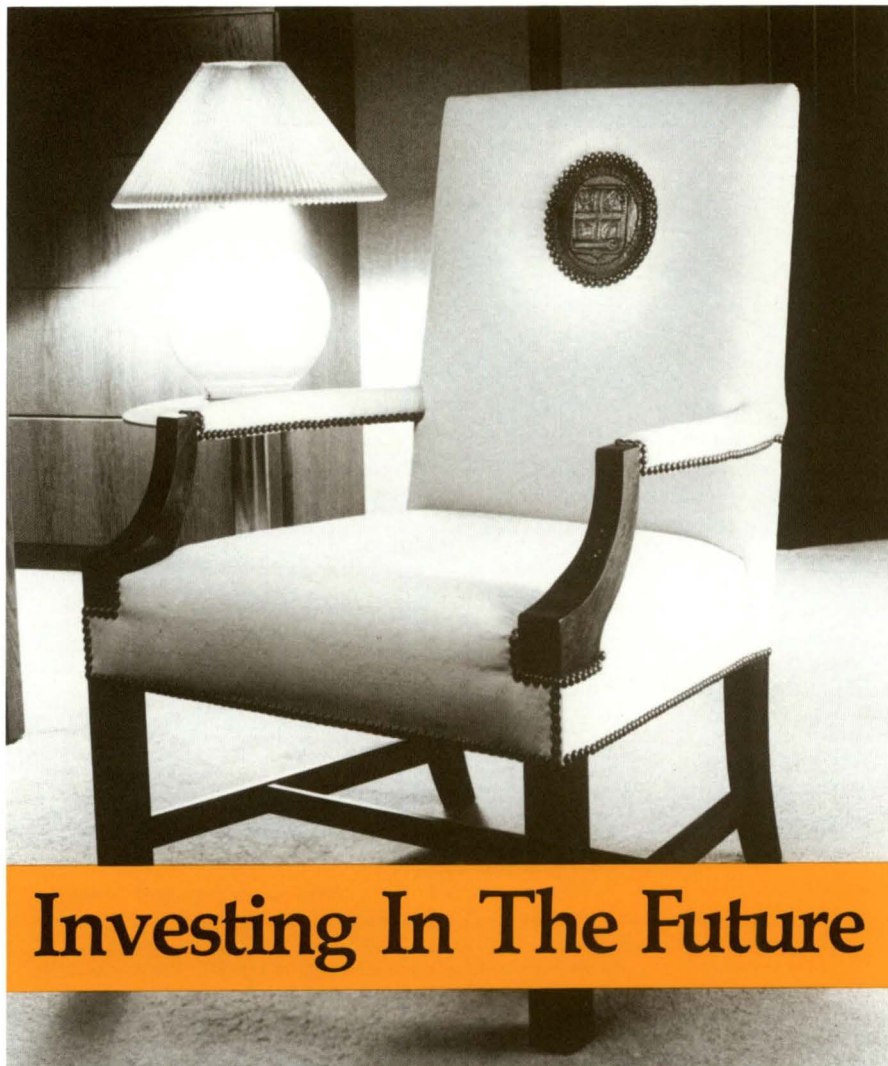
Cleary wants to continue his contacts in Indonesia just as he has maintained an ongoing collaboration with a Soviet scientist at the Pavlov Institutes in Leningrad. Sponsored by the Fogarty Foundation at the National Institutes of Health, Cleary took a professional sabbatical in the Soviet Union two years ago. He worked in the laboratory of Dr. Totolian, vice director of the microbial genetics section of the Pavlov Institutes. In return Totolian visited Cleary at the University of Minnesota last year, and the two researchers presented a joint paper at the International Streptococcal Genetics Meeting, held in Miami last May. They continue to collaborate on research through the mail, and one of Totolian's graduate students is trying to obtain a visa to work for a time with Cleary.

Cleary says he found much about the Soviet Union that argued against the stereotypical view held by many Americans. "Scientists are very willing to inform you about what they are doing, and I felt our interchange of information to be very free. I was able to bring bacterial strains with me with very little restriction."

Although Soviet researchers have limited access to Western scientific literature and are just beginning to use computerized technology, they do have solid academic training and the expertise to do good work in molecular biology, Cleary says.

He adds, "I'm very much convinced that the best way to relieve tensions in the world is to have more of these exchanges, not just for scientists, but for people in all occupations." ☂

Michael Moore is a science writer for the University of Minnesota Office of Health Sciences Public Relations.



Investing In The Future

Newly endowed chairs in the Medical School are bringing internationally known researchers to the University, promising breakthroughs in many areas of medicine.

By Jean Murray

"Recruiting the finest talent available to lead the 24 clinical and basic science departments" is one of the major objectives of the University of Minnesota Medical School as it approaches its 100th anniversary in 1988.

As a result of the highly successful Minnesota Campaign — the University's three-year, \$300 million fund drive — top-quality faculty members are being selected to occupy the endowed chairs, and the research they conduct will have an impact far beyond the borders of Minnesota.

The Medical School is among the leaders in numbers of endowed chairs established thus far — details of ten of the chairs follow.



Left to right: American Legion National Commander James P. Dean; Minnesota Legion Department Commander Duane (Bud) Redepenning; Medical School Dean David M. Brown, M.D.

The Minnesota American Legion/ American Legion Auxiliary Brain Science Chair

A \$1 million fundraising drive by the Minnesota American Legion and American Legion Auxiliary will be matched by the Permanent University Fund to establish a \$2 million Brain Science Chair project.

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.

A University search committee will select a clinical neuroscientist to occupy the chair.

According to Minnesota Legion Department Commander Duane (Bud) Redepenning, "The establishment of this Brain Science Chair at the new Minneapolis Veterans Administration Medical Center, through the University of Minnesota Medical School, will be a very important step in the research and treatment of brain diseases, which are the major medical problem of veteran patients at the Minneapolis VAMC."

The University of Minnesota and the Minneapolis VA Medical Center have been affiliated for 40 years in research projects and medical education.

"This Brain Science Chair is a giant step forward for all veterans and for all mankind in the field of brain diseases," says Dan Ludwig of Red Wing, president of the Minnesota Legion and Auxiliary's Brain Science Foundation. "More than 50 percent of all veterans treated by VA medical centers across the country suffer from some type of brain disorder. The Minnesota Legion and Auxiliary have the unique opportunity to be at the forefront in finding the answers to the unknowns in brain science by the establishment of this chair."

Ron D. Johnson



Jeffrey Grosscup

Jevne and George Pennock

The Pennock Family Land-Grant Chair in Diabetes Research

The Pennock Family Land-Grant Chair in Diabetes Research is established in memory of George and Jevne Pennock's daughter, Molly Pennock Eininger Lindemann, who was afflicted with diabetes. The family, including Mary Elizabeth Pennock, George T. and Jevne Hultgren Pennock, David G. and Diane Pennock, has pledged \$500,000 to endow a chair in diabetes research at the Medical School.

Dr. R. Paul Robertson has been named the first chair holder. Dr. Robertson is professor of medicine and director of the Medical School's Diabetes Center.

The funds will be used as a source of support for a variety of projects within the center and, according to Dr. Robertson, will help bridge the gap between basic and clinical scientists.

George Pennock is the retired board chairman and director of Tennant Company, a Minneapolis-based manufacturer of industrial, institutional, and commercial floor maintenance equipment. He graduated from the University in 1934 with a degree in business administration and is past president of the Minnesota Alumni Association. Jevne Pennock is a University Foundation trustee emeritus.

Mary Elizabeth Pennock graduated from the University in 1938 and earned a master's degree in social work in 1950. David G. Pennock received a master's degree in business administration in 1983.

The 3M Bert Cross Neurosciences Chair

The 3M Bert Cross Neurosciences Chair will be established at the Medical School to support research in the basic mechanisms of nerve function, with emphasis on vision research. The chair holder will use laboratory techniques to try to answer questions that will improve understanding of how normal vision works and how diseases impair normal processes. The research may help prevent and treat blindness and visual impairment.

The 3M Foundation contributed \$2 million to the Minnesota Campaign. The gift could total \$3 million because of a matching fund in which the foundation will give \$3 for every \$1 — up to \$250,000 — contributed by 3M employees. In addition to the Neurosciences Chair, a multidisciplinary chair in the Graduate School will be established as a result of this gift.

Bert Cross started work with 3M's laboratories in the 1920s, while a student at the University of Minnesota. He left the University in 1929 to work in 3M's first overseas lab, in England. He returned to the United States two years later to become manager of an abrasives plant, then became new products manager and general manager of the division that produced Scotchlite reflective materials for signs and road safety markings.

After managing development of reflective materials for seven years, Cross was appointed in 1952 to head 3M's rapidly growing graphic products group, which included such diverse businesses as offset printing plates, copying products, and reflective materials.

He was elected president and chief executive officer in 1963 and served as board chair and chief executive officer from 1966 to 1970, when he retired from the positions.



Bert Cross, former 3M president and chief executive officer.

Jeffrey Grosscup

The Helen and Milton Kimmelman Chair in Immunobiology

The Helen and Milton Kimmelman Foundation has contributed \$750,000 to fund a chair in immunobiology at the Medical School. A distinguished immunobiologist will be sought for the chair to complement the efforts of Dr. Fritz Bach and the Immunobiology Research Center. Dr. Bach currently holds the Harry Kay Chair in Immunobiology.

The University of Minnesota Medical School has a tradition of excellence in basic and applied immunology. The faculty has been responsible for some of the original descriptions of the origins and functions of immune cells, the control of regulation of immunoglobulins, the functions of transplantation-related immunohistocompatibility antigens, the first effective bone marrow transplantation, and many other discoveries in host defense system abnormalities in several disease states.

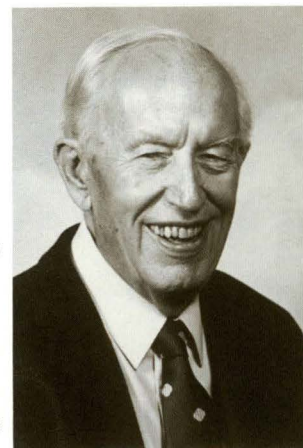
The establishment of the chair in basic and molecular immunobiology will strengthen the program and provide the depth of fundamental inquiry necessary to support sufficiently the immunobiologists and their clinical programs.

The William F. Dietrich Land Grant Chair in Fundamental Molecular/Cell Biology in the Basic Sciences

William F. Dietrich, retired president and CEO of the Green Giant Company, established a chair in the basic sciences at the University of Minnesota Medical School with a donation of \$1,000,000. The chair will support research in fundamental molecular and cell biology.

Dietrich, a Minneapolis native, was a University business student, but left to accept a position as an accountant at the Minnesota Valley Canning Company, the predecessor to Green Giant. Dietrich rose through the ranks, and in 1950, he became president and CEO, the first individual who was not a member of the founding Cosgrove family to hold that position.

Dietrich retired in 1959, and four years later he and a group of associates founded Community Investment Enterprises, now known as FBS Venture Capital. The firm was instrumental in funding a number of high-technology companies, including several in the medical technology field.



William F. Dietrich



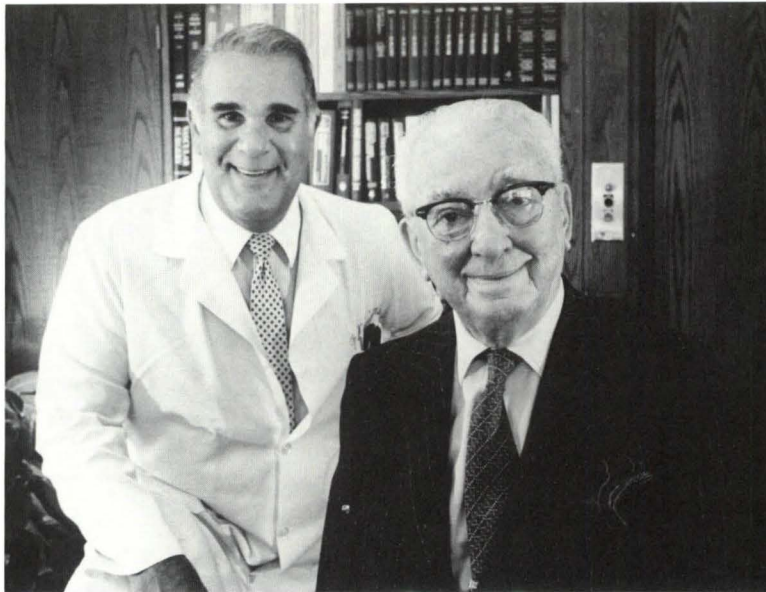
Harold G. Scheie, M.D.

The Harold G. Scheie Research Chair in Ophthalmology

The Department of Ophthalmology has announced the establishment of the Harold G. Scheie Research Chair in Ophthalmology.

Dr. Scheie is a native of Warren, Minnesota, and received his undergraduate and medical degrees from the University of Minnesota. 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, and in 1972 the prestigious Scheie Eye Institute was opened in Philadelphia. Since 1975 he has served as the founding director of the Scheie Eye Institute and as chairman emeritus.

Dr. Scheie has served as a member of the board of trustees of the Minnesota Medical Foundation, where he began an ophthalmology research fund when he returned in 1985 for the 50th reunion of his medical school class. In 1986 he directed two gifts to the Minnesota Medical Foundation to establish a research professorship in ophthalmology. These gifts, matched with funds from the Permanent University Fund, have made possible the \$1 million endowed chair.



Dr. John Najarian and Jay Phillips.

Jeffrey Grosscup

The Jay Phillips Chair in Surgery

The Phillips Foundation has contributed \$1 million to fund the Jay Phillips Chair in Surgery. The Phillips Foundation was incorporated in 1944 with funds donated by Jay Phillips and his family. Jay Phillips is president of the Phillips Foundation; a member of the New York Stock Exchange; and founder, retired chairman, and current director of Ed Phillips & Sons, Company. He has long had a supportive relationship with the University of Minnesota and the Medical School, and was the first secretary of the University of Minnesota Foundation.

Phillips had a close friendship with Dr. Owen Wangenstein, former chairman of the Department of Surgery. Over the years, Phillips has made contributions to the Medical School in the forms of grants for research, funds for the Wangenstein History of Medicine Library and the Phillips-Wangenstein Research Laboratory, major contributions to the construction of the Phillips-Wangenstein Building, and gifts toward student loans through the Minnesota Medical Foundation.

The Phillips chair will be occupied by the person who holds the position of chairman of the Department of Surgery. Dr. John S. Najarian is the current chairman. He is best known for his work in organ transplantation and is credited with making the University an international leader in the field, especially in kidney transplantation. He came to the University of Minnesota in 1967 from the University of California at San Francisco and has been chairman of the Department of Surgery since that time. He also served as chief of staff of the University Hospital and Clinic from 1976 to 1981. In 1985 Dr. Najarian became a Regents Professor, the highest honor the University gives to its faculty members.

The Donald W. Hastings Chair in Psychiatry

The Donald W. Hastings Chair in Psychiatry commemorates Dr. Hastings' accomplishments on

behalf of the Department of Psychiatry and the University. The \$1 million gift was pledged by Psychiatry Associates, members of the Department of Psychiatry faculty.

Dr. Hastings was head of the Department of Psychiatry from 1946 to 1969 and served as chief of staff at University Hospitals from 1972 to 1974. As head of the Department of Psychiatry, he developed and supported the Psychiatry Research Unit. His own widely published research includes studies on wartime psychiatric disorders, physiological therapies, impotence and frigidity. He was also the organizer of a pioneer transsexual program at University Hospitals.

The Department of Psychiatry currently conducts research in mood disorders, Alzheimer's disease, alcoholism and drug abuse, eating disorders, and smoking cessation. In the next few years, projects in schizophrenia will be established.

The Cecil J. Watson Chair in Medicine

The Minnesota Regional Health Associates Foundation, 65 Department of Medicine faculty members, has contributed \$500,000 to fund a land grant chair at the Medical School.

The chair honors Cecil J. Watson, head of the Department of Medicine and the Medical School from 1943 to 1966. In the Department of Medicine, the C.J. Watson Distinguished Service Award, the C.J. Watson Symposium, and the Watson Laboratory also acknowledge his support of innovative research in the treatment of human disease.

Jack H. Oppenheimer, professor of medicine and the director of the division of endocrinology, was appointed first recipient of this position in October 1986. Dr. Oppenheimer's research has focused on the metabolism and action of the thyroid hormones.

The Earl E. Bakken Chair

A \$2 million cornerstone gift for the region's first biomedical engineering center will be donated by the Medtronic Foundation. The University will provide another \$2 million in matched funds and has committed to raise an additional \$2 million from private sources.

The center will unite the University's medical and engineering faculties with the state's more than 300 medical products companies.

One million dollars of The Medtronic Foundation donation is for the center's directorship, which will be called the Earl E. Bakken Chair. Bakken, a University of Minnesota graduate and founder of the Fridley-based Medtronic Corporation, developed the first wearable, external, battery-powered pacemaker. Medtronic Inc. is the world's leading manufacturer of implantable medical devices.

The study of cardiovascular disease will be a major focus of the center. A joint university-industry council will determine other areas of emphasis, which may include research and development of such devices as implantable hearing prostheses, nerve stimulators, and audio/visual stimulators. ☂



Donald W. Hastings, M.D.



Fifteen medical students have worked in Dr. Moldow's lab during his tenure at the University.

Nancy Mellgren

Dr. Charles Moldow: An Outstanding Teacher

The first recipient of MMF's Outstanding Teacher of the Year Award brings out the very best in his students.

By Jean Murray

Dr. Charles Moldow is hard put to explain the chemistry that occurs between a teacher and a medical student, but he's experienced it many times in his laboratory. "You find the right student, you give that student your attention, and something special happens. I can't explain it."

His students find it easier to pinpoint the gifts of teaching that Dr. Moldow possesses, and they strongly endorse his selection as the first recipient of the Minnesota Medical Foundation's Outstanding Teacher of the Year Award.

"He's tremendously interested in medical students," says Barbara Drevlow, fourth-year student who spent three months this past fall working in Dr. Moldow's laboratory. "He treats medical students like adults. He has a way of getting you to use your own skills and knowledge to understand a problem or

work something out, rather than just lecturing or giving you the answers."

Of the three missions of the University of Minnesota Medical School — teaching, research, and patient care — teaching probably has the least visibility in the community. There are no major breakthroughs to capture front-page headlines such as those that occur in research and patient care.

But teaching is no less demanding and certainly no less important — all three elements must work together. Says Dean David M. Brown, M.D., "Teaching requires the faculty to stay abreast of the literature and to understand and effectively transmit to the students difficult concepts as well as to challenge those students to learn when they often feel overwhelmed by the dimensions of the expectations placed upon them."

Says Drevlow of Dr. Moldow: "He

remembers what it was like to be a medical student, how busy we are and how many demands we have on our time. He gives you a great deal of personal attention, even though he's a very busy person, and makes you feel the project you are working on is very important. He brings out your strengths, while letting you work independently."

Barbara Drevlow received an MMF student research grant to conduct biomedical research in Dr. Moldow's laboratory. Her project under his tutelage was entitled: "Stimulus response coupling: mechanism of bacterial lipopolysaccharide induction of endothelial cell tissue factor production." Student research grants are awarded by MMF to provide learning opportunities for medical students who have a serious interest in research, and the potential for future careers in biomedical research and aca-

demetic medicine.

"Dr. Moldow designs a project in a way that enables you to complete your research during the time spent in his lab; it gives you a feeling of accomplishment," says Drevlow. As a result of her work in Dr. Moldow's lab, she has been selected to present an abstract to the 28th Annual Student Research Forum in Galveston, Texas, in April.

Barbara Drevlow found especially meaningful the interest Dr. Moldow takes in the student as a whole person. "He encourages you to be active in things outside the lab, and he stresses the importance of fitness and exercise," she says. "He recognizes that there are other things in life besides medicine. And," she adds, "he has a great sense of humor which makes the work much more enjoyable."

Dr. Moldow has been a member of the University of Minnesota medical community since 1972, when he joined the Medical School faculty as an assistant professor in the Department of Medicine, hematology division. He became an associate professor in 1977 and professor of medicine in 1983. He was named vice-chairman of the University's Department of Medicine in 1982. In addition, he served as director of hematology/oncology at Hennepin County Medical Center from January 1980 to June 1982, and since June 1982 has been director of the Department of Internal Medicine at the Veterans Administration Medical Center in Minneapolis.

ogy at Hennepin County Medical Center from January 1980 to June 1982, and since June 1982 has been director of the Department of Internal Medicine at the Veterans Administration Medical Center in Minneapolis.

Dr. Moldow was a recipient in 1978 and 1979 of MMF's Distinguished Teacher of the Year Award, given each year to Medical School faculty members who have been selected for this distinction by the medical students.

The purpose of MMF's Outstanding Teacher of the Year Award is to recognize faculty members who have made outstanding contributions to the education of physicians. Selection is made by the Honors and Awards Committee of MMF, and evaluation of the nominees is based on achievement in three categories: Teaching and Advising — direct student contact activities which promote learning within the Medical School curriculum; Innovation and Academic Program

"He has a way of getting you to use your own skills and knowledge to understand a problem."



Nancy Mellgren

Barbara Drevlow conducted research in Dr. Moldow's lab this past fall.

Development — activities which are designed to enhance the delivery of medical education; and Educational Leadership — administrative and professional activities which contribute to the improvement of medical education.

In nominating Dr. Moldow for the award, three former students wrote, "Dr. Moldow is a model educator and clinician. His didactic skills and superior contributions to the education of house staff and students alike on both the inpatient and outpatient medical services have been already acknowledged by his being named a recipient of the MMF Distinguished Teaching Award two consecutive years. Those of us who, in addition, have been privileged to observe Dr. Moldow in direct patient care also can attest to his outstanding clinical skills and admire his genuine compassion for his patients. For these reasons, Dr. Moldow is constantly sought out and revered for his advice regarding diagnostic, therapeutic, and ethical issues of patient care."

The three nominating doctors, John Lake, M.D., Michael McGrath, M.D., and Paul Volberding, M.D., are all currently assistant professors of medicine at the University of California, San Francisco. All three studied in Dr. Moldow's lab, and all three were winners of MMF's Livermore Award, given each year to a medical student who has accomplished outstanding original research in the field of hematology.

"Dr. Moldow has excelled in the area of academic program development,"

according to Drs. Lake, McGrath, and Volberding. "He was principally responsible for the Phase-B Blood Course, directing it so that we felt it was the most effective course in the second year, Phase-B curriculum. As chief of the Medical Service, he is in charge of both the educational and clinical activities of the internal medicine departments at the VA Medical Center. His appointment to this position is an indication of the degree of confidence the Medical School has in his ability to administrate a large teaching and clinical service and to provide educational leadership to the Department of Medicine in general."

Dr. Moldow has served as the preceptor for four hematology fellows, three of whom continue in academic positions in this country and abroad. Two individuals have embarked upon their Ph.D. thesis research in his laboratory, and 15 medical students have spent time in Dr. Moldow's laboratory during his 15-year tenure at the University. Twelve of these are presently either in faculty positions at various medical schools around the country or continue to receive academic training.

Drs. Lake, McGrath, and Volberding wrote, "We all agree Dr. Moldow's most outstanding attribute is his ability to relate to students on a one-to-one basis both in the laboratory as well as in the role of student advisor. Dr. Moldow has served as advisor to a large number of medical students. These students with his guidance have secured positions in several of the very best internal medicine training programs in the country."

Dr. Moldow, however, is not in the business of medicine to win awards or recognition. He feels the awards should go to those in the curriculum affairs office and other areas of the Medical School who make things run smoothly but get little recognition.

He also doesn't take credit for the success of his students. "The students in my lab are basically working for themselves, seeing the results of their own efforts. We ask questions, we learn together."

But as the nominating doctors stated, "We believe that there can be no greater educational tribute to an individual in academic medicine than performance of his 'offspring'; in this regard Dr. Moldow's record is unparalleled." There is little doubt those offspring will continue to have a significant impact on the field of medicine for years to come. ☎

MEDICAL SCHOOL NEWSBRIEFS

University Named AIDS Treatment Evaluation Unit

The University of Minnesota Hospital and Clinic (UMHC) has been named one of 19 AIDS Treatment Evaluation Units (ATEU) by the National Institutes of Health. The primary function of an ATEU is to test drugs that have shown promise in the laboratory against the AIDS virus.

UMHC is the only medical center in the Midwest to become part of the ATEU network, which will exchange findings by means of a unique computer system connecting all 19 medical centers with a central data coordinating center in North Carolina. Using this approach, researchers hope to quickly identify therapies that show early or dramatic effects, either beneficial or harmful.

The research team is headed by principal investigator Dr. Henry H. Balfour Jr., professor of Laboratory Medicine/Pathology and Pediatrics, and medical director of the Clinical Virology Program at UMHC.

"The impact of becoming an ATEU should have far-reaching consequences for years to come — both to the Health Sciences Center and the people of Minnesota," Dr. Balfour states. "AIDS patients in the area will benefit from new treatments without having to travel long distances to an ATEU on either coast. With a projected 2,000 Minnesota AIDS patients by 1990, the importance of the regional availability of experimental

AIDS treatment protocols cannot be understated."

The program expects to enroll at least 60 patients a year over the next 4.5 years in studies of new anti-AIDS drugs. To achieve this patient quota, UMHC will be working closely with the Minnesota Department of Health and the Minnesota AIDS Project to recruit patients. The studies will involve both outpatients and inpatients. Inpatients will be cared for in the General Clinical Research Center at UMHC.

Besides Dr. Balfour, the UMHC research team includes co-investigators Dr. Frank Rhame, assistant professor in the Department of Medicine; Dr. Brooks Jackson, assistant professor of Laboratory Medicine/Pathology; Courtney Fletcher, PharmD, assistant professor in the College of Pharmacy; Dr. Fritz Bach, professor of Laboratory Medicine/Pathology; Dr. Colin Jordan, head of the Infectious Disease Section/Department of Medicine; and Dr. David Katzenstein, assistant professor of Medicine.

Also acting as co-investigators and forming a consortium of Twin Cities-based physician collaborators are Drs. Kent Crossley and Keith Henry of St. Paul/Ramsey Medical Center and Dr. Margaret Simpson of Hennepin County Medical Center, specialists in infectious disease who will be assisting in the design and conduct of the trials. □



Jeffrey Grosscup

Earl Bakken, Medtronic, Inc.

Earl Bakken Gives \$500,000 For Medical School Scholarships

Earl E. Bakken, developer of the first wearable, external, battery-powered heart pacemaker, has given the University of Minnesota \$500,000 through its fundraising campaign for scholarships in the Medical School's combined M.D.-Ph.D. program.

Bakken's gift will be matched by another \$500,000 from other University sources to create a \$1 million endowment for four scholarships. The combined M.D.-Ph.D. degree is a seven-year program. Students can pursue doctorates in a variety of basic sciences, such as biochemistry, cell biology, immunobiology, and molecular genetics.

Scholarship recipients will be called Bakken Scholars, says David M. Brown, M.D., Medical School dean. Preference will be given to applicants who want to do graduate work in the new Biomedical Engineering Center.

The center, one of five in the nation, is expected to be completed by 1990. It is being started through a \$2 million gift from the Medtronic Foundation. The center's directorship will be known as the Earl E. Bakken Chair.

Bakken's gift will enable the University to "continue to attract and train practitioners and scientists who will lead the way to major advances in medicine and biomedical engineering," says University President Kenneth H. Keller.

Bakken is senior board chair of Medtronic, Inc., which manufactures implantable medical devices. A University graduate in electrical engineering, Bakken founded Medtronic in 1949 with his brother-in-law, the late Palmer Hermundslie. He developed the battery-powered pacemaker with University heart surgeon Dr. C. Walton Lillehei in 1958. □



Mary Shafer

Dr. Henry Balfour announces the opening of the AIDS Treatment Evaluation Unit at the University of Minnesota.



Nancy Mellgren

Dr. Richard King, director of the Institute for Human Genetics' clinical genetics program.

Genetic Screening Tests Offered For Cystic Fibrosis, Duchenne Muscular Dystrophy

The University of Minnesota is offering genetic screening tests for possible carriers of cystic fibrosis and Duchenne muscular dystrophy.

Screening is done by personnel at the University's Institute for Human Genetics, directed by Anthony Faras, using relatively new DNA analysis techniques to compare genetic markers on the chromosomes of family members of people with either disease. Scientists and physicians can then determine which family members are capable of passing along the disease to their children.

The University is the only Midwestern center and one of a handful of universi-

ties across the country that offer the tests, says Harry Orr, director of the institute's Molecular Diagnostics Laboratory.

Genetic screening tests are just one part of a complete genetic counseling program available at the University, says Dr. Richard King, director of the institute's clinical genetics program. "This counseling and testing can relieve a great deal of anxiety in families affected by these diseases. Many relatives of individuals with one of these diseases fear that they are carriers, and therefore they just don't have children," he says.

Cystic fibrosis is the leading genetic killer of children in the United States. Most victims die before the age of 21, although improvements in preventive therapy are helping to control the lung damage caused by the disease and are prolonging life expectancy for people who have it. It is estimated that 10 million Americans carry the gene for cystic fibrosis. There is a 25 percent chance that a child of two carriers will be born with the disease.

Duchenne muscular dystrophy is the most common form of muscular dystrophy. Like cystic fibrosis, it is an incurable disease that usually leads to death around age 20. However, Duchenne muscular dystrophy affects only boys because it is caused by a defect in the X chromosome. It is estimated that 50,000 males in the United States have Duchenne muscular dystrophy. □



Tom Foley

Dr. G. Scott Giebink, director of the Otitis Media Research Program.

NIH Grant Helps Researchers Start Ear Infection Study

A \$4.3 million grant from the National Institutes of Health (NIH) will help researchers at the Otitis Media Research Program of the University of Minnesota Medical School study the complex factors involved in preventing and treating childhood middle ear infections.

Usually the result of a common cold, otitis media — or middle ear infection — occurs frequently in small children, some of whom require surgery or suffer partial hearing loss despite antibiotic treatment. Half of all children develop otitis media at least once by their first birthday, and one-third will have three or more ear infections by the time they are three years old, says Dr. G. Scott Giebink, pediatrics professor and director of the Otitis Media Research Program.

Ear infections are diagnosed one of every six times a child visits a doctor, and otitis media is the most frequent reason antibiotics are prescribed for children, says Dr. Giebink, who is also president of the Minnesota chapter of the American Academy of Pediatrics.

Sometimes the decision is made to surgically insert tiny plastic tubes in one or both of the child's eardrums. These tubes allow fluid to drain, preventing pressure from building up in the middle ear, which can cause scarring of the eardrum and hearing loss.

Acute ear infections with fever and ear pain may only be "the tip of the iceberg," according to Dr. Giebink. "We diagnose and treat the acute problem, but in many

Rural Medicine Faces Crisis, Says MMA Report

A recently released Minnesota Medical Association report entitled, "Averting a Crisis in Rural Health Care," notes a number of danger signs indicating that health care in rural Minnesota is in trouble.

"If there is no improvement in the economy in the next one to two years, it will be a crisis," says Dr. James Knapp of Detroit Lakes, president of the association and 1960 graduate of the University of Minnesota Medical School. The 6,200-member group includes 1,677 doctors in rural Minnesota.

The MMA task force based its report on the results of a survey of the association's rural members. Danger signs noted in the report include: 73 percent of rural physicians reported an increase of uncollectable bills; 43 percent indicated a decline in income and a majority expect a further decline; 31 percent reported a decline in the use of preventive care, such as well-baby exams and immunizations; 46 percent reported an increase in the

number of patients lacking basic health insurance; and 68 percent had an increase in the number of welfare patients.

The situation is the worst in northeastern, northwestern, and west-central Minnesota. Dr. Knapp says doctors are caught in a vicious economic cycle because many residents on the Iron Range and in farming areas can't buy medical insurance or pay medical bills.

The MMA is making 25 recommendations to the Legislature to prevent a crisis, such as adjusting reimbursement to physicians who provide care to large numbers of welfare patients; conducting a study of small, rural hospitals to define specific problems; developing a program for the provision of care to the uninsured; and reviewing Medicare reimbursement policies.

However, the overall problem is the economy, according to Dr. Knapp. "If we fix the economy, the rural health care problem will take care of itself," he says. □

children there is an underlying chronic disease that remains undetected. Our major problem is determining which child has chronic ear disease and which has a simple acute ear infection."

To address the wide range of problems contributing to otitis media, the University assembled a team of researchers with expertise in many areas, including pediatrics, otolaryngology, audiology, biometry, anatomy, and pharmacology. Laboratory research and initial clinical studies were conducted under the first-ever NIH program grant for otitis media research, which began in 1978.

"During the past eight years the research team has made important advances in understanding the mechanisms that lead to otitis media," Dr. Giebink says. "We know which of the bacterial organisms cause acute otitis media and chronic ear fluid. This takes us light-years ahead in knowing which treatments to try. We have discovered a great deal about the immunology of ear infections — how the body defends itself against ear disease. This has enabled us to work with scientists to develop vaccines that would protect children against otitis media."

The most recent — and largest — NIH grant, announced January 1, will fund clinical studies of new treatment strategies for children throughout the Twin Cities. The clinical studies will involve pediatricians, otolaryngologists, and audiologists at Park Nicollet Medical Center in St. Louis Park, as well as many other community physicians.

The first clinical trial, which began in February, is evaluating new treatments for middle ear infections in children scheduled to have tubes inserted. Previous clinical projects revealed that one in 20 of those children continued to have ear problems and will suffer some hearing loss, Dr. Giebink says.

Five hundred children will be studied using tubes plus either antibiotic and anti-inflammatory drug treatment or placebo therapy. The children will be followed for three years to determine if the drug treatment prevents ear complications and hearing loss.

Other projects in the Otitis Media Research Program will evaluate the effectiveness of new antibiotics that have shown promise in laboratory tests.

"The antibiotics now in use leave pieces of bacteria in the middle ear, which may cause the body to continue to send infection-fighting cells to the ear, prolonging the problem," Dr. Giebink says. "We suspect that certain antibiotics may leave no trace of the bacteria and will help us avoid this problem." □

Physician Combines Traditional Indian And Western Medicine

"Modern scientific medicine has frequently ignored the healing of the bruised and battered spirit. We have to focus on things other than the body," says Frank Clarke, M.D., M.P.H. (Master of Public Health) and Hualapai Indian.

Dr. Clarke, a board-certified family physician, spoke at the University of Minnesota, Duluth, School of Medicine, in January on the subject of "Traditional Indian Concepts of Health Care."

"Western medical philosophy's asset is its pursuit of comprehensive knowledge about the body," he says, "but healing of the other two human components — the mind and the spirit — should also be emphasized."

He says Indian medical philosophy integrates all three components in the treatment of patients, and regards the human spirit as the "energizing force" that requires care through careful doctor/patient interaction.

"The medic is both a thinker and a healer," says Dr. Clarke, who maintains that the western and Indian medical philosophies belong together for more comprehensive and effective health care. "I don't feel they're opposite concepts," he says. "They're like a right arm and a left

arm — together they make up the whole."

In his many lectures around the country, particularly to medical students, he emphasizes treating the whole person rather than the disease alone. He also illustrates how traditional Indian medicine concepts have crept into modern western medicine and are now being given more attention.

Such concepts include the practice of healing a patient primarily at night, when the body is already repairing itself; utilizing rhythm instruments to produce a lower, more stable biorhythm pattern; and chanting and producing states of altered consciousness.

"Medicine requires more than a technological virtuosity," he says. "Successful treatment also depends on patients who can be encouraged to extract the best of themselves."

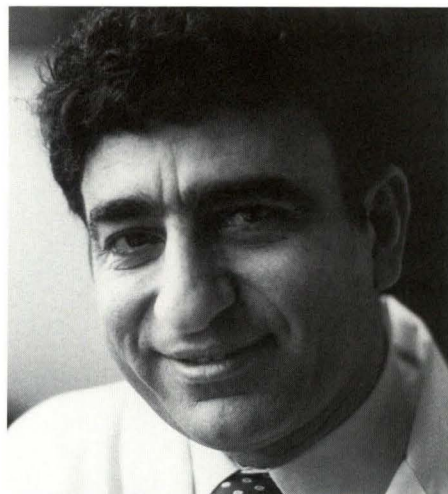
Dr. Clarke has recently retired from the Indian Health Service in Phoenix and is now in private practice in Woodlake, CA. He's listed in *Who's Who: Community Leaders and Noteworthy Americans*, and *Indians of Today*. He is also a founding member of the Association of Indian Physicians and presently is its third president. □

Genetic Studies Show Cancer Development

A genetic study of people with the most common type of lymph gland cancer has revealed that the disease develops in several discrete steps forecast by specific chromosome defects in the patient's tumor cells.

Dr. Jorge J. Yunis, a University of Minnesota laboratory medicine and pathology professor, and his colleagues reported in the January issue of the *New England Journal of Medicine* that those patients with follicular lymphoma usually have a single chromosome-gene defect at the beginning of their disease. They found that some patients then developed additional defects, some of which signaled an aggressive phase of the disease that required intensive treatment.

"We found that a patient's prognosis depended on whether additional chromosome defects developed and, if so, what types of defects, such as extra or missing chromosome pieces or genes," Dr. Yunis says. "Patients with only one defect usually had a relatively benign disease that often did not call for treatment and could



Dr. Jorge J. Yunis, Department of Laboratory Medicine and Pathology

expect to live an additional 10 to 15 years. However, those with multiple defects usually required treatment and had a general life expectancy of one to three years." About 10,000 new cases of follicular lymphoma are diagnosed in the

United States each year.

The appearance of certain additional chromosome-gene defects signaled that a patient's disease was about to transform into a more active lymphoma. Researchers found 14 of these defects in the 71 patients who were studied. Many of these defects served as clues to changes in the evolution of the tumor through the loss or duplication of critical genes.

"It has always been suspected that several steps or defects in the chromosomes and genes occurred or were present before cancer manifested itself, but there was no clear evidence of many of these steps," Dr. Yunis says. "We now have evidence of 15 recurring steps or defects, showing up as missing, extra, or misplaced genes."

The study is a general model for malignant solid tumors, which may appear anywhere and are the most common forms of cancer, he says. "We have found that solid tumors generally behave in the same manner as lymphomas. By focusing our efforts on chromosome regions that show repeated defects in lymphoma and other cancers, we should now be able to find which genes are involved and work on ways to correct these defects." □

Max Seham Student Award Given

The Max Seham Committee, Department of Pediatrics, has awarded the first annual Max Seham Student Award to Greg Plotnikoff, a second-year medical student. The award of \$500 is in recognition of Plotnikoff's efforts on behalf of the Biomedical Ethics Student Committee at the Biomedical Ethics Center.

The committee noted that Plotnikoff has exemplified the ideals of Dr. Max Seham, a well-known and revered pediatrician who practiced in Minneapolis. Dr. Seham had always been interested in broad socio-economic-philosophic concepts of medicine. The Max Seham Student Award was conceived by the Max Seham Committee to enhance the sensitivity of medical students to the needs of the underprivileged for medical care.

At the time of Dr. Seham's death, a fund was established from contributions in his honor, making possible the award. □

Dr. Vanselow Named Chairman-Elect of AAHC

Dr. Neal Vanselow, vice president for health sciences, University of Minnesota, has been elected chairman-elect of the Association of Academic Health Centers (AAHC). The name of the association was listed incorrectly in our winter issue. □

Duluth Doctor Assumes Health Sciences Post

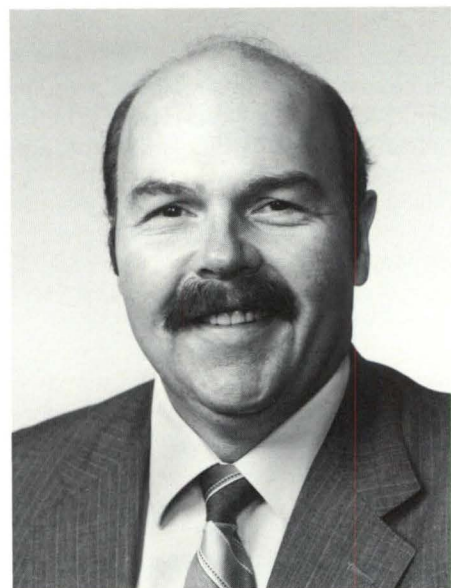
Dr. William E. Jacott has been named assistant vice president for health sciences at the University of Minnesota. Dr. Jacott assumed his new job March 30. His duties include working with professional organizations, affiliated hospitals, practicing health professionals, and the federal government.

A Duluth native, Dr. Jacott has been a family physician at the Duluth Clinic-Lakeside. He is chair of the American Medical Association's Council on Medical Education and president of the Federation of State Medical Boards of the United States Inc.

He is a 1964 graduate of the University of Minnesota Medical School in Minneapolis and received his undergraduate degree from the University's Duluth campus.

Dr. Jacott was chief of staff at Duluth's Miller-Dwan Hospital and Medical Center in 1970. He was an associate family medicine professor at the Duluth School of Medicine from 1974 to 1978 and was program director for the Duluth family practice residency during those years. He returned to private practice in 1978 but continued as a clinical professor at the Duluth School of Medicine.

The Minnesota chapter of the Ameri-



Dr. William E. Jacott, assistant vice president for health sciences.

can Academy of Family Physicians honored Dr. Jacott as teacher of the year in 1976. He received the Duluth campus Alumni Association Merit Award in 1978, and in 1979 he was given special recognition by the Duluth School of Medicine for his help in the school's development. □

Chromosome Analysis Aids Leukemia Prognoses

Analyzing chromosomes of adults with some types of leukemia soon after diagnosis can help doctors predict how the disease will progress and which patients will benefit most from certain treatments, according to Dr. Clara D. Bloomfield, medical oncology professor at the University of Minnesota Medical School.

Dr. Bloomfield presented her findings at the American Association for the Advancement of Science annual meeting in Chicago in February.

"Taking a patient's leukemia cells at diagnosis and examining the chromosomes is the best technique for clearly predicting how a patient is going to do," says Dr. Bloomfield.

Chromosome abnormalities are detected in 65 to 85 percent of patients with acute leukemia, Dr. Bloomfield reports. Leukemia accounts for about 3 percent of all new cancer cases.

The research work is important not just because of its relevance to leukemia, but also because it is possible that these findings may someday be applied to other forms of cancer, Dr. Bloomfield □

says. "We continue to find new chromosome abnormalities in different types of cancer cells each year, and though our work is by no means finished, this is a meaningful stepping stone." □

Dr. Cassius Ellis Co-Authors Book on Black Surgeons

Cassius M.C. Ellis, M.D., assistant dean of the University of Minnesota Medical School and director of surgical education at Mount Sinai Hospital, has co-authored *A Century of Black Surgeons: The U.S.A. Experience*.

The 850-page document is a narrative about black surgeons, written by black surgeons, that addresses their experiences in obtaining quality surgical training in the U.S. since the 1890s. Dr. Ellis' portion discusses Daniel Hall Williams, M.D., one of the first surgeons to operate on the pericardium in 1893. His patient lived for 47 years after the surgery.

The book also documents the development of predominantly black medical schools, hospitals, and surgical residency training programs. □

Schwartz Resigns As Hospital Director

C. Edward Schwartz, director of the University of Minnesota Hospital and Clinic, has resigned to accept positions at University of Pennsylvania medical facilities.

Schwartz will become executive director of the University of Pennsylvania hospital and vice president for clinical services at the university's Medical Center in Philadelphia.

Schwartz came to the University of Minnesota in 1983 from the University of Michigan Hospital, where he had been chief operating officer.

Gregory Hart, director of operations and administration at the University Hospital, has been named acting director by Neal A. Vanselow, University vice president for health sciences. Vanselow will appoint a search committee to find a successor to Schwartz. □

Dr. Cohn Receives Harvey Award

The first recipient of the William Harvey Award, presented at the second annual meeting of the American Society of Hypertension (ASH), is Dr. Jay N. Cohn, professor of medicine and head of

the cardiovascular division at the University of Minnesota Medical School.

The awards committee of ASH selected Dr. Cohn for the award in recognition of his research into circulatory factors in hypertensive vascular disease. He is cited specifically for his contributions to "the definition of the concept of unloading the heart as a therapeutic approach to circulatory disturbances."

Dr. Cohn has pioneered study in hemodynamic assessment of cardiovascular function in patients with shock, acute myocardial infarction, and heart failure. He has been instrumental in developing the concept of vasodilator therapy for heart failure. □

Dr. Ferris Elected Nephrology Society President

Dr. Thomas F. Ferris, Nesbitt Professor and chairman, Department of Medicine, was elected president of the American Society of Nephrology at the annual meeting in Washington in December 1986.

This organization represents 4,500 nephrologists in North America. Dr. Ferris formerly served as chairman of the American Board of Nephrology from 1982 to 1984. □

Dr. Pederson Named to Ophthalmology Chair

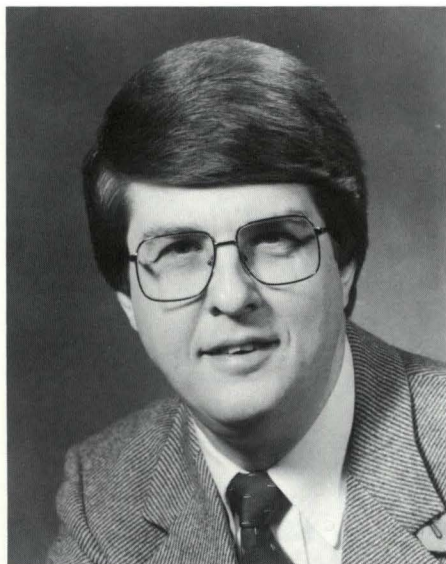
Dr. Jonathan E. Pederson, associate ophthalmology professor at the University of Minnesota, has been named the first holder of the Frank E. Burch Chair in

Ophthalmology.

Dr. Pederson has been Frank E. Burch professor of Ophthalmology. The professorship was elevated to full chair status with gifts from the Frank E. Burch Research Fund and matching money from the Permanent University Fund through the University's fund-raising drive, the Minnesota Campaign.

Dr. Frank E. Burch, an 1897 graduate of the University's Medical School, was chair of the Ophthalmology Department from 1927 to 1944. His belief that adequate support for research was needed to prevent blindness led to the establishment of the Frank E. Burch Research Fund in 1943. That fund made it possible for the University to construct its first ophthalmology research laboratories in 1959.

Dr. Pederson joined the faculty in 1980. He is internationally known for his clinical and research work in glaucoma, and was named the first holder of the Burch professorship in 1983. He is a 1968 graduate of Augsburg College in Minneapolis and a 1972 graduate of Johns Hopkins University Medical School. □



Dr. Jonathan E. Pederson, first holder of Frank E. Burch Chair in Ophthalmology.

Eaton Receives Iron Bolt Award

John W. Eaton, Ph.D., Department of Laboratory Medicine and Pathology, has been honored with the Iron Bolt Award at the Gordon Conference on Oxy Radicals in Biology and Medicine held recently in California.

A tradition at the Gordon Conference is to bestow on the most deserving attendee the prize of a rusty Iron Bolt which symbolizes the role of iron and oxygen in biological free radical reactions. The awardee displays the prize at his home institution for two years until the next Gordon Conference.

The prize is given to a leader in research in what may be free radical diseases (such as cancer, stroke, or heart disease) whose goal of transferring scientific information is most effectively achieved. Eaton has made major contributions on the role of oxygen-derived radicals in disease states through his imaginative research. □

Meharry Medical College Named WHO Center

Meharry Medical College of Nashville, under the directorship of Dr. Stacey Day, has been named a World Health Organization (WHO) Collaborating Center in Health Manpower Development. Dr. Day was a medical fellow at the University of Minnesota in 1956, and went on to appointments as medical fellow specialist, research assistant, and assistant professor in the Departments of Laboratory Medicine and Pathology.

As a WHO collaborating center, Meharry will focus its attention on global health issues at the community level. Health professionals working with the center will strive to provide high-quality care and improve the skills of health professionals in a cost-effective community health system. The center will also provide a clearinghouse for the collection and distribution of information worldwide regarding community health care.

This is the first time in the United States that a black educational institution has earned this international distinction.

In a letter of congratulations, President Ronald Reagan said, "The vision of Dr. Stacey Day, and his fine team at the center, builds on a community approach to medicine which is truly international in scope. The effort to bring outstanding medical care to other nations and to help them implement effective health service programs for their peoples is vitally important." □

MMF REPORT

Medical Student Variety Show Raises Scholarship Money

University of Minnesota medical students displayed an abundance of talent at the February 28 benefit variety show, "Operation 87: Medical School Fun and Follies." The evening was a great success, grossing over \$14,500, a 45 percent increase over last year's event. Faculty contributions will be matched as a part of the Minnesota Campaign, increasing the total amount raised.

Proceeds from the benefit are used to establish scholarships for students with unusually high debt levels. Four students received \$500 scholarships from the proceeds of last year's show. The remaining \$5,000, combined with money raised this year, will be used to establish a permanent endowed scholarship fund.

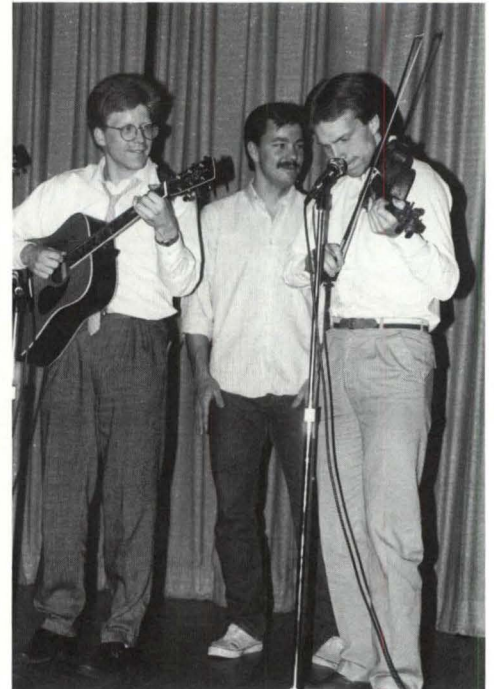
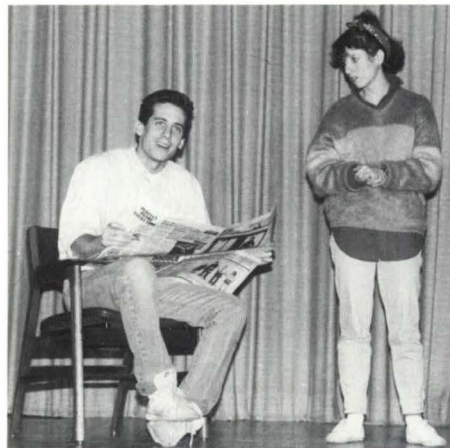
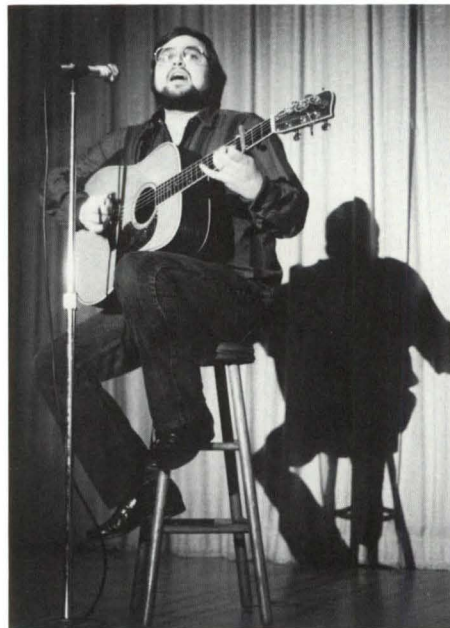
Medical School Fun and Follies is sponsored by the Medical Student Parents Committee, the Medical Student Council, and the Minnesota Medical Foundation. The University of Minnesota Medical Alumni Society also actively supported the show.

Held at the Northstar Ballroom of the St. Paul Student Center, the evening included a dinner catered by Lee Ann Chin. Desserts were prepared by the Medical Auxiliary.

Medical students, Parents Committee members, and MMF staff members put together an event that was enjoyed by alumni, parents, and guests. Included on the program were such scene-stealers as "Those Crazy Medical Commercials," "Prairie Hospital Companion," and "The Luck of the Larvae."

Special thanks goes to: Inge Schwochau, Parents Committee president; Parents Committee members Nina Bunik, Jean Conroy, Myrna Erickson, Toni Goldstein, Patsy Huberty, Merle Kane, Polly Malley, Virginia Newcome, Norman and Jean Qualey, Sharon Rhodes, Marion Votel, Peggy and Roger Wald, and Janis Wesa; student chairperson Tricia Huberty and assistant chairperson Terry Wollan; Helene Horwitz and Lowell Weber of MMF; and Pearl Rosenberg, assistant dean of the Medical School. Thanks also to the Minnesota Women Physicians and to President Pamela Morford, M.D., and Vice President Linda Schenck, M.D., for their support. □

Photos by Pete Bretzman.





MMF Approves \$110,700 in Research Grants

The Minnesota Medical Foundation Board of Trustees approved \$110,700 in research grants at its winter quarterly meeting. The amount includes \$63,100 in faculty research grants, \$2,100 in student research grants, and \$45,500 in special grants for research equipment and salary support.

Faculty grants include: **David Bradford**, orthopaedic surgery, \$4,000 to study ligament healing under electrical stimulation; **James Carey**, physical medicine and rehabilitation, \$3,500 to study measurement of motor control in amyotrophic lateral sclerosis; **Margaret Doucette**, physical medicine and rehabilitation, \$2,500 to study cardiovascular conditioning for non-ambulatory diabetics; **Michael Kaye**, surgery, \$8,000 to study sequential cardiac xenografting and homografting in closely related species; **William Krivit**, pediatrics, \$10,000 to study quantitative and qualitative analysis of production of alpha-1-anti-trypsin protein and gene by monocyte macrophage system; **Constantinos Limas**, medicine, \$3,500 to study beta-adrenergic receptor autoantibodies in human dilated cardiomyopathy; **Donald Pavelka**, obstetrics/gynecology, \$3,000 to study the association of anti-cardiolipins and infertility; **Michel Sanders**, medicine, \$6,800 to the study mechanism of action of steroid hormones; **Paul Savage**, medicine, \$3,000 to study molecular analysis of 11q23 abnormalities in leukemia/lymphoma; **Steven Seelig**, pediatrics, \$7,800 to study the role of serine protease inhibitors in growth hormone action; **Edward Stauffer**, physiology-UMD, \$5,000 for a shared micropipette puller; **Marie Steiner**, pediatrics, \$3,000 to study if pulmonary capillary damage is caused by free radicals produced during cyto-reduction for bone marrow transplant; and **Thomas Wells**, pediatrics, \$3,000 to study adrenergic activity in Dahl rats.

Student grants include: **Joan Krikava**, year 3, \$1,200 to research immunologic quantification of bovine ferrochelatase from the livers of normal and protoporphyria cattle; **Scott Lick**, year 4, \$600 to study orthotopic fox-to-

Michel Sanders: MMF Grant Recipient

Assistant Professor Michel Sanders, Department of Medicine, was named the recipient of a \$19,400 grant at MMF's Research Grants Committee winter meeting. A total of \$110,700 for faculty research grants, student research grants, and special grants for research equipment and salary support was approved by the committee. (See accompanying list.)

Sanders' project is entitled: "The mechanism of action of steroid hormones." Her research is a continuation of work done as a postdoctoral fellow in the Department of Pharmacology, University of Washington Medical School, Seattle, under Dr. G. Stanley McKnight.

In evaluating the practical significance of her project, Sanders writes, "Although the mechanism of action of steroid hormones has been intensively investigated, the molecular events linking binding of the steroid-receptor complex to the ultimate biological response remains elusive. The data summarized in this proposal suggest that steroids may act by relieving the action of a repressor. If true, then our model of how steroids regulate gene expression would have to be substantially altered. As steroid hormones have been implicated in the etiology of cancers of the reproductive tissues such as breast and prostate, a better understanding of steroid hormone action can only improve the treatment and prevention of these malignancies."

Originally from Massachusetts, Sanders received her B.A. in biology from Macalester College in St. Paul.



Nancy Meilgren

Michel Sanders

She was a predoctoral fellow in the graduate program in cellular and molecular biology, specializing in reproductive endocrinology, at the University of Michigan, Ann Arbor, and received her Ph.D. in cellular and molecular biology from the University of Michigan. She then went to the University of Washington Medical School for her postdoctoral work, and returned to Minnesota this past fall to become an assistant professor in the Department of Medicine and Biochemistry. □

dog cardiac transplantation; and **Jennifer Robinson**, year 4, \$300 to study the effect of ultraviolet light on fractionated serum bile acids and pruritis in hepatic cholestasis.

Faculty special grants include: **Douglas Christie**, lab medicine/pathology,

\$22,500 for multi-user equipment for immunoassays; **Robert O'Dea**, pediatrics, \$10,400 for radioisotopic research in clinical pharmacology; and **Michel Sanders**, medicine, \$12,600 to study the mechanism of action of steroid hormones. □

Kappa Delta Supports Orthopaedic Surgery

Sigma Beta Chapter of Kappa Delta Sorority was chartered at the University of Minnesota in 1918. Because of financial difficulties and lack of members during the 1970s, the chapter was declared dormant in 1972 and the chapter house was sold.

The money from the sale of the house was retained by the house corporation, Kappa Delta Inc. of MN, and invested these past years with the hope of re-establishing Kappa Delta at the University of Minnesota.

In the meantime, Kappa Delta Inc. of MN has been donating part of the interest each year to the Minnesota Medical Foundation for research in the field of orthopaedic surgery.

Kappa Delta Sorority has supported the Crippled Children's Hospital of Richmond, Virginia, (now known as Children's Hospital) as its national philanthropy since 1921. Collegiate chapters and alumnae associations of Kappa Delta have given toys, hospital equipment, volunteer labor, and monetary contributions to the hospital on a yearly basis. Kappa Delta Sorority sells Christmas seals to its members to raise money for the hospital.

Kappa Delta Sorority also presents four annual cash awards (currently each \$5,000) at the annual meeting of the American Academy of Orthopaedic Surgeons to doctors for their outstanding research in the field of orthopaedics.

Because of this heritage, Kappa Delta Inc. of MN decided to support Dr. Roby Thompson and his associates in the Department of Orthopaedic Surgery at the University of Minnesota via donations to the Minnesota Medical Foundation.

In the period from 1973 through 1986, Kappa Delta Inc. of MN has donated \$53,000 to the Minnesota Medical Foundation.

The annual corporation meeting will be in April at the Women's Club in Minneapolis with Dr. Thompson or a grant recipient speaking about the work done during the past year with the Kappa Delta gift. □



Jean Magney

Jean Magney Receives Herz Faculty Teaching Development Award

Jean Magney of the Department of Cell Biology and Neuroanatomy is this year's recipient of the Herz Faculty Teaching Development Award.

Magney's project involves the use of interactive videodisc technology to produce computer-aided instruction modules. This technology enables two-dimensional, static images to be brought to life, facilitating the presentation of structural and functional relationships to students. Magney will receive \$3,325 in funding for her project.

Established with an endowment fund donated by the late Malvin E. Herz and his wife Josephine, the Herz Faculty Teaching Award is presented to encourage the faculty of the University of Minnesota Medical Schools to pursue projects which will improve their methods and skills in teaching medical students.

The Honors and Awards Committee of the Minnesota Medical Foundation selected Jean Magney from proposals submitted by the faculty. Preference is given to faculty members who have demonstrated interest in teaching, leadership, creativity, and innovation in education. □

Minnesota Campaign Tally

As of February 1, \$215 million had been pledged and 76 new faculty positions endowed as part of the \$300 million Minnesota Campaign fund drive.

The faculty/staff division of the campaign has raised more than \$4 million in contributions from all campuses of the University of Minnesota.

"The faculty and staff campaign has exceeded our overall expectations," says Professor Emeritus William G. "Jerry" Shepherd, chairman of the faculty/staff campaign leadership committee.

The Minnesota Medical Foundation has raised more than \$2 million from faculty, staff, and retirees of the Medical School and University Hospital and Clinic. This represents about 50 percent of the entire faculty/staff campaign.

The Medical School also is a leader in the number of endowed professorships and chairs. (See article on chairs in this issue.) □

MMF Names Communications Director

Jean Murray has been named director of communications for the Minnesota Medical Foundation, it was announced by David R. Teslow, executive director.

As director of communications, Murray is responsible for the production of the foundation's annual report, quarterly magazine, promotional materials, and audio visuals. She also assists in planning and implementing special events.

Prior to joining the staff of the Minnesota Medical Foundation, Murray was self-employed as an editor, writer, and communications consultant. For six years before that, she served as editor of the *Minnesota Business Journal*. □

Nancy Mellgren

ALUMNI UPDATE

Dear Colleagues:

Although I stated in my last letter to you that winter arrived early in Minnesota this year, it faded quickly and local pundits are now calling it "the winter that never was." Snowblowers and cross country skis saw little use in the Twin Cities this year. Nonetheless, we are now in the mood for spring — and waiting for summer.

Reunion chairs and their committees are hard at work. From my perspective, I see a most energetic group of alumni volunteers working to present the most fun-filled reunions yet for their classmates. I'm enjoying being part of the excitement.

One of our most ambitious projects each year is the NEW HORIZONS IN MINNESOTA MEDICINE seminar. Six members of the Medical School faculty are invited to present updates on the innovative and dynamic research work taking place at our alma mater. The seminar is one opportunity for each of you to connect with your Medical School. Please look over the information in this issue and watch for the brochure with registration materials. We are putting extra effort into planning this year's seminar and want to share the results with you on Saturday, June 6.

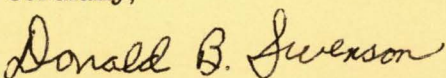
A highlight of the luncheon following the New Horizons seminar is the annual presentation of the Diehl Award. Nominations are being received. A history of the man, the award, and past recipients is part of this issue. This prestigious award is another of the traditional activities of the Society that I am pleased to help guide this year as president.

On the last day of February, I attended the second annual talent show presented by current medical students to generate support for the scholarship funds of the Medical School. It was a delightful evening and a number of alumni attended. Next year, I hope that even more of you will join in this cheerful way to spend a winter's evening and also benefit a good cause.

What have you been doing lately? News of your professional activities and any professional recognition that you have received is important to include in our class news section of the Bulletin. The most interesting part of any educational institution is its people; we think that you, the alumni of the Medical School, have news that classmates and others would enjoy reading. Take a moment to complete the form requesting information and send it to the editor. Why not stop and do it right now?

Your support of the Alumni Annual Fund this year is exceptional. Next issue I'll report on the results.

Cordially,



Donald B. Swenson, M.D. '51
President
Medical Alumni Society

P.S. It's not too late to register for your class reunion. Medical School classes of '37, '47, '57, '62, '77 and '46 (December class) are holding special reunions June 5 and 6. For information, contact Arnette Nelson or Bob Burgett at the Minnesota Medical Foundation — (612) 625-1440.

Alumni Profile

Name: Donald S. Asp, M.D.

Class Year: 1964

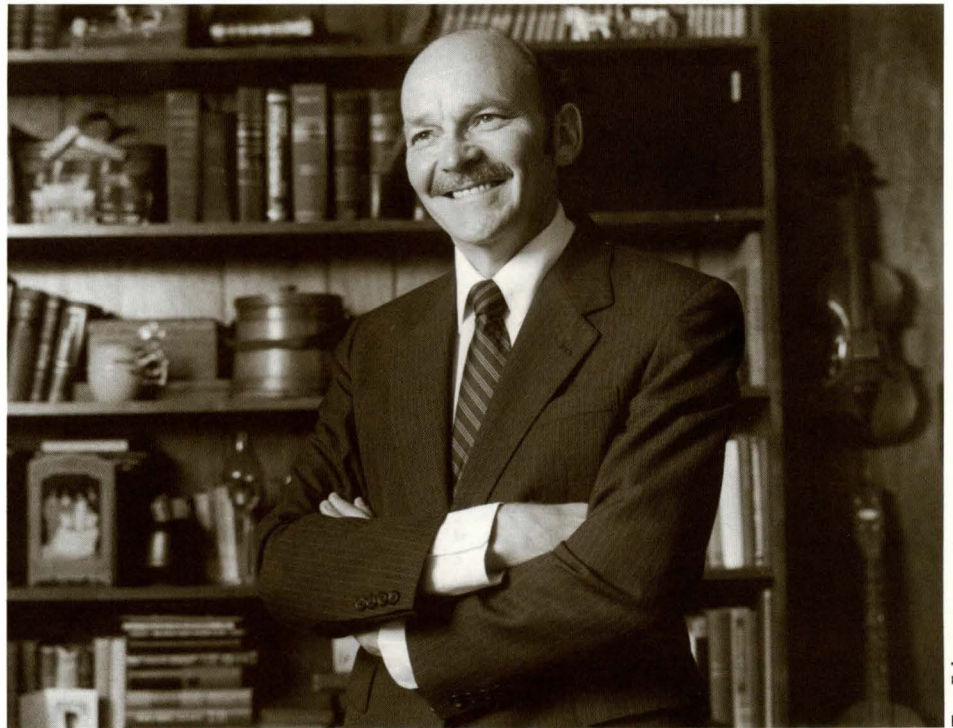
Home Town: Milaca, Minnesota

Family: Wife, Clara, a teacher in Roseville; children, Jonathan, a Fellow at Mayo Clinic; Erik, a chemistry major at the University of Minnesota; Maria, a theatre arts major at the University of Minnesota.

Position: Associate Professor, Department of Family Practice and Community Health, University of Minnesota Medical School; Director, Family Practice Residency Program at Bethesda Hospital, St. Paul.

Special Appointments: President, Minnesota Academy of Family Physicians; 1987 Convention Chairperson, North American Primary Care Research Group; Course Director, Family Practice Review: Update 1987; Consultant, Residency Assistance Program for the American Academy of Physicians; Consultant, American Board of Family Practice.

Developed: Family Practice Residency Program at Bethesda Hospital; New Horizons in Minnesota Medicine seminar, an annual event held in conjunction with graduation and reunion activities.



Tom Foley

Dr. Donald Asp, Department of Family Practice and Community Health.

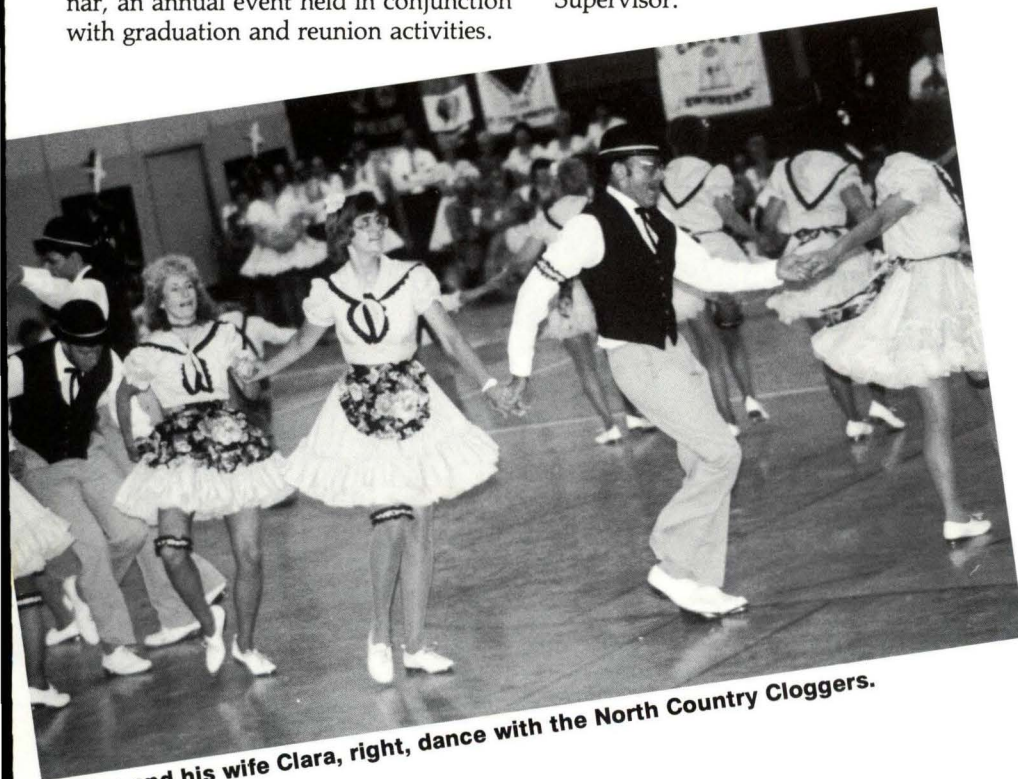
Former Practice: Six years private practice, Milaca, Minnesota.

Memories: Country school in O'Neil Township; musical activities in high school; Boy Scouts and 4-H Club; three years in the Army, attending Signal School and serving as a Radar Repair Supervisor.

Hobbies: Clog dancing with North Country Cloggers Exhibition team, jogging, Lean Gourmet Club.

Looking Ahead: The outlook for family practice and community health practitioners is clearly a bright one. The personal satisfaction is great. Family practice has gained full status as a specialty, and many medical students are selecting this area. Approximately 45 percent are choosing to practice in rural areas, and find the work there rewarding and the people very supportive.

Advice: Achieve a balance in your life. The healthiest physicians are those that are involved in activities outside of medicine. Physical activities are especially important to keep your body healthy and reduce stress.



Dr. Asp and his wife Clara, right, dance with the North Country Cloggers.

New Horizons in Minnesota Medicine—1987

Saturday, June 6, 1987
University of Minnesota Medical School
Malcolm Moos Health Sciences Tower—Room 2-690
9:00 a.m. - 12:30 p.m.

Registration is \$50.00 for Medical Alumni Society members (\$65.00 for non-members), which includes the annual Medical Alumni Society Luncheon following the seminar. Presentation of the Diehl Award is one of the highlights of the luncheon program.

FACULTY PRESENTATIONS:

Stuart W. Jamieson, M.D.
Peter J. Lynch, M.D.
William M. Thompson, M.D.
Leonard L. Heston, M.D.
Bruce Work Jr., M.D.
Arthur L. Caplan, Ph.D.

"Frontiers of Heart-Lung and Lung Transplantation"
"Recent Advances in Dermatologic Therapy"
"Clinical Applications of Advanced Imaging Technologies"
"Current Views on Alzheimer's and Related Dementias"
"Ethical Dilemmas in Obstetrics and Gynecologic Care"
"Current Viewpoints in Biomedical Ethics"

Stuart Jamieson, M.D.



Director of the Minnesota Heart and Lung Institute and Professor of Surgery

Dr. Jamieson directed the Heart-Lung Transplantation Program at Stanford University until March 1986 when he arrived in Minnesota. A

native of Rhodesia, he attended medical school in London, England, and practiced in England until accepting a position at Stanford in 1978. He is president of the International Society for Heart Transplantation and edited with Norman E. Shumway, M.D., the 1986 volume on cardiac surgery for Butterworths Press.

Peter Lynch, M.D.



Director of the Minnesota Heart and Lung Institute and Professor of Surgery

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William Thompson, M.D.



Professor and Head Department of Radiology

Before his appointment at Minnesota in July 1986, Dr. Thompson was professor of radiology at Duke University Medical Center. Among his

awards are Teacher of the Year at Duke in 1980 and James Picker Scholar in Academic Radiology from 1975-79. In 1984, he was a visiting scholar at the Advanced Imaging Laboratory at Stanford University Medical Center. He attended medical school at the University of Pennsylvania and completed his residency in radiology at Duke University Medical Center.

Leonard Heston, M.D.



Professor of Psychiatry

Dr. Heston is director of adult psychiatry with a special interest in behavior genetics. He received his medical education at the University of Oregon Medical School and has been on the faculty at Minnesota since 1970. His recent research has focused on Alzheimer's disease and other disorders. In 1984, he received the Dobzhansky Award for distinguished contributions from the Behavior Genetics Association.

Bruce Work Jr., M.D.



Professor and Head Department of Obstetrics and Gynecology

Dr. Work was professor of Ob-Gyn at the University of Illinois in Chicago for six years, before accepting the

chairmanship at Minnesota in 1986. He attended medical school at the University of Michigan, where he also did his residency in Ob-Gyn. He was a member of the faculty at Michigan for thirteen years. His recent publications and educational materials concern high-risk obstetric patients.

Arthur Caplan, Ph.D.



Director of the Minnesota Biomedical Ethics Center and Professor of Philosophy and Surgery

Dr. Caplan, a national leader in biomedical ethics, was associate director of The Hastings Center until his June 1987 appointment at Minnesota. He is especially interested in the public policy implications of advanced technology and the changing health care delivery system. He completed his graduate degrees in philosophy at Columbia University with his research interest in scientific philosophy established. He is consultant to the Committee on Science and Technology of the United States House of Representatives and last year was visiting professor at the University of Pittsburgh.

NEW HORIZONS IN MINNESOTA MEDICINE is an annual presentation to showcase six outstanding faculty members of the University of Minnesota Medical School. Scheduled in conjunction with Medical School graduation ceremonies and class reunion activities, NEW HORIZONS offers an opportunity to both local and visiting alumni to see the exciting and innovative work taking place at the Medical School — as well as earn C.M.E. credits.

NEW HORIZONS IN MINNESOTA MEDICINE is sponsored by the Medical Alumni Society, with assistance from the Minnesota Medical Foundation and the Minnesota Alumni Association. For more information, contact Arnette Nelson or Robert Burgett, MMF (612) 625-1440 or Paula Sanders, MAA (612) 624-2323.

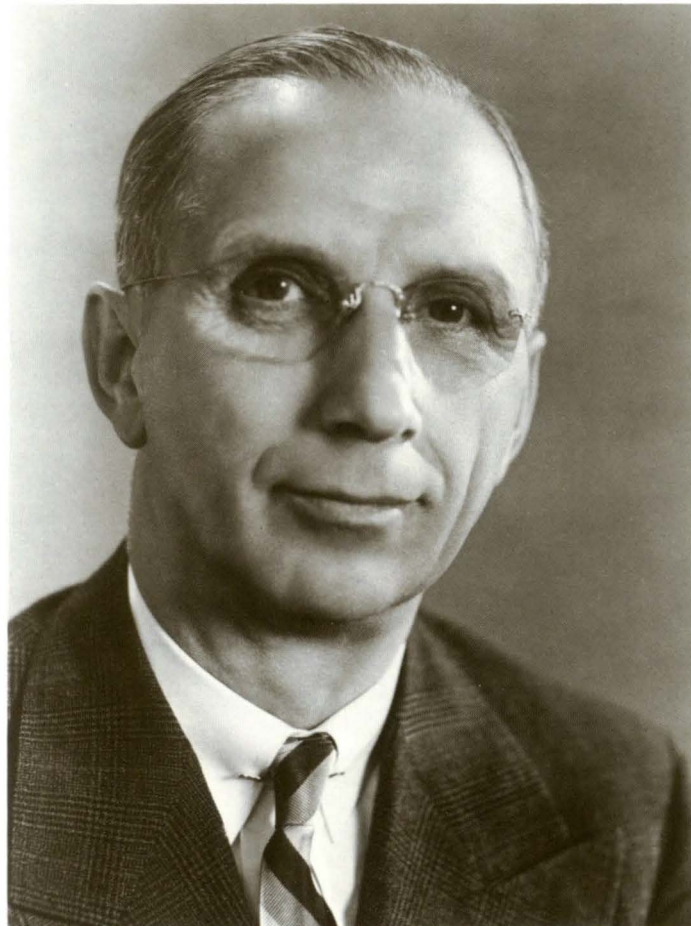
A Beacon of Strength and Integrity and Example: *Harold S. Diehl*

Accomplishments at the University of Minnesota

Appointed in 1935 as the fifth dean of the University of Minnesota Medical School, while also serving as dean of the College of Medical Sciences, Harold Sheely Diehl began a 23-year stewardship of the University's medical education programs. Widely known for his extensive research on the common cold and, later, cancer, Dr. Diehl is credited with bringing the University of Minnesota medical program to international acclaim as one of the world's finest.

In a 20-year building program, Dr. Diehl finalized plans for a new medical-biological library on the Medical School campus (later to be named in his honor), began construction on the Masonic Cancer Hospital, finalized plans for the Clinical Cancer Research Institute, and was involved in several other building and renovation projects which doubled the physical facilities of the Medical School and brought it to what he considered an adequate center for care of patients, teaching, and research.

As then University president, J.L. Morrill stated about Dr. Diehl, "With patient and productive persistence, he has brought the College of Medical Sciences at our University to acknowledged eminence among the great medical centers of the nation and world . . . In the long history of the University, Dean Diehl's career will shine as a beacon of strength and integrity and example."



Harold S. Diehl, M.D.

The Harold S. Diehl Award

Begun in 1962 to honor Dr. Diehl, the Harold S. Diehl Award is presented annually based on the following criteria:

- 1) Preferably an alumnus of the University of Minnesota Medical School.
- 2) Not engaged in an academic capacity.
- 3) Has made outstanding contributions to the Medical School, the University, the Alumni, and the Community.
- 4) Has had a relatively long experience in the field of medical science or a related field.

PAST RECIPIENTS

1962 - Owen Wangenstein
 1963 - Donald J. Cowling
 1964 - Vernon D.E. Smith
 1965 - Karl W. Anderson
 1966 - J. Arthur Myers
 1967 - Theodore Fritsche
 1968 - Walter Halloran
 Anderson C. Hilding
 Carl Holmstrom
 1969 - Karl R. Lundeborg
 1970 - Robert Barr
 LeRoy Larson

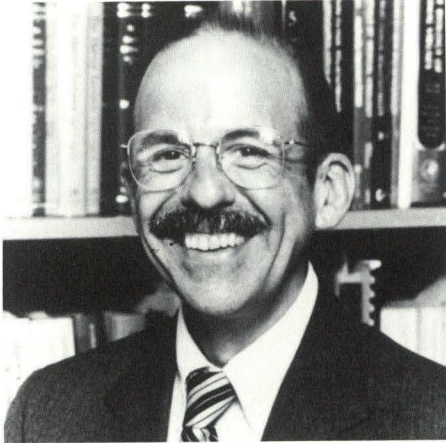
1971 - William C. Bernstein
 J.C. Grant
 1972 - J. Richards Aurelius
 Reino Puumala
 Marie Bepko Puumala
 Ricard Puumala
 Barbara Puumala
 1973 - Phillip Halenbeck
 Olga Hansen Litzenberg
 1974 - Ann Arnold
 Roger MacDonald
 Carl O. Rice
 R.S. Ylvisaker

1975 - Reuben Berman
 Bror Pearson
 Lawrence Richdorff
 1976 - Milton Hurwitz
 Leonard Lang
 Russell Sather
 1977 - Virgil J. P. Lundquist
 Ruth Boynton
 1978 - Herman Drill
 Lester Bendix
 1979 - Miland Knapp
 Harold Wilmot
 1980 - Helen L. Knudsen
 Donald Stewart

1981 - Eva Jane (Ostegren) Larson
 Carl Ragnar Wall
 1982 - Stuart Lane Arey
 Kristofer Hagen
 1983 - John J. Regan, Sr.
 John J. Eustermann
 1984 - Arnold S. Anderson
 John W. Anderson
 1985 - Kenneth W. Corey
 Frank E. Johnson
 1986 - A. Boyd Thomes

The Harold S. Diehl Award is presented during the Annual Medical Alumni Luncheon and Annual Meeting on June 6, 1987 (following the NEW HORIZONS seminar — during reunion weekend). Antoni Diehl, M.D., son of Harold Diehl, is the presenter — marking the 25th anniversary of the Diehl Award.

CLASS NOTES



Dr. Philip Y. Paterson

Dr. Paterson Receives Special Research Award

Northwestern University Medical School Professor Philip Y. Paterson, M.D., has received a Javits Neuroscience Investigator Award of \$827,031 for research in the neurological sciences. He is a 1947 graduate of the University of Minnesota Medical School.

Dr. Paterson is chairman of the Department of Microbiology and Immunology, Guy and Anne Youmans professor of microbiology and immunology, and professor of neurobiology and physiology at Northwestern University.

Dr. Paterson is continuing three decades of research on the mechanism of immune-inflammation of the central nervous system that leads to destruction of white matter myelin (covering of nerve fibers). This mechanism characterizes a disease of animals called experimental allergic encephalomyelitis (EAE) that can be used as a model to study multiple sclerosis.

A key finding has been the discovery of myelin basic protein (MBP), a product which acts to keep the body's own immune system from launching a misdirected attack on one's own central nervous system. Dr. Paterson will be studying the characteristics of MBP in the hope that it may be used to treat patients with multiple sclerosis.

The special seven-year award from the National Institute of Neurological and

Communicative Disorders and Stroke honors the late Senator Jacob K. Javits of New York, who suffered from a neurological disorder.

The Javits Neuroscience Award was made possible by a one-time Congressional appropriation, which the institute chose to use for the long-term support of investigators "who have a distinguished record of substantial contributions in some field of neurological or communicative sciences and who can be expected to be highly productive over the next seven years."

1959

Dr. John B. Campbell, Denver, Colorado, received a Distinguished Service Award at the Children's Hospital, Denver, in 1986, was awarded a fellowship in the American College of Radiology in 1986, and was elected president-elect of the medical staff of Children's Hospital for the years 1986 to 1988.

1966

Dr. Stephen L. Hanson, Bloomington, Minnesota, a commander in the Twin Cities Naval Air Reserve, was selected as commanding officer of the 4th Marine Air Wing-Medical. Dr. Hanson is an assistant professor in the Department of Family Practice and Community Health

at the University of Minnesota Medical School.

1966

Dr. Kent S. Wilson, St. Paul, Minnesota, was recently elected chief of the 1987 medical staff at Children's Hospital of St. Paul. Dr. Wilson is an ear-nose-throat specialist with Otolaryngology and Head and Neck Surgery, P.A. of St. Paul. He has been a member of the Children's Hospital staff since 1974.

1979

Dr. Ada Helleloid, International Falls, Minnesota, has been serving in Qalandarabad, Hazara, Pakistan in a 50-bed mission hospital for the past four years. The three doctors, one nurse practitioner, and one midwife see 200 patients daily. A separate tuberculosis program, childhood immunization program, and family planning program run concurrently with the clinics. Dr. Helleloid will be on leave in International Falls from July 1987 to July 1988.

1984

Dr. M. Joseph Walz, Minneapolis, Minnesota, is returning to his Rural Physician Associate Program (RPAP) site to start practice in July, 1987. Dr. Walz will be located in Aitkin, Minnesota.

What's New With You?

Name	Degree	Year
New Home Address		Telephone
City, State, Zip		
New Business Address		Telephone
City, State, Zip		
New Title or Position		

IN MEMORIAM

Richard E. Anonsen, M.D.

Class of 1954, died November 7 at his home in Dunwoody, Georgia, at the age of 60. A former Golden Valley, Minnesota, physician, Dr. Anonsen graduated with honors from the Medical School, and practiced medicine for the next 31 years. He was past president and chairman of the Hennepin County Medical Society, past president of the Hennepin County chapter of the Academy of Family Practice, past chief of staff at Eitel Hospital, and past president of the University of Minnesota "M" Club. In 1973 Dr. Anonsen received the Shotwell Award from Metropolitan Medical Center in Minneapolis for "noteworthy efforts in the health care field." He also was vice speaker at the house of delegates for the Minnesota Medical Association, and spoke out on political-medical issues. He retired in 1985 and relocated to Georgia. He is survived by four daughters.

John P. Brantner, Ph.D.

Class of 1948, died February 22 at his home in Minneapolis at the age of 65. Brantner graduated magna cum laude in psychology from the University of Minnesota in 1948. He joined the Department of Psychiatry as an instructor in 1954 and four years later received a Ph.D. in clinical psychology. In 1969, he was made a full professor and received the first of two Distinguished Teaching Awards from the Minnesota Medical Foundation. He received the second award, voted upon by the medical students, in 1977. In addition to giving lectures to psychology and medical students, Brantner was a consultant at University of Minnesota Hospital, counseled patients on a short-term basis, and was a frequent guest speaker at churches and meetings. Brantner is survived by a sister, Donna Edwards, of McFarland, Wisconsin.

Theodore C. Erickson, M.D.

Class of 1931, died on October 13 in Madison, Wisconsin, at the age of 80. While attending the University of Minnesota, Dr. Erickson did research in the surgical laboratory of Dr. Owen H. Wangenstein and served as a teaching fellow in the Department of Anatomy. In 1931, he began his internship at the hospital of the University of Pennsylvania, and in 1933 won a fellowship at McGill University and the Royal Victoria Hospital in Montreal. Dr. Erickson became the first chief resident in neurosurgery at the Montreal Neurological Institute in 1934. In 1941, he was invited to create a Department of Neurosurgery at the Wisconsin General Hospital, University of Wisconsin Medical School, Madison, and in the years that followed, organized a neurosurgical service and instituted a residency program. He is survived by his wife, Martha, and six children.

Melvin L. Hovland, M.D.

Class of 1933, died in December at the age of 79 in Minneapolis. Dr. Hovland practiced surgery in Minneapolis for 35 years, retiring in 1972. He is survived by his wife, Eve, his stepchildren, brothers, and nieces and nephews.

Fred Kolouch, M.D.

Class of 1940, died December 21 in Salt Lake City, Utah, at the age of 72. Dr. Kolouch was a surgeon at the University of Minnesota Hospital in the late 1940s, and during the 1970s was a member of the board of directors of the Minnesota Medical Foundation. He graduated from the University of Minnesota Medical School in 1940, and received his Ph.D. in surgery in 1945. As part of his research in the Department of Anatomy, Dr. Kolouch discovered one of the cells which subsequently helped all the later

studies having to do with cellular immunity, according to colleague Dr. Arnold Kremen of Minneapolis. In 1949, Dr. Kolouch joined a clinic in Twin Falls, Idaho, where he practiced general surgery. In the 1960s Dr. Kolouch received psychiatric training, and was on the faculty of the University of Utah College of Medicine as an assistant professor of psychiatry until retiring in 1981. He is survived by his wife, Helen, two sons and two daughters.

Harold H. Noran, M.D.

Class of 1936, died December 26 in Kentfield, California, at the age of 74. Dr. Noran was assistant administrator of Hastings State Hospital in Minnesota from 1939 to 1942. He was Clinical Professor Emeritus of Neurology at the University of Minnesota, founder of the Minneapolis Clinic of Neurology and Psychiatry, and founder of the Noran Neurological Clinic. He is survived by his wife, Ann, children and grandchildren.

Edward F. Walsh, M.D.

Class of 1941, died December 21 at the age of 69 in Arden Hills, Minnesota. He is survived by his wife, Alberta, children and grandchildren.

We have also received notice of the following death:

Hobart A. Reimann, M.D.

Wynnewood, Pennsylvania, died January 18 at the age of 88. Dr. Reimann was a professor of medicine at the University of Minnesota in the 1930s. He was a graduate of the State University of New York at Buffalo School of Medicine. Following his years of teaching at the University of Minnesota, Dr. Reimann went to Jefferson Medical School in Philadelphia as department chairman.

The Minnesota Medical Foundation Charitable Gift Annuity

"A way to GIVE and RECEIVE"

A gift investment that returns an income for life.

Features:

- Can be for one or two persons.
- Rate of return ranges from 6 percent to 14 percent depending on age.
- Tax-free income . . . ranges from 18 percent to 60 percent for a period of years.
- Saves taxes . . . a portion of the gift qualifies as a charitable contribution deduction, ranging from 39 percent to 59 percent of the gift.
- Can be funded with cash, stocks, or other property that is easily marketable.
- Secure . . . is backed by assets of the Minnesota Medical Foundation.
- Easy to establish . . . no attorney or legal fees are necessary.
- Inexpensive to manage . . . no investment or management fees.
- Payment schedule . . . quarterly, semi-annually, annually, (monthly for annuities of \$100,000 or more).

- Can be used to provide a lifetime income for someone other than self or spouse. For example: a relative, a friend, an employee, etc. (If under 40 years of age, will need special consideration.)
- University of Minnesota Membership Societies . . . qualifies for Heritage, Presidents, Trustees, or Builders, depending on amount of gift.
- Named Endowment Fund . . . a gift of \$10,000 or more will establish a named endowment fund. For example, the John and Mary Doe Scholarship Fund or Research Fund.

Sample data for a one-life annuity:

Age	Rate of Return	Tax-free Income	Charitable Deduction
50	6.5%	26%	45%
60	7.0%	31%	48%
70	7.8%	32%	53%
80	9.6%	49%	58%
90	14%	60%	59%

For specific information for one or two persons, please complete and return the information below.

Name(s) and birthdate(s) of person(s) who would receive income:

Name _____	Birthdate _____
_____	_____
_____	_____

Information will be provided in percentages. If you would like information for a specific amount, please indicate the amount:

\$ _____

Name _____

Address _____

City/State/Zip _____

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

HISTORICAL PERSPECTIVE

Perry H. Millard and the State Board of Medical Examiners

By Leonard G. Wilson, Ph.D.

In the spring of 1887, the Minnesota State Legislature passed a new act to regulate medical practice in the state. The law established a state board of medical examiners whose duty it would be to examine all new applicants for a license to practice medicine in Minnesota. Under the previous Minnesota medical practice act, passed in 1883, possession of a diploma from a recognized medical school was considered sufficient evidence of fitness to practice medicine. Only those applicants who lacked a medical diploma need take an examination.

The Minnesota act of 1887 was a direct challenge to the adequacy of the medical diploma as a measure of fitness to practice medicine, and consequently to the standards then maintained by American medical schools. Minnesota was the first state in the Union to establish a state board of medical examiners, although followed closely in the same year by Virginia. Within a decade more than half the states had enacted medical practice laws very similar to the Minnesota act.

The Minnesota law of 1887 also made possible the creation of a medical school that would adhere to standards at least equal to those of the best medical schools then existing in the United States. On April 7, 1887, shortly after passage of the medical practice act, a committee of three Minnesota physicians — Perry H. Millard of Stillwater, Charles N. Hewitt of Red Wing, and Daniel W. Hand of St. Paul — met with the Board of Regents of the University of Minnesota to propose that the University establish a medical teaching department. At the close of the

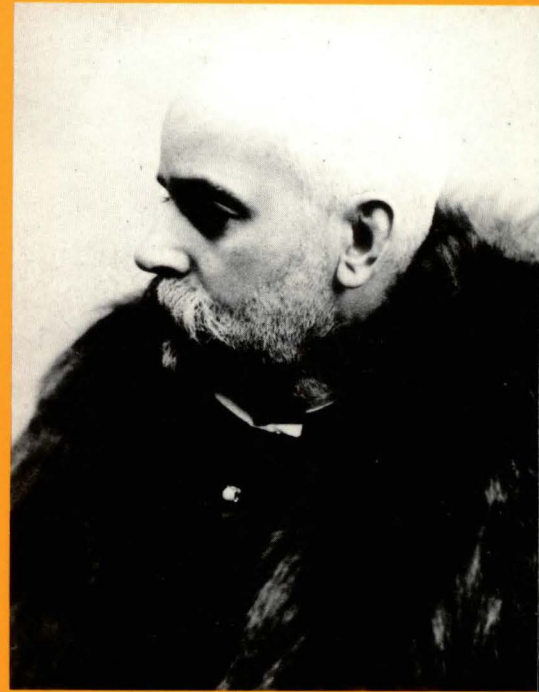
meeting, the regents decided to ask the Legislature for appropriations to establish a medical school.

The author of the 1887 Minnesota medical practice act, and the man chiefly responsible for its passage through the Legislature, was Perry H. Millard. At 39, Dr. Millard possessed extraordinary vision, political sagacity, force, and energy. He was born in Ogdensburg, New York, and in 1868, at the age of 20, came to Chicago where he studied medicine for three years at Rush Medical College.

After receiving his M.D. degree, he began to practice in Chicago, but lost everything he had in the great Chicago fire of October 1871. After the fire Dr. Millard moved to Stillwater, Minnesota, where his brother had settled. Stillwater was at the beginning of its years of prosperity as a lumber town, and Dr. Millard soon built up a large practice.

An early convert to antiseptic surgery, Dr. Millard traveled to London in 1880, where he spent several months in the study of surgery at Guy's Hospital. After his return to Stillwater in 1881, Dr. Millard's practice became increasingly surgical. In the summer of 1887 he moved to St. Paul where he became attending surgeon at two hospitals and chief surgeon for two of the principal railroads. He also was on the State Board of Medical Examiners, which he had worked to create, and deep in plans for the new medical school at the University where he would become the first dean.

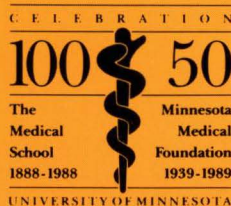
During the next 10 years, Dr. Millard would bring into being on the campus of



Dr. Perry H. Millard

the University of Minnesota a modern medical school with teaching and research laboratories on a par with the best in the country. Such furious work and heavy responsibilities broke his health. On February 1, 1897, he died at the age of 48 of pernicious anemia. At his memorial service President Northrop said:

While we must all leave this world and leave seemingly little behind us, by our individual efforts are laid the foundations for future generations to build upon. Of Perry H. Millard may be said this. . . *He laid the foundation in this state for medical education and medical law, upon which his successors may build safely. . .*



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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CALENDAR OF EVENTS

Family Practice Review: Update '87

Radisson South Hotel, Bloomington
CME (612) 626-5525

April 20-24

Respiratory Problems of the Immuno-Suppressed Patient

St. Paul-Ramsey Medical Center, Ramsey Clinic, St. Paul
CME (612) 221-3992

April 24-25

Alzheimer Patients: Toward a Standard of Care

Radisson Hotel, St. Paul
CME (612) 626-5525

April 29-30

Managing Quality in the Physician Office Laboratory

Site to be determined
CME (612) 626-5525

May 7

Human Aging X: Assessment and Transitional Care of the Elderly

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

May 13-14

The Complicated Diabetic

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

May 15-16

North American Primary Care Research Group — 15th Annual Meeting

Hyatt Regency Hotel, Minneapolis
CME (612) 626-5525

May 17-20

Fourth Annual Gynecologic Oncology Symposium

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

May 19

Current Concepts in Radiation Therapy

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

May 20-22

Surgery for the Primary Care Physician

Grandview Lodge, Brainerd, Minnesota
CME (612) 626-5525

May 29-31

Laser Surgery in Obstetrics and Gynecology

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

June 1-3

Unstable Coronary Lesions

Sheraton Park Place Hotel, St. Louis Park
CME (612) 626-5525

June 4-5

Workshops on Clinical Hypnosis

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

June 5-6

Frontiers in Laboratory Medicine and Pathology

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

June 10-12

The Second Minnesota Course of Interventional Radiology

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

June 11-13

51st Annual Surgery Course: Progress in Vascular Surgery

Willey Hall, University of Minnesota, Minneapolis
CME (612) 626-5525

June 17-19