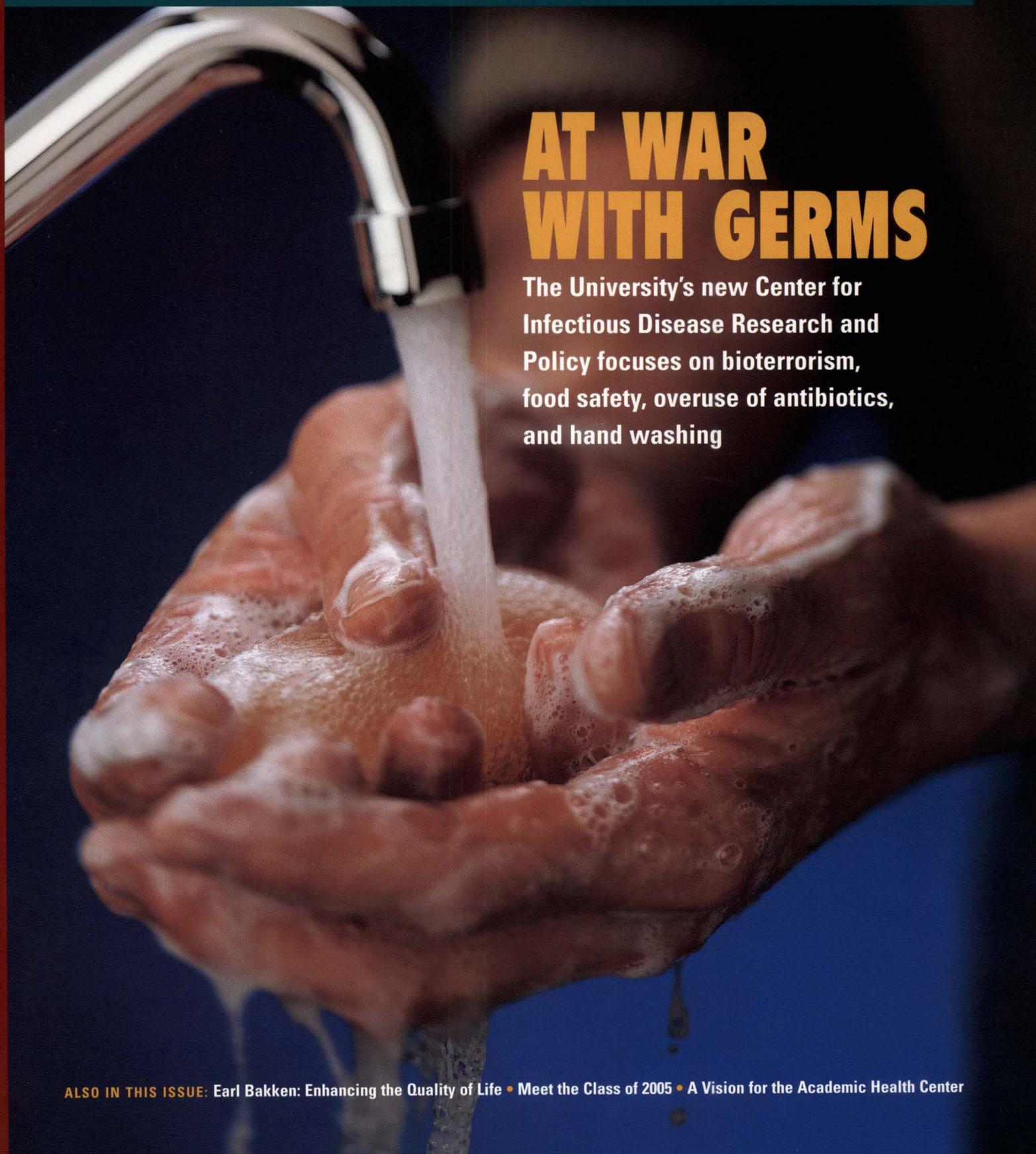


UNIVERSITY OF MINNESOTA MEDICAL SCHOOLS

MEDICAL BULLETIN

A PUBLICATION OF THE MINNESOTA MEDICAL FOUNDATION • WINTER 2002



AT WAR WITH GERMS

The University's new Center for Infectious Disease Research and Policy focuses on bioterrorism, food safety, overuse of antibiotics, and hand washing

ALSO IN THIS ISSUE: Earl Bakken: Enhancing the Quality of Life • Meet the Class of 2005 • A Vision for the Academic Health Center

MINNESOTA
MEDICAL
FOUNDATION

at the University of Minnesota

THE MISSION OF THE MINNESOTA MEDICAL FOUNDATION IS TO IMPROVE THE QUALITY OF LIFE FOR THE PEOPLE OF MINNESOTA, THE NATION, AND THE WORLD BY SUPPORTING THE ADVANCEMENT OF HEALTH-RELATED EDUCATION, RESEARCH, AND SERVICE AT THE UNIVERSITY OF MINNESOTA.



DEAR FRIENDS,

In a time of uncertainty and anxiety, we are experiencing a country more united than it has been for a long time – with a great resolve to protect freedom and opportunity. It is a country that is more determined than ever to improve the lives of not only Americans, but all world citizens.

As we know, the fields of medicine and public health provide unprecedented opportunities for a better world.

The lead article in this issue details the timely and critically important work underway at the new Center for Infectious Disease Research and Policy. We will continue to work closely with our colleagues in public health to address the challenges facing us in the areas of infectious diseases, re-emerging diseases, use of antibiotics, and more.

Here at the Medical School, we see a renewed spirit of collaboration – between departments and within departments – to find answers to diseases and conditions that cause suffering in our human family.

We believe that new prevention strategies, therapies, and cures are not a matter of if, but when. And we are hopeful that these breakthroughs will occur not just in our grandchildren's or children's lifetimes, but in our own.

We applaud our talented faculty – our teachers, clinicians, and researchers – for their steadfast commitment to excellence, and for their profound belief in a brighter tomorrow.

A handwritten signature in black ink, appearing to read "Alfred E. Michael". The signature is fluid and cursive.

Alfred E. Michael, M.D.

Dean, University of Minnesota Medical School, Twin Cities

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UNIVERSITY OF MINNESOTA MEDICAL SCHOOLS

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ON THE COVER: *Raising awareness of hand washing as a primary means of reducing infectious disease transmission is a top priority of the University's new Center for Infectious Disease Research and Policy. Photo by Tim Rummelhoff.*

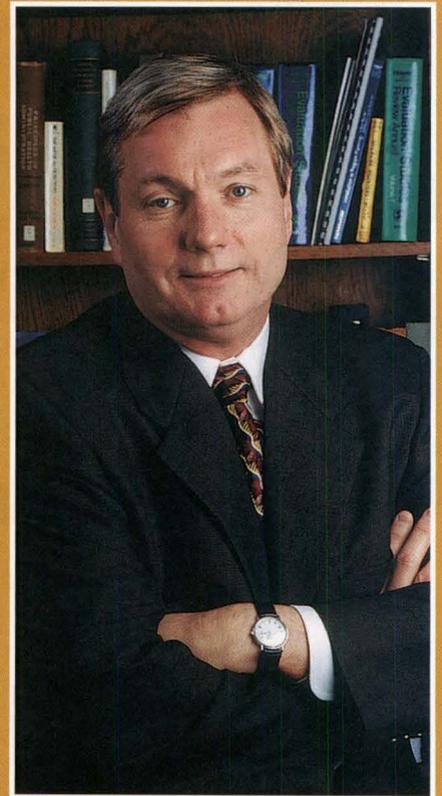
AT WAR WITH GERMS

THE UNIVERSITY OF
MINNESOTA TAKES THE
LEAD IN TARGETING
INFECTIOUS DISEASES
ON MANY FRONTS

No one has ever "hit the ground running" in a new job faster than Michael T. Osterholm, Ph.D., M.P.H. He heads the University of Minnesota's newly established Center for Infectious Disease Research and Policy, which was launched on September 4. A week after he took the helm, terrorists attacked the World Trade Center and the Pentagon.

That simultaneously ignited the public's fear of potential bioterrorist attacks and thrust Osterholm and the University into the national spotlight.

Then came the anthrax scare. Since then, Osterholm has spent 20-hour days shuttling between Washington, D.C., and the Twin Cities, between consultations with the government and public health experts, and between a "Who's Who" of the press from *The New York Times* to *Larry King Live*.



AT WAR WITH GERMS

Osterholm's blend of experience and his outspoken opinions on the ability of our public health infrastructure to handle a bioterrorist attack have made him one of the most sought after experts on bioterrorism. Those same traits make him eminently qualified to direct the new center. He received three degrees (M.S., M.P.H., and Ph.D.) from the University of Minnesota's School of Public Health and has been a member of the University's adjunct faculty for 23 years.

He served as the Minnesota state epidemiologist from 1984-99. For the past two years, he was chairman of iCan, Inc., a company he founded to develop Internet-based products and services to address the information needs of health care and public health professionals in the area of infectious disease. He also was an adviser on bioterrorism to the late King Hussein of Jordan.

Osterholm's book, *Living Terrors: What America Needs to Know to Survive the Coming Bioterrorist Catastrophe*, (written with *New York Times* reporter John Schwartz) was published last year and the publisher hurried the paperback issue to press just after the September 11 attack. Most recently, Secretary Tommy Thompson of Health and Human Services named Osterholm to his national advisory committee on bioterrorism.

"Dr. Osterholm has been a perceptive and powerful leader on addressing emerging and resurging infectious disease threats ranging from food safety to bioterrorism," says Peggy Hamburg, a former U.S. Assistant Secretary of Health and Human Services. "This center has the potential to have a national and international impact on our thinking around these critical public health issues."

RIGHT IDEAS, RIGHT TIME

The timing of the center's opening in light of world events has been stunning. When the center articulated its top priorities for its first year – bioterrorism, food safety, overuse of antibiotics, and good old-fashioned hand washing – no one could have imagined that those topics would be so forcefully brought front and center in the public's mind. Says Mark P. Becker, Ph.D., dean of the School of Public Health, "We're fortunate to have Michael and the center in position right now to help address these issues locally and nationally."

The potential for attacks using pathogens such as anthrax is bringing *all* the issues surrounding infectious disease onto the national radar. Says Becker, "Since September 11, current events have touched all four areas on which the center will focus. Moreover, these events have forced us to re-examine public health priorities and the best ways to allocate finite resources to address them."

The potential for dialogue on these complex issues has the Academic Health Center's Senior Vice President for Health Sciences Frank B. Cerra, M.D., charged up about the new center. He says it provides an opportunity for the University to capitalize on its strengths in several areas of medicine (including veterinary medicine), epidemiology, agriculture, pharmacy, law, public affairs, and food safety. He says, "The center will bring together a repository of knowledge and experience – interdisciplinary and inter-scholastic – that the state and its people can draw upon."

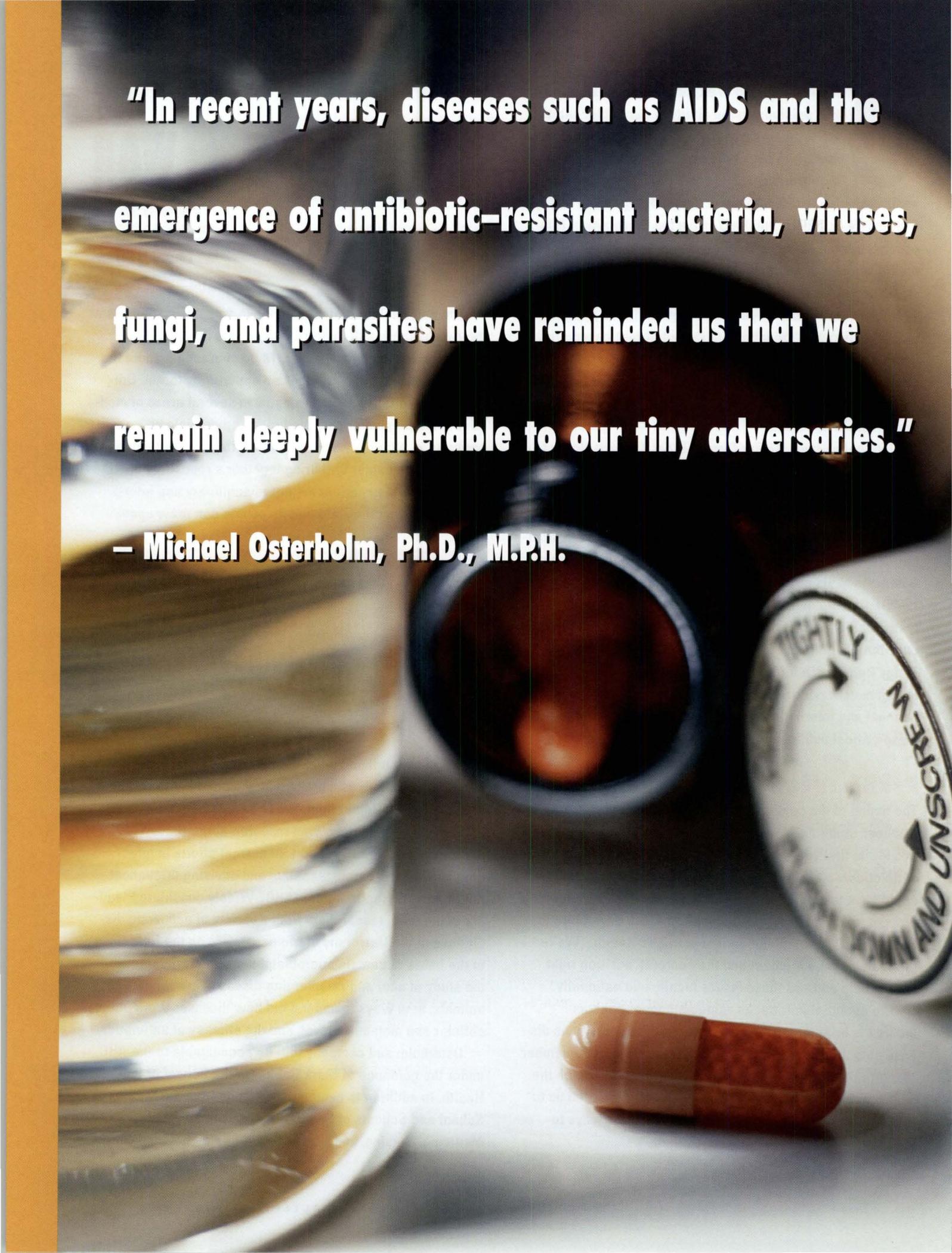
"Bioterrorism is not a new phenomenon. This is a wakeup call, a new world order."

— Michael Osterholm, Ph.D., M.P.H.

"I can also tell you what the center *won't* do," says Cerra. "It's not here as a place to make policy or to compete with the Health Department. We're here to help them."

Nor does the center *direct* research at the University. Rather, it will work to support all current efforts in infectious disease research, teaching, and advising throughout the Academic Health Center (AHC). Widely considered leaders in the field, researchers from a variety of academic disciplines at the University of Minnesota are on the front lines of the battle to contain microbial diseases. Work includes the study of new and re-emerging diseases in humans and animals, new ways to understand how diseases work at the cellular and molecular level, and the efficacy of antibiotics.

Osterholm and company will be accountable to the AHC under the guidance of Mark Becker in the School of Public Health. In addition to center staff, faculty from the Medical School and Schools of Public Health, Pharmacy, Veterinary Medicine, Nursing, and Law will be affiliated with the center.

A close-up photograph of a glass of yellow liquid, an open pill bottle, and a pill cap with a pill on the surface. The glass is on the left, the pill bottle is in the center, and the pill cap is on the right. The pill is a small, orange, oval-shaped tablet. The background is dark and out of focus.

"In recent years, diseases such as AIDS and the emergence of antibiotic-resistant bacteria, viruses, fungi, and parasites have reminded us that we remain deeply vulnerable to our tiny adversaries."

— Michael Osterholm, Ph.D., M.P.H.

Designed to be self-supporting, the center secured initial funding of \$500,000 from the Robins, Kaplan, Miller & Ciresi LLP Foundation for Education, Public Health, and Social Justice, and is also securing private funds, grants, and donations. Cerra sees an extra bonus: the added visibility that the center and Osterholm bring will help the University attract new research money and is expected to help attract and recruit faculty.

BEYOND BIOTERRORISM

The center is obviously playing an active role in the national discussion and subsequent policy development regarding bioterrorism preparedness. Capitalizing on Osterholm's experience at Ican, Inc. with electronic distribution of information, it will also pursue the role as the definitive Internet-based source for professionals in the areas of public health, medical services, emergency management, and law enforcement, as well as policy planners and elected officials. A new website for that purpose, www.cidrap.umn.edu, went live October 22, 2001.

While bioterrorism has understandably received the lion's share of attention thus far, the new center has identified three other specific topic areas as priorities for the first year of operation. They include:

- **Implementation of food irradiation.** The Center for Infectious Disease Research and Policy will initiate a major effort to increase professional and consumer education regarding food irradiation using Internet-based resources, public appearances, and the news media. In addition, a blue-ribbon panel of food producers and processors, grocery wholesale and retail executives, and experts in food safety, law, and public relations will be convened. A national blueprint for the implementation of routine food irradiation will be developed and an action plan to achieve this goal will be put into place.
- **Evaluation and response to pharmaceutical company marketing practices that have an impact on antimicrobial resistance.** A panel of national experts in the area of antimicrobial resistance will evaluate and make recommendations regarding the appropriate role that pharmaceutical companies should play in the judicious use of antimicrobial agents in humans and animals.
- Finally, a simple idea, **raise awareness of hand washing as a primary means of reducing infectious disease transmission.** This concept is so low-tech and so low-cost it's almost humor-

"The center will bring together a repository of knowledge and experience – interdisciplinary and interscholastic – that the state and its people can draw upon." — Frank Cerra, M.D.

ous, but experts agree that this simple act brings huge benefits.

What's the first step public health officials suggest to combat anthrax contamination? It's not a course of Cipro; it's hand-washing. The center has already had extensive discussions with national news media, leading public health officials, and soap manufacturing and public relations executives regarding support of an annual "National Hand Washing Day." Although the center will lead this effort, it will be paid for by grants from soap manufacturers.

LOOKING BACK ON "BUGS"

Even before bioterrorism became a household word, it seemed that new and re-emerging diseases – West Nile Virus, AIDS, tuberculosis, E. coli – posed an ever-increasing threat. To understand our current situation with infectious disease, it's important to take a look at our long relationship with "bugs."

We've been living with germs since the dawn of time, most often in a symbiotic relationship. Yet, our success in conquering diseases over the last 50 years and our excessive use of antibiotics has perhaps made us lose respect and let down our guard.

"Baby boomers have lived through a wonderful period when it seemed like all the magic bullets were found," says Mark Becker. "But we live in a very mobile world today and strains of TB, for example, are coming from other countries. It doesn't take long for a new disease like West Nile Virus to make its way here." He also cites overuse of antibiotics as a major problem in the re-emergence of nearly forgotten diseases, which have developed drug-resistant strains.

In *Living Terrors*, Osterholm writes "...in recent years, diseases such as AIDS and the emergence of antibiotic-resistant bacteria, viruses, fungi, and parasites have reminded

AT WAR WITH GERMS

AT WAR WITH GERMS

us that we remain deeply vulnerable to our tiny adversaries.”

Just how vulnerable? Enough to change the course of human history, according to Jared Diamond, the Pulitzer Prize-winning author of *Guns, Germs, and Steel: The Fates of Human Societies*. Infectious disease has been the greatest cause of death throughout history and remains so in the developing world. Diamond cites a few examples: “The greatest single epidemic in human history was the one of influenza that killed 21 million people at the end of the First World War.

The Black Death (bubonic plague) killed one quarter of Europe’s population between 1346 and 1352, with death tolls ranging up to 70 percent in some cities.”

Then there’s smallpox, a highly contagious disease that killed approximately 500 million people in the last century. It’s been more than 50 years since the last case occurred in the United States and the last naturally occurring case in the world was reported in Somalia in 1977. We assumed that the scourge was over until it became clear that Russia, Iraq, and North Korea still have stockpiles of the virus.

Diamond writes, “Because diseases have been the biggest killers of people, they have also been decisive shapers of history. Until World War II, more victims of war died of war-borne microbes than of battle wounds. All those military histories glorifying great generals oversimplify the ego-deflating truth: the winners of past wars were not always the armies with the best general and weapons, but were often merely those bearing the nastiest germs to transmit to their enemies.”

Nor is *intentional* germ warfare a new concept. According to *New York Times* reporters Judith Miller, Steven Engelberg, and William Broad in their book *Germs, Biological Weapons, and America’s Secret War*.

“Germs and warfare are old allies. More than two millennia ago, Scythian archers dipped arrowheads in manure and rotting corpses to increase the deadliness of their weapons. Tatars in the fourteenth century hurled dead bodies foul with plague over the walls of enemy cities. British soldiers during the French and Indian War gave unfriendly tribes blankets sown with smallpox. The Germans in World War I spread glanders, a disease of horses, among the mounts of rival cavalries. The Japanese in World War II dropped fleas infected with plague on Chinese cities, killing hundreds and perhaps thousands of people.”

Says Osterholm, “Bioterrorism is not a new phenomenon. This is a wakeup call, a new world order.”

A CALL TO ACTION – AND EDUCATION

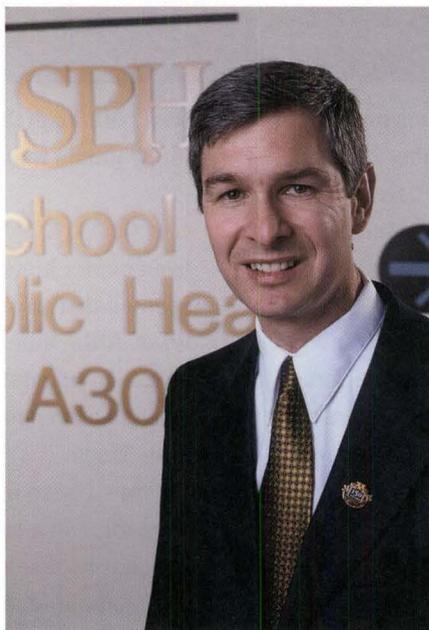
It’s a wakeup call long overdue, according to Osterholm, who has been outspoken in his criticism of the government’s approach to bioterrorism. “Preparedness is an issue of great debate recently,” he said in a Minnesota Public Radio forum.

“The media has polarized it; we’re either prepared or unprepared. I say we’re underprepared.”

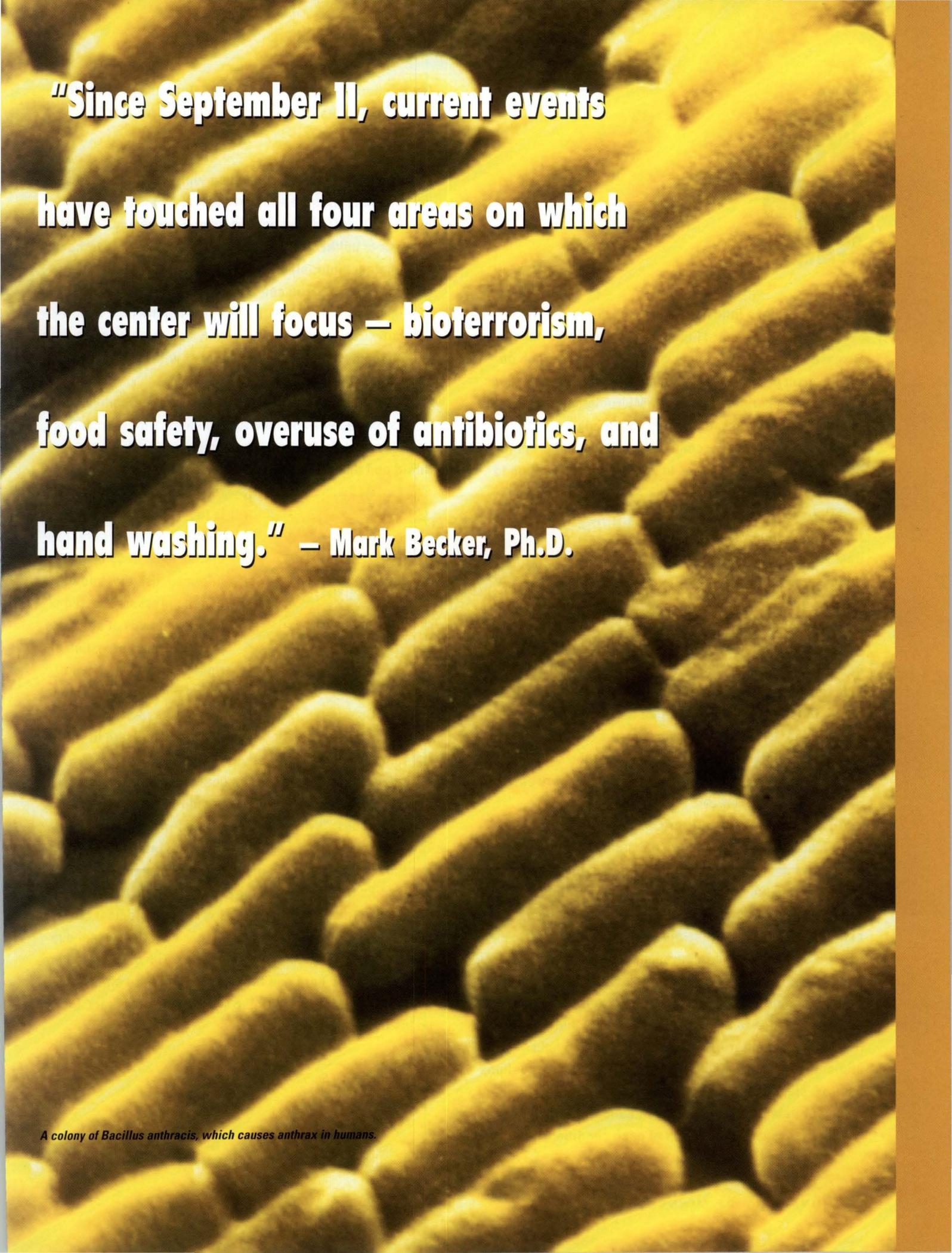
Specifically, he says the government has emphasized other weapons that can kill large numbers of individuals – namely chemical or nuclear weapons. “The difference in responding to bioterrorism, as opposed to a chemical or nuclear attack, is like the difference between flying a plane and driving a Formula One car.” He also cites the lack of interagency cooperation: “We can’t even coordinate the roles of the various federal and state health agencies today in the case of simple foodborne outbreaks.”

Osterholm says we must increase stockpiles of antibiotics and vaccines for the most likely agents to be used in a

biological attack; shore up the public health infrastructure for quick response; implement drills to practice for an attack; clear up the roles of federal, state, and local governments; and build more “surge capacity” into the system. “At the moment, hospitals, pharmaceutical companies, and insurers squeeze every excess penny out of health care, performing at the limits of their capacity. It’s time to open the debate over how much we’re going to let economics be the single compass for directing our medical system; we need, as



Mark Becker, Ph.D., Dean of the School of Public Health

A microscopic image showing a dense colony of Bacillus anthracis spores. The spores are rod-shaped and arranged in a regular, grid-like pattern. The lighting is bright, highlighting the texture and structure of the spores.

**"Since September 11, current events
have touched all four areas on which
the center will focus – bioterrorism,
food safety, overuse of antibiotics, and
hand washing." – Mark Becker, Ph.D.**

A colony of Bacillus anthracis, which causes anthrax in humans.

AT WAR WITH GERMS

a nation, to build a little more slack into the system.”

After the September 11 attacks, the Center for Infectious Disease Research and Policy convened a work group on bioterrorism preparedness with experts from organizations such as the American Society for Microbiology, the Association of Public Health Laboratories, and many more. The group offered a set of recommendations for action and preparedness and called on Congress to spend almost \$2 billion to upgrade that system.

Efforts to bolster the public health system’s ability to deal with such bioterrorist attacks will surely bring collateral benefits – better policy and procedures to deal with or prevent naturally occurring outbreaks. Osterholm told a Senate committee on October 9 that preparing for bioterrorist attacks “will also prepare us for the daily barrage of exotic agents from abroad, antibiotic resistant microbes, and the ever-growing problem with food safety. This represents the very essence of dual purpose resources.”

“The silver lining in this crisis is that we will have a huge increase in investment in the public health infrastructure,” says Jonathan Ravdin, M.D., head of the Department of Medicine and holder of the Nesbitt Chair in Medicine.

Health professionals are also taking action, honing their expertise in diagnosing the diseases that bioterrorists might use. On October 16, the Department of Medicine, Division of Infectious Diseases, in collaboration with the Minnesota Department of Health, sponsored a one-hour, online educational discussion to help clinicians identify and treat potential victims of bioterrorism. It was designed to help clinicians recognize and confirm the diagnosis of smallpox, anthrax, plague, and tularemia; to understand the initial medical treatment of each of these conditions; to understand how to triage suspected cases of each condition; and to

learn reporting infrastructure at the Department of Health and plans for dealing with such a crisis in Minnesota.

FEAR FACTOR

The events of September 11, along with the later instances of anthrax, have created a climate of fear and uncertainty, a feeling of helplessness against an unseen enemy. “The panic and fear is unlike anything I’ve ever seen,” says Osterholm. “A prominent journalist said, ‘Don’t tell me the truth, I can’t stand to hear it.’” The center will, no doubt, play a major role in stemming the fear. By bringing together the expertise of faculty from across the University and disseminating information to physicians and the public, it will help translate fear into appropriate action.

“The bottom line is we all need to take a breath and realize that there does not have to be a single illness from this point forward if we handle these situations calmly. We are afraid and that’s okay. How we live our lives, how we

respond, what we do about it is the critical piece,” says Osterholm. The general population must become more informed, use that knowledge to pressure elected representatives at all levels to do the right thing, fund the right programs, and make sound choices for the future.

“We are all fighting a much bigger war: the eternal evolutionary battle between man and germ ... we have to learn the ways of the adversary, fight on his terms – and survive.” — Michael Osterholm, Ph.D., M.P.H.

Says Osterholm, “Writing your senators and congressmen is not a futile gesture. In Washington, they’ll listen to you right now.”

In *Living Terrors*, Osterholm concludes with advice that’s important as we move forward in understanding our relationship with bugs. “We can’t take bugs for granted anymore. Terrorists are acting as intermediaries to bring the problem to us, but we’ve been reminded again and again, with outbreaks like antibiotic-resistant TB, HIV, *E. coli* 0157:H7, and West Nile virus. I’m not just talking about biological terrorism. We are all fighting a much bigger war: the eternal evolutionary battle between man and germ. The bugs were here before we were here and the bugs will be here after we’re gone. But we have to learn the ways of the adversary, fight on his terms – and survive.”

by Terri Peterson Smith

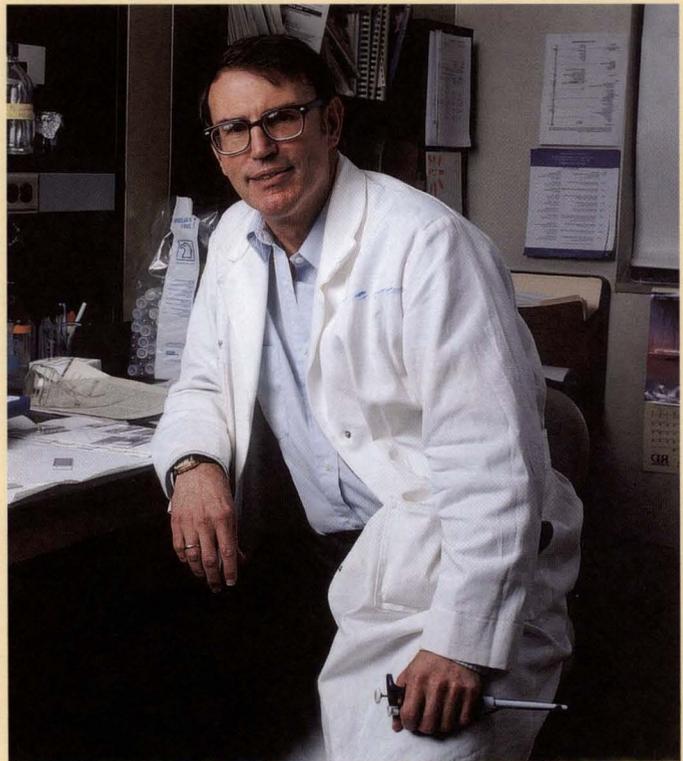
ON THE FRONT LINE

Widely considered leaders in the field, researchers from a variety of academic disciplines at the University of Minnesota are on the front lines of the battle to contain microbial diseases. Work includes the study of new and re-emerging diseases as well as new ways to understand how diseases work at the cellular and molecular level and the efficacy of antibiotics.

AT WAR WITH GERMS

RESEARCH ACTIVITIES • Research activities in the Medical School focus on several distinct areas.

ASHLEY T. HAASE, M.D., Regents' Professor and head of the Department of Microbiology, coordinates efforts in *HIV-1 pathogenesis* (with an emphasis on HIV-1 transmission). This group focuses on discovering initial viral and immune events at the time of transmission and factors that enhance efficiency of transmission. In addition, several faculty members are key personnel in the first multi-site collaborative Great Lakes Center for AIDS Research funded by the NIH. This center is comprised of the University of Minnesota, Northwestern University, the University of Wisconsin, and the University of Michigan. Key faculty involved in this effort are Drs. Timothy Schacker, Alan Lifson, Mitchell Krathwohl, and Paul Bohjannen.



Ashley T. Haase, M.D.

AT WAR WITH GERMS

DAVID H. SHERMAN, Ph.D., professor in the Department of Microbiology, is one of three scientists to receive a \$2.5 million federal grant to develop a drug against *smallpox*. He is collaborating with researchers at Duke University and the Medical College of Wisconsin. Once considered the most feared of all infectious diseases, smallpox was eradicated in 1977 and the vaccine was shelved. Sherman and his colleagues are designing a drug to treat, not prevent, the disease, using a technology Sherman developed at the University to try to genetically engineer molecules that could destroy the virus and save lives after infection.



David H. Sherman, Ph.D.

JESSE L. GOODMAN, M.D., M.P.H., professor in the Department of Medicine and director, Division of Infectious Diseases, leads the effort in the area of *tick-borne diseases*. His laboratory first isolated the etiologic agent of Human Granulocytic Ehrlichiosis (HGE) and has helped pioneer the use of

molecular techniques in studying the diagnosis and pathogenesis of both HGE and Lyme disease.

Diagnosis and treatment of *fungal infections* in the immunocompromised host is led and coordinated by **JO-ANNE VAN BURIK, M.D.**, assistant professor in the Department of Medicine, Division of Infectious Diseases. In collaboration with **PETER MCGEE, M.D.**, in the Department of Microbiology, van Burik is developing novel methods to quickly diagnose fungal infections. She also oversees multiple investigations of novel therapies for complicated fungal infection.

JONATHAN I. RAVDIN, M.D., professor and head of the Department of Medicine, specializes in *parasitic infections* and his laboratory is engaged in defining the initial immune response during primary infection with *E. histolytica*, a one-celled parasite that causes amoebic dysentery.

In addition, researchers are at work in other areas of the Academic Health Center:

WILLIAM D. HUESTON, D.V.M., M.S., Ph.D., professor in the Department of Clinical and Population Sciences in the College of Veterinary Medicine and an internationally recognized expert in Bovine Spongiform Encephalopathy (mad cow disease), has become the first director of the Center for Animal Health and Food Safety at the College of Veterinary Medicine.

THE DIVISION OF EPIDEMIOLOGY IN THE SCHOOL OF PUBLIC HEALTH focuses on the behavioral, social, and cognitive determinant of HIV/sexually transmitted infections; the role of infectious agents in chronic disease, including heart disease and cancer; and communicable diseases such as tuberculosis that disproportionately affect immigrant and low-income populations, many of whom reside in Minnesota.

JOHN C. ROTSCHAFER, PHARM.D., professor in the College of Pharmacy, studies in vitro modeling of antibiotic dosing patterns on antibiotic efficacy, particularly in anaerobic infections.

An archived webcast of the Centers for Disease Control's recent forum "Anthrax: What Every Clinician Should Know" can be viewed at: www.sph.unc.edu/about/webcasts. The goal of the forum is to educate clinicians on the present clinical guidelines and procedures for the early recognition, diagnosis, treatment, and reporting of anthrax exposure.

Fishing for Clues in the Battle Against Tuberculosis

During fiscal year 2001, the Minnesota Medical Foundation grants program awarded a record \$1.3 million for 98 start-up research projects and equipment purchases. Research funded with Foundation "seed money" is often used to leverage additional support from the National Institutes of Health and other sources.

Minnesota Medical Foundation grant recipient Lucia P. Barker, Ph.D., is working to unlock the secrets of tuberculosis by studying a closely related pathogen found in fish.

Each year three million people worldwide die of tuberculosis. The disease once thought vanquished is re-emerging as drug-resistant strains develop. The need for new therapies is great, not only worldwide but also in the United States. While currently not prevalent in this country, tuberculosis could again become a serious threat here as globalization increases.

Lucia P. Barker, Ph.D., of the Department of Medical Microbiology and Immunology at the School of Medicine in Duluth, is working on research that could lead to a new way to treat and prevent tuberculosis. She recently received a Minnesota Medical Foundation research grant to assist her explorations into the inner workings of the tuberculosis bacterium.

Barker and her colleagues are working with *Mycobacterium marinum*, a close cousin of the tuberculosis bacterium which infects both fresh and salt water fish. *Marinum* is an excellent model for studying TB because it grows more quickly (four to six hours instead of 24 hours for tuberculosis) and is less deadly to work with than tuberculosis. "It's like using a house cat to understand tiger behavior," explains Barker. Finding out how *marinum* invokes disease will yield big clues as to how tuberculosis works.

When a tuberculosis bacterium enters the lung, it is swallowed by a macrophage, a cell that engulfs and

absorbs harmful microorganisms. Usually macrophages are able to break down and "eat" foreign items, such as those found in everyday pollution. However, with tuberculosis the macrophage forms a granuloma, or mass of tissue, around the bacterium to seal it off and protect the body. These granulomas can lie dormant for years only to be activated later when the immune system is weakened by illness or age. The granuloma itself is not the disease; the disease begins when the granuloma breaks down and the tuberculosis bacterium is free to attack the rest of the lung.

The question Barker and her colleagues are asking is, How does the tuberculosis bacterium survive within the macrophage? How does it manage to make a place for itself inside this host cell that is normally a hostile environment that kills other harmful microorganisms? What is the mechanism by which this bacterium tailors itself a place for survival within the macrophage? The final question becomes, How do we prevent the bacteria from taking hold in the first place?

Barker's work involves identifying those genes of the bacteria that are actually stronger within the macrophage than outside it. The grant from the Minnesota Medical Foundation provides for technical help and supplies that will allow Barker to continue identifying and knocking out these genes one at a time in a process of elimination to see which



Photo by Dan Schlies

one is essential for the survival and thriving of the bacteria.

The goal of Barker's efforts is to eradicate tuberculosis by understanding how the mycobacteria produce disease. "Ultimately we are trying to understand the organism and find different strategies to give us as many options as possible for treating and preventing tuberculosis infections," explains Barker. "There exists no good vaccine against TB. The number of potential drugs is diminishing as bacteria are becoming more and more resistant. I would love to be able to find new information about the mechanism of TB and contribute to the development of a new drug that would help people worldwide."

by Andrea J. Peterson

New Funding, New Expectations, and New Opportunities

Frank B. Cerra, M.D., Senior Vice President for Health Sciences, delivered his 2001 State of the Academic Health Center report in September. The following excerpts are from the address.

Less than a year ago, I stood before you and called for a new covenant with the people of Minnesota on behalf of health professional education. I told you that the future direction of this Academic Health Center was based on the response of the Minnesota legislature to our clear need for public investment. And today – here we are with a successful and resounding response – the Minnesota legislature and executive branch have entered a covenant through the planned \$374 million funding of the AHC educational endowment [from tobacco settlement payments].

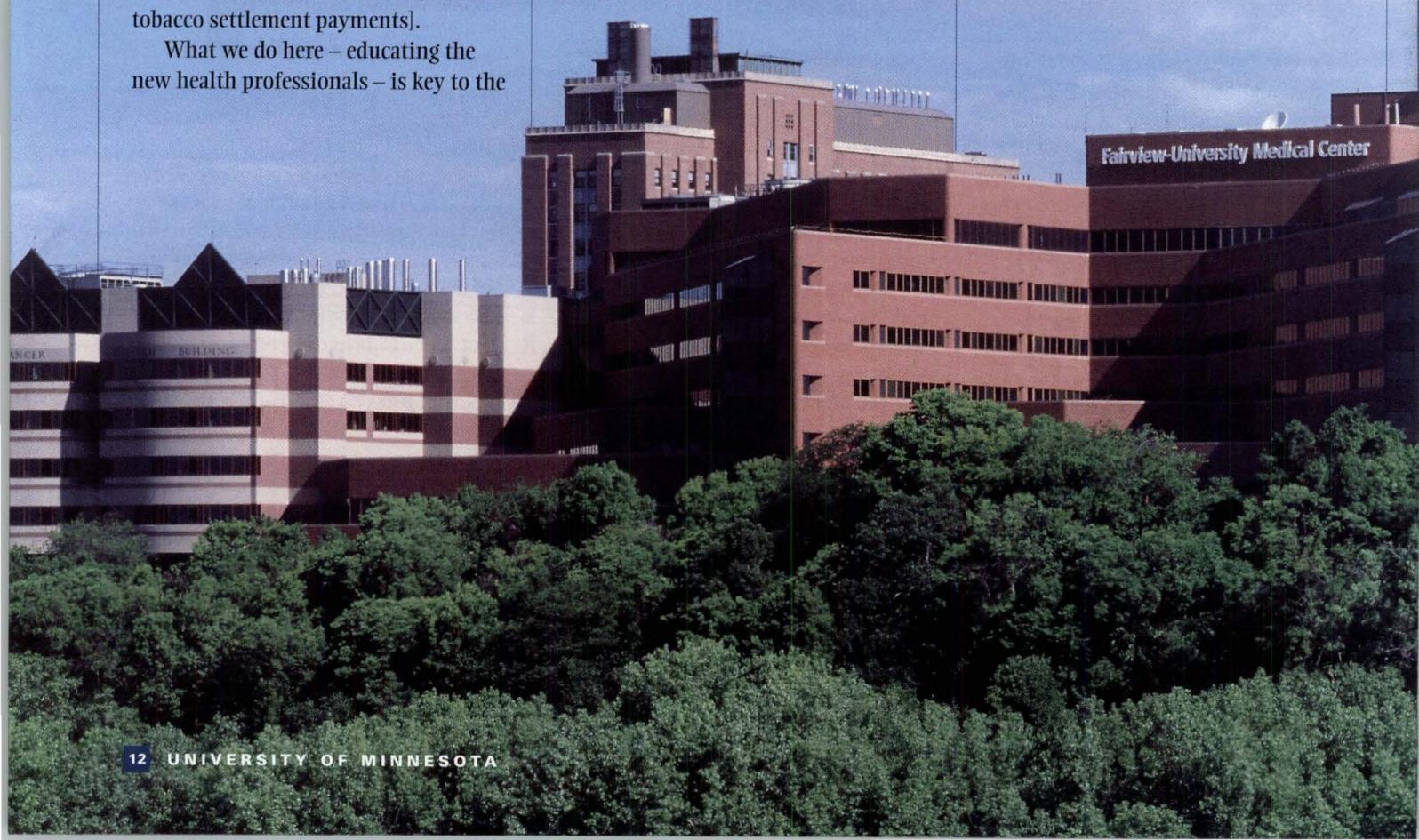
What we do here – educating the new health professionals – is key to the

future success, the future health, of this state. Indeed the work we do here contributes to Minnesota communities – it is recognized as valuable work that needs to be supported with public dollars. It is work that cannot be funded by tuition and private practice revenue alone. That is the mark of a very successful year. It also carries with it major responsibility, and a need to meet the expectations of the people who gave this vote of confidence.

The people – through both the legislature and the governor's office – resoundingly endorsed our central vision. It is our role, through the colleges and schools of the Academic Health Center, to prepare the new health professionals for Minnesota who will improve the health of our communities, discover and deliver new treatments and cures, and strengthen the economic vitality of our health industries.

The people in Minnesota want to know that when they need health care from a doctor, from a nurse practitioner, from a pharmacist or a dentist – that those health professionals are accessible and available. And they want to know that they'll be available in their home communities. That means that our schools are preparing enough professionals to meet the health needs of Minnesotans today – and into the foreseeable future.

The opportunity here is for us to partner with the National Institute of Health Policy (NIHP), the Minnesota Department of Health, health systems and planners, and others to develop a sort of blue-



print for the future health workforce – called *Health Vision 2013: System Redesign for the Future Workforce*. We know that the leading edge of the baby boom will reach the age of 65 in 2013. Although there's nothing particularly magical about the age of 65, we do know that chronic health conditions start to require more care, and become more frequent, at that age.

Through a series of focused dialogues with top health leadership, NIHP is developing a series of pilot projects to test innovative and more cost effective ways to deliver care.

Another aspect of this public expectation involves improving the health of our communities. As average ages increase – and we all live longer – the

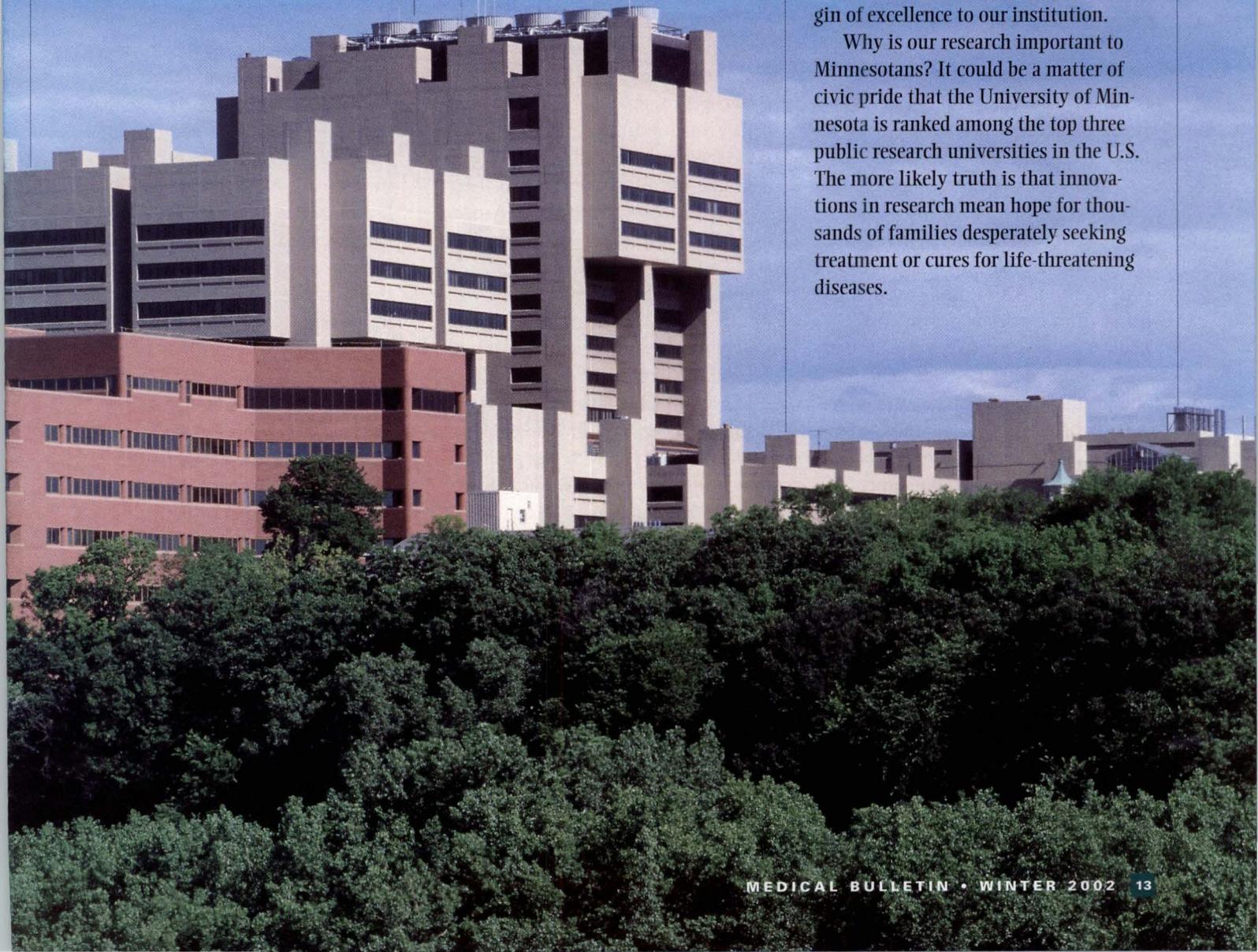
public expects health professionals to teach them how to live better. In Minnesota alone, the population of those over the age of 65 will nearly double in the next 10 years. That means we will need health professionals who have the skills to improve quality of life – as well as treat disease.

This goal of our strategic plan also provides a perfect opportunity for partnering. We know that schools are taking on more in the way of health screenings. We know that communities of faith are interested in health issues. We know that health is being added to the agenda for a number of government agencies. Each of those is an opportunity for this public university's Academic Health Center. No one group, agency, or institution can tackle health improve-

ment alone – we must partner, collaborate, and leverage each other's resources.

The public also expects that the University will maintain its position of leadership in research. This requires an investment in faculty and space. We clearly stated that we needed public funding to expand our capacity in research – with money to recruit physician scientists. We're less than a year away from the move into the new Molecular Cellular Biology building and we are committed to building the Translational Research Facility, giving us the capacity to hire 50 to 60 new faculty. We now also will have the resources to initiate this process. Those public dollars are leveraging increased philanthropy through both of our foundations with their successful capital campaigns. Those private dollars provide the margin of excellence to our institution.

Why is our research important to Minnesotans? It could be a matter of civic pride that the University of Minnesota is ranked among the top three public research universities in the U.S. The more likely truth is that innovations in research mean hope for thousands of families desperately seeking treatment or cures for life-threatening diseases.



State of the Academic Health Center *(continued)*

Today's greatest research innovations are taking place where disciplines touch. It's on the edge of dentistry and medicine, for example, where some of our best work in pain management is taking place. There is great hope in the new connections being forged between veterinary medicine, medicine, and public health, surrounding food safety and health.

We also need to work with our colleagues across the University to truly develop a culture that values diversity. What I mean by that goes far beyond the color of the faces in this institution – what I mean when I speak of valuing diversity is a culture that welcomes all differences, that actively seeks diverse views, perspectives, and ideas. We need to aggressively develop a culture that says: we can't be true healers if we don't seek to understand and respect each other's beliefs, ethnicity, heritage, history, and memories. That – in my mind – is the culture we need to develop.

There's one final area of interdisciplinary effort that focuses on expanding our traditional understanding of health care. It is the interdisciplinary collaboration that's leading to what's being called the "New Healer." We know from evidence-based science that there's more to health than medicine and treatments. We also know from science that faith, prayer, and spirituality can all play an important role in healing. We know there are allopathic, homeopathic, and naturopathic types of health care with staunch adherents – and we here at this public University need to welcome the opportunity to explore these frontiers.

With all professions, we need to be concerned with the adequacy of the workforce to meet the needs of an aging population, and the increase in chronic dis-



Frank B. Cerra, M.D., Senior Vice President for Health Sciences

ease in Greater Minnesota as well as the Twin Cities – particularly for the disadvantaged, where major health disparities continue to exist. How do we as the institution charged with meeting these challenges respond to them? As I said before, the health disciplines cannot do it in isolation from each other.

What this illustrates to me is that we can work our way through change and be successful. In each of our professions, we have to learn to recognize, understand, and frankly, embrace change. Change is the chronic condition of modern health care and, it too, presents an opportunity.

I want to make a very clear statement about the Medical School. This Medical School is now better positioned than nearly any in the nation to be successful. We are moving up the ranks in NIH funding – we're competing successfully in many areas, and we have yet to invest in our planned new faculty – our new physician scientists in the priority areas of growth.

We now have an added sustainable source of funding from the AHC endowment to pay for educational effort in the school. And there is a newly

focused, invigorated emphasis on key research priorities – a much-needed priority setting that's already having an impact.

The key to future success at this point is one mentioned recently by President Yudof – it's a forward-looking attitude that is open to change and willing to anticipate changes in society by more closely reflecting the society we serve. That's a whole new perspective – and one I'm beginning to see among my colleagues and peers.

We are sitting here at a moment of great opportunity based on great expectations for our institution. Here at the University of Minnesota, we've inherited a great legacy from the legends that came before us – in each of our professions. I believe strongly that one's history has a lot to do with who you are today – and I believe that understanding who you are today is necessary to be effective in creating the future, much of which is what we make it.

This Academic Health Center has had Katherine Densford in nursing, Owen Wangenstein and Walt Lillehei in medicine, Ancel Keys in public health, and many, many more from the past. We need to recognize that a great heritage often provides a great box for the future, restricting activity within its corners.

Today's expectations are telling us that we need to break open this box of our heritage. We have the same caliber of faculty now as we've had before. We have the public support and the support of the University. We have the resources to get going and the momentum to create more. We have the faculty and leadership. This is our opportunity to create the future for the health professions to meet the health needs of Minnesota communities and discover and disseminate that new knowledge. That future is in your hands – I look forward to accomplishing great things with all of you. ■

Earl Bakken: Enhancing the QUALITY OF LIFE

The creator of the
first wearable,
battery-powered,
transistorized
cardiac pacemaker,
and numerous other
medical devices,
has never lost sight
of the fact that
“high touch” is just
as important as
“high tech.”



EARL BAKKEN: ENHANCING THE QUALITY OF LIFE

It may seem a long way – in miles and in mind-set – from the high-tech labs of Medtronic, Inc., to the “healing island” of the Five Mountain Medical Community in Hawaii, but for Earl Bakken, the journey has not been an about-face of his dreams and philosophies. Rather, it is a natural extension of his desire to alleviate suffering and enhance quality of life.

Bakken is legendary for his pioneering work with pacemakers, his co-founding of Medtronic – one of the world’s great technology corporations – and his strong connections to the University of Minnesota.

Less known is his passion of the past decade, spearheading the Five Mountain Medical Community on the Big Island of Hawaii, and its “hospital of the future,” North Hawaii Community Hospital.

A SPARK OF LIFE

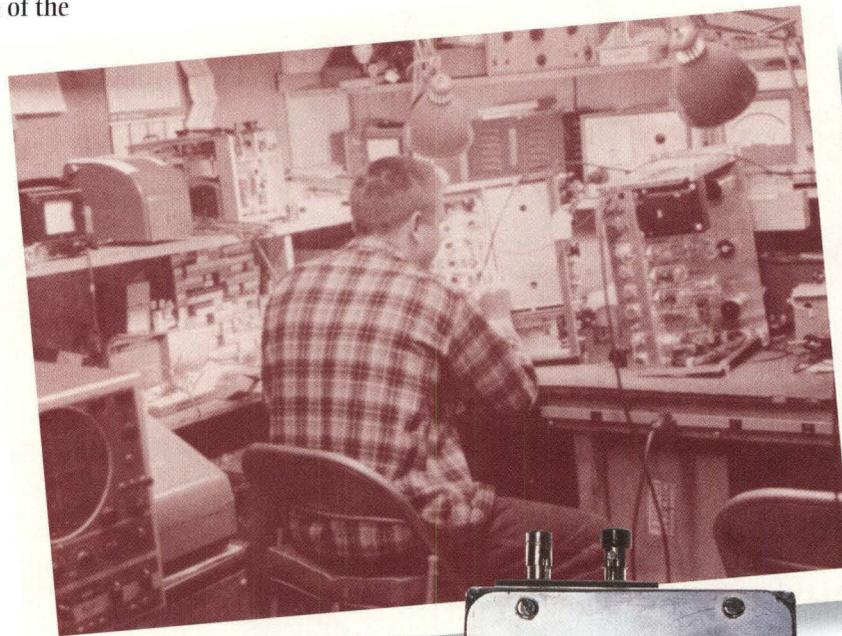
It’s been more than half a century since Bakken and his brother-in-law, Palmer Hermundslie, set up shop in a Northeast Minneapolis garage with an entrepreneurial zest aimed at an untapped market – the repair of medical equipment. The two young men called their company Medtronic, a contraction of “medical” and “electronic,” and in the first month of business grossed a total of eight dollars for the repair of a centrifuge.

Bakken had been intrigued by electricity and science since childhood, with not a small degree of inspiration coming from the film *Frankenstein*. What fascinated him most, Bakken recalls in his book *One Man’s Full Life*, was “the creative spark of Dr. Frankenstein’s electricity. Through the power of his wildly

flashing laboratory apparatus, the doctor restored life to the unliving.”

It wasn’t long before the start-up Medtronic began to establish strong ties with the medical and research staffs at the University of Minnesota, repairing and customizing medical devices for a variety of uses.

“Cardiologists at the University of Minnesota were beginning to do some heart catheterization in the



Above, Earl Bakken at work at the fledgling Medtronic, Inc., in 1950. Right, the first pacemaker, delivered to the University in 1957.



course of their pioneering work in open-heart surgery,” Bakken says. “After we would sell them, say, a multi-channel recording device for the cath lab, we would set up the equipment, help train the personnel in its use, and then be on hand to troubleshoot and repair it when necessary.”

The fact that Earl Bakken was on hand on an October day in 1957 would

change the course of history for patients suffering from cardiac disorders.

Dr. C. Walton Lillehei and his team had been making significant strides in the promising new area of open-heart surgery, including operations on infants to repair congenital defects of the heart. Bakken notes that the procedure, while effective, often interfered with the ability of the baby’s heart to

conduct the electrical impulses that sustain a steady beat, resulting in a condition known as “heart block.”

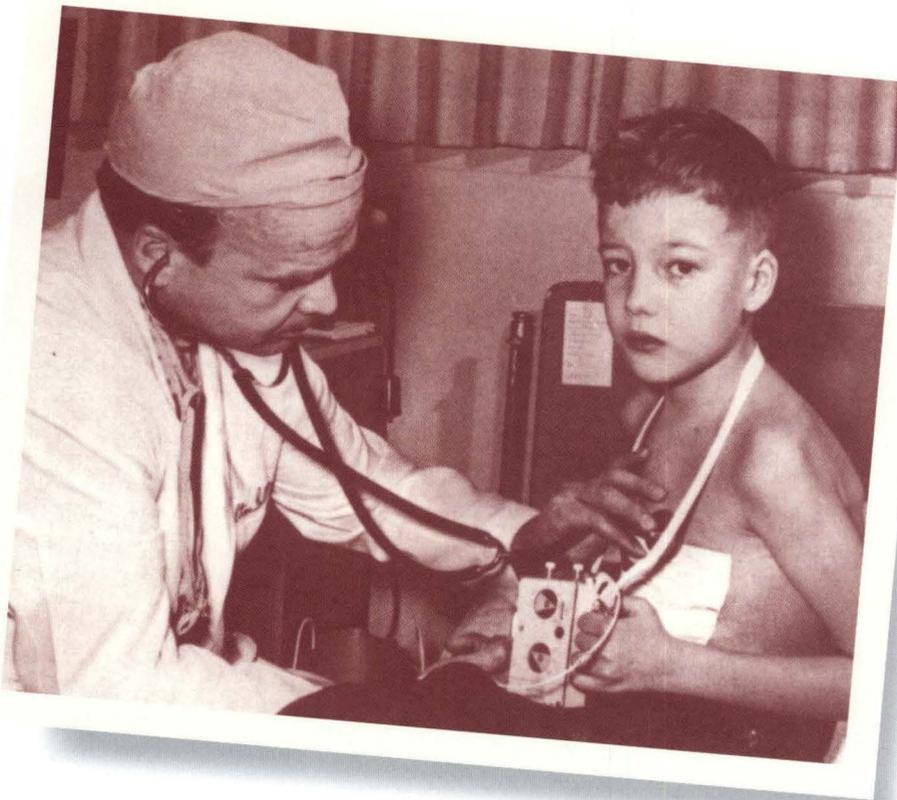
It had been shown that the heart would respond to an electrical shock to the chest, but this was too painful to be continued for any length of time. Lillehei theorized that if wires could be attached to the heart muscle itself,

it might be possible to apply mild electrical impulses that would be perceptible to the heart, but not to the patient.

The theory worked, but the patient had to be tied to a very large machine that provided

the regulated pattern of impulses – a machine that was dependent on a constant supply of electricity. Following a power outage on that day in October that threatened the lives of Lillehei’s tiny patients, he wondered if it would be possible to make a portable device that would do the same job.

The problem was presented to Earl Bakken, who was well-known at the



Dr. C. Walton Lillehei is featured in the *Saturday Evening Post* with a young patient wearing an early version of the pacemaker.

University for his ability to solve perplexing medical equipment problems. Bakken went to work, and within just a few weeks, returned to Lillehei with a battery-powered device small enough for a patient to wear around the neck or waist – the first wearable pacemaker. This fledgling relationship between the visionary Bakken and the University of Minnesota would grow into a powerful partnership – benefiting millions.

By the end of 1960, Medtronic had become a pioneer on the new frontier of implantable medical therapy. Today, the \$5 billion company has more than 25,000 employees around the world.

Bakken's desire, from the very beginning, has been to restore "full life" to real people the world over. The Medtronic mission statement, crafted in 1962, has not changed in nearly four decades:

"To contribute to human welfare by application of biomedical engineering in the research, design, manufacture, and sale of instruments or appliances that alleviate pain, restore health, and extend life."

A HEALING PLACE

On April 20, 1996, says Earl Bakken, "I witnessed a miracle." On this day, a small, rural hospital on the Big Island of Hawaii was dedicated. It was no ordinary hospital.

The opening of North Hawaii Community Hospital wasn't the first miracle Bakken had witnessed. "Forty years earlier I watched a small electrical device – cobbled together with spare parts according to a diagram for an electronic metronome borrowed from a popular magazine – keep an infant heart patient alive."

For Earl Bakken, retirement to his beloved Hawaii became an opportunity to embrace a new vision – continuing his lifelong philosophy of making the world a better place.

CENTER FOR SPIRITUALITY AND HEALING

Earl Bakken has supported the Center for Spirituality and Healing at the University of Minnesota since its inception in 1995. The mission of the center is to promote interdisciplinary education, research, and patient care that integrates biomedical, complementary, cross-cultural, and spiritual aspects of care. The center's vision is to become a national model of integrative health care by emphasizing self-care and personal responsibility and by exploring choices in health and healing.

In 1999, the center established the country's first interdisciplinary graduate minor in complementary therapies and healing practices – with training provided to both practicing health professionals and students.

Working with the Medical School, the center has developed a comprehensive plan and approach for weaving integrative medicine throughout the four-year Medical School curriculum. The Medical School has begun training future practitioners using evidence-based, complementary approaches to healing.

The center has initiated and facilitated research in complementary care with colleagues throughout the University, and offers innovative continuing education programs that reach health professionals throughout the region. The center is also a founding member of the national Academic Health Center Consortium on Integrative Medicine.

MIND BODY SPIRIT CLINIC

Reluctant at first, and looking forward to fully enjoying the wonders of his adopted Hawaii, Bakken and his wife Doris were quickly drawn into the struggles of north Hawaii citizens to build a hospital. The northwest corner of the Big Island of Hawaii, the poorest of the Hawaiian islands, lacked an up-to-date medical facility and the population was in poor health compared to other areas of the 50th state.

"Truth be told," says Bakken, "it wasn't only the community's need and the dedication of my new neighbors that drew me in. It was the opportunity to explore some of the ideas involving holistic medicine I had acquired over the past several years.

"It was the once-in-a-lifetime chance to help build – from the ground up – a state-of-the-art health care facility designed around and for the patient, not the health care professional, and that incorporated, for the patient's sake, the best of all kinds of medicine, allopathic and 'alternative' alike."

Bakken explains his excitement at once more becoming involved in something "new and important and large enough to revolutionize the treatment of suffering human beings. Our primary concern," he says, "would be the health and well-being of the people of north Hawaii, but what we accomplished here could change the way health care is perceived and provided the world over."

There were a number of ways North Hawaii Community Hospital would be different, as laid out by Bakken in his vision for the hospital:

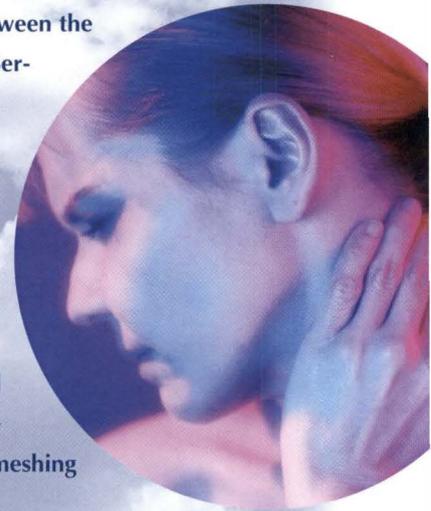
- The new hospital would be patient-centered – a healing instrument providing a total healing environment. Patients would have pleasantly furnished rooms with access to the out-of-doors, savory and nutritious meals,

Two years ago, the Center for Spirituality and Healing established the Mind Body Spirit Clinic – a partnership between the Academic Health Center and Fairview Health Services – to provide patient-centered, integrative care and to serve as a site for education and research.

Similar to Earl Bakken's vision, the clinic is working to close the gap between conventional medicine and complementary therapies such as massage, acupuncture, herbal therapy, and clinical hypnosis. It is a place where traditional physicians and complementary therapists come together to enhance health and well-being by meshing their knowledge and skills.

For example, the clinic's medical director, Sharon Norling, M.D., is conducting a study aimed at testing the effect of complementary therapies in women with ovarian cancer – by including massage, healing touch, and hypnosis in the care regimen.

Classes offered through the Mind Body Spirit Clinic include: Alternative Therapies for Depression, Clinical Hypnosis, Yoga, and Tai Chi for Arthritis.



The entrance and lobby of North Hawaii Community Hospital.



EARL BAKKEN: ENHANCING THE **Q**UALITY OF LIFE

liberal visiting hours, ready access to their medical records, and an open relationship with the entire staff.

- The new hospital would practice “integrated” or “complementary” medicine. The facility’s medical staff would be open to a variety of healers and healing techniques that might not have been part of the conventional western medical school curriculum. The methods and techniques employed would serve to “turn on” the natural healer within the patient.
- The new hospital would play a major role in teaching harmony in people’s lives. Part of that harmony derives from the state of health of the physical body – that largely mechanical, chemical, electrical entity in which we live – but the other, equally essential components are the mind and the spirit.

As Bakken explains, “I’ve devoted most of my life to the development of leading-edge electronic devices, but I’ve learned that technology is most effective – in many cases is effective only – when combined with the awesome power of the human mind, spirit, and hand.”

When North Hawaii Community Hospital opened in 1996, it was unlike any other. Besides healing music floating throughout the rooms, doorways that open to the outside from patient rooms, nursing desks for every eight patients, pets allowed in rooms, and artwork chosen by each patient to personalize the room, the hospital makes available numerous choices of complementary care. Chiropractic, massage, acupuncture, and naturopathic practitioners are available to patients.

“We believe we must refocus health care resources, from health care professionals to the public itself, on the responsibility of each person for his or her health and wellness,” says Bakken. “We must cultivate a new class of health care professional who has the ability to diagnose by sight, smell, and feel as well as by high-tech devices, and to heal by touch (as well as by device and drug) in the wonderful bedside-manner tradition of the old-fashioned family doctor.”

Typical of the hospital environment is Papa Auwae, an often-requested 92-year-old Hawaiian elder who treats patients using traditional Hawaiian herbs and procedures. He talks about the harmony of mind, body, and spirit as necessary for recovery. At the hospital, he prays with patients who request his help, delves into their emotional life, recommends diets, and prescribes herbal treatment.

Early on Bakken believed an educational center was needed to complement the hospital, and that dream has taken shape in a facility named Tutu’s House. In native Hawaiian culture, Tutu is your grandmother, who, by virtue of her age and experience, is a keeper of much knowledge, good sense, and love. When you are troubled or ill, you go to Tutu’s house for counsel and comfort.

Bakken and his neighbors wanted their own Tutu’s House, where the entire community could come for education and outreach. Today, Tutu’s House offers not only the highly effective touch of the wise elders on the staff, but also information in print and video about health and disease, computers which allow visitors to surf more than 100,000 medical websites, and an ongoing series of special community-oriented programs covering everything from healthy diet to cancer and diabetes support to teenage parenting to playing the ukulele.

CARDIAC ARRHYTHMIA CENTER

The Cardiac Arrhythmia Center at the University of Minnesota follows in the footsteps of Earl Bakken as it provides clinical and research expertise to the ever-growing industry of pacemakers and related heart rhythm

treatment devices. The center is committed to bringing state-of-the-art care to patients with heart rhythm disturbances, fainting spells, pacemakers, and implantable defibrillators.

Research at the University of Minnesota – beginning with Bakken’s early pacemakers – spawned an extensive network of companies engaged in the provision of specialized treatments for heart rhythm problems, led by Medtronic, Inc. The Twin Cities region is a world leader in the manufacture of these devices, and as a result, patients at the Cardiac Arrhythmia Center benefit from the availability of the most advanced heart rhythm treatments at the earliest possible stages of development.

The center has evolved over the past 20 years into an internationally recognized resource, receiving referrals from throughout North America. The center sponsors educational programs for physicians and nurses, and its staff members are frequent participants in national and international conferences on the management of heart rhythm problems.

EARL BAKKEN: ENHANCING THE QUALITY OF LIFE

The dream has expanded to include not only North Hawaii Community Hospital and Tutu's House, but has grown to embrace the entire Big Island's Kohala Coast as "nature's healing island." The Five Mountain Medical Community organization has been formed to promote the health and healing resources of northwest Hawaii. The hospital and its encircling culture of wellness has not only benefited patients, but has provided hundreds of jobs for local citizens and bolstered the economy of the entire region.

BLENDING MEDICINE FOR THE FUTURE

Earl Bakken's dream goes far beyond the sandy beaches of Hawaii. He has a vision for sharing the philosophy of North Hawaii Community Hospital with the world – for attracting patients and medical practitioners from places thousands of miles away. In turn, he dreams of exchanging knowledge, both high tech and high touch, with other caregivers, medical centers, and medical schools – especially with his own University of Minnesota.

"To some folks I may seem, at least from a distance, a round peg in a square hole," says Bakken. "The creator of the world's first battery-operated wearable cardiac pacemaker and one of the pioneers of the electronic implantable medical-device industry wholeheartedly embracing spiritual healing and other decidedly 'low-tech' responses to what ails us as human beings may seem peculiar indeed ... The truth is, my belief in a holistic approach to healing and health is simply an addition to, and integration with, my long-held ideas, ideals, and philosophies."

Bakken is excited and encouraged by a number of programs underway at the University of Minnesota. And in fact, his support and philosophy have been the impetus for the leadership role the

University has taken in the field of complementary medicine.

The University's Academic Health Center (AHC) has become an interdisciplinary center of excellence in complementary care, with a goal of serving Minnesota and the nation through research and development of innovative models of education and patient care that reflect integration of conventional, complementary, spiritual, and culturally appropriate approaches to healing. The AHC was one of the first in the country

to launch an interdisciplinary effort of this scope and magnitude.

"We must expand our traditional understanding of health care," says Frank Cerra, M.D., senior vice president for health sciences. "We know from evidence-based science that there's more to health than medicine and treatments. We also know from science that faith, prayer, and spirituality can all play an important role in healing. We know there are allopathic, homeopathic, and naturopathic types of health care with

CHRONOBIOLOGY

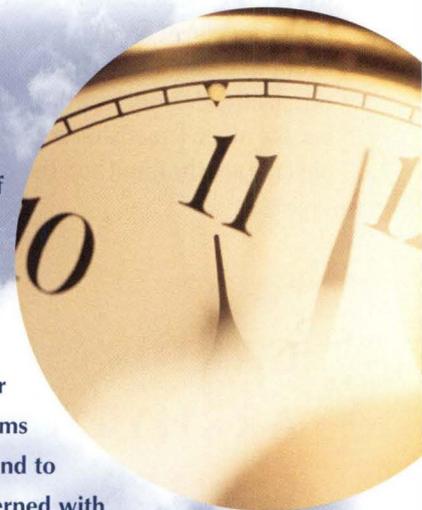
Earl Bakken has a long-time interest in the field of chronobiology, and the work done over the years by the University's Franz Halberg, Ph.D., professor in the Department of Laboratory Medicine and Pathology.

Chronobiology refers to the relationship of our minds and bodies to time, to the cycles and rhythms that relate to our physical and mental activities, and to the parameters of our physical activity. It is concerned with how changes in time of day, day of the week, and week of the month affect our minds and bodies.

According to Bakken, an acute awareness of these patterns and fluctuations can greatly improve our understanding of physical ailments. In his book *One Man's Full Life*, he uses the measurement of blood pressure as a prime example of the need for a chronobiological approach to health care.

"It's been estimated that fully half of the treatment for high blood pressure in the United States is unnecessary," writes Bakken. "Many of those treated for the disease were simply measured at the wrong time of day. Conversely, many others who do have high blood pressure may go untreated because measurements are not taken at a time of day when their blood pressure is elevated."

Bakken emphasizes that the techniques of concepts such as chronobiology are not intended to replace conventional medicine. "We are advocating significant adjunctive and complementary approaches to the medicine we know now – a powerful combination of the best of both high-tech and high-touch therapies."



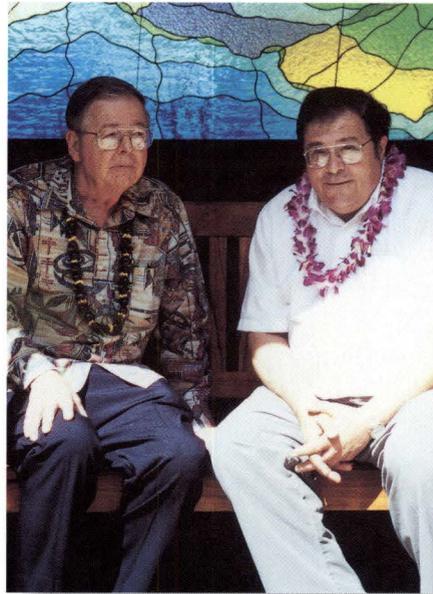
staunch adherents – and we here at the University need to welcome the opportunity to explore these frontiers.”

As Earl Bakken knows, creating an interdisciplinary complementary care program involves educating, training, and integrating professionals from all areas of health care. As a first step, in 1997 University of Minnesota health sciences students were given the opportunity to take a course called “Introduction to Complementary Healing Practices,” which explored the theories, cultures, and research bases of biomedicine, complementary, and cultural healing practices. Students had opportunities to experience hypnosis, biofeedback, meditation, prayer, traditional Asian medicine, chiropractic, massage, and other therapies.

The goal of this and other related courses is to produce graduates from the AHC health professional schools who demonstrate specific abilities related to complementary, spiritual, and cultural care.

“We aggressively treat the human body with surgery, drugs, and devices, and the mind is routinely left out of the equation,” says Bakken. “However, it is very interesting to note that technology usually works much better if the mind of the patient is made a part of the process. I know from my own work at Medtronic that we have much better results with certain devices when patients understand the device, believe in its effectiveness, and appreciate the implications of living with it inside them.”

Mary Jo Kreitzer, Ph.D., R.N., director of the University’s Center for Spirituality and Healing, echoes Bakken’s beliefs. “We need to continue to provide leadership,” she says. “The Academic Health Center has not only an opportunity but a responsibility to fill that role. We have to continue to build our center of excellence, to develop the research that must be conducted in this



Earl Bakken and Dr. Frank Cerra, Senior Vice President for Health Sciences at the Academic Health Center, in Hawaii

area. We are creating a very innovative, interdisciplinary model of education and patient care that reflects the best of integrated complementary and allopathic care.”

Earl Bakken is keeping close watch on what the University is doing, and is offering his support in many ways. He meets with researchers and staff in a number of key areas – spirituality and healing, chronobiology, cardiology, arrhythmia, and bioengineering – exchanging information and formulating plans for the future.

“This is very exciting stuff,” he says. “We’re talking here about paradigm shifts in medicine. Much of this would have been unthinkable just a few years ago. Many institutions are now moving in the holistic direction, but the various pieces are probably not as well integrated as they are at the U.”

It’s extremely gratifying to Bakken to be part of this coming together – whether in Hawaii or in Minnesota – and to experience the fulfillment of his vision of a new day in health care.

He talks frequently about one of his life’s themes, which has turned his visions into reality: *Ready, fire, aim!*

- We get *ready* by setting a personal mission, which includes a set of values, a goal that helps humanity, and a meaningful role for your life. We get ready by continued learning and education, by continually feeding our minds with information. We get ready by developing a belief in our intuition. We visualize results – and hold that vision until it’s a reality.
- We *fire* by acting on our vision and values. We take the first steps, even if the direction isn’t clear. We do something, understanding that one person can make a difference. We take responsibility for what we do. We act like a leader. We walk the talk and set the way.
- How do we *aim*? We try again. Our first 10 attempts may not succeed, but the education we gain by trying is very important, and success will come with persistence. We flood our minds with information, read incessantly, examine the reasons we haven’t succeeded, and fire again.

Earl Bakken has been a visionary his whole life. His legendary contributions through the invention of the cardiac pacemaker and the other life-changing medical devices created by Medtronic have had a worldwide impact. But he is not done. He is once again on a mission to relieve suffering and provide the very best in health care for the whole person.

“My journey has been – and continues to be – not a narrowing of perspective like a railroad track receding in the distance, but a widening of scope and possibility, like the rising of the sun above vast Mauna Kea.”

by Jean Murray

University of Minnesota Medical School: Meet the Class of 2005

ENTERING CLASS DEMOGRAPHICS

Total applicants	1,654	States represented	20
Total selected	165	U.S. colleges and universities represented ..	82
Minnesota residents	119	Minnesota colleges and universities represented	19
Age range	20 to 45	Total number of majors represented	39
Overall GPA	3.63		

Doctors who attended medical school a few years back might not recognize the high-tech, 21st century world that surrounds today's entering students.

With the click of a mouse, they can access a video of an entire lecture through Lectures Online – any time of day – if they missed class or just want to review. And, by checking out the latest medical software on their PalmPilots, they can find information on diseases, diagnosis, prognosis, treatments, drug data, and more, in seconds.

Obviously, medical school is much different in the year 2001 ... and so are the students. “At orientation I told the entering students that I could



Marilyn Becker, director of admissions, University of Minnesota Medical School

not describe the ‘typical medical student’ because they all vary so much in age, cultural aspects, backgrounds, and majors,” says Marilyn Becker, director of admissions, University of Minnesota Medical School.

“Some students come with stronger human services experiences, others with stronger research backgrounds. They may be returning to school after other careers or beginning medical school immediately after completing bachelor’s degrees.”

This variety reflects the Medical School’s dedication to recruiting and training for a variety of career paths in medicine. “This is a real strength of our school,” says Becker. “We are

bringing in students who will be primary care physicians as well as specialists and teachers. We are also thinking of the needs of our state in areas such as rural health, clinical research and teaching, and health care leadership.”

Prospective Medical School students go through an extensive application and interview process. Not only must they do well academically, competitive applicants must have demonstrated commitment to medicine and service.

“Our expectation is that they’ve had exposure to the field of medicine and that they are strongly motivated,” Becker says.

“For example, some service-related experience in medical settings is helpful – such as volunteer service or physician shadowing. Other experiences such as research and

Continued on p. 24

Class of 2005: SCOTT HOLTHUSEN

With a passion for sports and a talent in biology and chemistry, sports medicine would seem like a natural fit for Scott Holthusen of Wahpeton, North Dakota. But, he wanted to make sure.

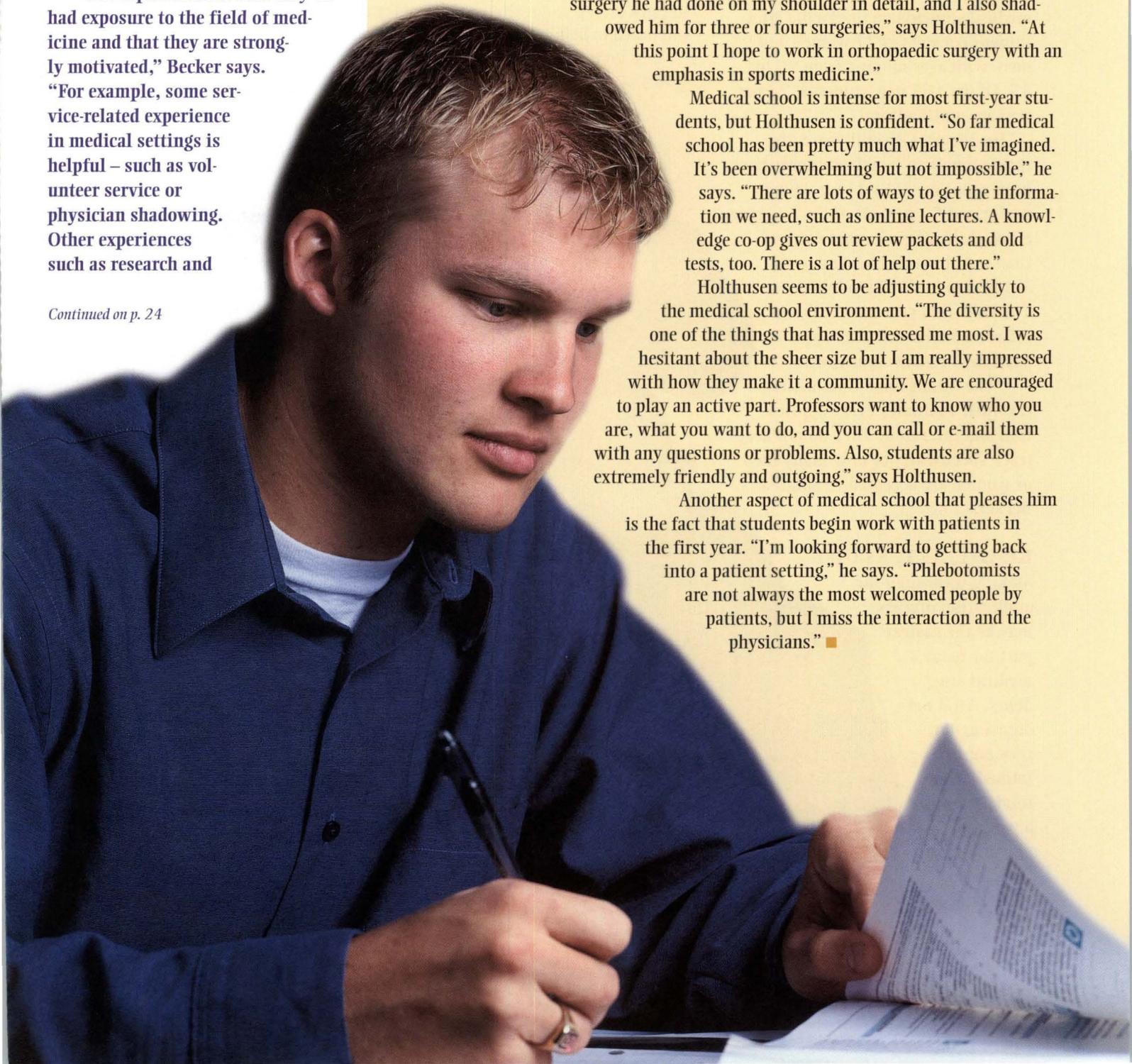
After graduating from Concordia College in Moorhead, Minnesota, where he majored in biology and played football, Scott spent a year working. “I took a year off to make sure medicine was right for me,” he explains. “I worked at a hospital doing phlebotomy [drawing blood samples from patients].” After finding out how much he enjoyed the patient interaction, Holthusen applied to several medical schools and is now attending his first choice, the University of Minnesota.

As an athlete, Holthusen had many occasions to learn about health care first hand – shoulder surgery, knee surgery, and minor pulls, for example. His experiences as a patient significantly influenced his decision to pursue medicine. “The orthopaedic surgeon who worked on me, Dr. Phil Johnson, is the kind of surgeon I’d like to be. He explained the surgery he had done on my shoulder in detail, and I also shadowed him for three or four surgeries,” says Holthusen. “At this point I hope to work in orthopaedic surgery with an emphasis in sports medicine.”

Medical school is intense for most first-year students, but Holthusen is confident. “So far medical school has been pretty much what I’ve imagined. It’s been overwhelming but not impossible,” he says. “There are lots of ways to get the information we need, such as online lectures. A knowledge co-op gives out review packets and old tests, too. There is a lot of help out there.”

Holthusen seems to be adjusting quickly to the medical school environment. “The diversity is one of the things that has impressed me most. I was hesitant about the sheer size but I am really impressed with how they make it a community. We are encouraged to play an active part. Professors want to know who you are, what you want to do, and you can call or e-mail them with any questions or problems. Also, students are also extremely friendly and outgoing,” says Holthusen.

Another aspect of medical school that pleases him is the fact that students begin work with patients in the first year. “I’m looking forward to getting back into a patient setting,” he says. “Phlebotomists are not always the most welcomed people by patients, but I miss the interaction and the physicians.” ■



leadership are also important.

"And, we consider whether they have the personal traits, like compassion, that are needed in a physician. Simply put, is this person going to be a successful medical student and an exceptional physician?"

"They also need to be knowledgeable about the challenges facing medicine, to understand to some degree the field they will be entering. Because, when they enter medical school they are entering the medical profession," says Becker.

This year's entering class of 165 medical students on the Twin Cities campus consists of 71 women and 94 men, with ages ranging from 20 to 45. Of the 165 new students, 22 percent are multicultural.

For the past several years, the ratio of male to female students has been about even. Last year women comprised 53 percent of the entering class, the first time more women than men became University of Minnesota medical students. The shift this year may only reflect a difference in the proportion of female applicants.

"The Admissions Committee carefully evaluates every application and interview. They do not keep track specifically of how many men or women are accepted," explains Becker.

READY, SET, STUDY

Making it through the application process may be the easiest part for today's medical students. After orientation day, they are immediately immersed in a world of new information, experiences, and

Class of 2005: AIMEE ENGBRETSON

The average age of a University of Minnesota first-year medical student is about 24 years old. Aimee Engbretson is above average, in more ways than one. She is 30 years old, and has just begun her medical school education.

In Engbretson's words, she has a "very random background." After graduating from Northwestern University in Chicago, where she majored in political science and literature, Engbretson traveled. Then, she took an internship with Senator Paul Wellstone, focusing on domestic violence issues. Later she moved back to Minneapolis and worked in children's publishing. Her next move was to New York City to manage production for a fashion design company. Finally, she went to New Mexico where she worked in retail and "did some serious soul searching," as she puts it.

All of this led to medical school. "I had always thought about medicine throughout this process, yet I wasn't sure it was the right thing for me," explains Engbretson, "When I stopped and thought about it, I realized I kept coming back to medicine.

"The idea of being a healer drew me to it. Partly what influenced me was becoming sick myself and realizing the connection between mind, body, and emotions. I am interested in helping people through life, with the physical and emotional."

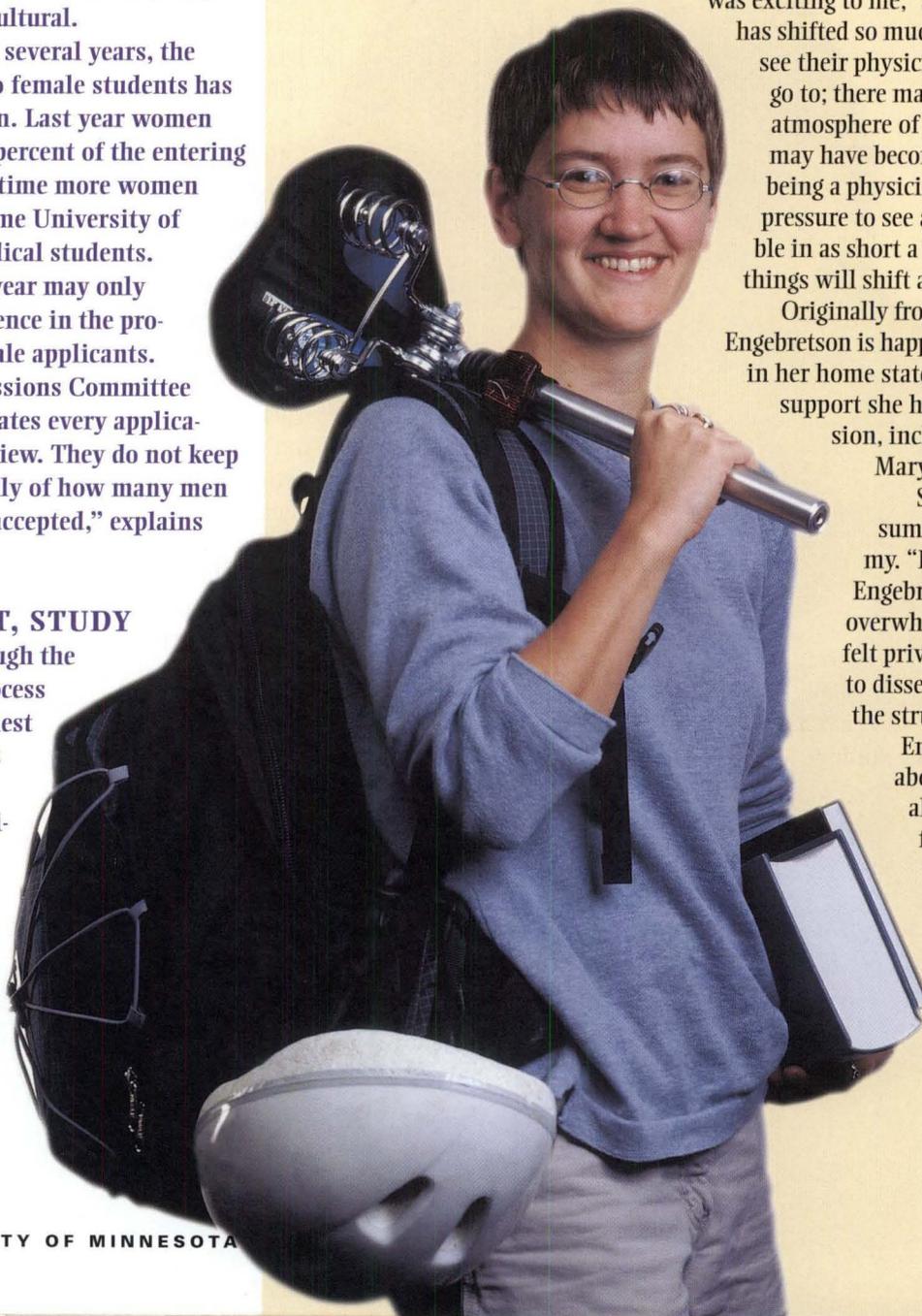
Engbretson's father is also a physician, in obstetrics and gynecology. "I saw the reality and still wasn't deterred. I got to see what he did, on a daily basis, and that was exciting to me," she says. "The climate

has shifted so much that people may not see their physician as a person they can go to; there may not be as much of an atmosphere of trust. And physicians may have become less satisfied with being a physician – there is so much pressure to see as many people as possible in as short a time as possible. I believe things will shift again."

Originally from Alexandria, Minnesota, Engbretson is happy to be near family again in her home state. She appreciates the support she has received in this decision, including the Royal C. and Mary H. Gray Scholarship.

She began classes last summer, starting with anatomy. "It is a lot of work," says Engbretson. "Anatomy was overwhelming but amazing. I felt privileged that we were able to dissect a body and learn about the structures."

Engbretson is excited about exploring international medicine and is looking forward to the possibility of working in another country. ■



challenges. It is an intense curriculum, but it is balanced by a supportive environment with much collaborative learning.

For example, second-year medical students help the first-years through orientation day, and many sign on as mentors to help the newcomers with the transition throughout the year. Second-year students also assist on the first day of anatomy class, which can be an overwhelming experience for some beginners.

While the first year of medical school is primarily lecture based, small-group “Physician in Society” lessons focus on other topics such as professionalism and ethics. Unlike in the past, when students often waited until the third year to work with patients, this year’s group will have some patient contact before the end of their first year.

Small groups are also integrated into the curriculum for case-based learning, which is a more direct application of science-based learning within the context of patient care. Direct clinical correlations are woven in to show students how the material they are learning relates to patient care.

Students also support each other, through study groups and programs like Knowledge Co-op, a resource for study guides and tutoring. Begun in 1988, the Knowledge Co-op is a peer teaching program run by second-year medical students. It offers large group reviews, practice lab situations, and individual tutoring.

For such a large school, the sense of community among the students, and professors, may be unusual, but it is not surprising. It reflects the Medical School’s successful efforts to recruit high-caliber students with the qualities necessary to become extraordinary physicians. And, just as important, it is a result of efforts to help those new students succeed as students and as future physicians.

by Jodi Ohlsen Read

Class of 2005: MATTHEW OSTRANDER

Matthew Ostrander is a trained aircraft mechanic ... and he is going to be a physician. The link between the two is not obvious at first, but the path Ostrander is following seems certain.

While working in North Carolina as an aircraft mechanic, Ostrander often felt that something was missing. It wasn’t until he was undergoing physical therapy for a shoulder injury that he began to realize he missed working directly with people.

“My injury was complicated, with nerve damage. Nobody could figure it out easily. As a patient, I experienced what it was like to really need someone’s help. I realized then that I want to be a person who can help.”

Medical school is pretty much what Ostrander expected, he says. But the fast pace and amount of information was a bit of a rude awakening. He is optimistic, and is self-assuredly tackling the huge volumes of new material.

“One pleasant surprise is that the University is working hard to make medical school more humane and to introduce us to patient care sooner,” says Ostrander. “In our ‘Physician in Society’ class we talk about ethics and what it’s like to be a doctor. It’s fun to be introduced to that in the first year. I think the class helps us put things in perspective.”

Ostrander is also pleased to be a recipient of the Royal C. and Mary H. Gray Scholarship, which provides tuition support for first-year students from rural areas. When he read the description, Ostrander, who grew up in Kettle River, Minnesota, knew he should apply. “I thought ‘this is really me.’ I wrote an essay and sent it in priority mail – it couldn’t hurt to try. I was really happy when I found out I was selected. For me, it makes a big difference,” he says.

He hasn’t chosen a specialty at this point but is considering neurology, rheumatology, and internal medicine. Right now he’s keeping his options open, to see where the path leads next. ■



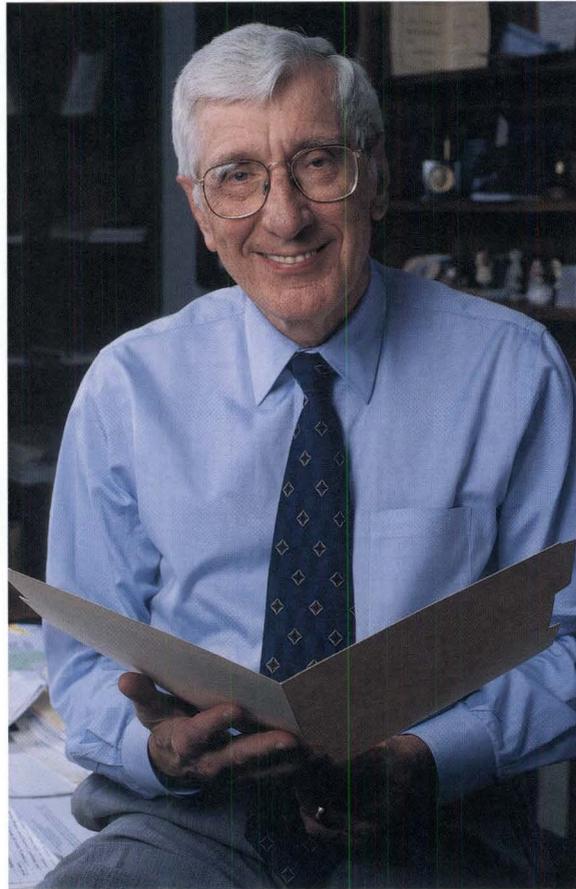
Dean Al Michael to step down

Alfred F. Michael, M.D., dean of the Medical School, announced September 20 that he plans to step down as dean in June 2002.

Michael came to the University of Minnesota as a post-doctoral fellow in 1960. In 1968 he was named professor and chief of pediatric nephrology, and in 1986 was named a Regents' Professor. A year later he was chosen to head the Department of Pediatrics. He became interim dean in 1996 and dean in April of 1997.

"My proudest moments in medicine have been to lead the University of Minnesota's Medical School through its dramatic transformation over the last five years," says Michael. "I will leave at a time when the Medical School is well-poised and financed to reclaim its position of excellence in medical education in this nation."

"Under the leadership of Dean Michael, the Medical School has established critical research priorities, expanded interdisciplinary efforts, enhanced community outreach



Alfred F. Michael, M.D.

and clinical care, and increased accountability to the people we serve," says Frank B. Cerra, M.D., senior vice president for health sciences. "Furthermore, the Medical School today operates in the black – a significant accomplishment for medical schools in this country."

Michael will remain on the faculty as a professor in the Department of Pediatrics.

Cerra has announced that the search process for a new dean of the Medical School is being put into place. Co-chairs of the search committee are E. Thomas Sullivan, J.D., dean of the Law School, William S. Pattee, professor of law, and Roby C. Thompson, Jr., M.D., professor of orthopaedic surgery and associate dean for clinical affairs. Committee members include a wide range of individuals from the University and the medical community. ■

U of M community clinic honored for mental health work

The Community-University Health Care Center/Variety Children's Clinic (CUHCC) mental health program was honored with a Certificate of Significant Achievement by the American Psychiatric Association at its national convention in Orlando October 10.

Called a model for culturally appropriate health care, the south Minneapolis clinic provides a range of affordable mental health services to underserved and high-risk communities. Multilingual paraprofessionals and culturally sensitive psychiatrists and nurses staff CUHCC's mental health program. The

program serves approximately 1,500 clients annually, with the help of care providers who speak Hmong, Lao, Cambodian, Vietnamese, Spanish, and Somali, in addition to English.

The staff has been recognized for being especially helpful to immigrants new to western medicine, educating not only the client but also family members and consequently the greater community.

CUHCC was founded in 1966 as an outreach initiative by the University of Minnesota to reduce infant mortality in a south Minneapolis neighborhood with some of the highest medical and social risk factors in the area. ■

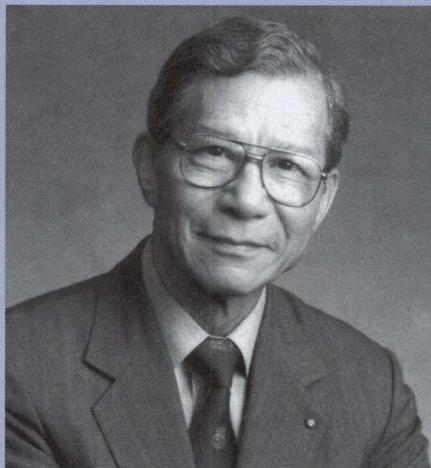
Neurosurgeon and former dean Shelley Chou dies

Shelley N. Chou, M.D., Ph.D., Professor Emeritus in the Department of Neurosurgery and former dean of the Medical School, died July 21, 2001, at his home in Rio Verde, Arizona.

Chou was born in China in 1924. He came to the United States in 1948 and received his medical degree from the University of Utah Medical School in 1949. He served his residency at the University of Minnesota, where he also earned a Ph.D.

He entered the residency program in the Department of Neurosurgery at the University of Minnesota in 1950, under the leadership of Dr. William Peyton. Chou left Minnesota after his residency for a clinical faculty appointment at the University of Utah, and then went to the National Institutes of Health where he focused his skills in neurophysiology.

In 1960, Chou returned to Minnesota to join the faculty of the Neurosurgery Department, then chaired by Dr. Lyle French. He



Shelley N. Chou, M.D., Ph.D.

became a full professor in 1968 and was selected to chair the department in 1974.

He pioneered early work in brain scanning and made major clinical contributions to cerebrovascular and spinal surgery. In 1996, he was awarded the American Association of Neurological Surgeon's highest honor, the Cushing Medal.

In 1989 Chou resigned as head of the Department of Neurosurgery, but in

1993 came out of retirement to serve as interim dean of the Medical School and deputy vice president for Medical Affairs at the request of then University President Nils Hasselmo. Hasselmo chose Chou because of his commitment to the University's reform agenda, and to help lead the management changes at the Medical School. He was chosen to head the school not only because of his stature as a neurosurgeon but because he was universally well-liked and respected.

"Shelley Chou's contributions to the care of patients and his leadership in the field of neurosurgery, both in Minnesota and nationally, were enormous," says Al Michael, M.D., dean of the Medical School.

Chou is survived by his wife, Jolene, and three children, Shelley Tien-mo, Dana Tien-wen, and Kerry Tien-shui Chou. The Shelley N. and Jolene J. Chou Chair in Neurosurgery has been established to honor the life work of Dr. Chou. ■

Landmark study offers hope to those with heart failure

The University of Minnesota is among the first in the nation to evaluate a mechanical heart assist device as a permanent therapy for end-stage heart failure patients. The evaluation was conducted as part of a groundbreaking randomized clinical trial, called REMATCH, the results of which were published in the *New England Journal of Medicine* in mid-November and presented at the American Heart Association's Scientific Sessions.

The report concludes that the heart assist device resulted in statistically and clinically significant improved rates of survival and quality of life for end-stage heart failure patients ineligible for heart transplants.

"The device is clearly an excellent alternative for those who are not candidates for transplantation," says Soon John Park, M.D., associate professor of surgery.

The REMATCH trial, which stands for Randomized Evaluation of Mechanical Assistance for the Treatment of Congestive Heart Failure, was a collaborative effort sponsored by the National Institutes of Health, Columbia University, and Thoratec Corporation. It was conducted at 22 sites nationwide, with 129 patients enrolled.

As a participant in this important trial, Fairview-University Medical Center is part of a nationwide effort to help people with end-stage heart failure find a new treatment choice and new hope for a longer and better-quality life. ■



Soon John Park, M.D.

Ollila named top alumni volunteer

Gene Ollila, M.D., Medical School Class of 1970 and current president of the Medical Alumni Society (MAS), was named Volunteer of the Year by the University of Minnesota Alumni Association at its national awards event September 14.

Ollila has brought a positive outlook and a considerable professional reputation to the leadership of the Medical Alumni Society, and has been instrumental in helping MAS re-emerge as a vital supporter of the Medical School and its students. He sought out fellow positive thinkers from many medical disciplines to serve with him, and added student representatives from each class and from the School of Medicine, Duluth.

Ollila put truth to the society's motto of "alumni helping students," and, in the words of Medical School Dean Al Michael, has "helped make believers out of skeptics who previously felt the Medical School favored its research mission over its mission of educating future doctors."



Gene Ollila, M.D., receives the Volunteer of the Year award from UMAA national president Bruce Nelson and UMAA executive director Margaret Carlson.

He helped create "Connections," a physician-student mentoring program that involved 350 community physicians in its first year. In addition, Ollila acts as alumni spokesperson at many Medical School events and wrote to all alumni supporting the University's legislative initiative and urging advocacy.

His help with fund raising is one reason why the Medical School leads all University of Minnesota academic units in the giving rate among alumni. Says Dean Michael, "By all accounts, Gene has done a fabulous job as volunteer leader of the Medical School's more than 12,000 alumni." ■

Reunion Weekend Planned for May 30 to June 1

The 2002 Medical School Reunion Weekend is just months away, with numerous activities in store for this year's celebration. The festivities will take place May 30 to June 1, with the classes of 1942, 1947, 1952, 1962, 1967, 1972, 1977, and 1992 gathering on the University campus for this special occasion.

Reunion Weekend will include a tribute to the Class of 1952 at the Half Century Luncheon, a stimulating Continuing Medical Education program featuring prominent members of the Medical School faculty, a special deans' dinner at the McNamara Alumni Center, and the weekend's highlight – private class dinners at the Marriott Hotel in downtown Minneapolis. Several other events will fill out the busy reunion schedule, including a visit to the Science Museum of Minnesota and interesting local tours.

Members of the celebrating classes will receive more information on Reunion Weekend in January, and invitations (including registration materials) will be sent in mid-April. If you have questions in the interim, please direct them to Julie Crews Barger (612-624-9161) or Sue Clark (612-626-0619). E-mail inquiries can be sent to MAS@mmf.umn.edu. If you are calling from outside the Twin Cities, please call 1-800-922-1663. ■

2001-2002 MAS BOARD OF DIRECTORS

The Medical Alumni Society board represents alumni of the Medical Schools in the Twin Cities and Duluth and seeks to build and promote the reciprocal, mutually beneficial relationship that exists between the Medical Schools and their graduates.

Eugene W. Ollila, M.D., '70, *President*
 Edward M. Beadle, M.D., '78
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 Robert J. Zajac, M.D., '00

Call for Diehl and Alumni Recognition Award Nominees

The Medical Alumni Society board invites nominations for the 2002 Harold S. Diehl and Alumni Recognition Awards. Both awards will be bestowed upon their recipients at the Reunion Weekend Deans' Dinner on Friday, May 31, 2002, at the McNamara Alumni Center.

Given in honor of the University of Minnesota Medical School's fifth dean, Harold Sheely Diehl, M.D., the Diehl Award is presented to an individual who has made outstanding professional contributions throughout his or her career. The Diehl Award has been presented to the 83 people listed on this page since its inception in 1962.

Qualifications for nomination and criteria used in the selection process are: 1) preferably a graduate of the University of Minnesota Medical Schools; 2) preferably not currently engaged in an academic capacity; 3) outstanding contributions to the Medical

Schools, the University, alumni, and the community; and 4) relatively long experience in the field of medical service or a related field.

In contrast to the Diehl Award's recognition of lifetime achievement, the Alumni Recognition Award is presented to a graduate of the Medical Schools for outstanding accomplishments over the past five years. Selection for the award is based on exemplary achievements in the community or field of medicine, or for outstanding service to the University of Minnesota Medical Schools. This year's winner will be the sixth recipient of this award.

Letters of nomination and supporting materials for both awards should be received by Friday, March 1, 2002, and should be sent to: *Medical Alumni Society Awards Committee, McNamara Alumni Center, University of Minnesota Gateway, 200 Oak Street SE, Suite 300, Minneapolis, MN 55455-2030.* ■

Harold S. Diehl Award Winners

- | | | | | | |
|------|-----------------------------|------|----------------------------------|------|----------------------------------|
| 1962 | Owen H. Wangensteen, '21 | 1977 | Ruth E. Boynton, '20 | 1993 | John I. Coe, '45 |
| 1963 | Donald J. Cowling | | Virgil J.P. Lundquist, '42 | | Howard B. Burchell |
| | Charles G. Sheppard, '35 | 1978 | Lester H. Bendix, '28 | 1994 | N.L. "Neal" Gault, Jr., '50 |
| 1964 | Vernon D.E. Smith, '30 | | Herman E. "Tiny" Drill, '29 | | Tague Clement Chisholm |
| 1965 | Karl W. Anderson, '23 | 1979 | Miland E. Knapp, '29 | 1995 | Stanton A. Hirsh, '45 |
| 1966 | J. Arthur Myers, '20 | | Harold E. Wilmot, '23 | | Melvin Sigel, '56 |
| 1967 | Theodore R. Fritsche, '30 | 1980 | Helen L. Knudsen, '43 | 1996 | Stanley Goldberg, '56 |
| 1968 | Walter H. Halloran, '15 | | Donald E. Stewart, '37 | | Severin H. Koop, Jr., '55 |
| | Anderson C. Hilding, '18 | 1981 | Eva Jane (Ostergren) Larson, '38 | 1997 | Joyce L. Funke, '50 |
| | Carl H. Holmstrom, '29 | | Carl Ragnar Wall, '28 | | Thomas A. Stolee, '58 |
| 1969 | Karl R. Lundeberg, '25 | 1982 | Stuart Lane Arey, '31 | 1998 | Jesse E. Edwards |
| 1970 | Robert N. Barr, '30 | | Kristofer Hagen, '42 | | John B. Sanford, '48 |
| | LeRoy J. Larson, '20 | 1983 | John J. Eustermann | 1999 | B.J. Kennedy, '45 |
| 1971 | William C. Bernstein, '27 | | John J. Regan, Sr., '43 | | C. Walton Lillehei, '41 |
| | J.C. Grant, '42 | 1984 | Arnold S. Anderson, '43 | | Ben P. Owens, '47 |
| 1972 | J. Richards Aurelius, '22 | | John W. Anderson, '51 | 2000 | H. Mead Cavert, '50 |
| | Barbara M. Puumala, '59 | 1985 | Kenneth W. Covey, '43 | | Richard M. Magraw, '43 |
| | Marie Bepko Puumala | | Frank E. Johnson, '43 | 2001 | Arthur C. Aufderheide, '46 |
| | Reino Puumala | 1986 | A. Boyd Thomes, '42 | | (March) |
| | Ricard R. Puumala, '59 | 1987 | Marcy L. Ditmanson, '54 | | Mildred S. Hanson, '51 |
| 1973 | Phillip Halenbeck | | Malcolm M. Fifield, '50 | | |
| | Olga Hansen Litzenberg, '15 | 1988 | Chester A. Anderson, '44 | | ALUMNI RECOGNITION AWARD: |
| 1974 | Ann Arnold | | Robert B. Howard, '44 | 1998 | June M. LaValleur, '87 |
| | Roger A. MacDonald, '46 | | Arnold J. Kremen, '37 | 1999 | Richard L. Stennes, '69 |
| | Carl O. Rice, '25 | 1989 | Howard L. Horns, '43 | 2000 | Paul S. Sanders, '70 |
| | R.S. Ylvisaker, '26 | | Austin M. McCarthy, '42 | | Valerie K. Ulstad, '82 |
| 1975 | Reuben Berman, '32 | 1990 | M. Elizabeth "Peggy" Craig, '45 | 2001 | Charles I. Benjamin, '65 |
| | Bror F. Pearson, '31 | | John P. Stapp, '43 | | |
| | Lawrence Richdorf, '20 | 1991 | Dorothy Bernstein | | |
| 1976 | Milton M. Hurwitz, '39 | | Irving C. Bernstein, '42 | | |
| | Leonard Lang, '28 | 1992 | Frederic J. Kottke, '45 | | |
| | Russell O. Sather, '32 | | William A. O'Brien, Jr., '46 | | |

1946 Class Reunion



The Class of 1946 celebrated its 55th reunion in June. Front row, left to right: Joseph Von Drasek, Farrell Stiegler, Donald Larson, Theresa Haddy, Francis Haddy, Raymond Read, Sheldon Mandel, and Sidney Esenten. Back row, left to right: James Cosgriff, William Anderson, Ray Rose, Donald Schimnoski, Jack Wallinga, Richard Frey, Hartvig Roholt, Robert Clark, Harold Wente, Oliver (Bud) Peterson, Joseph McCormack, Robert Rocknem, Winston Lindberg, John Mayne, Harold Perry, and William Muesing.

Golf Classic raises \$60,000

2001 MINNESOTA MEDICAL FOUNDATION GOLF CLASSIC SPONSORS



Dave Mona (former Minnesota Medical Foundation board member), Dr. Bill Jacott (Golf Classic chair), and Brad Choate (Minnesota Medical Foundation president and CEO) display the results of this year's 11th Annual Minnesota Medical Foundation Golf Classic. The event, held August 27 at the Minneapolis Golf Club, attracted more than 200 golfers and resulted in \$60,000 raised in support of medical education and research at the University of Minnesota.

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IN MEMORIAM

DR. HAROLD AUGUST CHRISTIANSEN, Class of 1938, Jackson, Minnesota, died June 7 at age 89. He spent five years in the Army, including two years overseas with Gen. George Patton's Third Army as a neuropsychiatrist with the 104th Evacuation Hospital. While in the service he earned a Bronze Star. He worked for 33 years in the Jackson health care community. He is survived by his four children; his wife, Gertrude, preceded him in death.

DR. FRANK KIESLER, Class of 1941, Grand Rapids, Minnesota, died July 2 at age 84. After receiving his medical degree, he was commissioned a first lieutenant in the U.S. Army Medical Reserve. He served for more than three years in the western Pacific as chief of neuropsychiatry, attaining the rank of major. Kiesler served as a full-time member of the faculty of the Medical School and as a consultant to the Veterans Administration Clinic. In 1960 he became director of the Northland Mental Health Center in Grand Rapids. He continued part-time with the Medical School as a visiting clinical professor. At Northland, his pioneering work in rural mental health program development attracted visits by psychiatrists from many parts of the United States and from other countries. Kiesler was a founding member of the Minnesota Psychiatric Society which he served in many capacities, including the presidency. He is survived by his daughter. His wife, Margaret, and son preceded him in death.

DR. HELEN L. KNUDSEN, Class of 1943, Minneapolis, died February 28 at age 89. She was formerly director of the Division of Health Facilities at the Minnesota Department of Health. Knudsen was a 1980 recipient of the Harold S. Diehl Award. She is survived by two nieces. Her body was bequeathed to the University of Minnesota Anatomy Bequest Program.

DR. ALTON E. LINDBLOM, Class of 1937, Tucson, Arizona, died October 16 at age 90. He completed his residency in ophthalmology at the University and performed surgery during World War II as a lieutenant colonel in Europe. He practiced medicine in Mankato, Minnesota, from 1951-79. During that time Lindblom and his wife served as medical missionaries in St. Lucia. After retirement he and his wife, Evelyn Tillberg Lindblom, moved to Tucson. He is survived by his wife and four children, including Dr. Barbara Patrick, Class of 1973.

DR. JAMES McCLINTOCK, Class of 1958, Santa Barbara, California, died February 5 at age 78. His specialty was nuclear medicine. He is survived by his wife, JoEtta, and four children.

DR. EVERETT C. PERLMAN, Class of 1930, Minneapolis, died June 6 at age 95. He worked as a pediatrician in Minneapolis and retired at the age of 80. He served as a colonel during World War II. He is survived by his wife, Grace, and three children.

DR. LEWIS J. ROBERTS, Class of 1937, Forest Lake, Minnesota, died July 2 at age 90. He served as a flight surgeon in the U.S. Navy during World War II. He founded the Columbia Park Medical Group and was the first chief of staff at Unity Hospital. Roberts is survived by his wife, Jessie, and three children.

DR. IRVING RUSOFF, Class of 1943, Brick, New Jersey, died August 15 at age 86. He is survived by his wife, Lilian, and two children.

DR. WILLIAM H. TROW, Class of 1943, Eden Prairie, Minnesota, died August 23 at age 86. He is survived by his wife, Laurie, and six sons.

RICHARD L. TWEEDIE, PH.D., D.Sc., Minneapolis, died June 7 at the age of 53. He had been a professor and head of the Division of Biostatistics in the

School of Public Health. He served on advisory boards at a number of institutions, including the National Science Foundation. Tweedie is survived by his wife, Catherine, and one daughter.

DR. WILLIAM WAYHRAUCH, Class of 1951, Lincoln, Nebraska, died August 14 at age 78. His specialty was surgery. He is survived by his wife, Janet, seven children, and his brother Robert, Class of 1947, Waterloo, Iowa.

DR. G. CHARLES WILCOX, Class of 1943, Albert Lea, Minnesota, died April 29 at age 81. He served in the U.S. Army Medical Corps from 1946-48 and attained the rank of captain. Wilcox was a family practice physician in St. Peter, Minnesota, from 1948-53, and worked in Wood Lake, Minnesota, for one year. He worked at the Albert Lea Medical Center from 1954 until his retirement in 1985. He is survived by his wife, Mary Jane, and three children.

DR. BRUCE ROBERT ZIMMERMAN, Class of 1967, Rochester, Minnesota, died July 16 at age 59. He was a resident in internal medicine and a trainee in endocrinology at the Mayo Graduate School of Medicine. From 1969-72 he served in the Army and achieved the rank of major. He had been a consultant in endocrinology since 1976 and professor of medicine at Mayo Medical School since 1996. From 1985-92 Zimmerman was vice chair of the division of endocrinology. He was president of the American Diabetes Association (ADA), and had served on many committees and task forces of the ADA. He is survived by his wife, Cristina, and three children.

Minnesota Medical Foundation welcomes new board members

The Minnesota Medical Foundation was pleased to welcome new members to the board of trustees at the October 22 annual meeting. The board of trustees is charged with the overall guidance of the Foundation in accomplishing its mission of raising and disbursing funds for the Medical Schools and School of Public Health.

Six individuals were elected to four-year terms on the board.

Richard A. Carlson, M.D., Edina, is a radiologist and director of breast imaging for Suburban Radiologic Consultants, and is a 1972 graduate of the University of Minnesota Medical School. He served on the Minnesota Medical Foundation board from 1990-98.

James L. Craig, M.D., M.P.H., Minneapolis, recently retired from General Mills as vice president and director of Health and Human Services. He has also served as adjunct clinical professor in the Medical School and School of Public Health.

John M. Murphy, Jr., St. Paul, is Minnesota state chairman of U.S. Bancorp, and is involved in numerous community activities including the Phillips Partnership, Greater Minneapolis Metropolitan Housing Corporation, and New Ball Park, Inc.

Robert N. Schulenberg, M.D., Red Wing, is a pediatrician and is affiliated with the Fairview Red Wing Clinic and St. John's Hospital. He is a 1969 graduate of the Medical School, and a clinical professor of pediatrics.

Mary K. Stern, Minneapolis, is an investment banker and former president of Sit Mutual Funds. She is very active in the community, serving on numerous boards and committees including the YWCA of Minneapolis, the Minnesota Council on Academic Education, and Metropolitan State University.

Leslie C. Turner, Minneapolis, has been involved with the Minnesota Medical Foundation board through her leadership role with the Women's Health Fund, one of the Foundation's affiliate organizations. She is active in numerous organizations, including the United Way, the Girl Scouts, and the Minneapolis Crisis Nursery.

Named as faculty representatives to the board by virtue of their leadership positions in the Medical School were:

Council of Basic Health Sciences Chair Timothy J. Ebner, M.D., Ph.D., professor and head of the Department of Neuroscience at the University of Minnesota Medical School and holder of the Maurice Visscher Land Grant Chair in Physiology.

Council of Clinical Sciences Chair Leo T. Furcht, M.D., professor and head of the Department of Laboratory Medicine and Pathology, director of the Biomedical Engineering Center, and holder of the W.W. Allen/Elsa U. Pardee Foundation Chair in Cancer Biology.

Also welcomed to the board as representatives of Minnesota Medical Foundation affiliates for one-year terms were:

Mark Allison, Bob Allison Ataxia Research Center

Beverly Carlson Gazda, Women's Health Fund

Sidney Kaplan, University Children's Foundation

Eugene W. Ollila, M.D., Medical Alumni Society

Treva Paparella, International Hearing Foundation

Stacy D. Rubsam, Variety Children's Association

NEW BOARD MEMBERS FOR 2001-2002



Richard A. Carlson,
M.D.



James L. Craig, M.D.,
M.P.H.



John M. Murphy, Jr.



Robert N. Schulenberg,
M.D.



Mary K. Stern



Leslie C. Turner

The Minnesota Medical Foundation is a non-profit organization which provides support for health-related research and education at the University of Minnesota Medical Schools in the Twin Cities and Duluth and the School of Public Health.

For more information about the Minnesota Medical Foundation or to update your address, call or write:

Minnesota Medical Foundation
McNamara Alumni Center
University of Minnesota Gateway
200 Oak Street SE, Suite 300
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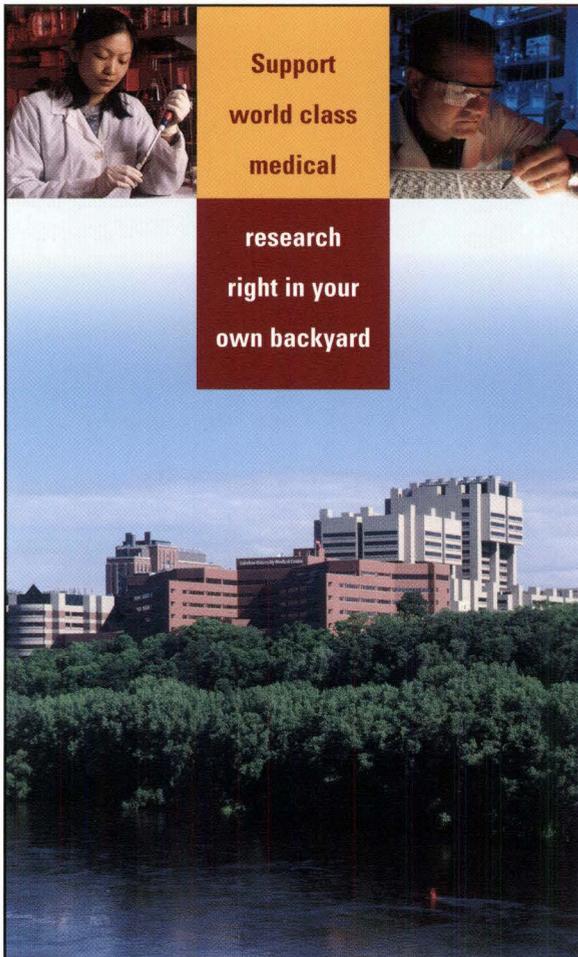
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