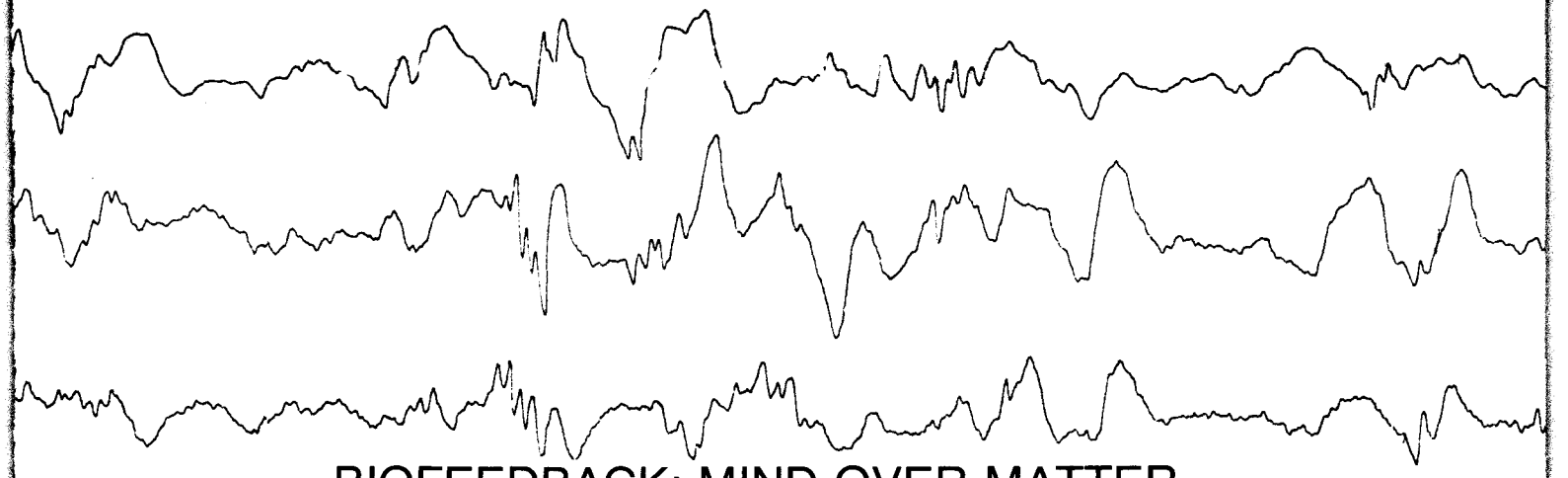
MEDICAL BULLETIN
UNIVERSITY OF MINNESOTA

FALL / WINTER, 1975



BIOFEEDBACK: MIND OVER MATTER

CONGRATULATIONS, MR. PRESIDENT

For the past eight years, the Minnesota Medical Foundation has enjoyed the good fortune of having Mr. Lewis W. Lehr as an active member of its Board of Trustees. He has just begun his second year of a two-year term as the Foundation's volunteer President.

We are pleased to use this space to congratulate "our" President on his recent appointment as President of U. S. Operations for the 3M Company. Mr. Lehr joined 3M in 1947.

Mr. Lehr has been an enthusiastic supporter of the work of the Minnesota Medical Foundation and he has already assured us that he will continue as the Foundation's volunteer President through his term, despite his new responsibilities with 3M. We thank him and we thank 3M for letting us have him part-time.

— MMF

Lewis Lehr

THE UNIVERSITY OF MINNESOTA MEDICAL BULLETIN

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This magazine is published quarterly by the Minnesota Medical Foundation as a service to alumni of the University of Minnesota Medical School, physicians in the state of Minnesota and members of the Foundation. There is no subscription fee. No advertising is accepted. Publication is made possible by contributions to the Minnesota Medical Foundation. Editorial office: 5412 Powell Hall, University of Minnesota, Minneapolis, Minnesota 55455.

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Published by the Minnesota Medical Foundation in behalf of the University of Minnesota Medical Schools (Minneapolis and Duluth), Minnesota Medical Alumni Association, and the Minnesota Medical Foundation. Statements and opinions published herein are exclusively those of the authors themselves.

BIOFEEDBACK THERAPY: PATIENT HEAL THYSELF

By Heidi Reidell*

Opinion is mixed, but more and more health professionals are becoming interested in evidence that some patients — maybe all patients to some degree — *can* control bodily functions previously thought to be involuntary. An amazing example is the Swami Rama of the Himalayas who, in scientifically conducted research at the Menninger Foundation, slowed his heart to 20 beats per minute and stopped it completely for more than 20 seconds.

The physicians, clinicians and researchers conducting "biofeedback" therapy and training in the Twin Cities have disparate approaches and conflicting conclusions on its usefulness and its future as a therapeutic tool.

WHAT IS BIOFEEDBACK?

November 1973 "Seminars in Psychiatry," devoted entirely to biofeedback, defined it as "the use of monitoring instruments to detect and amplify internal physiologic processes . . . and literally feed it back to the subject."

Organ specific biofeedback therapy can help bring under conscious control, body functions which we think of as being under only the most minimal control. Heart rate and blood pressure for example. Biofeedback equipment lets the patient detect success or failure in efforts to control these functions.

What is biofeedback therapy used for? A wide and expanding range of problems: tension headaches, migraine headaches, hypertension, epilepsy, ulcers, cardiac arrhythmia, asthma, Raynaud's disease, torticollis, toothgrinding, paralysis, spasticity, hemiplegia, and more.

Pilot clinical and experimental study in this field began in the early 1960's. Three major devices are used in both training and research.

1. *Electromyograph.* The more electrical energy circulating through a person's muscles, the more tense the person is. By attaching electrodes to the frontalis, for example, the person can hear the evidence of his tension, and hear the tone emitted by the machine increase as he grows more tense and decrease as he relaxes. Those with tension headaches can learn conscious relaxation with the aid of this device. Some stroke victims can learn to tense muscles thought to be lost to conscious control.

2. *Temperature trainer.* This is thought to be the best aid for teaching concentration. It is useful in teaching vascular dilation to migraine headache sufferers. This treatment is also used for those with Raynaud's disease, a condition that can lead to gangrene.

Phillip Nuernberger demonstrates ease with which biofeedback equipment is attached to patient.

3. *Electroencephalograph*, or *Alpha trainer*. Demonstrates and helps reinforce various states of mind and relaxation.

The manipulation of mental and internal body functions through the use of biofeedback devices can result in learned, voluntary, conscious control of "involuntary" body functions. The capabilities of the mind in controlling the body is an area outside of our western-oriented experience and is a field we have barely begun to explore.

TREATING TENSION

One area in which we recognize the effect of the mind on the body is tension. So many diseases are the result of tension breaking down the weakest part of the body. Consider ulcers and headaches as diseases largely related to tension.

(Continued next page)

*Heidi Reidell is a free-lance writer.

BIOFEEDBACK

Doctors frequently advise their patients to relax, but for the patient that is much easier said than done. How, step-by-step can he relax? A perpetually tense person may not even know the meaning of the word.

Here biofeedback training can be particularly useful. The individual can hear or see evidence of his tension. He can experience the steps necessary to reduce his tension level and have that pattern reinforced through instantaneous, constant feedback of sound or light. The intrusion of a negative or disturbing thought immediately comes back to him as a higher level of tensions. Also, the calming and relaxing of the mind and body is immediately indicated by a lower sound or light level.

With the guidance and reinforcement of the machines, the individual can learn the meaning of relaxation, establish his individual pattern in reaching it and, later, without the use of the biofeedback machine, be able to return at will to a relaxed state.

"This form of therapy doesn't demand more of the patient than an ability to understand what he is asked to do and the motivation to make himself better. This is a nonsurgical, non-medicated form of therapy in which the only complication encountered is a lack of success," goes the narration of a Roche film on biofeedback therapy featuring Dr. Joseph Bredney of New York University Medical Center.

"Biofeedback can be useful in treating neurological dysfunction," continues Bredney. "Damaged internal sensory loops can be replaced by machines to retrain control. Involuntary movements can be overcome through creation of new feedback loops in the brain . . . "

The range of uses of biofeedback therapy in a variety of problems is demonstrated in this film. Says Bredney, "In the patients we have successfully treated so far, conventional methods of rehabilitation, medical, surgical, physical and psychotherapeutic, were used for long periods of time with limited success. The same patients have benefitted in a relatively short period of time from sensory feedback therapy. In reteaching patterns of functioning, we are using a trial and error method. Apparently, some patients can learn to use the intact portions of the nervous system to take over the impaired function."

In an article in the *Archives of General Psychiatry*, May 1974, entitled "Clinical Applications of Biofeedback Training" the authors reviewed the available studies in the field with the premise that the efficacy of biofeedback techniques should be evaluated by the same standards as one would apply to new drugs or a new form of psychotherapy.

Patient tries to relax and receives "feedback" from machines measuring her success.

The authors, Edward Blanchard, Ph.D. and Larry Young, MS., said that electromyograph feedback had the most dramatic success. "The work on the application of EMG feedback training to clinical problems is the oldest and soundest work in the biofeedback area. In such areas as the elimination of subvocal speech during reading and the retraining of paralyzed muscles in hemiplegics, the evidence is quite sound that EMG feedback training has marked therapeutic effects.

"It is also fairly well established that a combination of EMG feedback training and practice in relaxation is very effective in the treatment of tension headaches."

The authors concluded that although the initial results of biofeedback research are encouraging, even portentous, the controls in the experiments conducted were not as scientifically based as they should be. Much of the information tended to be anecdotal. Other researchers say anecdotal information is no less real.

BEWARE OF ALPHA-SEEKERS

Legitimate research has been clouded by "alpha-seekers" and those eager to use half truths to the advantage of their bank accounts. Again, in the 1973 November Seminars in Psychiatry, Dr. Lee Birk warned: "Biofeedback is in clear danger of being oversold. The public is being urged by the zealots and entrepreneurs who are now claiming this whole field as their own to enjoy a euphoric ride on the crest of therapeutic ebullience that

sometimes borders on mindless omnipotence."

Whew! But the sentiments expressed in that mouthful are echoed repeatedly by those researching and using biofeedback in the Twin Cities.

One feared that overpublicizing biofeedback might lead to the abandonment of basic scientific research in the same way that research in hypnotism and acupuncture suffered from sensationalism.

Most of the local researchers emphasized the lack of definitive research in the field of biofeedback. Several are currently engaged in remedying the situation.

CENTER FOR BEHAVIOR MODIFICATION

William Duffy, a psychologist, runs the biofeedback research and training program at the Center for Behavior Modification in Minneapolis.

"We want relaxation training to be an active process rather than a passive one, for people to use their discriminative process and learn the early signs of increased tension and be able to do something about it immediately. A chief goal is to have the person develop a cognitive sense of self control," says Duffy.

"Being a private, profit-making center, we can't concentrate on doing traditional research," continues Duffy. But research is being conducted with those referred to the clinic for problems such as essential hypertension and migraine headaches.

About 95 per cent of his subjects are referred to the center by other professionals. When they come in the first time a baseline level is established. "We establish a criterion of success, the same for every person. In one project, 195 of 206 subjects reached the criterion of success within 7.7 40 minute sessions," said Duffy.

UNIVERSITY HOSPITALS

Dr. Alan Roberts, director of the Pain Treatment Center at University of Minnesota Hospitals, is doing more research than therapy in biofeedback. He expresses doubts about its efficacy.

His subjects are selected from the University's psychology department and spend an unguided period relaxing before using the machines for experiments in the treatment of tension headaches, spasms or torticollis.

Only half his subjects are able to learn, says Roberts. He says biofeedback therapy is overdramatized and overpopularized, and unless there is scientifically grounded research, respect for the area will diminish. In his opinion, electromyograph treatment is the most promising, but the power of the "placebo effect" is underestimated in the treatment of headache and tension.

GOLDEN VALLEY HOSPITAL

Dr. Walter Indeck is conducting research and treatment at the Golden Valley Hospital. An orthopedic surgeon, he concentrates on the use of biofeedback in treating orthopedic problems, but is also examining the application of biofeedback in pain rehabilitation, muscle relaxation, peripheral vascular disorders such as Raynaud's disease, epilepsy, ulcers, and even asthma. He is also researching its use in the treatment of chemical dependency.

"We have no well-constructed projects with proper conditions for more definitive studies," Indeck says. "If we can observe the healing of an ulcer, and show that there is no longer a need for medication, that would have more substance." His work with ulcer patients has been very encouraging, and he has recently been awarded a grant to study biofeedback in the treatment of ulcers and strokes.

"Future research will have to be done with physician supervision," says Indeck. While he expects the field to expand rapidly, he expresses concern that over enthusiastic extolling of biofeedback's benefits might result in dampening legitimate research. "I'm afraid a lot of it will crop up unsupervised as it is now along both the East and West Coasts," he said. "There is wholesale selling of alpha conditioning. I think this is unwise."

MINNEAPOLIS CLINIC OF NEUROLOGY AND PSYCHIATRY

Indeck and Phillip Nuernberger, a clinician, set up the biofeedback treatment program at the Minneapolis Clinic of Neurology and Psychiatry in Golden Valley. Both men have backgrounds in the practice of Yoga and implement relaxation and concentration exercises taught in the Yoga tradition.

Both Indeck and Nuernberger have worked with the Swami Rama of the Himalayas, a phenomenal human being. In scientifically conducted research at the Menninger Foundation in Topeka, Kansas, Swami Rama has demonstrated extraordinary control of his body. In controlled experiments, he has simultaneously raised and lowered the temperature in two separate muscles in his hand by 15 degrees and then reversed the process. He has recalled everything told to him while his EEG patterns indicated a deep sleep state, characterized by delta waves. He has decreased his heart rate to only 20 beats per minute and completely stopped his heart for 22 seconds.

YOGA THERAPY

Nuernberger is now director of the biofeedback treatment center at the Minneapolis Clinic. "My patients come primarily from neurologists and psychiatrists and some general practitioners. I typically get people

(Continued next page)

who have seen everybody else, I tend to be a last resort kind of person. I often see people who have had headaches for 15 years," says Neurnberger.

"Now, because of my background I use Yoga," Nuernberger said. "Learning how to use breathing techniques and exercises calms the emotions, develops concentration and induces greater states of relaxation than you would normally get through auto-suggestion, but I also use autogenic phrases, the Schultz and Luthe system, in temperature training because it's quick and simple."

Is this behavior modification?

Says Neurnberger, "This is where people in biofeedback often make a mistake. It's not a behavioral control, it's a mental control. In terms of psychology, when you talk about behavior, you're talking about the obvious, the external, the consequential reactions and responses. You're not talking about *the space in between* the stimulus and response that mediates the response.

"What happens too often in biofeedback clinics as far as I can see is people are being taught changes, but they're not taught how they make those changes. So it's again a blind habit pattern that people are being trained into."

The difference between traditional medicine and biofeedback therapy, says Nuernberger, is that in biofeedback therapy, the patient is responsible for himself. "It's different than medicine where a patient will go to the doctor and say 'give me a pill that will cure me!' The patient comes for biofeedback therapy and says 'teach me how I can cure myself.'"

"I have no other responsibility than to communicate my particular skills as best I can. Certainly my skills and knowledge exceed the patient's, but it's my job to communicate how to attain the same kinds of skills I have.

"Let's bring it back to the guy who comes in with a tension headache," continues Nuernberger. "The reason he has a tension headache is because his realities are geared to a non-now situation. He is either too much in the past, or too much in the future. When people get into the habit of being in the past or the future, they start building tension. And tension in the body breaks down the weakest part of the body. Either they'll have ulcers, or headaches, heart problems or may develop psychosomatic problems in other parts of the body."

Biofeedback therapy, which shows the individual direct evidence of his tension, can help to retrain people to a more relaxed pattern. Nuernberger uses relaxation exercises with his patients before they use the machines.

The role of relaxation as a placebo effect is questioned by Dr. Alan Roberts and is discussed in current literature on biofeedback. Nuernberger disagrees.

"A placebo is an inert, psychopharmacological or psychotherapeutic or medical substance or procedure that has nothing to do with anything. But because the patient believes in it, his belief will create the change, perhaps superficially. Oftentimes, the placebo effect won't last," Nuernberger says. "But we're not looking at an inert process here. We're looking at a process that reduces tension levels, that makes changes in the psychic structure of the individual. Relaxation is not a placebo, it's an actual effect. The expectation that something will work only allows the freedom for the process to operate."

Are people being trained to depend on the machines?

"The machines are reward systems for those who do the relaxation exercises at home," says Nuernberger about his treatment method. "Patients come in once a week and see the changes that are happening. In practicing biofeedback here, rather than reliance on the machines, we teach people to rely on themselves."

Biofeedback training does not always succeed. "It doesn't work with everybody," says Nuernberger. "A lot of people won't take the time to do it. Some people are so hung up with the idea of you curing them they're not going to work on themselves. Some people for some reason, don't learn the skills even though they give it a try. I suspect that they have a deep belief that they can't learn the skills.

"With about 20 per cent of my patients, nothing happens," Nuernberger said. "But there are lots of reasons for that. A lot of my failures only come in one time, so I don't really see that as a failure. Then there are some people who want to be sick, they get too much reward out of it. Still there are some people who really give it a chance and don't make it. I really don't know why, yet. I wish I did."

Dr. Charles Strobel in the 1973 Seminars in Psychiatry said, "Biofeedback encourages the subject to view himself as responsible agent in regulating his life style and health. The successes of modern scientific medicine have been impressed upon the populace by the mass media in various terms — medical soap operas, documentaries, commercials for patent medicines. So well has this message been received that physicians are no longer expected nor permitted to make occasional mistakes. Acclimated as he is to be a recipient rather than a participant in treatment, modern man may require personal demonstration through a structured period of self-learning to incorporate the concepts of individual responsibility into his daily life-style in times of both health and illness." Strobel said.

Biofeedback therapy helps teach man how to use his mind to control his body. For years we have accepted without much question the fact that only a small percentage of the brain's potential is used by man. Perhaps it's time to change that. Biofeedback therapy may be able to help.

MEDICAL STUDENT MEDITATES ON THE MOVE

Mark Kremen leads students through movements of Tai Chi Chuan.

Mark Kremen doesn't take his meditation sitting down. The second-year medical student at the University of Minnesota teaches Tai Chi Chuan, the art of moving meditation regularly practiced in China.

When Kremen was a student at the University of California at Davis, he travelled to San Francisco to study Tai Chi with Master Choy Kam-Man. Now Kremen teaches the art to a growing number of students in the University area. Tai Chi has taught him an unique understanding of body movement which he says he could not have learned from a textbook. He is interested in the physical movement and the mental relaxation and is already planning to further develop those interests in his medical career. He plans a practice which combines psychiatry and physical medicine and rehabilitation. He works with a dance therapist in the University of Minnesota psychiatry department and also studies at the Choreogram Dance Studio in Minneapolis.

Kremen explained that meditation has taught him a calmness that has greatly benefited him in his dealings with people, and it also helps him settle into his studying. "I have an intensity," he says, "but it is on the inside. Tai Chi Chuan helps me feel my internal drives and translate them to worthwhile action."

"The process of teaching has also been of great benefit to me," he says. "I see myself as a teacher of patients eventually."

There is no hierarchy of belts or degrees associated with Tai Chi Chuan. Its martial aspects are more evident in the weapons versions (sword, sabre and partner) which Kremen has studied but does not teach. "The best defense is not to fight," Kremen says. "The *form* of Tai Chi Chuan is neutral, neither aggressive nor defensive. The form does not change even though certain circumstances might dictate a different use for the form, such as the martial use."

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"The emphasis in Tai Chi Chuan is on the 'Chi,' or intrinsic energy. Softness and flow as opposed to developing strength, meditation as opposed to technique," he said.

As his students accompany him in gracefully and slowly moving through the exercises, Kremen recites almost lyrical names for the movements . . . "grasp bird's tail left . . . grasp bird's tail right . . . carry tiger to mountain . . . step up to form seven stars . . . "

We asked Mark what his family thought of his interest in meditation and dance. (His father is Arnold J. Kremen, 1937 graduate of the University of Minnesota Medial School.) "I think they feel I am a little odd," he said.

"But I am at peace with those feelings."

℞ FOR CHEMICAL DEPENDENCY: MEDITATE TWICE DAILY

Meditation Hatha Yoga and biofeedback therapy have proved a useful addition to existing treatment programs for chemically dependent people in the Twin Cities area. Several hospital based treatment centers including St. Mary's, the V.A. Hospital and drug treatment residencies, Pharm House and New Connections, show alcoholics and other chemically dependent people how to gain control over their lives, habits and emotions through yoga breathing practices, postures that emphasize balance and coordination, conscious relaxation and meditation.

The very word yoga conjures up images of lotus postured swamis in mystical settings. But blow away the incense and tools for building a self-disciplined way of life remain. And self-discipline is pivotal in recovering from chemical dependency.

Psychiatrists, psychologists, meditation teachers and drug counselors who use yoga principles in the treatment of dependencies recently shared their skills at a conference sponsored by the Minnesota Chemical Dependency Counseling Program and the University's School of Public Health. Dr. Richard Heilman, medical director of the Alcohol and Drug Abuse program at the Minneapolis V.A. Hospital, introduced yoga meditation as a treatment modality at the three day conference in November. Conference participants were taught breathing exercises, concentration and relaxation by Dr. Usharbudh Arya, director of the Meditation Center in Minneapolis.

Hatha Yoga, physical postures that require and develop balance and coordination were demonstrated to the participants, who practiced them several times during the conference.

Postures are particularly appropriate in the treatment of chemical dependency. Years of low self worth, guilt and anxiety that accompany dependency translate into poor health, and atrophied muscles. Chemical dependents often develop self protective, inward posture, reflecting the protective behavior they have developed around the use of their chemical. Entering treatment requires a person to admit that his life was not in his control, that his daily habits surrounded use of his chemical and shut out family and career. Becoming receptive to change can begin on a physical level, by developing receptive postures. Some people (particularly amphetamine users), during the detoxifying segment of treatment, haven't the attention span to confront their problems in reasoned discussion. Exercise, using yoga postures can reestablish connection between mind and body.

Emotional upset and difficulty with emotional control often occurs in the group phase of treatment. Charles Bates, who runs the yoga program at Pharm House, teaches at the Johnson Institute and does counseling work at St. Mary's Hospital, explained the relationship between yoga and dependency treatment:

"Chemical dependents medicate their feelings," said Bates. "Once in treatment, they have to deal with a lot of guilt. When they accept the fact that the chemical was ruling them, they can start to make changes. But that's a hard thing to admit, because it means admitting that your life was not under your control, consequently the person feels powerless, worthless." Regaining physical well being, simply feeling better through yoga postures can be the first step in regaining control of one's life, explains Bates.

Breathing exercises can help the individual maintain control over his emotions. "If all you can do is be angry, or cry, you'll never get to the problem," Bates said. Preoccupation with events in the past or in the future cause tension, and don't effect change. Some chemical dependency treatment programs use biofeedback machines to help dependents indentify and reduce tension.

Counselors at the conference divided into small groups to discuss the use of yoga in their individual programs with representatives from the Metropolitan Medical Center, St. Cloud Hospital, the State Alcohol and Drug Authority and the Meadowbrook Treatment Center and Alcoholics Anonymous.

The success of yoga in the treatment of dependencies is largely anecdotal to date. Statistical analysis of attitude change is difficult, especially when inclusion of these techniques is so recent.

The yoga program at Pharm House, directed by Charles Bates for three years, is the longest experiment to date. Others in the field, including the nationally known Johnson Institute, have thought it beneficial, and are incorporating yoga-style therapy in their chemical dependency programs.

— HR

MEDICAL ALUMNI ASSOCIATION PRESENTS 1975 DIEHL AWARDS

The Minnesota Medical Alumni Association held its 38th Annual Meeting Oct. 17 in St. Paul and presented its 1975 Harold S. Diehl Awards for outstanding contributions to the Medical School and the University of Minnesota to three medical alumni; Reuben Berman, '32, Bror Pearson, '31, and Lawrence Richdorf, '20. The award is named for the late dean of the health sciences.

Berman, a specialist in cardiology and internal medicine, has been in private practice in Minneapolis since 1946. He is a charter member of the Minneapolis Society of Internal Medicine and a former president of the Minnesota Heart Association. He is a former editor of *Minnesota Medicine*, the publication of the Minnesota State Medical Association. He is a clinical professor of medicine at the University of Minnesota and is director of medical information at Mount Sinai Hospital in Minneapolis.

Pearson, a native of Sweden, has been in private practice in Shakopee, Minn., since 1934. He has served with the Minnesota State Board of Medical Examiners since 1961. He is a district governor of the Rotary Club and is a member of the Shakopee School Board.

Richdorf, longtime area pediatrician, is semi-retired. He helped establish the Minnesota Heart Association and was instrumental in the creation of the Variety Club Heart Hospital. He received a Gold Headed Cane Award in 1972 for his 50 years of professional leadership in pediatrics. He is still active on the staffs of Lutheran Deaconess and Fairview Hospitals.

1975 recipients of the Harold S. Diehl Award of the Minnesota Medical Alumni Association (left to right): Reuben Berman, Med. '32, Bror F. Pearson, Med. '31, and Lawrence F. Richdorf, Med. '20.

Don Dahlstrom, Med. '62, 1975 president of the Minnesota Medical Alumni Association, visits with Diehl Award winner Bror Pearson.

Members of the class of '50 at the Friday evening alumni banquet: (Kneeling, left to right) George T. Tani, Albert L. Walonick, N. L. Gault, Edward P. Donatelle, Sarah Gault, Pat Rollins, Marcus I. Shelander, Edward A. Johnson, Clifford J. Stadem, Charles V. Carlson. (Standing in center row, left to right) David D. Webster, Norman A. Nelson, Naomi G. Lund, Arvid J. Houglum, William C. Broderick, Margaret Filante. (Back row, same order) Konald A. Prem, Kenneth B. Romness, Terrence B. McManus, Leighton Larson, William Filante, Alan R. Hopeman, Joyce L. Funke, David D. Norman, and Neil Palm.

THE PRIVATE SECTOR AND ITS FUTURE IN THE U.S. HEALTH CARE SYSTEM

(The following address was presented by Charles C. Edwards, M.D., former assistant secretary for health, U.S. Department of HEW, at the Annual Meeting of the University of Minnesota Medical Alumni Association, Oct. 17, 1975, in St. Paul.)

An occasion like this tends to make all of us a bit nostalgic, which is natural enough. And at a time when the affairs of our own nation and of the world are — or certainly seem to be — especially disturbing, the temptation to look backward to what we would like to think were happier days is all but irresistible.

Unfortunately, of course, we cannot afford the luxury, or the folly, of looking backward — at least not for long. Because in literally every sector and facet of human events, including, certainly, the field of health and health care, the demands of the present and of the immediate future require our total attention and every quantum of applied intelligence that we can devote to them.

And sad to say, the past, at least insofar as the health care system is concerned, is a rather limited guide through the difficulties we face now and will surely face in the years and months ahead.

I say this knowing full well that whatever course the American health care system finds itself on in the future will be an outgrowth, logical or illogical, of the past. But I must say, from a perspective that draws on a good many years of experience in both the public and private sector, there is little in the recent performance of the health care system that gives me a feeling of confidence or of optimism about the future.

If patriotism is the last refuge of scoundrels, then I

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"The system of third-party financing has put the health care consuming public in somewhat the position of the frog in the pan of water. If the heat is raised slowly enough, the frog gets boiled before it senses what is going on."

suppose nostalgia must be about the last refuge of the desperate. And I think it is not an exaggeration to say that there are elements of the American health enterprise that are indeed in a desperate situation. The most obvious and most serious is the state of our health economics.

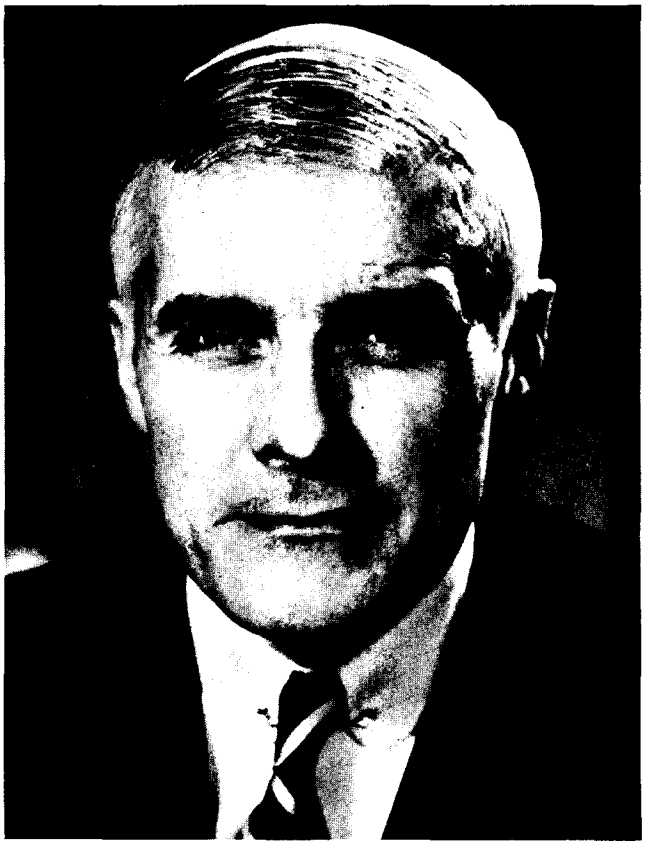
We are now experiencing inflation in the cost of health care at an annual rate of better than 13 per cent. Almost certainly, the American people will spend in the neighborhood of $125 billion for health care next year — five times as much as they spent in 1960.

When the cost of crude oil from the Middle East went up by 300 per cent, the United States was plunged into a state of economic shock and we heard grandiose proposals about obtaining energy from the sun, the tides, from volcanoes, and even from the solid waste of our metropolitan areas. But a rise of 500 per cent in the cost of health care — albeit over a matter of years, rather than weeks — seems to produce little more than resignation and the halfhearted suggestion that higher prices might possibly be equated with better care.

Why is it that the really very alarming state of inflation in the cost of health care produces so little in the way of public and official reaction, other than a special kind of ineffective rhetoric known as "jawboning?" I think the answer is not a simple one, but figuring out the answer is nonetheless critically important.

At the risk of oversimplifying, I would suggest that perhaps the principal reason for the lack of an effective response to the perennial pattern of double-digit inflation in the cost of health care is that most consumers, and probably most providers as well, have been insulated against the shock. The system of third-party financing has put the health care consuming public in somewhat the position of the frog in the pan of water. If the heat is raised slowly enough, the frog gets boiled before it senses what is going on. By the same token, American consumers of health care are so used to buying care on the deferred payment plan — through insurance or taxes, and usually through both at once — that they cannot really feel the impact of the enormous rise in the cost of that care.

Obviously, the individual or family that is hit with an illness or injury that is truly catastrophic, in that it goes far beyond what their insurance will pay for,



Dr. Edwards

comes tragically face to face with the real disaster of the cost of health care in America. Such a person or family is rather like one of the acutely underdeveloped nations in Africa or Asia that is literally faced with ruin and starvation by what has happened to the price of oil. But for the vast majority of Americans, the incredible rise in the cost of health care over the past two decades or so is a blow too subtle to be fully appreciated.

Of course it could be said that this is precisely what third-party financing is supposed to accomplish — to spread the cost of care among enough people and over a long enough time span so that no one, or at least only a few people, can be seriously threatened by having to pay for health care. But now we are beginning to understand that this kind of protection has its negative as well as its positive aspects. Not only does it make difficult the job of alerting the public to the problem of rising costs, it also contributes to the inflationary pattern itself by skewing the health care system toward hospitalization and other costly practices and away from ambulatory care, preventive services, use of less expensive personnel and similar facets of health care that could save money and probably in the final analysis be more effective.

I know, of course, that most of us are all too familiar with this line of thinking, and I do not propose to pursue it any further. My point is that what is happen-

ing to the cost of health care, and happening with virtually no public understanding and little that could be called appropriate response on the part either of government or the private health sector, is going to produce a cataclysmic change in the American health care system. I think there is no longer any doubt about that.

"The only real uncertainty now is, will the system be boiled alive like the frog, or will it have sense enough to jump before the water gets too hot?"

The only real uncertainty now is, will the system be boiled alive like the frog, or will it have sense enough to jump before the water gets too hot. The answer to that one is, in my judgment, still up for grabs.

But there are several trends and currents that will most certainly bring the cost issue rapidly to a boil. One is taking place in the health insurance field itself.

During World War II, when wages were frozen, organized labor began intensive bargaining to gain increasing amounts of fringe benefits for its members, one of which, of course, was health insurance. Over the years, the scope of insurance coverage has broadened tremendously under collective bargaining agreements, to the point where health insurance is one of the more substantial costs of doing business for companies both large and small.

By having to pay ever increasing amounts for insurance plans — not to improve coverage, but to keep up with the rising cost of health care — management is quite literally having to ask, "Where is this price rise going to end and how?"

But labor, too, is beginning to question the ever rising portion of fringe benefits being taken up by health insurance. There are beginning to be signs that organized labor would like to see less of the fringe benefit package going to health insurance, and certainly better health care for the dollars spent. In essence, both labor and management are starting to question the steadily rising cost of health care protection. And not surprisingly, they are looking toward government for some answers.

But government is in a quandary different only in form, not substance. As the share of the federal budget taken up by Medicare and Medicaid continues to mount — $5.4 billion increase in this current year over last year — federal fiscal planners — and note that I do not say health planners — are coming to the conclusion that rising Medicare and Medicaid costs will have to be offset by reductions in other areas, and particularly in other health areas.

I rather imagine that when President Ford submits his budget next year, he will elect to deal with the cost of Medicare and Medicaid by trimming spending on the so-called controllable items in the health budget — training, research, construction, community health services, and so forth, and, in my judgment, he has no other choice.

However, the academic community and the scientific research establishment will set up the usual howl. But as usual, they will be protecting their own turf, rather than facing up to the fact that they are being hurt, not by the president and his advisors, but by the uncontrolled rise in the cost of health care.

For the fact of the matter is that growth simply cannot be infinite. In the last 15 years, health care has risen from 5.2 per cent of the gross national product to 8.3 per cent, and there are no indications of a leveling off, let alone a downturn.

We simply cannot continue on this course. The economy of the United States will not stand it. No matter how important health care may be to the people of this country, it cannot push other vital interests aside. The nation needs housing and transportation, as well as health care. It needs an energy program. It needs to replace industrial plants and equipment. It needs education. It needs a multitude of things, each of which must compete for the same dollars that pay for health care. Yet no major component of the U.S. economy is rising as rapidly, or has consistently risen for as long, as health care.

"In the last 15 years, health care has risen from 5.2 per cent of the gross national product to 8.3 per cent, and there are no indications of a leveling off, let alone a downturn."

As one who has spent many years involved in the federal health establishment, I recognize full well the temptaion to turn these problems over to the federal government, if not in confidence, then in desperation. And sad to say, the federal government is about the only segment of society that shows any real desire to do something about the cost of health care. Perhaps no one else has the will or the imagination to come to grips with the problem. But I hope that is not the case. For if it is, we will surely witness the collapse of the pluralistic health care system in America and the imposition of a nationalized health system along lines that are not entirely unknown on this planet.

But I would hope that before that happens, the private sector will elect to take a stab at controlling its major problem — the problem of cost.

(Continued next page)

"We simply cannot continue on this course. The economy of the United States will not stand it. No matter how important health care may be to the people of this country, it cannot push other vital interests aside."

A number of sacred cows will have to be sent to the slaughterhouse: the medical profession will have to modify the fee-for-service system in favor of an equitable and responsible system of fee scheduling; hospitals will have to dispense with the cost-plus method of meeting their expenses and accept prospective budgeting or some other system of cost containment; business will have to take a much tougher stand both with labor and with health insurers in negotiating for health insurance coverage; and labor, too, will have to demand a better return for the health insurance dollars paid out by workers and employers.

Beyond that, we will have to accept the fact, not just the theory, of health planning. Hospital boards and medical staffs will have to be prepared not to add redundant or inappropriate facilities and equipment. The practice of one-upsmanship among rival hospitals is a foolish frill that costs untold billions of dollars a year — billions that we can no longer afford.

These are, I suppose, only the most obvious essential steps that the private sector can take toward controlling the cost of health care. But obvious as they may be, they are not being taken on any scale that has yet made a difference. And furthermore, there is little evidence that major elements of the private health sector are seriously and sincerely trying to apply these or any other meaningful cost control measures — a good deal of talk but little action.

Whether or not there is time to take effective action in the real world of health economics, I do not know. It may be that the nation will rush into a program of national health insurance with so little preparation and so little sense of the risks that this one step will seal the fate of private health care in this country. On the other hand, perhaps the message will finally get through to everyone concerned with the same kind of impact that OPEC produced. Then I trust we will see rational change in the system.

For the only alternative is to be boiled in our own juice. Not a very happy prospect. But if the health enterprise sits in the pan like the proverbial frog, it is an all too certain prospect.

McKelvey Room Dedicated

Friends of Dr. John Leyland McKelvey gathered Sept. 17 in Unit A, University of Minnesota Health Sciences Center, to honor him and dedicate a quiet study room furnished in his name and partly with memorabilia from his life. Dr. McKelvey was the first full-time head of the University of Minnesota's department of obstetrics and gynecology, accepting that appointment in 1938.

Dr. McKelvey has achieved world-wide respect as a teacher and practitioner in his specialty. He was born in Kingston, Ontario, in 1901. He received his medical degree and master's degree in surgery from Queen's University in 1926. He was well-known as an athlete in Canada in his youth, as a rugby champion, a hockey star and intercollegiate heavyweight boxing champion. He served his internship at Johns Hopkins and after two years was granted a fellowship for foreign travel. He spent the first half of his foreign study year with Robert Meyer in Berlin and the last half travelling to medical centers in Germany, Great Britain and Austria.

In 1934 he became assistant to the chief of the department of obstetrics and gynecology of the Union Medical College in Peking, China, where he was soon appointed head.

In 1958, he spent the summer attending clinics as a visiting professor in Melbourne, Sidney and Perth, Australia, and Auckland, New Zealand. He spent 1962 in Singapore, where he organized the medical school's department of obstetrics and gynecology and installed a Malaysian Chinese physician as chief. He increased the teaching staff and earned accreditation for the school from the British Medical Council.

Donations for the McKelvey room were handled by the Minnesota Medical Foundation.

Dr. Konald Prem affixes the identification plate to the door of the McKelvey room.

Dr. and Mrs. McKelvey at the dedication.

MINNESOTA MEDICAL FOUNDATION 37TH ANNUAL MEETING

The Minnesota Medical Foundation held its 37th annual meeting Oct. 22 to elect three new trustees, approve new grants of $51,000, present awards for teaching and research, and report that more than $2 million was spent or committed for future expenditure by the organization the past year.

NEW MMF TRUSTEES

Elected to four-year terms on the Board of Trustees were Dr. David M. Brown, professor of laboratory medicine/pathology and pediatrics at the University of Minnesota; Dr. Robert J. Goldish, Duluth internist and clinical associate professor of medicine at the University of Minnesota-Duluth School of Medicine, and Terrance Hanold of Minneapolis, recently retired executive of the Pillsbury Company. Hanold is a graduate of the University of Minnesota Law School and is also a certified public accountant.

CHIEF EXECUTIVE

In other action relating to management, the Foundation designated Eivind O. Hoff, executive director, as chief executive officer, a title previously held by the group's volunteer president.

BIGGEST YEAR

The Foundation reported total expenditures and commitments last year of $2,165,033, including $500,000 in medical research grants and $326,240 in direct financial aid to medical students. Total income was $2,851,366 for the past fiscal year, $2,405,916 in gifts and $445,450 in earnings. Total assets at year end were $8,450,455. Included in the totals is the Foundation's first million dollar gift from someone who attended the University of Minnestoa Medical School. The donor, who has requested that he not be indentified, contributed the $1 million to help with construction costs of the proposed clinical building at the University called "Unit B-C."

GRANTS APPROVED

New research grants were announced as follows: $14,797 to Dr. Charles McKhann, professor of surgery, for an ultracentrifuge used to isolate tumor antigens; $9,250 to Dr. Robert J. Desnick, associate professor of pediatrics, for a genetics study; $8,000 to Dr. Andreas Rosenberg, professor of laboratory medicine and pathology, for a super calculator for use in his research and that of several other investigators in the Stone Research Laboratories at the University (the Stone Laboratories are owned by the Minnesota Medical Foundation and leased to the University); $5,933 to Dr. Fernando G. Diaz, resident in neurosurgery, for a clinical study of revived circulation in the brain after stroke, and $4,000 to Dr. Daniel Johnston, instructor in neurology, for a study of the effects of certain drugs in epilepsy. A grant of $12,210 was awarded to Dr. Edwin W. Haller, associate professor of physiology at the Duluth medical school, for diabetes research.

FIRST KAPLAN AWARD

Also at the annual meeting, the Foundation presented the first annual Dr. J. Jacob Kaplan Memorial Award for outstanding original research by a student. The $1,500 prize was awarded to Louis Terracio who received his Ph.D. in anatomy from the University of Minnesota in 1974 and is now an instructor at Hahnemann Medical College in Philadelphia. His research showed conclusively that intravenous injection of betahistine hydrochloride stimulates collateral circulation in the hearts of laboratory animals when main arteries are blocked, thus minimizing the amount of permanent damage to the heart.

The Kaplan Award was established through an endowment in the will of the late Dr. J. Jacob Kaplan, a long-time Minneapolis physician and 1939 graduate of the University of Minnesota Medical School. Dr. Kaplan died in 1973. He established the research prize before his death and asked that the annual award be given in honor of the tradition of Minnesota's great teachers of medicine, especially Drs. E. T. Bell, Robert A. Good, Elias P. Lyon, Maurice B. Visscher, and Owen H. Wangensteen.

TEACHING AWARDS

The Minnesota Medical Foundation's 1975 Distinguished Teaching Awards were also announced at the annual meeting. Dr. A. B. Baker, Regent's professor of neurology, received the clinical teaching prize and Dr. Gerhard Brand, professor of microbiology, received it for teaching basic science. Both are repeat winners, Baker having received the teaching award in 1973 and Brand in 1974. The selection of teachers for the $1,000 cash prizes is made as a result of a medical student poll.

IN MEMORIAM

The Foundation has been the beneficiary of memorial giving for many years. The following persons were remembered in 1974 through gifts given to the Minnesota Medical Foundation:

Dr. Milton Abramson
Mabel Ackley
Mrs. Ember Acton
John A. Ainley, Sr.
Emil Alberg
Arnold Albrecht
Lois Alexander
Axel B. Algren
Claude H. Allen
Marie Altman
Chester H. Armstrong
Eileen Anderson
Jimmy Anderson
Josephine F. Anderson
Lee Duane Anderson
Louis Anderson
Claire B. Andrews
Sheldon L. Anonsen
Max Ansel
Edmund M. Antonini
David Aronsohn
Lawrence Atkins
Donald S. Attwood
David Badiner
Mrs. David Badiner
Dr. Joe Baird
Roger Bakke
Richard H. Bancroft, Sr.
Carroll Barnett
James W. Barton
Bernard Baskin
Mildred Baum
Harriet Bayers
Aaron Bearmon
Mrs. Harold Beckstrom
Dr. E. T. Bell
George Benz
Mrs. Darrel Berg
Mrs. A. N. Bessesen, Jr.
Henry Don Beste
Dorothy Beyer
John Bishop
Marta Bjorklund
Martha Blair
Dr. Henry Bloch
Mrs. John Bloemendaal
Dr. Jacob Blumenthal
Mrs. Grace Borchert
Dr. Chauncey Borman
Grace J. Boucher
Ronald Bowers
John C. Brackett
Mrs. Thomas Brackett
Dr. Charles Brasher
Dr. James Bratholdt
O. D. Bremness
Juel Brenden
Martin C. Brenner
Lawrence J. Breyen
Ruth Brooks
E. H. Brown
Robert C. Buffington
Georgine Burger
Lillian Burger
Louise Bailey Burgess
Ralph J. Burnard
Mrs. Donald Butler
John S. Canellos
Mrs. Donald W. Carlson
Kermit Carlson
Marguerite Carlson
Ruth H. Carlson
Victor Carlson
John E. Carroll
Mariam Carson
Mrs. Walter E. Cary
Mrs. Lou Chandler
Wesley Chandler
Arthur G. Chermak
Ted Christensen
Carl Christiansen
Barbara Christie
Dr. Sumner S. Cohen
Dr. Richard Cole
Carl U. Colliander
Curtis Cooper
Florence G. Cooper
Michael Corbett
Lawrence Cowan
Margaret Cranford
Fred Crowson
Sadie Crystal
Dr. Lucien Culver
John Curran
Lloyd Cuthbertson
Bryan Daugherty
Mrs. Thomas Davies
Mrs. Frank Davis
Philip Davis
Velma Denenny
Dale DeShane
Helen Dickson
Dr. Harold S. Diehl
Mrs. A. B. C. Doherty
Luella Drake
Clark Dristy
Gladys M. Edlund
Dr. Paul S. Ehrlich
Otto J. Eickhof
Lucy Einch
Martha Eisenmenger
Raymond A. Eklund
Nan C. Elmquist
Mildred Emerson
Violet Erickson
Herbert W. Estrem
Arlene Eull
Sibert Evenson
Chet Eyer
Mrs. Don Falconer
Dr. Walter Fansler
Sherwood Fawler
Magdaline Feldbrugge
Dr. William Feldman
George Fenske
Marilyn Fenske
Robert Scott Fiedler
Steve Fink
Dr. Robert Fischer
Nathan Fischman
Lyle H. Fisher
Geraldine Fitch
Harold Fladebo
Jean Flakne
Mrs. C. H. Floberg
George Foede
Carl J. Footh
Marvin Foran
Silas Ford
Ann S. Foster
Philip Fouke
Wilton F. Frank
Dr. Betty Fraser
Floyd Fredine
Mrs. Thomas Freeman
Dr. Howard M. Frykman
Mary Ann Gabler
Elsie Galt
Russell D. Garlock
Edna Gartz
Walter Gates
Esther Gerardy
Adolph Gilbert
Emil Gilbertson
George Gish
Bernadine Giuliani
Ruth Golden
William Goldetsky
Ben Goldsamt
Ethel Goldstein
Dorothy Granstaff
Mary I. Grant
Stephen Gravelle
Simon Gray
Mrs. Ralph Greeder
Mrs. C. B. Green
Harold Greenwood, Sr.
Leslie N. Grunnet
Glenn Gullickson, Sr.
Dr. Hugo Gustafson
Albert L. Gutzke
Minnie Hagedorn
Dr. Paul S. Hagen
Florence Hamel
Boyd Hammer
Dr. Ralph D. Hanover
Dr. Erling Hansen
Wilbert Hanson
Stella Hardel
John Harens
Mrs. George Harper
Raymond H. Harpler
William Hartman
Clark Hatton
Della E. Havey
Dr. William R. Heegaard
Kathy Helland
Annette K. Henning
Robert Henry
Margaret C. Herman
Mrs. Edward Hermann
Eleanor Hesselgrave
Thomas H. Hodgson
Bertha Hofer
Ruth Hofsoos
George J. Horsch
George W. Horton
Robert Howard
Karl E. Humphrey, Jr.
James L. Hutchins
Sadie Isaacs
Dr. Ellery James
Raymond Jefferson
Mr. and Mrs. Franz Jevne
Cora Johnson
Dr. Ernest A. Johnson, Jr.
Erwin F. Johnson
George R. Johnson
Kenneth O. Johnson
Raymond V. Johnson
Dr. Luverne W. Johnsrud
Margaret Jones
Richard E. Jones
Violet Joriman
Lena Karels
Morris Katz
Claude C. Kennedy
Julia Kennedy
Anne Kern
Dr. Herman Kesting
Robert Kirsch, Jr.
Enid Klein
Ernst Klett
Eleanor Knapp
Ole Knutson
Dr. Norman Korn
Clifford Koutz
Ruth R. Kozberg
George Kraetsch
Ira Kriss
Mrs. Kruhietz
James Kruskopf
Mrs. Cel Kuhlmann
Maxim Kunian
Joan Kunzman
John S. Kuslich
Anthony Kuss
Pearl J. Lambert
Estelle Lamberton
Anna Larson
Esther Larson
Ida Larson
Cassandra Lawson
Eleanor Lawson
Mrs. Warren Lawson
Theodore Laymon
Dr. Hubert W. Lee
Mary C. Leebens
Christ Legeros
Raphael L. Leubner
Clara Levinson
Mildred S. Lewis
Minnie Lifson
J. Thomas Livermore
Frieda S. Lovering
Milo Lundahl
Robert Lynn
Ben McBratnie
Robert McCanless
Margaret McCarvill
Marie McClintock
Mrs. Arthur McFarland
Dr. Catherine McGregor
Ralph McGrew
Mildred McNulty
Elwin A. Madsen
Alma Mahan
Judith E. Mahoney
Arthur Majeski
Ted C. Maki
Philip J. Malkerson
Vincent H. Malmberg
Mildred M. Maloney
Larry Mammen
Cy Martin
Myrtle M. Martin
Isabell Masters
Carl E. Matson
Ann Mendelson
Norman B. Mears
Dr. Paul Medelman
Louise M. Mettler
Daniel H. Meyer
Mrs. L. J. Meyer
Dr. Henry E. Michelson
William T. Middlebrook
Elmer Mikkelson
Garth Miller
Mrs. Peter Miller
Pedro Ministral
Leo Misenar
Amanda Mitchell
Dr. Michael Moga
Lois Moore
Charles Moosbrugger
Dr. Frank E. Mork, Sr.
John Morrisey
Doris Motron
Clement Murlowski
Mrs. Barbara Mussman
Jean Nelson
Kirk Ness
Mary Neumeister
Philip Neville
A. L. Nienaber
Stanley Norton
Mrs. Walter Nosek
Dr. Walter G. Nuessle
Wilbur Nygren
Edward O'Brian
Velma O'Brian
Dennis O'Farrell
Dr. J. O'Hage
Orali Oines
Carl Olson
Ed Olson
Howard A. Olson
Oscar Olson
Arthur O'Neil
William O'Reilly
Darlene Ost
Joseph Ostedt
Harold Osterberg
Otto F. Oswald
Marion Ott
Mark Ould
Marie Ouren
Dr. Osmund Palmer
Mrs. Alex Pankratz
Alan Park
Mildred Parsons
Mary M. Pas
Diana Jean Paskoff

(Continued next page)

MEMORIALS Continued

Mrs. Susan Paskoff
Lloyd G. Pattee, Sr.
Grace Peach
Mrs. Frank Pesce
Alice Peters
Dr. Paul S. Pettit
Mrs. Otto Pieper
Angelo Michael Pilla
Phyllis Plaisted
Marie Poppenberger
Harold Porter
Dorothy Pouliot
Mrs. George C. Power, Sr
Patricia Pratt
Maude Ann Pregler
Sidney Proosow
Edmund Quimette
Lydia Rambow
Vern Rasmussen
Louis Ratner
Fred Rau
Robert Reay
Estelle M. Reedy
Harold V. Rhine
Sam Rifkin
Vivian Riggle
Margaret Roller
Mrs. Carl Rorem
Dr. Reuben M. Rosenwald
Dr. Ralph Rossen
Mabel J. Rovang
Emery Rowe
Fanny Rubenstein
Paul Rubenstein
Edmund A. Rude
Dr. John G. Rukavina
William Saari
Willis Salisbury
Frances H. Salmon
Fred D. Salmon
Ida Sandey
Herbert Sattler
E. N. Saunders
Edward C. Sayre
Katie Schell
Frank H. Schmidt
Phillip C. Schmidt
Paul H. Schmitt
Emma Schneekloth
Mary Schneider
R. Michael Schneider
Dr. Max E. Schottler
Vincent Schultz
Winiferd Schulz
Max Schwartz
Marvin Schwerin
Samuel Shapiro
Sidney Shapiro
Myrle G. Showalter
Arnold Siegel
Alfred H. Silver
Michelle Simon
Anna Simpson
Betty Singer
Elsie Singer
Leonard Sip
Harry E. Sloan
Dr. Leonard N. Sloan
Anna Van Slyke
Wesley B. Smith
Carl Sohns
Mrs. Henry Soltau
Henry Soltau
Hazel Sorenson
John W. Sorenson
Hazel Spring
Paul Steneroden
K. Wilhelm Stenstrom
Hattie Stern
Marie F. Stern
Harry Stewart
Milton Stieg
Giordano B. Stocco
Mrs. Ward Stoddard
Gladys Strandlien
Mrs. McNeil Stringer
Michael Swagel
Owen J. Swanson
Henry Taylor
Dr. Richard R. Teeter
Harold ten Bensel
Mrytle S. Tengwall
Arthur Thomas
T. W. Thorson
Connie Toreson
Stanley Torgerson
T. E. Tryhus
Mary Uram
Irel Vant
Mrs. F. Vanwazer
Bertha Vashro
Olaf Velstad
William Frederick Vernon
Maurice Edwin Wagner
Louis D. Ward
Zoe Warren
Victor Wasserman
Richard Wattenberg
Mae Weber
Peter Weber
Michael John Weinberg
Ethelwyn Weir
Agnes Weldele
Joe Werner
Ernest Westerman
Laura Westerman
Virgil Westphal
George J. Westrich
Beulah White
Patricia Whitman
Frank Whitson
Marian Wiecking
Celia Wielinski
Dr. Henry L. Williams
Melvin Wishnick
Harry Wold
Dr. William H. Ylitalo
August Zeigler
Jack Zitch
Mr. and Mrs. A. Zmuda & Son

FACULTY PROMOTIONS

Several Medical School faculty promotions were recently approved by the University of Minnesota Board of Regents.

To Professor: W. Robert Anderson, Eldon Berglund, Donna Blazevic, Mary Dempsey, William Fifer, Thomas Kiresuk, Michael Levitt, Frank Nutall, Richard Poppele, Fred Shapiro and Yang Wang.

To Associate Professor: John Bond, Desmond Burke, Theodore Buselmeier, Brian Campion, Joseph Cardamone, Alexander Cass, Christina Comty, Amos Deinard, Robert Desnick, Russell Hanson, Charles Horwitz, Charles Jorgenson, John Long, S. M. Mauer, Rex Shafer, Preston Williams.

D. C. AREA ALUMNI GET TOGETHER

More than 70 persons attended a reception for University of Minnesota medical alumni and friends of the Medical School in Washington, D. C. in early November. The reception was sponsored by the Minnesota Medical Foundation and Dr. and Mrs. Wallace Armstrong. Dr. Armstrong, former head of the University of Minnesota Medical School's department of biochemistry, is with the National Institute of Dental Research in Washington.

Honored guests were Dr. N. L. Gault, dean of the University of Minnesota Medical School, and Dr. John W. LaBree, dean of the University of Minnesota-Duluth School of Medicine. Oldest alumnus present was Dr. Lyle Roberts, a graduate of the Medical School's class of 1916.

The reception was held in conjunction with a meeting of the Association of American Medical Colleges (AAMC). Minnesota will also hold a reception for Minnesota medical alumni in conjunction with the AAMC meeting scheduled for the San Francisco area in November, 1976.

CHRISTIAAN BARNARD VISITS MINNESOTA

Dr. Christiaan Barnard, one of the best known physicians to have trained at the University of Minnesota, returned to the Medical School Oct. 8 to deliver a surgery lecture at the University of Minnesota and visit friends and colleagues in the area. He received M.S. and Ph.D. degrees in surgery from the University of Minnesota in 1958.

Barnard, who performed the first successful heart transplant in 1967, is now doing "double heart" transplants, in which he adds the donor heart without removing the recipient's own diseased heart. He is head of cardiovascular surgery at the University of Capetown Medical School, Capetown, South Africa. One of his single heart transplant patients is still alive nearly seven years after receiving a transplanted heart.

Barnard, who doesn't carry malpractice insurance, said in Minneapolis that fear of malpractice suits is a serious hindrance to medical research in the United States.

FLORIDA AREA ALUMNI: GET READY TO MEET

Dr. Paul Dwan, who attended the University of Minnesota Medical School and who was associated with the University's department of pediatrics for many years, plans to host a reception for Minnesota medical alumni and friends at his home in Boca Raton, Florida, sometime in February or early March.

Dr. N. L. Gault, dean of the Medical School in Minneapolis, and Dr. John W. LaBree, dean of the Medical School in Duluth, will be honored guests.

Minnesota medical alumni and other friends of the University of Minnesota Medical Schools who will be in Florida should contact Dave Teslow, Minnesota Medical Foundation, Box 193 Mayo Building, University of Minnesota, Minneapolis 55455, for details.

LOCAL WOMEN'S AMA-ERF SCHOLARSHIP

Mary Lu Beigle, phase D medical student, has received the 1975–76 Scholarship of the Women's Auxilary of the Minnesota State Medical Association. The scholarship is funded through the American Medical Association Education and Research Fund (AMA-ERF) campaign.

Beigle was selected by the Medical School honors and awards committee as an outstanding woman scholar in the Medical School. She is a native of Duluth and graduated from Duluth Cathedral High School in 1969. She was a Phi Beta Kappa graduate of Marquette University, where she majored in biology, was a member of Phi Sigma, the biological honors society and recipient of the Phi Sigma Award for achievement in biology.

The scholarship provides full tuition and fees for one year.

DULUTH MEDICAL SCHOOL SEEKS ARTIFACTS FOR MEDICAL MUSEUM

The University of Minnesota-Duluth School of Medicine is establishing a museum of medical history. Gifts of artifacts will be appreciated. Recognition will be given to the donor and original owner. An outstanding display of early medical supplies is planned. For further information, contact Dr. John LaBree, Dean, UMD School of Medicine, or Dr. Sam Boyer, 1 Boyer Road, Twig, Minn. 55791.

Mitchell J. Rosenholtz, 1956 graduate of the University of Minnesota Medical School, was chosen by the University of Missouri, Columbia, Medical School class of 1975 to help with the investiture of the new doctors. Here he places the hood on Michael D. Hagen, class president. Dr. Rosenholtz is assistant dean for student affairs at Missouri and teaches pathology.

OBITUARIES

Harry E. Bank — 1916

Died September 1 at age 84. Dr. Bank was a lifetime resident of Minneapolis and served 40 years with the V. A. Hospital. He served in World War I as a lieutenant in the Navy medical corps and in World War II as a major in the Army medical corps. As chief of professional services, he helped set up the doctor training programs at the Veterans Administration hospitals in Minneapolis, Portland, Ore., and San Francisco.

James A. Blake — 1934

Died in August at age 66. Dr. Blake was a general practitioner in Hopkins, Minn., for 39 years. He was a former president of the Hennepin County Medical Society and former chief of staff of Eitel Hospital. In 1964 he received the Merit Award of the Minnesota Academy of General Practitioners.

(Continued next page)

OBITUARIES Continued

Edward W. Hayes Sr. — 1913

Died Oct. 2 at age 92. Dr. Hayes was an internationally known authority on tuberculosis and was author of a book on the subject. He was a longtime resident of Monrovia, Calif. He retired from his medical practice in Monrovia in 1956 and between 1960 and 1970 he worked with the Hayes Foundation, providing medical care for crippled Mexican children at Los Angeles hospitals. He was founding president of the American College of Chest Physicians in 1936. He was named Catholic Physician of the Year in 1962 by the National Federation of Catholic Physicians Guilds and he received the Benemerenti Medal from Pope Paul VI in 1964. He was born in Millville, Minn., on July 4, 1883, and grew up on a Minnesota farm. He was captain of his football team at Carleton College and later in his life volunteered a great deal of his time as team physician for high school athletic teams.

Frederick C. Meyer — 1930

Died Oct. 2 at age 71 at his home in Kenyon, Minn., where he established his practice in 1931. He is survived by his wife, Icle Whitney Meyer, and four children, all graduates of the University of Minnesota: Barbara Meyer Puumala is a 1959 graduate of the University of Minnesota Medical School; Rodney Meyer is a 1964 graduate of the Dental School; Russell is a 1969 graduate of the Dental School; and Nancy Meyer Fogelson is a 1965 graduate of the School of Education.

Phillip A. Rierson — 1962

Died Sept. 8 in Denver at age 39. He was a pediatrician, hematologist and oncologist with the Southdale (Edina, Minnesota) Pediatric Associates. He was on the staffs of Minneapolis Children's Health Center, Fairview Southdale Hospital and University of Minnesota Hospitals.

RURAL PHYSICIAN ASSOCIATE PROGRAM ENTERS 5TH YEAR

Forty University of Minnesota medical students moved to 37 rural state communities in September to begin service as rural physician associates.

Now starting its fifth year, the University's Rural Physician Associate Program (RPAP) has sent more than 120 third-year medical students to learn by doing at the side of experienced family practitioners.

This year, eight new towns are participating and eight internal medicine specialists have been added to the physician-teachers who spend from nine months to a year with a student.

Students and physicians are together in the office, clinic and hospital — wherever patient needs are met. The local physician-preceptors have clinical faculty appointments with the University, but receive no salary. The students receive two quarters of academic credit plus a $5,000 stipend from the state and $2,500 from the preceptor for the first nine months. The final three months of service are optional.

IT WORKS

According to RPAP developer and director Dr. John Verby, professor of family practice and community medicine, the program has already proved successful on at least two counts.

First, practically all of the students who participated in the program at the beginning and have completed their residency training are now practicing in small Minnesota communities. Several are in the towns they lived in as rural physician associates.

Second, their preceptors and the visting consultants from the University's Health Sciences Center say that they have learned from each other.

RPAP PROGRAM, 1975-76

TOWN	PRECEPTOR
(Family Practice)	
*Moorhead	Vern Carlson, M.D.
*Red Lake Falls	David Mersy, M.D.
Bagley	Harris Pearson, M.D.
Alexandria	William Heegaard, M.D.
Grand Marais	Roger MacDonald, M.D.
La Crosse	Philip Utz, M.D.
Melrose	Allen Horn, M.D.
*Windom	James Dokken, M.D.
*Pine River	Charles Pelzl, M.D.
Grand Rapids	Robert Kelly, M.D.
Willmar	H. P. Hinderaker, M.D.
Blue Earth	John Anderson, M.D.
Granite Falls	Kenneth Carter, M.D.
Hibbing	Bayard French, M.D.
Fairmont	Robert Zemke, M.D.
*Redwood Falls	Roger Schroeppel, M.D.
Park Rapids	Edgar Gamm, M.D.
Luverne	Paul Rud, M.D.
*Benson	Richard Griffin, M.D.
Aitkin	John Carson, M.D.
Slayton	Jean Bader, M.D.
Preston	Robert Sauer, M.D.
Elbow Lake	Larry Rapp, D.O.
Fergus Falls	Leong Hom, M.D.
Long Prairie	James Kvale, M.D.
Pipestone	Frank Boyd, M.D.
Little Falls	Royden Belcher, M.D.
Owatonna	James Miller, M.D.
*Watertown	David Philp, M.D.
Cannon Falls	Robert Molenaar, M.D.
Montevideo	Norman Hagberg, M.D.
Two Harbors	Community Clinic
(Internal Medicine)	
Willmar	James Tiede, M.D.
Mankato	Byron McGregor, M.D.
*Worthington	John Mork, M.D.
Waconia	James Lehmann, M.D.
Cokato	John Bergstrom, M.D.
Fergus Falls	Carl Page, M.D.
Winona	A. W. Fenske, M.D. and H. J. Anderson, M.D.

* First time participants

THE WARREN REPORT

Before 1968 the Minnesota Medical Foundation had never heard of Dr. Frank S. Warren. By the end of 1975 the Foundation had spent nearly $200,000 of his money on medical research — but Dr. Warren remains mostly a mystery.

When the Foundation first learned in 1968 that it was a beneficiary in the will of Alice Warren, Dr. Warren's daughter, few people around the Medical School had even heard his name. That wasn't too surprising. He graduated from the Medical School in 1896. He had a successful practice in Faribault, Minn., until about 1932, when he moved to Washington, D.C. He died in 1945. He left a sizeable estate — and a good deal of investment knowhow — to his daughter.

The move to Washington was prompted by his own heart condition and his daughter's multiple sclerosis. He never took out a medical license in Washington, instead devoting his time to research in M. S. Alice lived until 1968 with the disease, largely due to what he learned about the care of M. S. patients.

Alice met Ralph E. "Jeff" Harmon, an experienced investment counselor, at a time when she was trying to decide what arrangements to make for the distribution of her estate after her death. Fortune smiled doubly on the Minnesota Medical Foundation in the person of Jeff Harmon. First, he suggested a bequest for research at Dr. Warren's Medical School, which led to the Minnesota Medical Foundation. Second, he was named Trustee of the resulting Warren Fund and proved to be an exceptionally successful investor on behalf of the trust.

The bequest was to be invested for 20 years, with annual earnings going to MMF for research. At the end of the 20-year period, the principal of the fund will be divided equally between the foundation and the Cathedral of Our Merciful Savior, Episcopal, in Faribault. Through Harmon's successful investment program, $251,080 had been added by the end of 1974 to the original principal of $346,308 through realized capital gains and more than $180,000 distributed to MMF for its research programs. Harmon says his goal is to provide a half million dollars each to MMF and the Episcopal Church when the principal is divided. He hasn't given anyone any reason to doubt his ability to do it.

Some interesting things we have heard about Dr. Warren while researching this report . . .

Mr. Harmon

He made a lot of his money in American Tobacco stock and was a non-smoker.

Prior to the crash of the stock market in 1929, he converted all his holdings to cash and transferred the money to a safety deposit box. Then he took an ocean cruise, where he expressed amazement at the number of people who didn't see the financial disaster coming.

He personally operated on his wife and daughter. When colleagues questioned this he said, "They deserve the best, and by God, I am the best."

RESEARCH GRANTS AWARDED FROM DR. FRANK S. WARREN RESEARCH AND DEVELOPMENT FUND

Name, Title, Department	Title of Research Project	Amount
Sheldon B. Sparber, Ph.D. Assistant Professor Department of Pharmacology	Biogenic Amines in Developing Fetal Brain	$ 7,500
Yusuf Abul-Hajj, Ph.D. Assistant Professor Department of Pharmacognosy	Δ^4–Reductase Activity in Lever with Various Hepatomas	2,500
Milton Alter, M.D. Professor Department of Neurology	Multiple Sclerosis and Childhood Infections	2,500
Wesley D. Anderson, Ph.D. Assistant Professor Department of Anatomy	A Study of the Vertebral-Basilar and Internal Carotid Arterial Systems of the Brain of Dog in Relation to the Intracranial Arteries of Man	2,500
James F. Berry, Ph.D. Professor Department of Neurology	Lipid Metabolism in Experimental Demelination	1,500

(Continued page 23)

Alice Warren. We could not find a picture of Dr. Warren

James R. Bloedel, M.D., Ph.D. Assistant Professor Department of Neurosurgery	Primate Cerebellar Physiology	2,000
Richard D. Brunning, M.D. Associate Professor Department of Laboratory Medicine	Histochemical and Ultrastudies Studies of Marrow and Peripheral Blood Cells in Hodgkin's Disease and Leukemia	2,000
Jose M. Feola Instructor Department of Therapeutic Radiology	Synergistic Effects of Iodoacetamide	3,000
Thomas Hakala, M.D. Assistant Professor Department of Urology	Immunologic Studies of Genitourinary Tumors	5,000
William R. Kennedy, M.D. Associate Professor Department of Neurology	Physiological Activity of Human Muscle Spindle Afferents	1,500
Toni Mariani, Ph.D. Post-Doctoral Fellow Department of Pediatrics	Industion of Malignancy or Immunity in Weanling Mice	3,500
William E. Martin, M.D. Instructor Department of Neurology	Catecholamine Metabolism in Parkinson's Disease	5,000
Richard Moore, Ph.D. Associate Professor Department of Laboratory Medicine	Investigation of the Water Permeability of the Membrane of the Human Blood Cells from Patients with Leukemia	5,000
Sheldon B. Sparber, Ph.D. Assistant Professor Department of Pharmacology	A Comparative Study of the Prenatal and Postnatal Effects of Methylmercury on the Developing Organism	7,500
Kenneth F. Swaiman, M.D. Professor Department of Pediatric Neurology	The Effect of Dilantin and Other Anti-Convulsants on the Developing Brain of the Fetal Rat	2,000
David S. Bradford, M.D. Assistant Professor Department of Orthopedic Surgery	Studies on the Fibroblast from Patients with Idiopathic Scoliosis	7,500
Amos S. Deinard, M.D. Assistant Professor Department of Pediatrics	Urinary Immunoglobulins and Their Relationship to Bacteriuria (Research not done, money refunded to MMF)	2,500
Robert B. Howe, M.D. Assistant Professor Department of Internal Medicine	The Effect of the Plasma Environment on Red Cell Survival and Function	7,500
Linda Tseng, Ph.D. Assistant Professor Department of Ob-Gyn	In-Vitro Studies on the Nuclear Cytoplasmic Distribution of Estradiol, Estrone and Progesterone in Human Endometrium and Placenta	2,500
Norbert S. Domek, Ph.D. Assistant Professor Division of Nuclear Medicine	Quality Control Testing of ^{99mc}TC-Sulfur Colloid	3,000
John W. Hadden, M.D. Medical Fellow Department of Pediatrics	The Role of Cyclic Nucleotides as Membrane to Nuclear Signals in the Human Lymphocyte	7,500
Nirmala Jagarlamoody, M.D. Intern Department of Pathology	Augmentation of the Immunogenicity of 3-Methyl Cholanthrene Induced Murine Sarcomas	4,000

J. J. Sciarra, M.D. Professor and Head Department of Ob-Gyn	Cytophotometric and Cytologic Studies	7,500
Preston P. Williams, M.D. Assistant Professor Department of Ob-Gyn	Evaluating Premalignant and Malignant Conditions of the Uterine Cervix by Colposcopy	2,500
Lawrence A. Lockman, M.D. Assistant Professor Department of Pediatric Neurology	Phenobarbital in the Treatment of Neonatal Seizures: Dose, Metabolism, and Toxicity	4,000
Jerrold M. Milstein, M.D. Assistant Professor Department of Pediatric Neurology	Energy Metabolism in Developing (Immature) Rat Brain	7,500
Alexandra Filipovich Medical Student	Characteristics of Certain Cerebellar Afferents	500
Robert J. Desnick, M.D., Ph.D. Assistant Professor Department of Pediatrics	Diagnosis and Treatment of Inherited Enzyme Deficiencies	15,000
Erskine M. Caperton, M.D. Assistant Professor Department of Medicine	Acquisiton of Equipment to establish Section of Rheumatology	15,000
Malcolm N. Blumenthal, M.D. Clinical Assistant Professor Department of Medicine	Allergic Reactions Involving Anti-Lymphocytic Globulin	5,864
J. Nevin Isenberg, M.D., Ph.D. Fellow Department of Pediatrics	Glycoproteins in Disease States	6,000
Milton Alter, M.D., Ph.D. Professor Department of Neurology	Experimental Allergic Encephalomyelitis in Animals with Hereditary Complement Deficiencies	5,000
Daniel Johnston, Ph.D. Instructor Department of Neurology	Membrane and Synaptic Effects of Anticonvulsant Drugs in Aplysia	5,870
Stephen A. Smith, M.D. Assistant Professor Department of Pediatric Neurology	An Ultrastructural and Autoradiographic Study of the Migrating Neuroblast in Pre-term Rat Neocortex	1,098
Richard Eisenberg, Ph.D. Assistant Professor Department of Pharmacology Duluth	Effects of Librium and Valium on the Hypothalamo-pituitary-adrenal Axis in the Rat	5,482
Kenneth F. Swaiman, M.D. Professor Department of Pediatric Neurology	Effect of Anticonvulsants on the Disaggregation of Fetal Brain Ribosomes	1,900
Palmer Rogers, Ph.D. Professor Department of Microbiology	Genetic Repair of Human Enzymic Deficiencies by Specific Bacterial Genes	8,000
Stanley L. Erlandsen, Ph.D. Associate Professor Jonathan A. Parsons, Ph.D. Assistant Professor Department of Anatomy Duluth	Evaluation of Normal and Neoplastic Cells Utilizing Immunocytochemical Techniques	7,676
Edward Knych, Ph.D. Assistant Professor Department of Pharmacology Duluth	Study of the Effect of Sodium Depletion on the Secretion of Aldosterone and the Sensitivity of the Adrenal to Angiotensin II in the Conscious Rat	3,133
		$187,523

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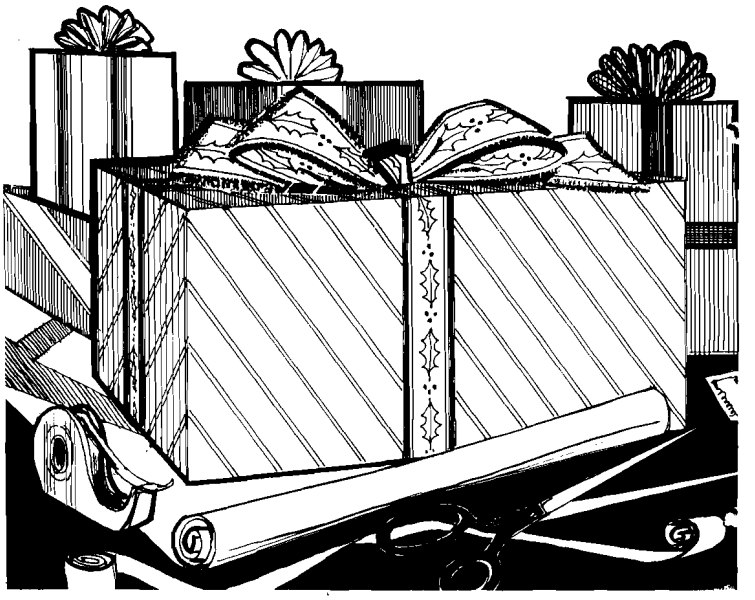

IRS MAKES YOUR GIFT EASIER

The Internal Revenue Service (IRS) shares the cost of your contribution to the Minnesota Medical Foundation. If you have a taxable income of $32,000 and donate $100 to MMF, the actual out-of-pocket cost to you is $61. The remaining $39 is, in effect, paid by IRS, assuming the tax return is for a married couple, filing a joint return with itemized deductions. Out-of-pocket cost of the contribution is even less for a single person.

On an income of $12,000, out-of-pocket cost of the $100 contribution is $78. For a $16,000 income it's $75, or it's $72 for a $20,000 income, $55 for $40,000 and $45 for a $70,000 income.

A donation made by check and delivered or mailed to the Minnesota Medical Foundation by December 31 is deductible for that year, even though MMF doesn't cash it until the next.

A donation of securities is also allowed for one year if the properly endorsed certificates are delivered or mailed to the Foundation by December 31 of that year.

Your gift is more important than ever in helping the Minnesota Medical Foundation meet the rising costs of medical student aid, medical research, and publication of the **Medical Bulletin**, as well as many other important programs benefitting the University's medical schools in Minneapolis and Duluth.

There's an MMF business envelope enclosed in this magazine. Please use it to send your generous check today. Thank you.

For the Foundation,

Vernon D. E. Smith, M.D. '31

ADDRESS CORRECTION REQUESTED

MOVING MEDITATION: Page 7

DR. MCKELVEY HONORED: Page 14

Medical student Mark Kremen.

Dr. and Mrs. McKelvey.