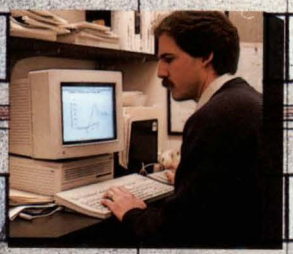
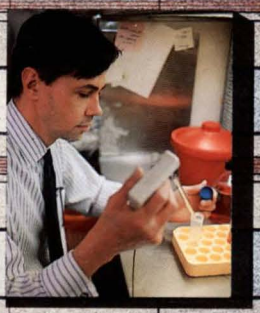
UNIVERSITY OF MINNESOTA

MEDICAL

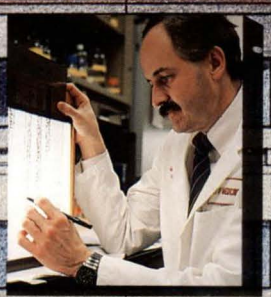
BULLETIN
WINTER/SPRING 1991





BUILDING HOPE

The University of Minnesota Cancer Center



A PUBLICATION OF THE MINNESOTA MEDICAL FOUNDATION

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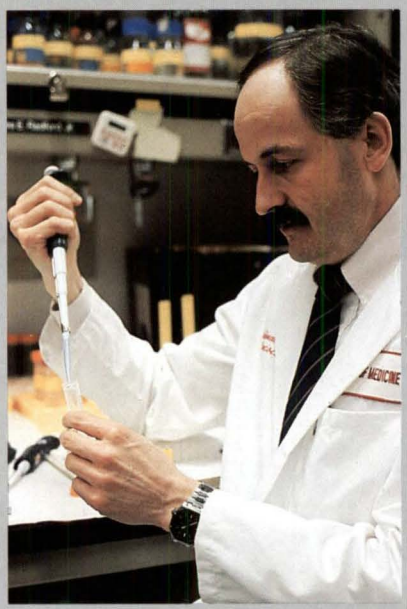

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The Minnesota Medical Foundation was founded in 1939 by a dedicated group of faculty members and medical alumni who saw the need for private support to build a strong future for the Medical School. A non-profit organization, MMF raises and disburses 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: The new University of Minnesota Cancer Center. Photos by Nancy Mellgren.

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

The University of Minnesota Cancer Center: Research, Education, Treatment

Cancer is a subject that concerns each of us. We all share a concern that we do everything possible to avoid the risks of cancer. We seek to improve early diagnosis and wish to improve quality of treatment in order to increase the probability of cure and to diminish morbidity during treatment.

There have been extraordinary gains on all of these fronts. Some forms of cancer are now curable. In other instances, many cancer patients have longer periods of remission. Treatment has become more acceptable in terms of fewer side effects. Diagnosis of many forms of cancer is being made much earlier. In a few dramatic instances such as the roles of cigarettes and other forms of tobacco, we have learned how to minimize risk. However, many forms of cancer have defied the best of our efforts. Clearly major challenges lie ahead through research.

The University of Minnesota has had an outstanding record in cancer research. Medical School faculty members have earned more than $15,000,000 a year in nationally competitive funding in cancer research. The School of Public Health has had outstanding research programs nationally funded on the epidemiology of cancer. We face the challenge of going further to advance all facets of cancer research.

The University of Minnesota Cancer Center has been designated as our major vehicle for further improving the quality and intensity of cancer research at the University of Minnesota. The Cancer Center will bring together faculty from various collegiate units and other disciplines to join forces in targeting cancer as a major objective in their research. The Center will combine the efforts of basic and applied sciences. It will provide the unique opportunity to go from the laboratory to the bedside and back again to the laboratory scientist to resolve clinically important problems. It will combine the efforts of the molecular biologist, geneticist, biochemists and cell biologists, physicians and surgeons, all concentrating on the real-life problems of the patient with cancer. It will provide the primary focal point for clinical trials with chemotherapeutic agents, radiation, and other experimental medical and surgical procedures. It will focus on the entire age spectrum from the very young to the elderly.

The Cancer Center will enable scientists concerned with genetic control of cell growth to understand how a normal cell is modified to change its growth characteristics and to metastasize. It will enhance the study of factors that form natural barriers to cell growth and how cancer and normal cells differ in their responses to those barriers. It will increase the study of agents that cause changes in cell growth possibly leading to cancer such as viruses and toxins. The Center will encourage cancer drug design based upon dissection of normal and cancer cell biochemistry. It will help to develop methods for applying basic science advances to clinical medicine by improved technologic translation into useful products. It will enable implementation of large population-based chemical diagnostic and therapeutic trials.

The Cancer Center will have major beneficial impacts for this state and the region as the focal point for answering and resolving the dilemmas of cancer. Education will be an important mission of the Cancer Center. Translation of research findings for the public and for the health care professional will enable the scientists to communicate the significance of their laboratory discoveries. The public needs to understand how to minimize risks of cancer, to cope with the diagnosis of cancer, and to understand the benefits and risks of cancer therapies.

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

BUILDING HOPE

THE UNIVERSITY OF MINNESOTA CANCER CENTER

Unique in the Upper Midwest, the University of Minnesota Cancer Center will play a vital role in the battle against cancer.

by Elaine Cunningham and Jean Murray

Cancer.

The very word is frightening. The disease itself is often devastating. According to the American Cancer Society, cancer ● strikes an estimated 16,400 Minnesotans annually; ● is the second-leading cause of death in America; ● is the leading cause of disease death among children between the ages of three and 14; ● is diagnosed in nearly 1 million Americans every year; ● affects 75 percent of all families in America; ● will eventually afflict 75 million (about 30 percent) of Americans now living, if current trends continue; ● increases in incidence 1,000 times between ages 40 and 80, afflicting 12 percent of Americans over age 65.

It is a disease that knows no boundaries of age, race, or social status. It is a disease that will likely touch us, our loved ones, or someone we know. It is a disease that we all hope will soon be conquered.

Cancer: The long battle

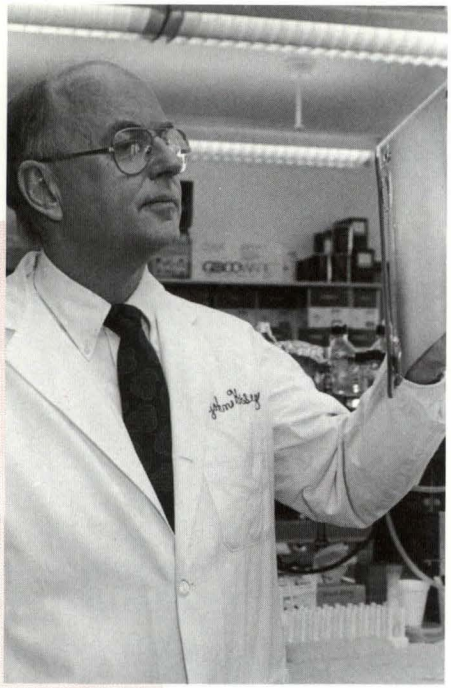
The battle against cancer has been raging for many years and, yet, no cure has emerged. At times it seems that the disease may be winning the war. But, in fact, there have been many notable victories. Cancer survival rates have risen dramatically in the past 60 years. In 1930, for example, less than 20 percent of the nation's cancer patients survived more than five years. Today, that rate is nearly 50 percent. For some types of the disease, such as breast and testicular cancers, the five-year survival rate is more than 90 percent. An estimated 5 million Americans who have had cancer are alive today—and 3 million of them were diagnosed more than five years ago.

Intensive medical research has been the key to such impressive victories. Through research there is an improved understanding of cancer which has yielded innovative methods of diagnosis and treatment. The battle is not hopeless, and with expanded support of cancer research it may someday be won.

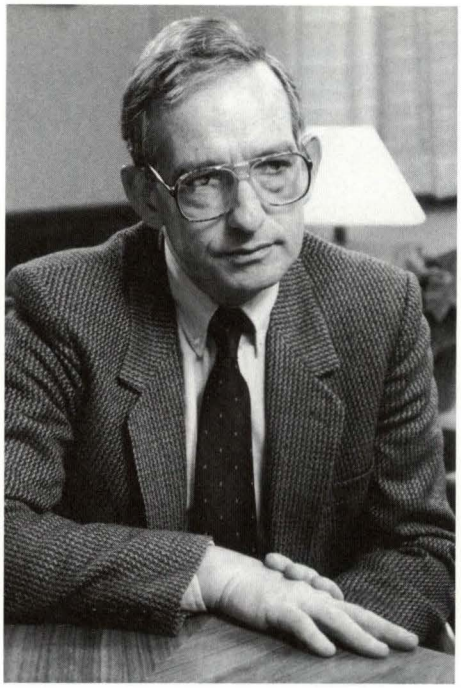
The University of Minnesota: Leading a charge

The University of Minnesota has long been one of the nation's leading cancer research institutions. Through studies in its Medical School, Hospital and Clinic, and Masonic Cancer Center research facility, University investigators have discovered treatments and diagnostic methods that have saved innumerable lives. For example:

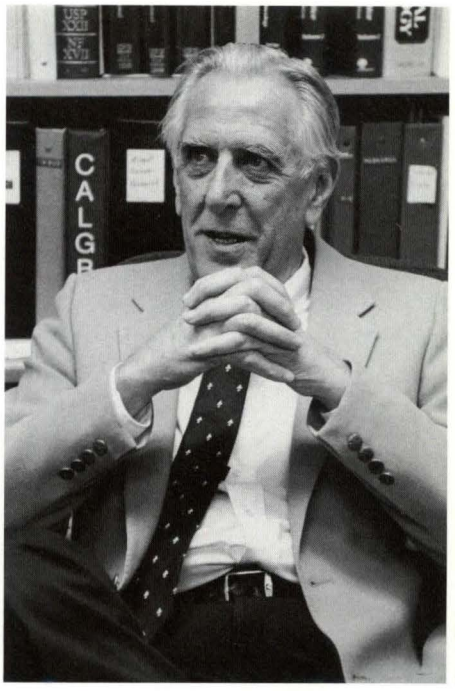
- In 1968, University doctors performed the world's first successful bone marrow transplant on a child, giving new hope to patients with cancer and related disorders. Today, the University's bone marrow transplantation program is one of the largest in the world, conducting more than 200 transplants annually.
- The Women's Cancer Center at the University of Minnesota is recording some of the best survival rates in the world for gynecologic cancers. Cervical cancer patients at Minnesota have a five-year survival rate of 72.4 percent versus a worldwide rate of 53.5 percent. Patients with endometrial cancer have a five-year survival rate of 74.5 percent, compared to an international rate of 65



Dr. John Kersey



Dr. David Brown



Paul Eide

Dr. B.J. Kennedy

"We feel that having a place where people involved in cancer can be together, work together, and talk together, will be a fantastic advance for cancer research at the University."

"Not only are we involved in caring for patients, but we do the research that leads to improved patient care."

"There are a lot more things we need to know about cancer. This is going to take a lot of basic research with scientists in the laboratory."

percent. Ovarian and vulvar cancer patients have the best five-year survival rate in the world—50.7 percent.

- University researchers pioneered medical oncology which is now recognized as a formal discipline. Significant advances have been made in this area toward the diagnosis and treatment of major cancer types.
- The cancer-inhibiting properties of cabbage and other cruciferous vegetables were first identified at the University of Minnesota. Today, researchers continue to investigate how diet can help prevent cancer.

Cancer researchers at Minnesota have made and are continuing to make advances in other areas as well. Areas such as therapeutic radiology/radiation oncology, pediatric oncology, cancer immunology, urologic cancer, cancer cell biology, cancer cytogenetics, skin cancer, and cancer pharmacology. Highlighted on these pages are more detailed examples of the cancer research taking place at the University of Minnesota.

Dr. David Brown, dean of the Medical School, sums up the cancer research efforts at Minnesota. "The target for cancer research," he says, "is the patient with cancer, both in terms of preventing the occurrence of cancer and in terms of curing people who are afflicted with cancer. Cancer research has to transcend from the most basic fundamental laboratory research all the way through the clinical applications of that research—the patient care. That's what makes the University of Minnesota different. Not only are we involved in caring for patients, but we do the research that leads to improved patient care."

A Cancer Center: More ammunition

Clearly, the University of Minnesota has made many contributions in the war against cancer. More than 100 Medical School faculty and 50 faculty from other collegiate units are conducting vital clinical and basic cancer research. These researchers have been extremely successful in their efforts, attracting attention and federal funding for their projects. Yet, something is missing.

Despite the wide range of cancer research and treatment expertise at Minnesota, there is no central administration or focal point through which researchers can direct their initiatives. They work in different departments, separated by spatial boundaries which often make it difficult to collaborate on projects. Given the complex nature of cancer research, such interaction is critical to the success and expansion of research programs. In addition, no new laboratory space has been available for cancer research in the past 25 years. Many of these older laboratories lack the space to accommodate the complex equipment needed to effectively progress with cancer investigations.

"I think the biggest impediments to cancer research at the University of Minnesota are the lack of sufficient space and lack of sufficient numbers of people to carry on needed research programs," says Dr. John Kersey, professor of laboratory medicine and pathology and pediatrics, holder of the Children's Cancer Research Fund Land Grant Chair in Pediatric Oncology, and director of the University's Bone Marrow Transplantation Program. "Cancer research is a complex business. It requires experts in a whole variety of fields gathered together in one place with the goal of conducting real quality research. Cancer is not easy to understand or easy to treat. There are lots of unanswered questions."

To resolve some of the problems faced by cancer investigators at the University of Minnesota and to ensure future excellence in cancer research, the Medical School—in cooperation with the Colleges of Biological Sciences, Pharmacy, and Veterinary Medicine; the Schools of Dentistry, Nursing, and Public Health; and the University Hospital and Clinic—has proposed the creation of a comprehensive Cancer Center at Minnesota.

Such a center would bring together investigators from all schools and departments to collaborate on projects and share ideas and knowledge. It would

Dr. Gordon Ginder

Dr. Gordon Ginder, professor of medicine and the new director of medical oncology at the University of Minnesota Medical School, sees a bright future for oncologists in making progress toward controlling many of the cancers that are resistant to current treatments. The key, says Ginder, lies in better understanding the basic molecular processes of cell growth and differentiation.

"Just as the revolutionary principles of physics in the early part of this century led to the successful exploration of space, the basic principles of molecular biology of cancer cells that have emerged and continue to be discovered now promise to usher in a new era in the diagnosis and treatment of cancer."

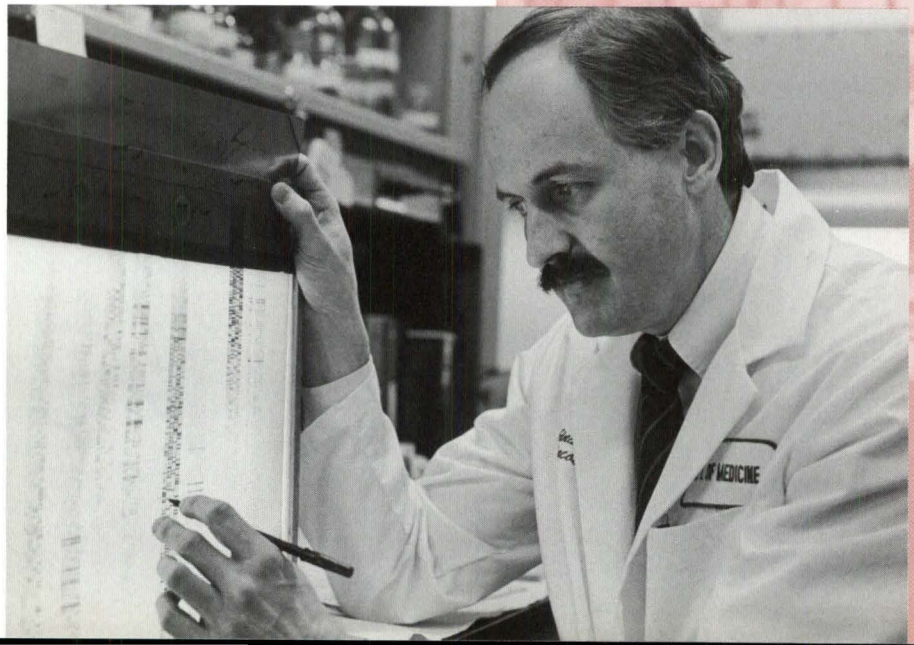
In his own laboratory, Ginder is currently working on two major cancer projects. The first looks at the regulation of histocompatibility antigen proteins in tumor cells. These proteins are important in the ability of the immune system to recognize and destroy cancer cells. Ginder's research seeks to answer such questions as: Why are these proteins deficient in certain tumors? and How does this relate to how malignant the tumor is and how quickly it spreads? Some factor in certain cancer cells appears to interfere with the regular expression of these proteins, so Ginder and his colleagues are experimenting with ways to increase the histocompatibility, thus enhancing the ability of the immune system to clear out cancer cells.

The second area Ginder has worked on and plans to develop relates to autologous bone marrow transplantation which has been effective in treating lymphoid tumors or lymphomas. Ginder is looking at applying this treatment—which involves removing the patient's bone marrow, treating the cancer with high dose chemotherapy and/or radiation at levels that would normally kill off the bone marrow, and then reintroducing the removed bone marrow cells into the patient—to other types of cancers such as breast cancer and solid tumors which are responsive to chemotherapy but cannot often be cured by it.

In the clinic, according to Ginder, we are beginning to see the application of the improved understanding of tumor biology in treating cancers not effectively treated by conventional treatments. A Cancer Center at the University of Minnesota, he says, would improve the process of bringing this type of research to the clinic.

"A Cancer Center would enable a critical mass of researchers to work together, interact, and translate the basic science into clinical application more rapidly. We have a strong base for a Cancer Center here because we have so many good research programs in cancer biology. A Cancer Center would attract other strong researchers and make us more competitive for NIH and federal funding. As such it would give us a higher profile with the public. We have excellent cancer research programs here and we are building more. We need to let people know they don't have to go elsewhere."

Dr. Gordon Ginder is a professor of medicine and director of medical oncology at the Medical School.



Dr. Thomas Sellers

"The best cure for cancer is to never get the disease in the first place," says Dr. Thomas Sellers, assistant professor of epidemiology at the University of Minnesota School of Public Health. "Research needs to focus not only on better therapies and cures, but on the causes of cancer as well."

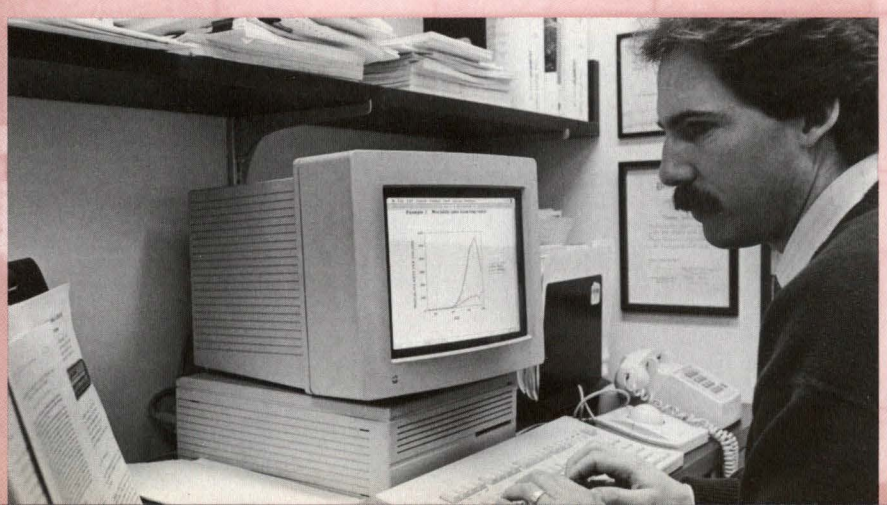
A team of researchers led by Sellers and including scientists from Louisiana State University (LSU) has found evidence of the existence of a lung cancer gene in some families. The gene appears to make those who carry it susceptible to lung cancer, especially if they are smokers. Sellers and his colleagues also found that people who inherit the gene tend to develop lung cancer earlier than the rest of the population.

While working at LSU as a post-doctoral fellow in genetics, Sellers developed the computer program that made it possible for him to begin analyzing the health status of three generations of families in which at least one person had died of lung cancer from 1976 to 1979. That analysis showed that 27 percent of lung cancers diagnosed at the age of 50 were attributable to the gene alone; 42 percent to a combination of the gene and smoking; 27 percent to smoking alone; and 4 percent to neither the gene nor smoking.

Sellers continues to collaborate with colleagues at LSU on the genetic epidemiology of lung cancer in an effort to identify putative susceptibility genes. This includes re-contacting the families previously studied in order to obtain blood samples for DNA analysis. At the University of Minnesota, he is pursuing similar types of research on cancers of the breast and colon.

"Localization of cancer susceptibility genes might lead to clinical tests to identify people who would most benefit from increased surveillance and counseling as to how to decrease their risk of developing the disease," says Sellers, "such as avoiding occupational or dietary exposures." He believes that the University of Minnesota is one of the few places that has the ability to examine carefully the interactions between host susceptibility and environmental factors as causes of cancer. "We have cooperation between the two disciplines here—between the epidemiologists and the geneticists—which isn't happening in many places."

Sellers feels that "the main advantage of a comprehensive Cancer Center is that it brings all of the important players in cancer research together. It enhances communication, collaboration, the sharing of ideas from different disciplines so that we can present a unified front in our studies of cancer."



provide additional laboratory space and equipment. It would facilitate coordination of research funds. By allowing closer interaction among cancer researchers and clinicians, the Cancer Center would improve patient care, diagnosis, and treatment. It would increase visibility and public awareness of the outstanding cancer research programs underway at the University of Minnesota. It would be a benefit in attracting other quality researchers to Minnesota.

Although other local and regional health care providers offer a range of oncology services and, in some cases, undertake limited research activity, the University of Minnesota is unique in the Upper Midwest in its capability to conduct a broad spectrum of basic and clinical cancer research. In fact, it is anticipated that a University of Minnesota Cancer Center would serve as a vital resource to scientists, care providers, and the public throughout Minnesota and beyond.

Ultimately, a formal Cancer Center at the University would lead to improved care and innovative cancer treatments for Minnesotans and people everywhere.

"The planned University of Minnesota Cancer Center will provide an opportunity to create new research activities in the Medical School," explains Dean Brown. "The University of Minnesota already stands high in the nation among institutions for funding in cancer research programs. Therefore, we already have a highly-regarded stature in terms of cancer research activities. This new effort will add to that stature by bringing more innovation in cancer research to the existing strengths at the University."

Many believe that establishing a major cancer center would bring several economic advantages to the state of Minnesota as well as to the University. The Center would employ staff who would pay taxes and buy Minnesota goods and services. The Center itself would need supplies and equipment that could be purchased from Minnesota companies. Industries interested in cancer therapies may be attracted to Minnesota to be near

Dr. Thomas Sellers is assistant professor of epidemiology in the School of Public Health.

such a major research center. In addition, a world-class Cancer Center would strengthen the University's attraction as a cancer treatment center, bringing in patients from outside the state and the country.

Although the economic advantages to the state may be speculation, there is certainty that a Cancer Center would create more research space and more opportunity for researchers to share costly laboratory resources. This is what is exciting to faculty.

"We feel," says Kersey, "that having a place where people involved in cancer can be together, work together, and talk together, will be a fantastic advance for cancer research at the University."

The Fund for the University of Minnesota Cancer Center: UCan

To provide the resources necessary to establish a Cancer Center at the University of Minnesota, the Medical School and the Minnesota Medical Foundation (MMF) have embarked on a major fund-raising initiative. The Fund for the University of Minnesota Cancer Center, dubbed UCan, is seeking major multi-year commitments from business and

Dr. Lillian Repesh

The primary implication of Dr. Lillian Repesh's research—that the phenotype, or physical characteristics, of metastatic melanoma cells can be altered to resemble nonmetastatic cells without damaging healthy tissues—suggests that scientists are discovering the kinds of information needed about cancer that may eventually lead to better therapeutic strategies and an increased understanding of the biology of metastatic cells.

At the School of Medicine in Duluth, Repesh, associate professor of anatomy and cell biology, has been studying the process of how cancer cells spread. She is collaborating on her project with Dr. James B. McCarthy, associate professor of laboratory medicine and pathology at the Twin Cities Medical School. Recently, Repesh has been able to demonstrate that it is possible to inhibit the ability of malignant melanoma cells to spread by inducing changes in the phenotype of these cells.

Within the invasion phase of metastasis, tumor cell adhesion and migration are necessary steps. In order to successfully invade the basement membrane and connective tissue barriers of cells at a new site, tumor cells must perform a three-step process, explains Repesh.

First, the cells must attach themselves to matrix components of the basement membrane. Next, the cells must secrete enzymes necessary to degrade these components. Finally, the tumor cells must migrate through deficits created in the basement membranes and into the adjacent tissue where secondary malignant tumors will form.

Repesh discovered that highly metastatic melanoma cells treated with Adriamycin, a commonly used anti-cancer drug, were significantly inhibited in their ability to invade basement membranes during laboratory tests. Using levels of the drug that are not toxic to cells, she found that pretreated cells exhibited an increased adhesion to the extracellular matrix components, resulting in a decrease in the ability of the cells to migrate.

These results were unexpected, explains Repesh. "Highly metastatic tumor cells typically have relatively few stress fibers and focal contacts, which are areas of cell-substrate adhesion. But here, cells pretreated with the drug showed a dramatic increase in the number of stress fibers and focal contacts formed and they exhibited an increased adhesion to substrate components. These observations are more characteristic of benign or poorly metastatic cells."

Continued collaboration between researchers from both University of Minnesota Medical Schools will be enhanced through the expanded facilities of the Cancer Center, bringing about increased understanding of the mysteries of this devastating cellular process called metastasis.

Dr. Lillian Repesh is associate professor of anatomy and cell biology at the University of Minnesota, Duluth, School of Medicine.

Ken Moran

Dr. Daniel Vallera

"Numerous investigators at the University of Minnesota have independent programs dealing with the study of cancer," says Dr. Daniel Vallera, professor in the Department of Therapeutic Radiology. "One factor that makes it different from other programs is the desire of these investigators to work together to achieve the end of curing cancer. Clearly, the talent is here—molecular biologists, bioengineers, immunologists, and radiotherapists all collaborating under the general umbrella of cancer research."

Vallera describes his major project area as the use of "armed" monoclonal antibodies for therapy of cancer. "We take the monoclonal antibodies and arm them by linking them to a catalytic toxin called ricin of which a single molecule delivered to the tumor cell is capable of killing it. The idea behind this approach is to selectively deliver a potent poison directly to the tumor cell with a minimum of agent delivered to the other nontargeted normal tissues of the body as commonly occurs with more current chemotherapeutic agents.

"We have concentrated on these reagents to treat T cell malignancies such as acute lymphoblastic leukemia and lymphoma. We have also investigated this approach for the possible treatment of lung adenocarcinomas."

Vallera reports that he and his colleagues have also been investigating the arming of monoclonal antibodies with potent radionuclides such as Yttrium-90. "This isotope generates tremendous amounts of energy and has a very short half-life," he notes. "Thus, if delivered directly to tumors, it will destroy all tumor cells in the vicinity, even those that are resistant to drugs and toxin. Our work shows the potential for treatment of human tumors, and has recently been accepted for publication in *Cancer Research*."

In addition, the researchers in Therapeutic Radiology have been studying approaches to promote allogeneic bone marrow transplantation for therapy of cancer by testing radiolabeled monoclonal antibodies and toxin-labeled monoclonal antibodies for promotion of bone marrow engraftment. The program has been successful, and it appears that labeled antibodies also show considerable potential for the treatment of graft-versus-host disease, one of the major complications that result when bone marrow is transplanted between related individuals.

"We feel that the outcome of our research will be the use of these approaches in the clinical program here at the University," says Vallera. "Already, immunotoxins have been used in the clinical bone marrow transplant program to eliminate residual leukemia cells from patients' bone marrow in a treatment procedure called autologous bone marrow transplantation."

Vallera feels that the construction of a facility that will further integrate the independent programs at Minnesota will be fundamental to furthering current programs and achieving future support in the highly competitive research environment. "The Cancer Center will serve to focus the research community on this singular goal," he concludes.

industry, foundations, and the general public. The goal of this fundraising drive is $30 million. Proceeds will be used for three major elements:

- to build a 78,000-gross-square-foot, four-story facility that can serve as the focal point of cancer research at the University. The building, which is planned to go on top of the existing Dwan Variety Club Cardiovascular Research Center, will contain 20 new laboratories equipped with state-of-the-art technology, seminar space, and office areas.
- to provide three new endowed chairs at $3 million each and five junior faculty positions at $1 million each.
- to fund new research programs in the broad fields of cancer immunology, molecular and cellular biology, pharmacology, biochemistry, dentistry, public health, veterinary medicine, oncology, neurology, otolaryngology, dermatology, nursing, surgery, and orthopaedics.

According to MMF development officer Mark Zachary, who is coordinating the Cancer Center fundraising, the response to date has been excellent. "With roughly $11.3 million already pledged from nearly 200 corporations, foundations, organizations, and individuals, we are well on our way to success. Our goal is to provide all Minnesotans with the opportunity to invest in this

Dr. Daniel Vallera is a professor in the Department of Therapeutic Radiology.

Center. Once finished, we will all share in the benefits of the state-of-the-art cancer research being done in our own state."

As fundraising efforts continue, proposals on the administrative structure of the Cancer Center are beginning to take shape as well. Preliminary plans call for a director to be named who would: oversee recruitment of faculty in conjunction with departments and collegiate units; manage financial components including budget and research proposals; coordinate clinical programs with appropriate faculty and University Hospital administrative staff; and develop educational and other University-based programs.

The director would be assisted by three associate directors—one for clinical programs, one for basic science programs, and one for outreach and education programs. In addition, a number of committees would be enlisted to oversee various administrative and scientific functions of the Center including a Council of Deans and Directors, an Internal Scientific Advisory Committee, an External Scientific Advisory Committee, and a Community Advisory Committee.

As a cancer researcher and clinician for the past 30 years, Dr. B.J. Kennedy, Masonic Professor of Oncology and a Regents' Professor of Medicine and former director of the Division of Oncology

Dr. Philip McGlave

"The University of Minnesota is one of the world's leaders in the development of therapy for leukemia and other cancers," says Dr. Philip McGlave, professor of hematology in the Department of Medicine. "In particular, the bone marrow transplantation program is one of the top two or three in the world with regard to the development of curative therapy for leukemia, lymphoma, and other cancers. I suspect as the Cancer Center laboratory space becomes available, more world class scientists and clinical researchers will be attracted to the various cancer research programs at the University of Minnesota."

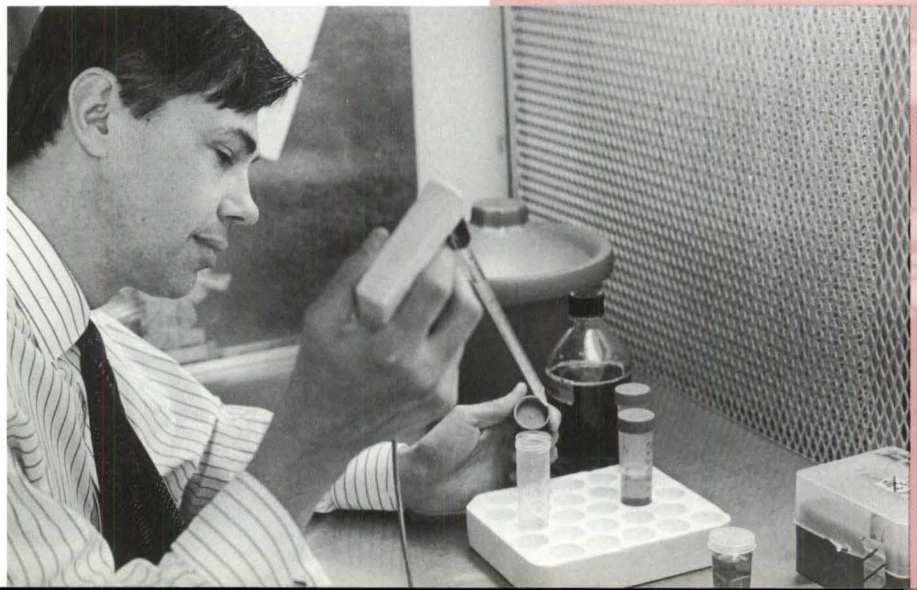
McGlave's clinical cancer research projects include directing the adult bone marrow transplantation program, with particular interest centering on the use of bone marrow transplantation therapy for chronic myelogenous leukemia. His group has been one of the first in the world to perform bone marrow transplants using autologous marrow (the patient's own bone marrow), which has been treated to remove leukemia cells. They are also pioneers in both related and unrelated donor transplants.

One current laboratory project attempts to select non-cancerous stem cells from the bone marrow of patients with leukemia. A second laboratory project involves the selection of cancer killing cells (natural killer cells) from the peripheral blood of patients with chronic myelogenous leukemia which can subsequently be used to treat the patient's leukemia.

McGlave details the promising applications of the research. "Our observations concerning the use of unrelated donors for bone marrow transplantation will double to triple the number of patients who can receive donor transplants, curative therapy for some forms of leukemia. Our work with autologous bone marrow transplantation may allow us to transplant patients who are older and for whom a donor (related or unrelated) cannot be located. Our basic research efforts to purify hematopoietic stem cells may allow us to perform autologous bone marrow transplantations on virtually all patients with chronic myelogenous leukemia, and may be applicable to the treatment of other leukemias. Our use of natural killer cells may allow us to provide biological therapy (rather than chemotherapy or radiation therapy) for patients with chronic myelogenous leukemia and possibly other leukemias."

McGlave believes that the availability of state-of-the-art laboratory space in the Cancer Center will allow the University of Minnesota to recruit not only individual scientists, but scientific leaders who can then recruit larger groups necessary for cancer research. "The housing of basic scientists with research interests in cancer will also allow cross-fertilization and collaboration," he says, "which is currently difficult since laboratories are scattered throughout the medical center complex. The availability of space will also free up many of us who currently must spend much of our effort competing for existing space rather than focusing our energy on actual research."

Dr. Philip McGlave is a professor of medicine, hematology division, and director of the adult bone marrow transplantation program.



Photos by Nancy Mellgren

Dr. Arnold Leonard

Dr. Arnold Leonard, professor of surgery and head of pediatric surgery, has brought together a group of investigators including Drs. Peter Anderson (Department of Pediatrics), Cynthia Loeffler (a surgery resident), and Augusto Ochoa (Department of Laboratory Medicine and Pathology), to study cancer therapy in relation to the patient's own immune system. He summarizes their approach by saying:

"One of the most fascinating and potentially effective means of controlling cancer is the use of the patient's own immune system. Our laboratory has been investigating a new approach in which the immune system may contribute to the effectiveness of these other therapies.

"We have been working with a natural substance, Interleukin-2 (IL-2), a protein produced by the body to stimulate certain types of white cells (lymphocytes) to stimulate the immune system to kill cancer cells. Although initial results of the use of IL-2 against cancer in hospitalized patients were encouraging, the use of this type of therapy for large numbers of cancer patients in the outpatient clinic is not practical in its present form. Major problems with effective use of IL-2 are that it is toxic and is rapidly eliminated after a single injection. We have been actively investigating approaches to solve these problems.

"Dr. Anderson has been investigating new and improved formulations of IL-2. One novel formulation incorporates IL-2 into lipid vesicles which are smaller than red cells. These IL-2 containing vesicles are called liposomes. They keep the IL-2 in the body a longer time and stimulate the immune system to fight cancer. IL-2 liposomes have been very effective against lung and liver cancers in mouse tumor models. Dr. Ochoa in our laboratory has been developing methods to increase the number of cancer killing immune cells using IL-2. He discovered a practical means of markedly increasing the number of cancer killing cells using the combination of both IL-2 and an antibody (anti-CD3) to stimulate very rapid and sustained growth.

"In 1988, Dr. Anderson and Dr. Ochoa proposed investigating the use of IL-2 liposomes and infusions of these rapidly growing IL-2 and anti-CD3 stimulated cancer killing cells together. Dr. Loeffler demonstrated in a mouse colon cancer model that colon cancer metastases to the liver were significantly reduced when the combined approach of IL-2 liposomes and anti-CD3 stimulated cancer killing cells was used. For this she has received the prestigious Research Award from the American College of Surgeons.

"With the aid of grants from the Children's Cancer Research Fund, private funds, the Minnesota Medical Foundation, and OncoTherapeutics Inc., Drs. Anderson, Ochoa, and Loeffler's work has been advanced from test tube studies to studies of cancer immunotherapy in mice and rats. Because of these very promising basic results, Dr. Ochoa is now on leave of absence at the National Cancer Institute (Frederick, Maryland) directing the immunotherapy laboratory and he will be supervising human trials with these new cancer therapies. Thus, work initiated by our group at the University of Minnesota at the basic cellular level has provided potentially practical immune treatments of cancer such as once-a-day outpatient treatment with IL-2 liposomes. It is this type of work that begins at the most basic level, then is applied to the cancer problem using model systems in rodents in order to develop practical new human therapies, that is most satisfying to us.

"It is our hope and expectation that our cancer immunotherapy laboratory—with other scientists in the proposed Cancer Center—will continue to discover, test, and utilize the immune system to more effectively treat cancer."

in the Department of Medicine, has seen many dramatic improvements in the management of several cancer types.

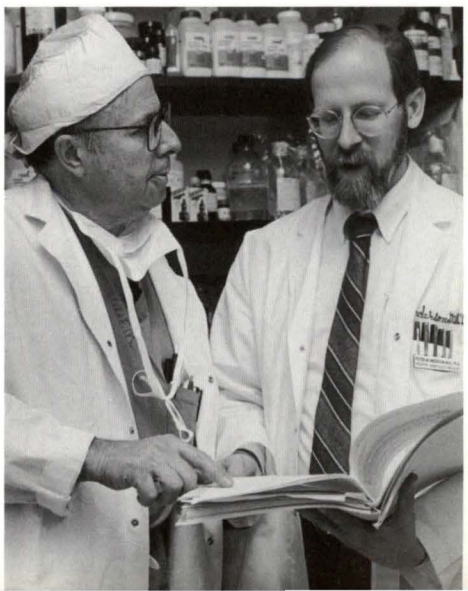
"Twenty years ago," says Kennedy, "a large percentage of young men with testis cancer would die of their disease. The introduction of chemotherapy, of which this institution played a fundamental role, has resulted in a striking movement, in fact a cure of the disease, even when it's widely advanced. We really do believe that the word cure is appropriate. The cancer is not coming back."

Even though Kennedy has seen and been a part of such dramatic improvements in cancer treatment, he realizes much more needs to be done and how much a cancer center would enhance efforts.

"There are a lot more things we need to know about cancer," he says. "We need a better basic science approach to understanding what cancer is, how it spreads, and why we are able to destroy it with various chemicals. This is going to take a lot of basic research with scientists in the laboratory. It is for that reason that we need an expanded cancer research facility."

No war is easy and the battle against cancer is no exception. A University of Minnesota Cancer Center, however, is another weapon to use. It builds hope that one day the war will be won.

Dr. Arnold Leonard (left) is professor of surgery and head of pediatric surgery. Dr. Peter Anderson is an assistant professor of pediatrics.



Dr. Morris Davidman: *Teacher of Medicine*

MMF's Outstanding Teacher award winner motivates, respects, and listens to his students.

by Holly Holmes

Dr. Morris Davidman defines himself as more of an entertainer than a teacher. "Why should learning be dull?" he asks.

Davidman's teaching style is anything but dull. "Teachers are often show people in order to stimulate their audience through entertainment," he explains. Being a showman also allows Davidman to be more approachable to the students. He believes "it is important to be as nonthreatening to students as you can."

However, being entertaining isn't everything, he warns. A good teacher must still be honest, accurate, and most of all knowledgeable. After all, he explains, "The worst thing is to have a showman who doesn't know his material."

These unconventional teaching methods recently earned Davidman the 1990 Outstanding Teacher of the Year Award presented by the Minnesota Medical Foundation. The award proves that Davidman is doing something right because it recognizes faculty who have made outstanding contributions to the education of physicians and medical students.

Davidman is associate professor of medicine at the University of Minnesota Medical School. He is also chief of nephrology at Hennepin County Medical Center, overseeing about 12 nephrologists in the department. A typical day for Davidman consists of many different responsibilities. As an academic physician, he is constantly trying to balance the functions of patient care, administration, research, and teaching. "You spend your day," says Davidman, "making rounds and teaching as you take care of patients."

Photos by Nancy Mellgren

Dr. Davidman believes in breaking students into small groups for more interaction with faculty.

A native of Calgary, Alberta, Davidman received his M.D. from the University of Alberta in Edmonton. He was associate professor at the University of Calgary before coming to Minnesota, and his first hospital appointment was as director of chronic renal failure at the University of Calgary Hospital. While in Canada he began looking for an opportunity to do undergraduate and graduate (resident) teaching. He discovered he could do both at Hennepin County Medical Center. He joined the staff in 1976.

Davidman always wanted to be a doctor. Now, however, he says, "I don't know if I am a doctor. I take care of a lot of people, but if people ask me what I do, my answer is very often that I teach medicine. I'm proud of being a doctor, but I teach medicine."

Informing students about medicine is something he does very well. For the past eight years, Davidman has been chairman and course director for the Kidney Course, presented to second-year medical students.

Davidman's theory about learning is that "what you struggle to learn yourself is what you retain." He feels the problem every teacher faces is how to present a curriculum to students which stimulates them to learn themselves.

Davidman believes that students are basically motivated individuals. Teachers must find ways to present material so that students don't get turned off.

Keeping classes motivated isn't an easy task. It may be easier, Davidman says, "to take students, shove facts down their throats, and have them regurgitate those facts on an examination."

He feels this approach is very ineffective. His tactic for keeping students motivated is to involve them by breaking into small groups to allow for more interaction with faculty. "We haven't done nearly enough of this," he says. The theory behind this approach is that smaller groups stimulate students and allow more opportunity for them to work through problems with a faculty member there to help. After striving to resolve a problem on their own the students will be more likely to learn.

"What I try to tell our students in medicine is that there is a faculty who really cares."

Small groups are not Davidman's only teaching technique. "I never ever think a student's question is stupid," he says. "I never assume the knowledge base of a student. I feel a teacher should always start at the beginning, never at the middle. If you start too far ahead of students, you will lose them."

Davidman's respect for his students shows. "They know what they need," he says. "What I try to tell our students in medicine is that there is a faculty who really cares. I demonstrate this by respecting their complaints and trying to do something with them."

As is customary, Davidman has his students fill out evaluation forms at the end of the session. He takes these suggestions into careful consideration. He has actually changed lectures and subject materials based on these student evaluations.

As chairman of the Educational Policy Committee at the University, Davidman also gets an opportunity to do something about student complaints. Student representatives on this committee have input on how the faculty runs the curriculum.

This is Davidman's last year as chairman of the Educational Policy Committee, and there are many goals to accomplish. The curriculum at the University needs to be modified with changes that will last. The committee also is struggling with how to test students in their clinical years. "We have an obligation to the public to make sure our graduates are competent. We have an obligation to the students to give objective feedback when they are in the wards." It would please Davidman if the committee could achieve even half of the goals set in front of it this year.

The Outstanding Teacher Award is not Davidman's first award. His special talents as a teacher made him the appropriate choice for the 1979 Hennepin County Medical Center Teacher of the Year Award and a 1983 and 1986 recipient of the Distinguished Teaching Award from the Minnesota Medical Foundation.

Davidman has made many outstanding contributions in education and is a worthy recipient of the Outstanding Teacher of the Year Award. His commitment to teaching combined with his enthusiastic attitude make him a model of excellence. His contributions to the medical field will continue to affect people's lives well into the future.

The story of BRETYLIUM *from Eisenhower to E.T.*

Physiology professor Marvin Bacaner has been instrumental in the development of the life-saving drug bretylium.

by Michael P. Moore

Here's a great trivia question: What did former President Dwight D. Eisenhower and E.T., the extraterrestrial, have in common (besides baldness)? The answer: they both were saved from ventricular fibrillation by the heart drug bretylium. And that's only one of the strange twists in the amazing story of bretylium, which began with a serendipitous discovery by Marvin Bacaner, professor of physiology at the University of Minnesota Medical School.

The discovery came in 1964, during a series of canine experiments investigating the relationship between heart metabolism and heart performance. Initially, Bacaner was studying the totally isolated hearts of dogs connected to a mechanical system in which the hearts pumped blood. During analysis of biopsy samples from the hearts, "we found something very interesting," Bacaner says. "The old idea was that the heart was about one-half percent glycogen, but we found big regional differences, from almost no glycogen to 5 percent glycogen, depending on which parts of the heart were contracting more strongly."

Bacaner would have written a scientific report of this discovery if not for a comment by one of his colleagues in the Department of Physiology. "He came by and said, 'Marvin, I'd feel a little better about your data if there were a little more dog around the heart.' I felt that was justified, so we set up some experiments to obtain the biopsies with the heart in the chest cavity. But we couldn't get very far because every time we tried to biopsy a heart, it would fibrillate, and that changes the whole metabolism of the heart. So we concluded that there was no way we could repeat the experiment on a normally beating heart."

Then one night Bacaner woke up in the middle of the night with a possible answer. "The intact hearts were more prone to fibrillation because they were connected to the nervous system. Since the major innervaters of the heart ventricles are from the sympathetic nervous system, I decided to try to block them. I went to a colleague in pharmacology and asked if I could borrow some guanethidine, the only drug I knew of that blocked post-ganglionic sympathetic action. He didn't have any, but he handed me a newer drug that he said would do the same thing."

The drug was bretylium tosylate, and it allowed Bacaner to biopsy the beating hearts without inducing fibrillation, suggesting that sympathetic blockade was indeed reducing the ability of the heart to fibrillate. "Being an M.D., that seemed very significant; not only did I understand what made the heart prone to ventricular fibrillation, namely sympathetic innervation, but I also knew how to block it."

To further evaluate bretylium's usefulness in reducing vulnerability to ventricular fibrillation, Bacaner turned to an electrical-threshold system developed by two colleagues, John A. Johnson and Richard J. Stish. "We modified their system slightly so we could evaluate thresh-

"So I took it out to the airport and put it on a plane. The first I knew it had been used was when a Washington, D.C., newspaper reporter called me."

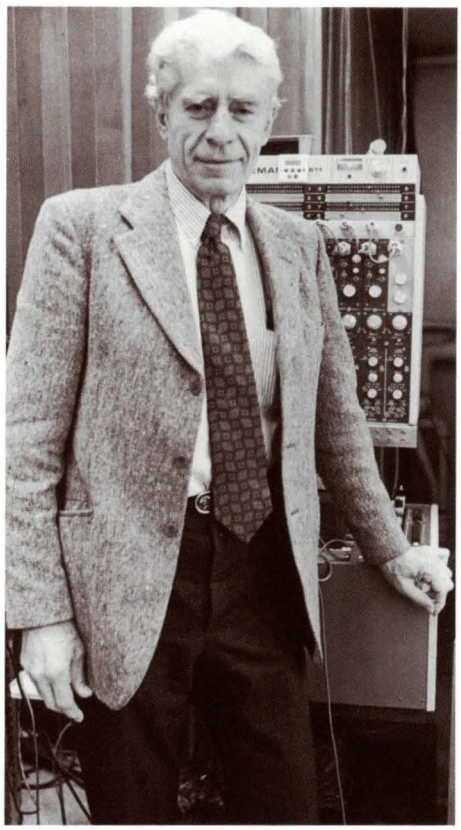
olds for ventricular fibrillation, and then we tested bretylium. We found that it markedly raised the amount of current it took to induce ventricular fibrillation.

"But the most remarkable finding was that bretylium induced a phenomenon called spontaneous defibrillation, which occurs naturally in small animals such as cats, rabbits, and rodents, but which is never seen in large hearts such as those of dogs, pigs, cattle, and humans. Large hearts will fibrillate until the heart is defibrillated with an electrical countershock or the person dies. The fact that we could induce this phenomenon in dogs' hearts was a spectacular sign of anti-fibrillatory effect."

Ironically, the theory that caused Bacaner to end up working with bretylium turned out to be only partly true. When he tried guanethidine, thinking that its sympathetic blockade effect would produce results even better than bretylium's, there was no anti-fibrillatory effect. "We now know that sympathetic blockade is a helpful but not necessary component—the major component (in bretylium's anti-fibrillatory action) is a membrane effect on the ionic currents of heart cells," Bacaner says.

Thinking that he had discovered something with clinical potential, Bacaner called a former colleague who had left academia to become research director and then president of a pharmaceutical company. "The first thing he said was 'Get a use patent.' He explained that in this country you can patent the novel use of a compound, and since bretylium was originally patented as an anti-hypertensive compound, I could patent its use to prevent ventricular fibrillation." The bretylium tosylate compound was originally patented by the Burroughs Wellcome Company, but it was dropped from consideration as an anti-hypertensive because it induced only orthostatic hypotension, and patients soon became tolerant even to that effect.

Bacaner convinced Willard Fornell, then director of the University's patent office, to file for a patent on the use of bretylium as an anti-fibrillatory drug. He then contacted Burroughs Wellcome to see if they would be interested in licensing the compound for this new application.



Dr. Marvin Bacaner of the Department of Physiology has been working with bretylium for more than 25 years.

"I called them and they weren't very interested, because they had already spent a lot of money on bretylium and it had died. But I finally persuaded them to let me present my data, and when I did they became mildly interested. They said they didn't want to undertake clinical trials because of the expense, but if I was willing to do the trials they would supply the three things I needed to get an Investigational New Drug approval from the Food and Drug Administration (FDA): the manufacturing specifications, the chemical stability data, and the preclinical toxicity data."

Bacaner supplied the clinical testing plan, and after obtaining FDA approval, he went ahead with a pilot study on 30 patients. Bretylium was given only as a last resort, to acute cardiac patients in whom all other treatments had failed. All 30 patients converted to normal heart rhythm and lived. "We were most successful in the six with refractory ventricular fibrillation and the four with ventricular tachycardia; bretylium was less successful in suppressing other types of nonlife-threatening arrhythmias."

Bacaner published those results and continued with clinical testing, unfortunately without any funding. "The people around here participated because I asked them to, and I'm indebted to surgeons Walt Lillehei and Aldo Castenada, and to about 15 local physicians who sent us patients."

The pilot results did lead to a license agreement with Burroughs Wellcome, however, and as part of the contract the company agreed to set up controlled studies. Why those clinical trials were never conducted is open to speculation. Bacaner thinks three factors contributed: confusion as a result of the company moving its headquarters; the fact that at that time bretylium had been tested only when given parenterally rather than orally, which might reduce the size of its market; and the company's desire to find an analog of bretylium that was either more effective or absorbed better when given orally.

Burroughs Wellcome did send bretylium out on a compassionate basis to about 1,400 patients, with very good results. Former President Dwight D. Eisenhower became one of those patients after receiving a life-saving dose sent by Bacaner. In 1968 Eisenhower had a heart attack and was in Walter Reed Hospital in Washington, D.C., suffering refractory ventricular fibrillation.

"Apparently his cardiologist had read one of my clinical reports and he called me to request some bretylium," Bacaner says. "So I took it out to the airport and put it on a plane. The first I knew it had been used was when a Washington, D.C., newspaper reporter called me, and then the Minneapolis paper called. I never heard anything official, but I later saw the clinical report, which said that every time they stopped giving him parenteral bretylium he'd go back into fibrillation, so they put him on oral bretylium

Nancy Mellgren

and he did fine for about six months. He died suddenly a short time after they stopped giving him oral bretylium."

However, despite the extensive compassionate use suggesting that bretylium was very effective, the lack of data from controlled clinical trials stood in the way of FDA marketing approval. And despite Bacaner's persistent efforts, Burroughs Wellcome wasn't pursuing the clinical testing needed for FDA approval. It took pressure applied on Burroughs Wellcome by Harold Chase, then University vice president for academic affairs, and on the FDA by two nationally prominent figures at the University, chief of cardiology Howard Burchell, then editor of the journal *Circulation*, and head of physiology Maurice Visscher. As a result of action by the University, Burroughs Wellcome relinquished its claim to bretylium in 1972 and gave the University royalty-free access to the composition patent.

The burden again fell on Bacaner to carry on clinical studies until a new licensee could be found, as well as to continue to supply the drug to physicians who requested it for compassionate use, often in emergency situations. "We used skycabs for a couple of years, and we never charged for the drug, just for the delivery," Bacaner says. After about a year and a half of this service, Bacaner was able to put together enough data to do what no individual had ever done: he was invited by the FDA to present his results to the Cardiovascular Advisory Committee.

As a result of the committee's recommendation, his new drug application (NDA) was approved by the FDA in November 1973, opening the way for full marketing approval. "As far as I know, this was the first and last time FDA has approved an NDA submitted by an individual, rather than a company," Bacaner says. In the approval letter, E. DeVaughn Belton, M.D., director of the Division of Cardio-Renal Drug Products, wrote the following:

"I would like to express my appreciation for the role you have played in the development of bretylium and its usefulness in severe arrhythmias and for your presentation to the Cardiovascular Advisory Committee . . . At this junction may I humbly suggest that it is in the interest of the patients to be treated that we proceed expeditiously toward a new drug approval."

But not even this victory speeded the re-licensing of bretylium. It was a hard sell because it was initially approved by the FDA as a drug of last resort, and because its effectiveness in preventing ventricular fibrillation when given orally had not yet been evaluated, Bacaner says. Finally, in 1976, a license was signed with a small, independent company named Arnar Stone, which was later bought by American Hospital Supply.

In July 1978, bretylium, under the trade name Bretylol, was fully approved for marketing by FDA. "It took us 11 years, from 1965, when the evidence of its value was quite clear, until 1976, when Arnar Stone made it clinically available, to get bretylium into use. That's too damn long," Bacaner says. "We must have hit every bureaucratic problem in the world. That it ever was marketed at all I think is a miracle."

Not only was bretylium marketed, it went on to become the most lucrative royalty-generating product ever licensed by the University of Minnesota. Those royalty payments ended in 1988, a year in which total sales of Bretylol reached $15 million. Several million dollars were generated to support University research over the 13 years of the license agreement. Some of that money was used to expand the University's Office of Patents and Licensing and to more aggressively—and expediently—pursue new patent and license agreements.

"Royalties from bretylium gave us the ability to serve faculty better and to get more new technologies out to industry and the public," says John Thuente, director of the University's Office of Patents and Licensing.

Bacaner has used some of the royalties he received from bretylium to endow a scholarship fund through the Minnesota Medical Foundation. "It recognizes the most original and useful scientific achievement by a graduate student in each of the six basic science departments of the Medical School," he says. Students chosen by the departments to receive the annual Jacob and Minnie Bacaner Awards, named in memory of his parents, receive $500 and have their names added to plaques kept in each department.

Now that the bretylium patent has run out, Bacaner says he feels freer to try to improve the way it is used. "I've never felt free to openly criticize how it was being used while the patent was in force,

"I couldn't believe it when out of the blue comes this mention of bretylium. It was kind of fun. It was a very realistic cardiac resuscitation . . . "

because I didn't want to be in the position of advocating the use of a drug from which I was benefitting materially."

The problem he sees is that the original FDA-approved indication was for bretylium to be used following administration of lidocaine and procainamide, if those drugs failed to restore normal heart rhythm. "It's been very difficult to reverse that, even though the current FDA indication is unqualified for the 'prophylaxis and therapy of ventricular fibrillation'—period—which no other drug has.

"Bretylium works when everything else fails, but it works much better if it's given first," Bacaner says. He explains that bretylium increases the strength of heart contractions, while other drugs depress both contractility and rate. Prior administration of such drugs (class 1 anti-arrhythmics) also increases the tendency of bretylium to cause hypotension, which is its only side effect, he says.

"Very often cardiac patients are dehydrated from diuretics. When you give them bretylium, which decreases peripheral resistance, it magnifies the effects of dehydration and leads to hypotension, especially if the other drugs have blocked its action of increasing contractile strength. You can easily prevent or reverse hypotension, though, by giving fluids or by constricting the periphery with vasoconstrictors. Really though, the side effects are caused mostly by its being used after all these other drugs. Symptomatic hypotension is very unusual when adequate doses of bretylium are used as the primary treatment."

Despite the intensity with which he tells the story of bretylium, Bacaner softens when asked about the movie *E.T.* He went to see the movie on the insistence of his son. "He said, 'Dad, you've got to come see this movie, you'll love it!' I said, 'What do you mean, it's a kid's movie,' but he insisted, so I went." Near the end of the movie, when E.T. is being treated by a team of doctors and seems to be dying, he suddenly goes into cardiac arrest. As chest compressions are started, the doctor in charge yells, "Let's try the bretylium!" and other medical personnel repeat the call: "Get the bretylium." A while later, E.T., seemingly dead, opens his eyes and greets his friend, Elliot.

"I couldn't believe it when out of the blue comes this mention of bretylium," Bacaner says. "It was kind of fun. It was a very realistic cardiac resuscitation, probably set up under the supervision of an emergency room physician. Most use of bretylium is by emergency room physicians, who seem to appreciate the usefulness of bretylium a lot more than cardiologists do."

The realism of the E.T. episode was recently emphasized by a Minneapolis newspaper's account of a similarly successful cardiac resuscitation. Under a headline reading: "Chance or fate? 'Dead man's' tale defies odds," Star Tribune columnist Jim Klobuchar recounts the events following the collapse of a 65-year-old man. Early in the article, he quotes one of the attending doctors: "For more than 70 minutes he was down with no blood pressure or practically no blood pressure, no pulse; and when they brought him to emergency and we started to try to save him, some people in the room thought we were crazy. They thought he was gone."

Later in the article, Dr. Lynn Simon, the emergency physician who treated the patient at Methodist Hospital, is quoted: "We shocked him 18 times and gave him three different kinds of drugs," Dr. Simon said. "For a while, nothing seemed to bring him back. I don't think many there thought there was any chance of saving his brain even if his heart came back. So much time had gone by. The bretylium (a drug that gives a kind of chemical shock) seemed to help. At 2:30 he was able to recognize his wife. At 7 p.m. we had most of the tubes out of him, and I talked to him about it."

Bacaner says it's a story he's heard many times, but which he hopes will have a less death-defying theme in coming years as bretylium is given to patients earlier in their resuscitation. "While bretylium saves hundreds of patients with intractable ventricular fibrillation, it could save thousands if used properly," he says.

Besides advocating the proper use of bretylium, Bacaner continues his long-term research into the physiology and biochemistry of heart arrhythmias, hoping to find even more effective ways of preventing these life-threatening events. He still carries out most of his work amidst a maze of heart-monitoring apparati in his cluttered laboratory. But he recently embarked as a co-investigator on a new, futuristic type of research. Together with fellow physiologists Raimond L. Winslow, Robert F. Miller, and Denis Noble (Oxford University), he is using the vast computational power of the Minnesota Supercomputer Institute to develop "Computational Models of the Dynamics of Cellular and Neuronal Networks."

Put simply, that means taking what has been discovered about individual heart and nerve cells and about small groups of these cells, and using the supercomputers to extrapolate that knowledge into large networks of such cells. Those models can then be used to test theories for what causes arrhythmias, and to develop novel methods of preventing or stopping them. The project is one of six focus projects being sponsored through 1991 by the Army High Performance Computing Research Center, which was established at the University of Minnesota with a grant of $66 million for the next five years.

The supercomputer modeling research cannot replace the laboratory animal research that led to the discovery of bretylium, and which will undoubtedly lead to the discovery and testing of many more medications. But it does occasionally take Bacaner's and other physiologists' research to a higher plane at which different types of knowledge and inspiration might lie.

Undoubtedly, Ike and E.T. would both approve.

Michael P. Moore is communications coordinator for the University of Minnesota's Office of Research and Technology Transfer Administration (ORTTA).

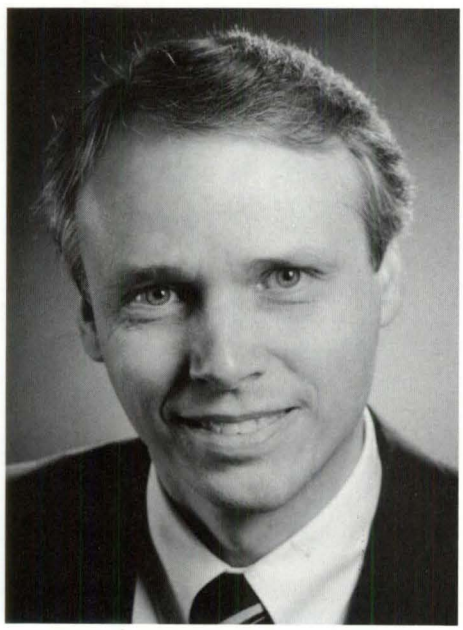
BECAUSE OF *You!*

MMF says Thanks at Annual Meeting

Ronald O. Baukol

Gail P. Bender, M.D.

Paul T. Birkeland



Richard A. Carlson, M.D.

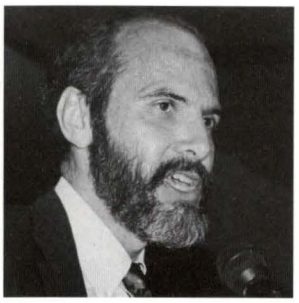
The Minnesota Medical Foundation expressed appreciation to donors, volunteers, and alumni at the 52nd Annual Meeting held October 30, 1990. Because of You was the theme, recognizing the gifts, guidance, time, and energy given by thousands of individuals and organizations during the past year in support of research and education at the University of Minnesota Medical Schools.

Highlights of the evening included the presentation of academic awards, donor and volunteer recognition, the passing of the gavel from past president of the board of trustees Dr. Nadine Smith to new president James Spicola, and an address by featured speaker Dr. Arthur Caplan, director of the Center for Biomedical Ethics at the University of Minnesota. Other new officers of MMF include vice president James W. Reagan, secretary Bobby I. Griffin, and treasurer Peter Heegaard. New board members are Ronald C. Baukol, Gail P. Bender, M.D., Paul T. Birkeland, and Richard A. Carlson, M.D.

Distinguished Teaching Awards were announced for recipients Drs. Paul Severson, Arthur Aufderheide, and Kendall Wallace of the UMD School of Medicine, and for Drs. Stephen Katz, Valerie Ulstad, Laurel Drevlow, and George Landis of the Twin Cities Medical School. Dr. Morris Davidman was recognized as recipient of the 1990 Outstanding Medical School Teacher of the Year Award, and Drs. Anton Johnson and Brian Quebbemann were introduced as recipients of the J. Jacob Kaplan Research Award.

Dr. Arthur Caplan challenged the audience with his provocative talk on reproductive technologies, providing an update on a number of current cases as well as addressing the many ethical ques-

Art Caplan, director, Center for Biomedical Ethics



Ron Franks, M.D., dean, UMD School of Medicine

Nils Hasselmo, president, University of Minnesota

tions that are raised as reproductive techniques enter the domain of the research laboratory.

Four individuals were confirmed as new members of the MMF board of trustees. The board is comprised of faculty of the University of Minnesota Medical Schools, leaders in the medical community, and representatives of the corporate community. The board is charged with the overall guidance of MMF in accomplishing its mission of raising and disbursing funds for medical education and research at the University of Minnesota Medical Schools in the Twin Cities and Duluth.

Ronald O. Baukol is a group vice president of the 3M Medical Products Group. He has been employed by 3M for 25 years in many capacities including managing director of 3M Ireland and chairman and chief executive of 3M United Kingdom PLC. Baukol is active in many civic and professional organizations, in particular the St. Paul Chapter of the American Red Cross. A Chicago native, he received his B.S. in chemical engineering from Iowa State University and his M.S. from the Massachusetts Institute of Technology.

Gail Papermaster Bender, M.D., is a private practice physician specializing in medical oncology. She has practiced at the Meadowbrook Building in St. Louis Park since 1984. Bender has received a number of honors in her career including the Twin West Chamber of Commerce Women of Achievement Award and the American Association of University Women Fellowship Award. A Minneapolis native, Bender was educated at Cornell, Stanford, and the University of Minnesota Medical School.

Paul T. Birkeland is an attorney who has been associated with the firm of Faegre & Benson for 28 years. He is currently a partner and head of the banking/commercial practice group. Throughout his career, Birkeland has lectured extensively on subjects related to banking to a variety of audiences. A Brookings, South Dakota, native, Birkeland is a University of Minnesota Law School graduate.

Richard A. Carlson, M.D., is chairman of the Department of Radiology at Fairview Southdale Hospital. He has been actively involved with the Minnesota Medical Foundation for a number of years, serving on the Executive Committee of the Centennial Scholarship Fund and as president of the Medical Alumni Society in 1984-85. A Lindstrom, Minnesota, native, Carlson is a St. Olaf College and University of Minnesota Medical School graduate.

Morris Davidman, M.D., Outstanding Teacher of the Year, David Teslow, and Nils Hasselmo

Drs. Nadine Smith and David Brown, dean, Twin Cities Medical School

Editor's Note: MMF President Jim Spicola passed away on January 29. *Story on page 35.*

MEDICAL SCHOOL NEWSBRIEFS

APPOINTMENTS, HONORS, AWARDS

Anesthesiology

Drs. Richard Palahniuk and **Ji-Chia Liao** travelled to Taiwan to be guest speakers of the National Society of Anesthesiology of the Republic of China. They were also visiting professors at the National Taiwan University in Taipei.

Biochemistry

Dr. Leonard J. Banaszak was the recipient of an NIH grant for a project, "Structural Studies of Lipid Protein Systems." **Dr. Michel M. Sanders** was a recipient of an American Cancer Society grant for her project, "Control of Gene Expression by Peptide and Steroid Hormones." **Dr. Paul J. Siliciano** received a National Science Foundation grant for his project, "The Function snRNP Proteins in Splicing."

Dr. Ronald Edstrom was the featured speaker at the Gordon Conference in Ventura, California, in January. Dr. Edstrom spoke on "Enzyme Organization and Cell Function." **Dr. John Lipscomb** spoke in Kyoto, Japan, in December on "Structure and Mechanism of Protocatechuate 3,4 Dioxygenase" at the International Symposium on Oxygenases and Active Oxygen. **Dr. Howard Towle** was an invited speaker at the Department of Cell Biology at Baylor College of Medicine in December.

Cell Biology and Neuroanatomy

Dr. Robert P. Elde received the Alcohol, Drug Abuse, and Mental Health Administration's MERIT Award from the National Institute on Drug Abuse for his project "Laser Confocal Imaging of Opioid Peptides." MERIT (Method to Extend Research in Time) awards are given to investigators who have demonstrated superior competence and outstanding productivity in their previous research endeavors. Dr. Elde was also appointed to the John B. Johnston Land Grant Chair in the Neurosciences.

Dermatology

Dr. Peter J. Lynch, professor and head of Dermatology, was elected vice president-elect of the American Academy of Dermatology, Inc. **Dr. Mark Dahl** has been named a candidate for president of the American Academy of Dermatology.

Family Practice and Community Health

Drs. Roberd M. Bostick, Charles E. Boult, and **David C. Current** were recently appointed assistant professors. **Dr. Ruth Bolton** was nominated Unit Director at the University's Family Practice program at North Memorial Hospital, effective last July. **Dr. Diane A. Dahl,** also recently appointed assistant professor in February, was named Unit Director at the University's Family Practice program at Methodist Hospital.

Medicine

Dr. Harry Jacob received a five-year renewal of his MERIT Award from the National Institutes of Health. He has also been appointed editor-in-chief of the *Journal of Laboratory and Clinical Medicine.*

Appointed associate editors were **Drs. David Brown, Dale Hammerschmidt, Peter Bitterman, Colin Jordan,** and **Thomas Hostetter. Dr. Louis Tobian** was the co-recipient of the American Society of Nephrology's highest award, the John P. Peters Award. Dr. Tobian is a professor in the Department of Medicine.

Neurosurgery

Dr. Walter Hall, graduate of the College of Physicians and Surgeons of Columbia University, joined the Department of Neurosurgery on February 1, following a neurosurgical residency at the University of Pittsburgh. He was also recently awarded the Van Wagenen Fellowship. Dr. Hall's primary focus will be in neurosurgical oncology. **Dr. Stephen Haines** became a founding member of the Skull Base Surgery Society and was elected to the executive committee of the Congress of Neurological Surgeons. **Dr. Roberto Heros** was elected vice president of the Federation of Latin American Neurosurgical Societies. **Dr. Paul J. Camarata** received a scholarship from the American College of Surgeons and a grant from the United Parkinson Foundation. **Dr. Walter C. Low** recently received the Established Investigator Award from the American Heart Association.

Obstetrics and Gynecology

Dr. Linda Hammer Burns will be joining the faculty as assistant professor. She will be involved with the Women's Cancer Center and Women's Health Center.

Ophthalmology

Dr. Jonathan D. Wirtschafter has been appointed to the Frank E. Burch Research Chair in Ophthalmology. Dr. Burch, an 1897 graduate of the University of Minnesota Medical School, was chairman of the department from 1927-1944. Dr. Wirtschafter holds the position of professor of ophthalmology, neurology, and neurosurgery at the University of Minnesota. Prior to coming to Minnesota he was professor and founding chairman of the Department of Ophthalmology at the University of Kentucky.

Orthopaedic Surgery

Dr. Liza Arendt was named to the NCAA Committee on Competitive Safeguards and Medical Aspects of Sports. **Dr. James H. House** was guest lecturer at the Allied Services Conference on "Future Directions in the Treatment of Spinal Cord Injury" in Scranton, Pennsylvania, where he spoke on Functional Reconstruction of the Hand in Quadriplegia. **Dr. William Lew** received the 1990 Excellence in Research Award—Young Investigator from the American Orthopaedic Society for Sports Medicine. **Dr. Harry J. Robinson** was appointed chairman of the Liaison Committee on Military Affairs in December.

Otolaryngology

Dr. George L. Adams was named professor and head of Otolaryngology. He has been interim head since 1989, and on

staff of the University of Minnesota Hospital and Clinic since 1973.

Pharmacology

Drs. Kenneth Hargreaves and **Paul Pentel** were recently appointed associate professors.

Dr. Akira Takemori recently was named president-elect of the American Society for Pharmacology and Experimental Therapeutics (ASPET). **Dr. Ben Zimmerman** was guest lecturer of Hypertension Day at the University of Tennessee.

Dr. Earl Dunham received a Minnesota affiliate grant from the American Diabetes Association to study "Renal Eicosanoids and Osmolytes in Diabetes." **Dr. Louise Nutter** was a recipient of a National Institutes of Health grant for a project entitled, "Mechanisms of Resistance to Menadione." **Dr. Ben Zimmerman** received a grant for his project entitled, "Bradykinin Vascular Influence and ACE Inhibition," from the National Institutes of Health.

Physiology

Dr. Eric A. Newman, associate professor, joined the faculty in July, 1990. Dr. Newman came from the Eye Research Institute of the Retina Foundation in Boston. **Dr. Stephen Katz** received a Distinguished Teacher Award from the Minnesota Medical Foundation for the second consecutive year; **Dr. Carlo Terzuolo** was honored in a symposium sponsored by Physiology. **Dr. Dale Branton** is involved in a research project studying calcium channels in nerve cells, funded by the Minnesota Medical Foundation. **Dr. Eric Newman** received a grant from the National Institutes of Health to study membrane physiology and function of retinal muller cells. **Dr. Carlo Terzuolo,** along with **Drs. Richard Poppele, John Soechting,** and **Timothy Ebner,** received an international grant from Japan for a project entitled, "Computational, Adaptive and Cognitive Aspects of Motor Behavior and Their Neuronal Basis." **Dr. Richard Poppele** is providing consulting and advising services for setting up medical school curriculum at Maharry Medical College in Nashville, Tennessee.

Psychiatry


Tim Rummelhoff

Dr. Marilyn Carroll received a MERIT award for her project entitled, "Environmental and Pharmacological Control of Drug Abuse." **Dr. Patricia Faris** was the recipient of a National Institute of Mental Health grant for her project "Role of CCK in Feeding: Anatomy-Aided Behavioral Studies." **Dr. Harry Hoberman** received a National Institute of Mental Health grant for his project "Psychiatric Disorders Among Native American Adolescents." **Dr. James Halikas** received a grant from the National Institute of Drug Abuse for his project "Carbamazepine in the Treatment of Cocaine Abuse."

Radiology

Dr. Wilfrido Castaneda-Zuniga was appointed president-elect of the Society of Cardiovascular and Interventional Radiology.

Dr. Eugene Gedgaudas, professor emeritus, has been selected to receive the Gold Medal of the American Roentgen Ray Society in May. **Drs. Kurt Amplatz, Wilfrido Castaneda-Zuniga,** and **Arthur Smith** received the 29th Ferdinand C. Valentine Award given by the Council of the New York Academy of Medicine in New York.

Dr. Joseph Yedlicka gave lectures on "Interventional Biliary Procedures: Techniques and New Developments" at the National Yang-Ming Medical College in Taipei. **Dr. Wilfrido Castaneda-Zuniga** was visiting professor at New England Deaconess Hospital/Harvard University in October. He also presented lectures at the Tenth Postgraduate Uroradiology course in Vancouver, Canada, and spoke at the New Advances in Interventional Radiology course in Peoria, Illinois. **Dr. Janis Letourneau** presented lectures at the Curso Internacional de Endourologia in Mexico City. She was also visiting professor to the North Dakota Radiological Society in Bismarck. **Dr. Harry Griffiths** presented a paper on MRI in Sports Injury at the 17th Annual Refresher Course of the International Skeletal Society held this year in Salzburg, Austria. He also recently had a book published by Aspen Publications entitled, *Imaging of the Lumbar Spine.*

Dr. Christopher Kuni completed his research on "Quantitative SPECT Brain Imaging, MRI, and Neuropsychological Testing in AIDS Dementia," funded by Medi-Physics, Inc. **Dr. Joseph Yedlicka** is continuing his research on using compressed collagen foam plugs and the inferior vena cava clip; both studies were recently published. **Dr. David Hunter** is beginning a city-wide project on the use of angioplasty vs. atherectomy for superior femoral artery stenoses. He also completed analysis of spermatic vein sclerotherapy with hot contrast. **Dr. Harry Griffiths** and colleagues continue their research into the place of MRI in the diagnosis and follow-up of bone and soft tissue tumors.

Therapeutic Radiology

Recently appointed assistant professors in the Department of Therapeutic Radiology include **Drs. Kathryn Dusenbery** and **Kathryn Farniok. Dr. Dan Vallera** was recently appointed to the American Cancer Society Advisory Board. **Dr. Seymour Levitt** was named an at-large member of the American Cancer Society's national board of directors, and a member of the society's executive committee.

UMD School of Medicine

The UMD School of Medicine's Department of Physiology recently received the Burroughs Wellcome Award, a highly distinguished award given to a few universities each year for demonstrating scientific advancement. The first award of its kind to ever be granted to the School, the selection of the award was based on the cardiovascular research efforts of **Drs. Joseph Di Salvo, Lorentz E. Wittmers, Jr.,** and **Gary R. Marchand.**

School of Public Health

Dr. Thomas Louis, professor and head of the Division of Biostatistics, was named president-elect of the International Biometric Society, Eastern North American Region.

MMF REPORT

MMF approves $142,350 in research grants

The Minnesota Medical Foundation board of trustees approved $142,350 in research and special grants at its fall quarterly meeting. The amount includes $84,600 in faculty research grants, $11,250 in student research grants, and $46,500 in special grants for research equipment and salary support.

Faculty grants include: **Jerome Abrams, M.D.,** Surgery, $4,500, Effect of inversed inspiratory-expiratory ratio and end-inspiratory pause on ventilation-perfusion ratios; **David Bradford, M.D.,** Orthopaedic Surgery, $4,000, Is disc degeneration a permanent change in cell population?; **David Cherwitz, M.D.,** Lab Medicine and Pathology, $3,000, Mutational activation of ras oncogenes in human lung cancer; **Kathleen Daly, Ph.D.,** Otolaryngology, $4,000, Epidemiology of early otitis media; **Gregory Filice, M.D.,** Medicine, $5,000, B2 microglobulin and CD8+ T cells in CMV infection; **Tracy Gannon, M.D.,** Dermatology, $1,800, Relationship between granuloma annulare and diabetes mellitus assessed by HbA1c vs. serum glucose; **Christopher Gomez, M.D., Ph.D.,** Neurology, $7,000, Mutant receptors as a potential cause of excitatory neurotoxicity and neurodegenerative disease; **Edward Janoff, M.D.,** Medicine, $5,000, Killing of streptococcus pneumoniae by CD4+ T lymphocytes; **Beom Seok Jeon, M.D.,** Neurology, $1,800, Experimental mitochondrial encephalomyopathy; **James Johnson, M.D.,** Medicine, $6,000, Role of virulence factors in e. coli urinary tract infection; **Emmanuel Katsanis, M.D.,** Pediatrics, $4,000, Generation of murine neuroblastoma specific cytotoxic T cells; **Gloria Niehans, M.D.,** Lab Medicine and Pathology, $4,000, Complement activation in human cancer; **John Perentesis, M.D.,** Pediatrics, $5,000, Molecular genetic construction of recominant immunotoxins; **Paul Siliciano, Ph.D.,** Biochemistry, $7,000, Structure of the U1 snRNP particle; **Amy Skubitz, Ph.D.,** Lab Medicine and Pathology, $4,500, Interaction of colon carcinoma cells with laminin peptides; and **Georgia Wiesner, M.D.,** Medicine, $4,000, Char-

Grants continued on page 21

MMF Grant Recipient: Amy P.N. Skubitz

Amy P.N. Skubitz, Ph.D., assistant professor in the Department of Laboratory Medicine and Pathology, was one of 20 faculty members to receive a research grant at the Minnesota Medical Foundation's fall meeting of the board of trustees. In all, MMF approved $142,350 in faculty research grants, student research grants, and special grants (see adjacent article).

Skubitz received $4,500 in support of her project entitled, "Interaction of colon carcinoma cells with laminin peptides."

She describes the project by stating, "Adenocarcinoma of the large bowel affects approximately 5 percent of the U.S. population, accounting for 15 percent of all cancers and 150,000 new cases diagnosed each year. When diagnosed in its early stages, before spreading outside of the colon has occurred, colon cancer is highly curable by surgical treatment.

"Laminin is a protein which causes tumor cells to adhere, spread, and migrate. We will study the interaction of colon carcinoma cells with parts of laminin in an attempt to understand the spread of, and potentially diagnose or treat, colon cancer."

Skubitz notes that recent studies have shown that laminin receptors are present in increased levels on highly metastatic colon carcinoma cells compared to normal colonic epithelium. She goes on to explain, "Since the amino acid sequences for all three chains (of laminin) are known, we have synthesized several peptides from domains of laminin that have functional activity. In preliminary experiments, some of these peptides directly promoted colon carcinoma cell adhesion. In addition, some peptides also inhibited colon carcinoma cell determinants within intact laminin.

"These results and others suggest that there are likely multiple cell adhesion promoting sites in laminin. In this study, we will attempt to define the sites on laminin which promote colon carcinoma cell adhesion, spreading, and migration in an attempt to further understand the complex process of metastasis."

Dr. Amy Skubitz

Skubitz received a B.S. cum laude in biochemistry from the University of Maryland and a Ph.D. from the Department of Pharmacology and Experimental Therapeutics at The Johns Hopkins University School of Medicine. She was a postdoctoral fellow at the University of Minnesota's Department of Laboratory Medicine and Pathology from 1984-88, and is currently an assistant professor in the department.

In 1985, Skubitz received the Sandoz Award for excellence in the field of pharmacology, and has received research grants from the National Cancer Institute, the American Cancer Society, and the American Diabetes Association for her work. She has made presentations on her studies in St. Louis, Ann Arbor, Heidelberg, Germany, and at the University of Minnesota. She also serves on the University of Minnesota Medical School Admissions Committee.

Centennial Scholarship Campaign tops goal

The Centennial Scholarship Campaign Executive Committee extends a warm thank you to the many donors and volunteers who helped make the Centennial Scholarship Campaign a success. As of December 31, 1990, the official end of the campaign, more than $10 million in cash, stock, property, and deferred gifts has been committed to scholarships at our Medical Schools in Minneapolis and Duluth.

The Minnesota Medical Foundation's board of trustees and the administration of each of our Medical Schools join in thanking you for your generosity and participation. Because of your willingness to help future physicians, many talented and motivated students will continue to matriculate at our Medical Schools—without fear of overwhelming debt upon graduation.

Executive Committee

Dr. Rolf Andreassen '46
Mr. Russell Bennett
Dr. Reuben Berman '32
Dr. Richard Carlson '72
Dr. H. Mead Cavert '50
Dr. Herman Drill '29, Chair
Dr. Malcolm Fifield '50
Dr. N. L. Gault, Jr. '50
Dr. Arnold Kremen '37
Dr. Frank Lushine '71
Dr. Peggy Naas '83
Dr. John B. Sanford '48
Dr. Nadine Smith '52

The campaign was successful but is only the beginning as we attempt to raise scholarship support to where it should be at our great Medical Schools. A continued emphasis is necessary if we are to ensure quality health care for the future.

Many thanks to all who participated, and an open invitation to others to join us with a gift, pledge, or bequest to the Centennial Scholarship Campaign. The scholarship monies raised serve as a lasting tribute to our alma mater's 100th anniversary and to the many dedicated physicians who have and will continue to enter the field of medicine.

Grants

Continued from page 20

acterization of K Ig germline gene transcription.

Special grants include: **Anthony Faras, Ph.D.,** Institute of Human Genetics, $15,000, DNA sequencer; **Alfred Michael, M.D.,** Pediatrics, $6,500, Molecular basis of pediatric disease (equipment); **Paul Orchard, M.D.,** Pediatrics, $9,000, Enhancement of cytotoxicity by retroviral mediated gene transfer of cytokines into T cells; and **Leslie Schiff, Ph.D.,** Microbiology, $30,000, Characterization of a reovirus double-stranded RNA-binding protein.

Student grants include: **Gregory Barsness,** Year 4, $1,800, Role of alveolar macophage production of platelet-derived growth factor in development of pulmonary vascular remodelling and interstitial fibrosis; **Christopher Benson,** Year 4, $1,800, Effects of a selective angiotensin II inhibitor on left ventricular hypertrophy and dilatation in a canine model of ventricular damage; **Marty Janning,** Year 4, $1,800, Acoustic biasing of compound action potential in experimental perilymphatic fistula in guinea pigs; **Antony Pearson,** Year 4, $900, Molecular epidemiology of nosocomial clostridium difficile disease; **Andreas Stefan,** Year 4, $1,350, Investigation of insulin sensitivity in hemipancreatectomized patients and the testing of islet functioning in pateints receiving autologous islet; **Kevin Stieglbauer,** Year 4, $1,800, Does the common acute lymphoblastic leukemia antigen utilize an endogenous substrate?; **Jeffrey Sullivan,** Year 4, $1,800, Are heat shock proteins an important factor in initiating or amplifying the immune response in experimental allergic encephalitis?; and **Julie S. Zink,** Year 4, $1,800, Effects of hyperbaric oxygenation, dichloroacetate and 1, 3-butanediol on cerebral biochemical recovery and neurologic outcoming following trauma. □

CCRF names executive director

Jodi Davis has been named the executive director of the Children's Cancer Research Fund (CCRF). She has a strong background in the health care industry, having worked for Physician's Health Plan in the Provider Relations Division and as a marketing consultant to several Twin Cities health care firms. Davis also has a 10-year history as a volunteer with Mt. Sinai Hospital and Minneapolis Children's Medical Center, and currently serves on the board of directors of the Hennepin County Interagency Child Abuse Evaluation Center.

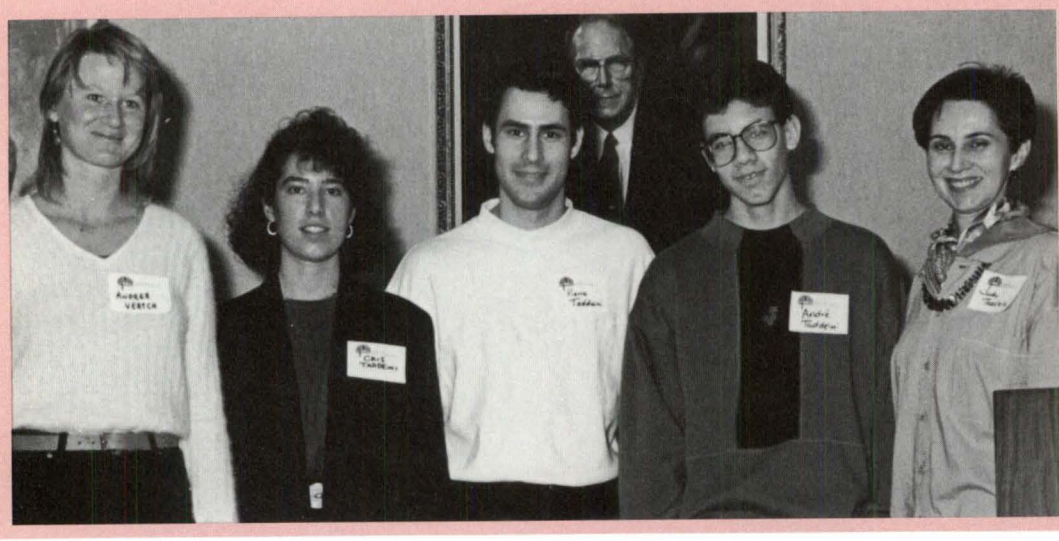
Davis received a bachelor's degree in education from the University of Minnesota, and a master's degree in business administration from the College of St. Thomas. She has worked as a professional calligrapher and teacher for the Hennepin Technical Centers and the Edina Public Schools.

CCRF is one of the more than 700 special program funds managed by the Minnesota Medical Foundation. CCRF has provided financial support for studies in pediatric oncology at the Medical School for more than 30 years, with a goal of ensuring quality and progress in the fight against cancer in children. □

MMF names new staff member

Harold P. Kurtz has joined the staff of the Minnesota Medical Foundation as the development officer for the School of Public Health. In his new position, he will be responsible for planning, implementation, promotion, and administration of an effective fund development program for the School.

Kurtz comes to MMF from the Children's Hospital of St. Paul where he served as vice president for development. He received his undergraduate degree from Wartburg College in Waverly, Iowa, and his master's degree from the University of Wisconsin in Madison. □



Left: Andrea Veatch (Taddeini Scholarship winner), and Cris, Pierre, and André Taddeini, children of Mrs. Luigi (Judy) Taddeini, right.

Right: Dr. Neal Gault, Jr. with Elva Lovell and Robin Baker, Lovell Scholarship winner.

Far Right: Bill Sullivan, Dr. Neal Gault, Jr., Barbara Higgins (Sullivan Scholarship winner), and Mrs. W. Albert Sullivan.

MMF recognizes scholarship winners

Through its scholarship and awards programs, the Minnesota Medical Foundation recognizes outstanding achievement and assists medical students faced with high debt levels. The following scholarships were presented this fall by MMF:

Alpha Epsilon Iota Scholarships

Ellen Coffey
Susan Frazier
Lorna Fredrikson
Debra Huderly
Jane Loitman
Barbara Weber

Established through the generosity of Alpha Epsilon Iota, which since 1901 has served as a support organization for women medical students and alumni.

Alpha Omega Alpha Scholarships

Nancy Benegas
Kevin Bowers
Stephen Smeaton

Established by the Minneapolis Chapter of Alpha Omega Alpha, an honorary medical society.

American Cancer Society Scholarships

John Seng
Steven Vold

Provided by annual grants from the American Cancer Society.

Rolf L. Andreassen Scholarship

Jennifer A. Bierman

Established by a gift from Dr. Andreassen, a 1946 graduate of the University of Minnesota Medical School.

Dr. A.B. Baker Memorial Scholarships

Michael Balm
Sujai Nath

Established in memory of Dr. Baker, a leading educator in the field of neurology.

Ruth Boynton Scholarships

Catherine DeGreef
Pamela McGlinch

Honor Dr. Ruth Boynton, former director of the University of Minnesota Health Service.

Margaret Dowell-Gravatt Scholarship

Inell Rosario

Established by Dr. Dowell-Gravatt, a 1945 graduate of the University of Minnesota Medical School.

Ludolf J. Hoyer Memorial Scholarship

Lisa Poss Benson

Established in memory of Dr. Hoyer, a 1932 graduate of the University of Minnesota Medical School.

Robert Wood Johnson Scholarships

Randall Card
Kristin Elliott

Provided by funds from the Robert Wood Johnson Foundation.

Walter and Elva Lovell Scholarships

Robin Baker
Patrick Riedel

Established by a gift from Elva Lovell.

Medical Alumni Society Scholarships

William Ayetey
Joia Mukherjee

Provided by the University of Minnesota Medical School Alumni Society.

At right, Dr. A.B. Baker Scholarship winners Ron Nath and Mike Balm with Dr. Neal Gault, Jr. and Mrs. A.B. Baker.

Medical Student International Study Fellowships

William Heegaard
Julie Mickelson
Kathleen Norman
Mary Schupp

Established by Drs. Sarah J. and N.L. Gault, Jr., to enable medical students to enrich their education through international clinical experiences.

Minority Higher Ability Scholarships

Nhat Vo
Derrick Williams

Awarded for academic achievement and financial need.

Ilgvars Nagobads/Dakota Mental Health Center Scholarship

Jennifer Tribble

Honors Dr. Nagobads' 25 years as director of the Dakota Mental Health Center by recognizing a medical student whose concentration is psychiatry.

Lester W. and Lois P. Netz Scholarships

Timothy Joos
Gregg Jossart
Kerry Kallas
Todd McKinley

Created through the generosity of Lester and Lois Netz.

Nicolette Norton Memorial Scholarship

E. Doreen Kiss

Established by Mr. Thomas Grossman and the Metropolitan Corporation in memory of Nicolette Norton.

Parents' Scholarships

Nancy Brunsvold
Lisa Latts
Ann McIntosh
Michael Stenzel

Funded by proceeds from the annual Medical Student/Parent Scholarship Benefit, with preference given to students active in the Benefit.

Park Nicollet Medical Foundation's Nicollet Clinic Founders Scholarships

Patricia Hoeft
Charles Phillips
Laure Waschbusch
Randall Zimmerman

Established by the Park Nicollet Medical Center for second- and third-year medical students.

Phi Delta Epsilon Jewish Medical Fraternity Scholarship

David Slovut

Made possible by a grant from the fraternity.

Dr. Albert E. Ritt Endowed Scholarship

Todd Love

Made possible by the generosity of Dr. Ritt, a 1932 graduate of the University of Minnesota Medical School.

Dr. Vernon D.E. Smith Scholarships

Daniel Boue
Peder Pedersen
Shelly Peterson

Given in memory of Dr. Smith, a St. Paul surgeon and a founder of the Minnesota Medical Foundation.

Albert Sullivan Endowed Scholarship

Barbara Higgins

Honors the memory of Dr. Sullivan, associate dean of the Medical School, and for 34 years a member of the faculty.

Luigi Taddeini Scholarship

Andrea Veatch

Established in memory of Dr. Taddeini, who served as chairman and president of Ramsey Clinic in St. Paul.

Vines Scholarships

Karen Kustritz
Georgia Taggert

Established in memory of Harold Thomas Vines through a bequest from Lillian Vines.

George H. and Lillian K. Williams Scholarships

William Garvis

Awarded to students planning to specialize in otolaryngology. □

Jim Kaat spearheads ataxia fundraiser

The University of Minnesota Ataxia Center recently held a fundraiser in cooperation with the Twin Cities Fall Sports Collectibles Show, an annual showcase and sale of sports memorabilia.

Ataxia is a disease of the nervous system that may cause a person to look and sound drunk, since walking can be unsteady and speech can be slurred. For most forms of ataxia, there is no known cure or prevention. The Ataxia Center was established in the University of Minnesota Department of Neurology to provide a comprehensive program for clinical care, education, and research in the ataxias and related disorders.

Former Minnesota Twin Jim Kaat, whose friend Bob Allison has contracted the disease, worked with the Ataxia Center and the Wayzata-based National Ataxia Foundation to organize the fundraiser. In addition to coordinating efforts with the show's promoters, he also donated a number of personal items to be auctioned, including one of his Golden Glove awards.

Over $9,572 was raised from autographs, poster sales, and the auction. Special attendees were Bob Allison, auctioneer Frank Quilici, and John Castino, Paul Molitor, and Earl Battey, who donated their time and autographs to the fundraiser.

If you would like to know more about ataxia, or would like to contribute to the Ataxia Center, contact the Minnesota Medical Foundation, Box 193 UMHC, University of Minnesota, Minneapolis, Minnesota 55455. □

Bob Allison and Dr. Lawrence Schut of the Department of Neurology with a Golden Glove award.

Parents' Day is great success

The fifteenth annual Parents' Day, held November 3, brought nearly 200 parents of first-year medical students to the University campus to learn about life as a medical student. The informative program included welcoming remarks by Krishna Komanduri, president of the Medical Student Council; David Teslow, executive director of the Minnesota Medical Foundation; and Dr. H. Mead Cavert, associate dean of the Medical School.

Dr. Donald Robertson, assistant dean for admissions, spoke about the selection and makeup of the 1990-91 class, and Dr. Robert McCollister, associate dean for curriculum affairs, explained the Medical School curriculum to the parents. Dr. Helene Horwitz, assistant dear for student affairs, talked to the parents about the hopes, dreams, and concerns of prospective physicians, and B.J. Gibson, financial aid counselor, explained the financial aid programs available to the medical students. President of the Freshman Class Steve Erickson entertained the parents with an amusing student's perspective of the first few months of medical school.

Nearly 200 parents attended this year's Parents' Day.

Parents' Day also included tours of the Medical School and the hospital, lunch at the Outside In cafeteria in the Phillips-Wangensteen building, and a reception at the conclusion of the day at the Bridges cafeteria in the hospital.

Parents' Day is sponsored by MMF, the Medical Students Parents' Committee, and the Medical Student Council. □

Students run for international health

The 1990 5K Run for International Health was held on Saturday, October 20, alongside the Mississippi River on the University of Minnesota campus.

Approximately 100 runners participated and funds raised were designated to the Medical Student Exchange Fund of the Minnesota Medical Foundation.

Established by Drs. N.L. and Sarah Gault, alumni from the class of 1950, the scholarship fund provides financial support to send health professions students abroad each year to complete a project in the field of international health.

Fourth-year medical student Linda Benjamin Albrecht won the women's division, repeating her victory in last year's race. Peter Hanson, a second-year medical student, won the men's division.

The 5K Run is an annual event with the purpose of providing continuing support for the scholarship fund. Major sponsorship for the event came from StrategiCare. For more information about the Medical Student Exchange Fund or to make a personal contribution, contact the MMF Annual Giving office, Box 193 UMHC, Minneapolis, MN 55455. Phone (612) 625-1440.

Sarah Wangensteen honored

A reception in honor of Mrs. Sarah D. Wangensteen and the establishment of the Conservation/Preservation Fund for the Owen H. Wangensteen Historical Library of Biology and Medicine was held in October in the Wangensteen Library.

The Owen H. Wangensteen Historical Library of Biology and Medicine, which houses the rare and historical works of the Bio-Medical Library, presently holds approximately 35,000 volumes dating from the 15th century to 1920. Dr. Owen Wangensteen, distinguished scholar, surgeon, researcher, teacher, and historian, was the driving force behind the creation of the library named in his honor.

Mrs. Sarah Wangensteen, the widow of Dr. Wangensteen, has given much time and attention to the long-term care of this valuable resource. Preservation of these rare books is a difficult and expensive task, and Mrs. Wangensteen has begun a preservation fund to provide a growing resource to finance efforts to save the historical collection.

Mrs. Sarah Wangensteen (facing camera) greets friends in the Owen H. Wangensteen Library.

The Conservation/Preservation Fund for the Owen H. Wangensteen Historical Library of Biology and Medicine will enable conservators to repair page tears and damage, deacidify paper, and rebind books and journals. Contributions to the fund may be directed to the Minnesota Medical Foundation, P.O. Box 64001, St. Paul, MN 55164-9793. □

ALUMNI UPDATE

Dear Colleagues:

Greetings. The New Year began on a busy note for the Medical Alumni Society. We co-sponsored alumni receptions in San Diego/LaJolla and Los Angeles, with upcoming receptions scheduled for Arizona and Florida as part of the University President's Club activities in those areas. The January MAS board of directors meeting, the society's annual "social meeting," was held at the Bell Museum on campus, and attended by medical students, parents, faculty, and administration members. Several hundred alumni and friends have participated in alumni-sponsored activities so far this school year. And from all accounts each event was enjoyed by all.

Nominations for the 1991 Harold S. Diehl Award are currently being accepted. Presented at the MAS Annual Meeting each spring, the Diehl Award recognizes outstanding service and contributions by one of our colleagues. If you know of a classmate or colleague who is deserving of this award, I encourage you to forward his/her nomination to the Medical Alumni Office.

Reunions for the classes of 1931, 1941, 1946, 1951, 1961, 1966, 1971, and 1981 are scheduled for June 6-8, 1991. All alumni from these years are encouraged to attend. The reunion program is in its fifth year and has been very successful and the events well-attended. Evaluations from participating alumni have been overwhelmingly positive and the most common remark is, "I'm really glad I came."

I am proud to report that the Centennial Scholarship Campaign successfully reached its goal of raising $10 million in support of scholarships at the University of Minnesota Medical Schools. Congratulations to the many alumni volunteers and donors who helped make this possible!

Comments, questions, or updates from alumni are always welcome. Please don't hesitate to send them to the Medical Alumni Office, Minnesota Medical Foundation, Box 193 UMHC, Minneapolis, Minnesota 55455 or call (612) 625-1440.

Sincerely,

Margaret A. MacRae, M.D.
President
Medical Alumni Society

P.S. Many thanks to all of you who have contributed to the Alumni Annual Fund and purchased membership in the Medical Alumni Society.

MAS News

The Medical Alumni Society's third annual winter meeting and reception was held January 9 at the James Ford Bell Museum of Natural History. Located on the east bank of the University campus, the museum contains artifacts, wildlife displays, and other treasures which serve to educate the public. Attendees also enjoyed a special photographic display by Jim Brandenburg, famous for his depictions of wolves and other animals in the wild, and the author of several books.

Approximately 40 people attended the reception, including MAS board members and spouses, and Medical School students and faculty from the Twin Cities and Duluth campuses. The reception was preceded by the January meeting of the MAS board of directors.

Nominations for the Medical Alumni Society board of directors are being accepted until the annual meeting on June 8, 1991. As stated in the society's constitution, a nominee should follow the MAS purpose:

> *". . . to foster the continuance of the fellowship development during the undergraduate life, to promote the welfare of the Medical School, to aid post-graduate medical education, and facilitate communication between the practicing physician and the Medical School faculty and administration."*

MAS board terms are for three years and nominations should be sent to:

Frank Lushine, M.D. '71
Medical Alumni Society
Box 193 UMHC
University of Minnesota
Minneapolis, MN 55455

Receptions were held again this winter in California for alumni and friends of the Medical Schools. Drs. Irving ('42) and Dorothy Bernstein (above, center) welcomed 40 guests into their home in LaJolla on February 2, and Dr. Lester ('39) and Devra Breslow opened their Los Angeles home to 35 guests on February 3. Twin Cities Medical School dean, Dr. David Brown, was the honored guest.

Approximately 70 guests attended the AAMC reception in San Francisco.

AAMC reception held in San Francisco

For the third year in a row, alumni and friends of the University of Minnesota Medical Schools and Hospital and Clinic gathered for a reception at the Association of American Medical Colleges' annual meeting. The reception, held October 20 at the San Francisco Hilton, was also sponsored by the Minnesota Medical Foundation (MMF) and the Medical Alumni Society (MAS).

On hand to welcome the nearly 70 guests were Dean David Brown (Twin Cities), Dr. Jim Boulger (Duluth), Dr. Neal Gault, Jr. (Twin Cities), Robert Dickler (U of M Hospital), and Dave Teslow (MMF).

This unique gathering of alumni, friends, and other Medical School faculty and hospital administrators is put on every year in conjunction with the AAMC's annual meeting. The event will be held in Washington D.C. in 1991.

University of Minnesota Medical Schools

CLASS REUNIONS

The Medical Alumni Society (MAS) of the University of Minnesota Medical Schools is pleased to invite alumni to participate in reunion activities for the classes of 1931, 1941, 1946, 1951, 1961, 1966, 1971, and 1981. Activities will be held the weekend of June 6-8 on the University of Minnesota Twin Cities campus. Two additional classes are being included in the 1991 schedule—the 45th and 60th!

Reunion Chairs

1931 (60th) Dr. Stuart Lane Arey
1941 (50th) Dr. Robert "Bud" Green
1946 (45th) Dr. Joe Von Drasek
Dr. Bob Breitenbucher
1951 (40th) Dr. Jack Vennes
Dr. Don Swenson
1961 (30th) Dr. Pat Scanlan
1966 (25th) Dr. Jim Layer
Dr. Bob Christensen
1971 (20th) Dr. Barb Berggren
1981 (10th) Dr. Charles "Ted" Grant
Dr. Martin Weems

Calendar

June 6 (Thursday)
- Reunion headquarters (Radisson Hotel Metrodome—U of M)
- Campus and hospital tours
- Welcome reception

June 7 (Friday)
- Reunion headquarters
- Half Century Club program
- Medical Alumni Golf Tournament
- Class of 1941/Half Century Club Luncheon
- Graduation
- Class Reunions (dinner, program, fellowship)

June 8 (Saturday)
- Reunion headquarters
- New Horizons in Minnesota Medicine (CME Seminar)
- Medical Alumni Society Annual Meeting & Luncheon
- Diehl Award presentation
- Campus and hospital tours
- Individual reunion class activities (on your own)

Questions may be directed to:
The Medical Alumni Office.
Minnesota Medical Foundation
Box 193 UMHC
University of Minnesota
Minneapolis, MN 55455
(612) 625-1440

New Horizons in Minnesota Medicine—1991

Saturday, June 8, 1991
Radisson Hotel Metrodome-
University of Minnesota
8:30 a.m. - 12:00 p.m.

Registration is $60.00 for Medical Alumni Society members ($75 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:

Robert J. Bache, M.D.	"Myocardial Hypertrophy as a Cardiac Risk Factor"
Leo T. Furcht, M.D.	"Frontiers in Cancer Metastasis Research"
Richard A. King, M.D., Ph.D.	"Clinical Applications of Molecular Genetics"
Nicole Lurie, M.D., M.S.P.H.	"Profile of Access to Care in Minnesota"
James E. Mitchell, M.D.	"Update on Eating Disorders"
Elizabeth R. Seaquist, M.D.	"Risk Factors for the Development of the Complications of Diabetes Mellitus"

Robert J. Bache, M.D.

Professor, Department of Medicine.

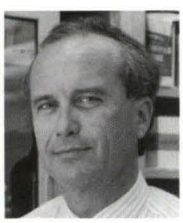
Richard A. King, M.D., Ph.D.

Director of the Division of Genetics and Metabolism, and Professor in the Departments of Medicine and Pediatrics, and the Institute of Human Genetics.

James E. Mitchell, M.D.

Professor, Department of Psychiatry; Director, Division of Adult Psychiatry.

Leo T. Furcht, M.D.



Allen-Pardee Professor of Cancer Biology, Professor and Head, Department of Laboratory Medicine and Pathology, and Director, Biomedical Engineering Center.

Nicole Lurie, M.D., M.S.P.H.

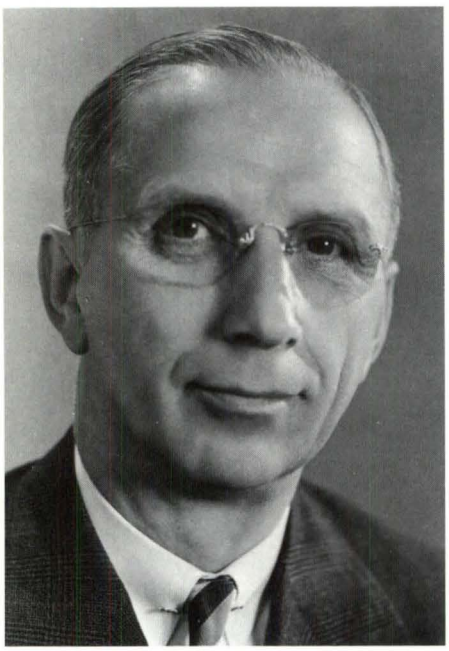
Assistant Professor of Medicine and Public Health, Hennepin County Medical Center and the University of Minnesota Schools of Medicine and Public Health.

Elizabeth R. Seaquist, M.D.

Assistant Professor of Medicine, Divisions of Endocrinology and Metabolism, The Diabetes Center.

NEW HORIZONS IN MINNESOTA MEDICINE is an annual presentation to showcase six 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 University of Minnesota Medical School, Minnesota Medical Foundation, and the Minnesota Alumni Association. For more information, contact the Medical Alumni Office at (612) 625-1440.



Harold S. Diehl

Diehl Award Nominations

Donald B. Swenson, M.D., '51, invites nominations for the Harold S. Diehl Award. The award will be presented at the Medical Alumni Society's Annual Meeting and Luncheon on June 8, 1991. Given in honor of the University of Minnesota Medical School's fifth dean, Harold Sheely Diehl, M.D., the award is presented to an individual who has made outstanding professional contributions throughout his or her career. The Diehl Award has been presented to 60 people since its inception in 1962.

Qualifications for nomination are:
1.) Preferably a graduate of the University of Minnesota Medical School;
2) Not currently engaged in an academic capacity;
3) Outstanding contributions to the Medical School, the University, the alumni, and the community;
4) Relatively long experience in the field of medical service or a related field.

Nominations should be received by **April 15, 1991,** and should be sent to:

Donald B. Swenson, M.D.
Chairperson
Harold S. Diehl Award Committee
Box 193 UMHC
University of Minnesota
Minneapolis, MN 55455

Nominations should include supporting documents and references to assist the committee in its deliberations. Questions may be referred to Susan Maddux at the Minnesota Medical Foundation. Telephone (612) 625-8676.

Harold S. Diehl Award Recipients

Given by the Medical Alumni Society annually since 1962, the Diehl Award honors physicians for outstanding service to medicine and to their communities. The award is named for the distinguished former dean of the Medical School, Dr. Harold S. Diehl, who served from 1935 to 1958.

Past Recipients

1962
*Owen H. Wangensteen '21
1963
Donald J. Cowling
*Charles G. Sheppard '35
1964
*Vernon D.E. Smith '30
1965
*Karl W. Anderson '23
1966
*J. Arthur Myers '20
1967
Theodore R. Fritsche '30
1968
Walter H. Halloran '15
*Anderson C. Hilding '18
*Carl H. Holmstrom '29
1969
Karl R. Lundeberg '25
1970
*Robert N. Barr '30
*LeRoy J. Larson '20
1971
William C. Bernstein '27
*J.C. Grant '42
1972
*J. Richards Aurelius '22
Barbara M. Puumala '59
*Marie Bepko Puumala
Reino Puumala
Ricard R. Puumala '59
1973
*Phillip Halenbeck
*Olga Hansen Litzenberg '15
1974
*Ann Arnold
Roger A. MacDonald '46
*Carl O. Rice '25
R.S. Ylvisaker '26
1975
Reuben Berman '32
Bror F. Pearson '31
*Lawrence Richdorf '20
1976
Milton M. Hurwitz '39
*Leonard Lang '28
Russell O. Sather '32
1977
*Ruth E. Boynton '20
*Virgil J.P. Lundquist '42
1978
*Lester H. Bendix '28
Herman E. "Tiny" Drill '29
1979
Miland E. Knapp '29
*Harold E. Wilmot '23
1980
Helen L. Knudsen '43
Donald E. Stewart '37
1981
Eva Jane (Ostergren) Larson '38
*Carl Ragnar Wall '28
1982
Stuart Lane Arey '31
*Kristofer Hagen '42
1983
John J. Eustermann
John J. Regan Sr. '43
1984
Arnold S. Anderson '43
John W. Anderson '51
1985
Kenneth W. Covey '43
Frank E. Johnson '43
1986
A. Boyd Thomes '42
1987
Marcy L. Ditmanson '54
Malcolm M. Fifield '50
1988
Chester A. Anderson '44
Robert B. Howard '44
Arnold J. Kremen '37
1989
Howard L. Horns '43
Austin M. McCarthy '42
1990
M. Elizabeth "Peggy" Craig '45
John P. Stapp '43

*Deceased

Alumni Profile

Name: Dr. Robert B. Tudor

Class Year: 1937

Specialty: Pediatrics

Home Town: St. Paul, Minnesota

Family: Dr. Tudor married June Greaves on August 8, 1941. They have three children: Richard, an Episcopal priest; Thomas, an attorney; and Ann, a physical therapist. The Tudors also have eight grandchildren.

Practice: He works a busy schedule as a pediatrician at Quain & Ramstad Clinic in Bismarck, North Dakota, where he has practiced for over 40 years. Although he is always on call and is always available for his patients, "burnout" has never been a problem.

Special Interests: Dr. Tudor is extremely active, and takes great interest in young people, especially the wrestling and basketball teams in Minot, Newburg, and Bismarck. For his contributions to junior college wrestling, he was inducted into the National Junior College Athletic Association Hall of Fame in 1990. In 1982 he received the National Interscholastic Athletic Administrators Association's Distinguished Service Award. He continues to serve as a host in Bismarck for visiting teams during high school tournaments.

Special Medical Interests: He began the first sports medicine program in North Dakota and is also the medical coordinator for state high school sports

tournaments in Bismarck. Dr. Tudor served as the attending physician to the United States Junior College wrestling team and traveled with them to Ecuador in 1977. Aside from sports, he works with learning disabled children, has founded a rape victim's program in Bismarck, and has contributed many articles to various medical publications. He is "busy, busy, and happy to be busy."

Personal Accomplishments: "Getting a good medical education. No question about that." Dr. Tudor is also very proud to have three children with graduate degrees who are, like himself, dedicated to helping others. He is honored to have a membership in the Harriet Lane Alumni Society. The Harriet Lane Home, at the Johns Hopkins Medical Center, was the first children's hospital in the United States to be affiliated with a medical center.

Reflections: Pediatrics is a wonderful place . . . it's an academic type of profession that provides an opportunity to know about people. Working with mothers and young people, inside or outside the clinic, teaches a great deal about life and is very rewarding.

—Victoria Kelly

CLASS NOTES

1933

Dr. Elmer C. Paulson, St. Paul, Minnesota, was recognized for his career accomplishments in the July/August issue of *St. Olaf Magazine*. Dr. Paulson, a radiologist, had a 25-year teaching career at the University and also volunteered as an instructor of family practice residents at St. Paul-Ramsey Medical Center, where the students voted him Teacher of the Year.

1938

Dr. Milan V. Novak, Tucson, Arizona, retired in July 1990 as coordinator of Human Subjects Research and chairman of the Human Subjects Committee for the University of Arizona. Prior to serving at the University of Arizona, Dr. Novak's successful career as a scientist and administrator involved serving with the University of Illinois Medical Center in Chicago and the University of Minnesota Hospital and Medical School. During his time at Minnesota, he developed and implemented one of the nation's first blood banks, including safe storage and preservation of blood and plasma for transfusions. He also pioneered the development of disposable plastic transfusion equipment and obtained a patent for his disposable blood transfusion filter, now used routinely. He retired to Arizona in 1969 only to leave retirement to head the Regional Medical Program and later coordinate Human Subjects Research.

1940

Dr. Curtis M. Hanson, Kalamazoo, Michigan, was recently honored for his 24 years of service as founder and program director of Kalamazoo's orthopedic surgery residency program, now nationally recognized as a prototype for community based orthopedics residency.

1941

Dr. Alfred M. Freedman, New York, New York, was honored in July 1990 by the International Society of Political Psychology for his excellence in editing *Political Psychology*. In August 1990, the Department of Psychiatry of the University of Helsinki awarded Dr. Freedman

Class Notes

(continued)

the Lapinlahti Medal for his outstanding contributions to international psychiatry. He was the first individual outside of Finland to receive this award. Dr. Freedman retired as chairman and professor of psychiatry of the New York Medical College in Valhalla, New York, in 1989 and is currently a visiting professor at Harvard University. He was a founding editor of the *Comprehensive Textbook of Psychiatry*, authored more than 200 papers and book chapters, and 18 books.

1943

Dr. George E. Moore, Denver, Colorado, received the Distinguished Service Award given by the University of Colorado. Dr. Moore, a cancer researcher, recognizing that animal tumor systems were not good models for human malignancy, developed and standardized techniques of maintaining human cell lines that did not alter basic molecular cell characteristics. He has established a cell bank containing more than 300 human malignant cell lines and defined the media for potentiating their growth.

1946

Dr. Anthony L. Ourada, Fairmont, Minnesota, retired in 1988 from general practice and surgery in Buffalo-Maple Lake, Minnesota, after 20 years of service. Currently, he keeps busy enjoying his six children, home, and five-acre lot.

1961

Dr. John J. Salchert, Cold Spring, Minnesota, was appointed state surgeon with the Minnesota Army National Guard. He was also promoted to colonel and received the Army Commendation Medal.

1961

Dr. Joe Westermeyer, Oklahoma City, Oklahoma, was appointed to the Institute of Medicine (National Academy of Science) Access to Health Care Task Force for 1990-92.

1963

Colonel Robert L. Schneider, M.D., Germany, U.S. Army Consultant on physical medicine and rehabilitation in Europe, received the Army Commendation Medal for outstanding service in January 1990 during NATO winter military maneuvers. He organized the movement of the field hospital by train and acted as an interpreter between German and other NATO forces as hospital commander at Erding, Bavaria, Germany.

1965

Dr. Yossef Aelony, Rancho Palos Verdes, California, is taking a sabbatical in France after co-authoring the book, *Practical Thoracoscopy.*

1967

Dr. Michael D. Stenberg, Hopewell Junction, New York, recently retired after 27 years of service in the Navy. He joined IBM Corporation at the East Fishkill New York Facility, and currently serves as a fellow of the American College of Preventive Medicine and the American College of Physician Executives.

1974

Dr. Michael B. Belzer, Minneapolis, Minnesota, was recently appointed Hennepin County Medical Center's (HCMC) new medical director. Dr. Belzer developed and directed HCMC's Office of Academic Affairs, served as assistant chief of the Internal Medicine Department, and directed the Internal Medicine Residency Program. He has been a member of the HCMC Hematology and Medical Oncology staff since 1980, and was named associate medical director for Academic Affairs last year.

1979

Dr. Gardner Bemis, Honolulu, Hawaii, has been named medical director of the Nursery/NICU at Kaiser Permanente Medical Center in Honolulu and co-chair of the hospital's Biomedical Ethics Committee.

1979

Dr. Jesse Gomez, Jr., San Diego, California, is medical director of the Medical Legal Evaluation Clinics, founded by Dr. Gomez. The clinics, located in San Diego, Vista, and El Centro, California, were established to help injured workers in the tri-state area regain benefits denied by employers and insurance companies.

1982

Dr. Jeff Gilbertson, Lebanon, New Hampshire, is in the final year of his fellowship in vascular surgery at Dartmouth. He finished his surgical residency at the University of Utah in 1988 and worked as an attending surgeon at Salt Lake City VA Hospital in 1989.

1985

Dr. Elenn Elness, Brooklyn Park, Minnesota, left for rural Pakistan in January to practice medicine as a missionary with World Mission Prayer League. Dr. Elness will be seeing 60 patients a day while working in an 85-bed hospital and busy outpatient clinic.

1985

Dr. John G. Schmidt, Valley Park, Missouri, was recently named the recipient of this year's Burke Award by the Burke Rehabilitation Center in White Plains, New York. The award, presented each year to an individual or group in recognition of outstanding achievements in the area of rehabilitation, honored Dr. Schmidt for his strength in overcoming the challenge of a disability. After suffering a stroke at a young age, he used his personal experience to encourage others through his decision to study neurology. He currently is a neurologist with the St. Louis University Medical Center in St. Louis, Missouri.

1989

Dr. Denise A. Larson, Edmonds, Washington, currently a pathology resident at the University of Washington in Seattle, announces the birth of their first child, Michael Adam Larson, born July 29.

In Memoriam

Harvey O. Beek, M.D.,

Class of 1933, St. Paul internist and medical director of the Wilder Foundation for 38 years, died in September at age 85. Dr. Beek served in Africa and southern Italy with the Army medics during World War II. He practiced medicine for over 50 years and was among the first in the area to treat psychosomatic illnesses. He is survived by his wife, Grace.

Theodore Catlin, M.D.,

Class of 1932, co-founder of Buffalo Memorial Hospital of Buffalo, Minnesota, died August 29 at age 82. Dr. Catlin began practicing medicine with his father in Buffalo where they operated a 10-bed hospital and clinic. In 1950, he helped start the Buffalo Memorial Hospital where he later moved his practice until semi-retiring in 1976. He is survived by his wife, Shirley, three daughters, a sister, and five grandchildren.

Thomas H. Comfort, M.D.,

Class of 1956, trauma specialist and former chief of orthopedic surgery at St. Paul-Ramsey Medical Center, died August 22 at age 58. Dr. Comfort began practicing medicine in 1963, and later joined St. Paul-Ramsey Medical Center in 1968 as chief of orthopedics. A world-renowned orthopedic surgeon, he helped establish one of the outstanding trauma services in the country. He taught at the University of Minnesota Medical School for more than 20 years, served as head of the cerebral palsy service at Gillette Children's Hospital from 1970 to 1988, and helped start the Minneapolis-based Orthopedic Learning Center where he was program director. He retired in 1988. Dr. Comfort is survived by his wife, Mary Sue, two daughters, two sons, a brother, and four grandchildren.

Arlinda K. Hildebrand, M.D.,

Class of 1980, Minneapolis family practitioner and strong advocate for early cancer detection tests, died September 16 at age 42. Dr. Hildebrand began her career in Massachusetts teaching junior high school science from 1972 to 1976 before studying medicine. After graduation from medical school, she practiced medicine for two years before being diagnosed with cancer in 1985. She practiced with the Parkside Family Physicians in Minneapolis from 1984 to 1988, and later with the Osceola Ramsey Clinic of Osceola, Wisconsin, until May of this past year. She is survived by her mother, four sisters, and four brothers.

Thomas J. Kenyon, M.D.,

Class of 1938, former St. Joseph's chief of staff and long-time St. Paul physician, died August 30 at age 77. Dr. Kenyon served with the Army at an Alabama hospital during World War II. Following the war in 1946 he returned to St. Paul to practice internal medicine. He served on the staffs of several area hospitals and provided medical care for nuns and residents at Home of the Good Shepherd in St. Paul, retiring in 1975. Dr. Kenyon is survived by three daughters, a son, sister, 13 grandchildren, and a great-granddaughter.

Thomas A. Lowe, M.D.,

Class of 1918, retired family physician and surgeon from South St. Paul, died August 29 at age 96. Dr. Lowe served in a European Army Hospital during World War I. After the war, he worked with the American Red Cross for a year before practicing medicine in Gibbon, Minnesota. He and his brother later opened and operated a practice in South St. Paul and served as physicians for the Armour meat packing plant in South St. Paul. Dr. Lowe retired at the age of 85. He was a fellow of the International College of Surgeons and a member of various professional organizations. He is survived by his wife, Bertha, a daughter, four grandchildren, and one great-grandson.

Robert Stuart Nelson, M.D.,

Class of 1934, internal medicine specialist and gastroenterologist of Houston, Texas, died in November at age 79. Dr. Nelson served in the U.S. Army Medical Corps for 20 years retiring as colonel in 1955. He was on the staff of the University of Texas M.D. Anderson Hospital and Tumor Institute as internist and chief of gastroenterology. He served as professor of medicine at University of Texas Medical School and Baylor University. Dr. Nelson devised the modified Vim-Silvermann Needle for liver biopsy and the photographic apparatus for gastroscopic photography. He received the Rudolph Schindler Award of the American Gastroscopic Society in 1960, and in 1974 received the Southern Medical Association's Seale Harris Award. Retiring in 1977 from full-time practice, he continued to practice on a limited basis at M.D. Anderson Hospital until his death. He is survived by his wife, Mary, three daughters, five grandchildren, and two great-grandchildren.

David Sandeen, M.D.,

Class of 1978, emergency medicine specialist, died on his birthday, September 24, at age 38. Dr. Sandeen did his internship in San Francisco where he made his home. He is survived by his parents, a brother, sister, niece, and nephew.

John D. Silver, M.D.,

Class of 1932, a founder of Mount Sinai Hospital in Minneapolis, died December 13 at age 83. Dr. Silver was a Minneapolis general practitioner for over 50 years, serving the needs of poor people for whom he often provided free medical services. He joined with a group to build Mount Sinai to serve the Jewish community; he was a staff physician there for the last 10 years of his practice. He is survived by his wife, Grace, three daughters, two sons, two sisters, a brother, and 14 grandchildren.

John E. Skogland, M.D.,

Class of 1937, co-founder of the American Academy of Neurology from Houston, Texas, died December 6. Dr. Skogland was a Fellow with the American Academy of Neurology until 1985 at which time he became a senior member. He was the owner and medical director of the Houston EEG Laboratory from 1949-1984, and of the Pasadena EEG Laboratory from 1958-1984. He also served on the staffs of various hospitals in Houston and Pasadena, and was chief of staff of Houston's Medical Arts Hospital. He is survived by his wife, Ruth, two daughters, one son, and three grandchildren.

Donald E. Stewart, M.D.,

Class of 1938, director of the Cancer Detection Center at the University of Minnesota, died December 4 at age 79. He practiced from 1949 to 1979 at Northwestern Clinic in Crookston and then became a field representative for the American College of Surgeons' cancer program for six years. He replaced Dr. Victor Gilbertsen as director of the University of Minnesota Cancer Detection Center in 1988. Dr. Stewart received a number of awards for his work in cancer research from the American Cancer Society. He was president of the Minnesota division of the American Cancer Society from 1967 to 1969, and served on the national board of directors from 1970 to 1975. He was also president of the Minnesota chapter of the American College of Surgeons from 1972-73. He is survived by his wife, Phyllis, four daughters, a son, sister, and 16 grandchildren.

Earl V. Wetzel, M.D.,

Class of 1940, St. Paul obstetrician and gynecologist and associate professor at the University of Minnesota, died October 9 at age 74. Dr. Wetzel served as a flight surgeon with the Army Air Force during World War II. He began practicing medicine in St. Cloud and moved to St. Paul three years later where he practiced for 35 years. After retirement he taught residents at St. Joseph's Hospital in St. Paul and was awarded the Dr. Leonard Lang Teaching Award for excellence in teaching. He is survived by his wife, Aurelia, two daughters, two sons, two brothers, and seven grandchildren.

Maurice L. Whalen, M.D.,

Class of 1929, retired physician and surgeon from Bruce, Wisconsin, died October 2 at age 84. Dr. Whalen practiced medicine in Bruce for 42 years, and served as chief surgeon at St. Mary's Hospital in Ladysmith, Wisconsin, retiring in 1974. He was a preceptor for medical students at the University of Wisconsin for 19 years. In 1974 he received the Max Fox Preceptorship Award from University of Wisconsin-Madison Medical Alumni Association for his skills as a teacher, and in 1978 received the Distinguished Service Award given by Mt. Senario College in Ladysmith. On the 35th anniversary of his practicing medicine, the community of Bruce honored Dr. Whalen by declaring March 9 as "Doc's Day." He is survived by his wife, Florence, three sons, two daughters, a brother, two sisters, 12 grandchildren, and two great-grandchildren.

John A. Williams, M.D.,

Class of 1939, retired St. Paul physician, died October 30 at age 76. Dr. Williams practiced family medicine for 50 years in the Central and University Park medical buildings. He served on the staff of Midway Hospital and was a physician for several companies in St. Paul. He is survived by his wife, Alice, two daughters, three sisters, and four grandchildren.

We have also received notice of the following:

Catherine Mills Davis,

Who established the Catherine Mills Davis Land-Grant Chair in Biomechanical Engineering in the Department of Orthopaedic Surgery, died January 11. Mrs. Davis, a former patient of the department, was successfully treated for crippling arthritis. Memorials have been referred to the Minnesota Medical Foundation in support of the chair.

John F. Perry, Jr., M.D.,

Former chief of surgery at St. Paul-Ramsey Medical Center and professor of surgery at the University of Minnesota Medical School for 25 years, died October 30 at age 67. Dr. Perry completed his residency and Ph.D. degree at the University of Minnesota Medical School. He was a pioneer in the field of emergency medicine, and was responsible for initiating emergency procedures currently in use throughout the country. In 1963, he established the Midwest's first burn unit at St. Paul-Ramsey Medical Center. He was awarded the Owen H. Wangensteen Award for Excellence in Teaching in 1989. Dr. Perry was president of the Minnesota Surgical Society and the Minnesota Chapter of the American College of Surgeons. He is survived by his wife, Genevieve, a son, and a sister. Memorials have been referred to the Minnesota Medical Foundation for the Dr. John Perry Fellowship in Trauma Surgery.

Claude J. Zagaria,

Donor and co-founder of the Zagaria Fellowship Research Award, died October 3 at age 70. Mr. Zagaria and his sister, Jane Stern, established the Zagaria Fellowships in Cardiology and Oncology. The fellowships honored the memory of Dr. James F. Zagaria, who graduated from the University of Minnesota Medical School in 1940, and his brother, Samuel Zagaria, who received his degree from the University's College of Business Administration in 1938. The fellowships provided medical students with an opportunity to acquire more knowledge and experience in research in clinical cardiology and oncology. When the fellowships ended in 1990, Claude Zagaria and his sister established the Zagaria Fellowship Research Award, which will be given to an undergraduate medical student for outstanding research achievement.

—Jan Hickey

James R. Spicola, 1930-1991

The Minnesota Medical Foundation lost a valued friend and benefactor when James R. Spicola, president and chief operating officer of Cargill Inc., died in January after a 14-month fight with cancer.

Spicola had been an active volunteer for MMF since he joined the board of trustees in 1983. This past October, he was elected president of the board, after serving as vice president for the previous two years.

David Teslow, executive director of the Minnesota Medical Foundation, says, "Jim Spicola was committed to anything he became involved in. He gave so much of his time and energy to MMF. He was just a super guy and we are extremely fortunate to have had him as a friend and co-worker."

Born in Aitkin, Minnesota, Spicola studied business at the University of Minnesota. He started at Cargill 36 years ago as an assistant merchandiser at Cargill's soybean plant in Fort Dodge, Iowa, and two years later was made the first manager of an innovative soybean plant in Memphis. He returned to Minneapolis in 1961, where he assumed increasing responsibilities in the soybean operation of the company. He was named executive vice president in 1981, with overall responsibility for Cargill's milling, oilseed processing, and industrial operations. He became president of the firm in 1984.

Jim Spicola

Jim Spicola and his wife, Ellie, have had long-time ties to the University of Minnesota, with special interests in medical education and research. Ellie's father, Allan Hemingway, was a professor of physiology at the University of Minnesota Medical School for many years. After his death, his widow Claire and the Spicolas decided to honor him and his devotion to education by establishing the Allan Hemingway Endowed Scholarships. The scholarships are given to graduate students in the Department of Physiology on the basis of merit, academic potential, and financial need.

As president of Cargill, Spicola had many demands on his time, yet he took a very important leadership role in the fundraising drive for the new University of Minnesota Cancer Center, volunteering to chair the advanced gifts division of the $30 million campaign. He knew from personal experience how cancer touches lives—Ellie Spicola was cured of cancer in 1961, and Jim was diagnosed with pancreatic cancer in late 1989.

"Jim was an inspiration to me personally as well as to all of our Cancer Center volunteers," says Mark Zachary, MMF's development officer for the Cancer Center fund drive. "His leadership during early planning was instrumental to the progress we have made to date. When this Center becomes a reality, it will be due in large part to him."

Spicola was deeply committed to the mission of the University of Minnesota Cancer Center. He said recently, "This Center will incorporate a broad spectrum of the cancer research that is going on, and will have national and international standing." Jim and Ellie made a generous pledge to the Cancer Center, because they wanted to "share some of our good fortune."

In addition to serving the Minnesota Medical Foundation, Spicola was a director of Norwest Corp., a trustee of the University of Minnesota Foundation, and a director on the general board of the Minneapolis YWCA.

He is survived by his wife, Ellie; sons John and Thomas; a daughter, Ann Jerhoff; his father, Anthony; and five grandchildren. A memorial fund has been established at the Minnesota Medical Foundation. Contributions may be sent to: The James R. Spicola Memorial Fund, Minnesota Medical Foundation, P.O. Box 64001, St. Paul, Minnesota 55164-9793.

Minnesota Medical Foundation Endowment Gifts

An endowment makes it possible for individuals to support, in perpetuity, programs, ideals, and values important to them.

An endowment may be established with a gift of $10,000 or more and may be funded in three ways:

1. Outright gift of stock, cash, or real estate.
2. Gift by will or trust designation.
3. Life Income Gift.

An endowment gift is a permanent gift. The gift principal is invested by the Minnesota Medical Foundation Trustee Investment Committee in a balanced fund that provides current income and long term capital appreciation.

Current income from interest and dividends averages about 5.5 percent. Each year the current income is used to support the program designated by the donor. Examples would include named scholarships, research grants, academic chairs, etc.

Capital appreciation/depreciation is added/subtracted from the gift principal. Capital appreciation averages about 10 percent annually.

Endowment funds are guided by a "Memorandum of Agreement" developed jointly by the Minnesota Medical Foundation and the donor. The donor has considerable latitude in directing how the endowment income shall be used.

Once established, any amount can be added at any time by anyone to the endowed fund.

I would like more information about endowment funds.

Name _____

Address _____

City/State/Zip _____

Phone _____

WI91

Please return to: Minnesota Medical Foundation, Office of Planned Giving, Box 193 UMHC, Minneapolis, Minnesota, 55455. Phone: (612) 625-5463.

ALUMNI VOLUNTEER FORM

Use this postage-paid card to let us know how you'd like to participate in alumni activities at the U of M Medical Schools.

RESIDENTS AWAY FROM HOME

This program aids residency searches by connecting Medical School students with volunteer alumni across the country. Providing overnight accommodations in your home would be especially helpful in defraying costs.

Yes, I want to help medical students with their residency search.

- ❑ I am willing to answer student questions about a residency site in my area.
- ❑ I am willing to host a student overnight.

STUDENT RECRUITMENT

Join our network of medical alumni who will contact students in their communities who have been accepted to the Medical Schools and encourage them to matriculate. Your support could ensure that top-notch students accept and attend our schools.

Yes, I would like to assist with student recruitment:

- ❑ of Duluth medical students.
- ❑ of Minneapolis medical students.
- ❑ at either campus.

Location/area you would serve (city, county, state, etc.)

_____

RECEPTIONS

The Alumni Office often holds receptions in areas outside Minnesota where there are concentrations of Medical School alumni and friends. Let us know if you would like a reception held in your area.

- ❑ I would be interested in attending a Medical School alumni reception held in my area.
- ❑ I would like to host a reception in my home.

Location/area _____

ALUMNI REUNIONS

- ❑ I am willing to assist with the coordination of reunions for my Medical School class.

Contact the Alumni Office if you would like further details on any of the programs mentioned above (612-625-1440).

Name _____

Address _____

City/State/Zip _____

Daytime Phone ( ) _____

Evening Phone ( ) _____

Class Year_____ Specialty _____

Tear along perforation and mail.
No postage stamp needed if mailed in the United States.

WHAT'S NEW WITH YOU?

Use this postage-paid card to let us know how you're doing and to share news of relocations, new positions, awards and honors, community activities, or personal experiences.

Name _____ Specialty/Degree _____ Year _____

Address _____ Telephone _____

City/State/Zip _____

News _____

_____

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THANKS FOR GIVING

Louis and Florence Kitsis

by Jean Murray

The dictionary's definition of philanthropy is "Goodwill to fellow men; an active effort to promote human welfare." Louis and Florence Kitsis exemplify the term philanthropist, and their generosity is a true extension of their philosophy of life. "God has been very good to us," says Louis. "We are simply returning what has been given to us."

Currently living in Palm Springs, California, the Kitsises were long-time residents of Mankato, Minnesota, where Louis was founder in 1943 of Shari Candies, Inc. His entrepreneurial talents, however, had been established at a very young age and Shari Candies was not his first venture into the business world.

Born in Russia, Louis Kitsis came with his family at the age of four to Mason City, Iowa. Following his graduation from high school, the family moved to Mankato in 1923. Louis became involved with a wholesale fruit company, and his astute business sense began to develop. There was never time for college, but the education Louis received in the working world more than made up for it.

Florence Kitsis, meanwhile, moved with her family to Minneapolis after spending her early years in Columbus, Wisconsin. She attended the University of Minnesota and received a degree in education. She worked as a record librarian at Minneapolis General Hospital until a year after the Kitsises were married, in March of 1931.

In 1935 Arlen Kitsis was born, and in his boyhood years was stricken with polio. "I got into the candy business as a way to care for our son," says Louis, "to pay for his treatment at Sister Kenny Institute." Arlen's illness was to have a direct effect on the Kitsises generosity in giving to others in years ahead. "God gave Arlen back to us," Louis says simply.

Florence and Louis Kitsis.

Arlen Kitsis is today president and chief executive officer of Shari Candies, and Louis and Florence Kitsis are the proud grandparents of three grandchildren and one great-grandchild.

Louis Kitsis retired from Shari Candies in 1976, but has seen no reason to slow down. At age 85, he is on the board of directors of the Bank of Palm Springs, a trustee of the Palm Springs Desert Museum, on the board of directors and vice chair of the Senior Citizens Building Committee (and recently funded the new senior citizens center, dedicated in January and named the Louis and Florence Kitsis Pavilion), on the boards of his temple and the Jewish Federation, and chair of the Palm Springs Societe d'Allegro Opera Guild.

In 1975 Louis Kitsis received the National Humanitarian Award in Mankato for his work with the City of Hope, and the family's widespread generosity has been ongoing. For more than 15 years the Kitsises have had a particular interest in cancer research, and have established the Louis Kitsis Cancer Research Fund at the City of Hope, the Louis and Florence Kitsis Cancer Research Fund at the University of Minnesota through the Minnesota Medical Foundation, and a fund in the Urology Department at the Mayo Medical School.

Gifts from the Kitsises have been significant in supporting the cancer research of Drs. Seymour Levitt and Fatih Uckun of the Department of Therapeutic Radiology at the University, and their enthusiasm for the planned University of Minnesota Cancer Center is strong.

"When someone is hungry, you feed them," Louis Kitsis sums up. There is little doubt their gifts will lessen the suffering of many people.

Minnesota Medical Foundation
Box 193 UMHC, University of Minnesota
Minneapolis, MN 55455
(612) 625-1440

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CALENDAR OF EVENTS

Critical Care Medicine Holiday Inn East, St. Paul CME (612) 221-3992	**March 7 - 8**
Pediatric Advanced Life Support (PALS) Capitol Professional Building, St. Paul CME (612) 221-3992	**March 12 - 13**
Family Practice Today Holiday Inn East, St. Paul CME (612) 221-3992	**March 14 - 15**
Medical Directors Training Program IVB Holiday Inn Metrodome CME (612) 626-5525	**March 21 - 23**
Eleventh Annual Occupational Medicine Update Holiday Inn East, St. Paul CME (612) 221-3992	**March 22**
Annual Obstetrics and Gynecology Update Holiday Inn East, St. Paul CME (612) 221-3992	**April 4 - 5**
ENT Update Health East, St. Joseph's Hospital, St. Paul CME (612) 221-3992	**April 5**
Annual Ophthalmology Course Radisson Hotel Metrodome CME (612) 626-5525	**April 8 - 9**
Allergy and Immunology Location to be announced CME (612) 626-5525	**April 11 - 12**
Bone Marrow Processing Lab Radisson Hotel Metrodome CME (612) 626-5525	**April 18 - 19**
Family Practice Review Radisson Hotel Metrodome CME (612) 626-5525	**April 22 - 26**
Pulmonary Function Testing Workshop St. Paul-Ramsey Medical Center, St. Paul CME (612) 221-3992	**April 24 - 26**
Women's Cancer Center Symposium Radisson Hotel Metrodome CME (612) 626-5525	**May 14**
Radiation Therapy Radisson Hotel Metrodome CME (612) 626-5525	**May 15 - 17**
Neuroblastoma Screening Radisson Hotel Metrodome CME (612) 626-5525	**May 22 - 24**
Clinical Hypnosis Sheraton Midway Hotel CME (612) 626-5525	**May 31 - June 2**

ATTENTION!

Medical School Alumni
Classes of 1931, 1941, 1946,
1951, 1961, 1966, 1971, 1981

Reunion Weekend
June 6-8

Come and celebrate and renew acquaintances with your fellow Medical School classmates.

See page 28 for schedule

For information call:
MMF Alumni Office
(612) 625-1440