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The changing face of medicine
Minnesota’s Future Doctors puts a diverse group of students on the road to medical school

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Dear Friends,

Nothing inspires me more than an incoming class of medical students—that promising group selected by an admissions process that helps us choose not only the brightest but also those best suited to practice medicine in our increasingly diverse communities.

This fall, thanks to a 22 percent increase in Medical School applications (compared with 4.6 percent nationally), we are welcoming the largest entering class in 30 years. Between our Twin Cities and Duluth campuses, we have 241 first-year medical students—10 percent more than usual. This year’s talented group has higher MCAT scores and GPAs than did previous classes, and 11 percent of the new students have advanced degrees. Additionally, 22 percent are multicultural, and 14 percent are first-generation college graduates. About 80 percent are from Minnesota, which means they are more likely to practice medicine here.

We also hope to serve the state through Minnesota’s Future Doctors, a joint program of the University and Mayo Medical Schools that helps prepare promising minority, immigrant, and economically disadvantaged college students for careers in medicine. Read about our inaugural group of 23 in this issue’s cover story.

You will also find a story about an NIH-funded program that provides early-career clinical researchers at the University with the time and resources they need to launch their research and eventually compete for major grants.

Finally, this issue honors John Kersey, M.D., founding director of the University’s Cancer Center. Dr. Kersey helped build the Cancer Center’s reputation as a national leader in cancer research and care. An outstanding scientist and graduate of our Medical School, Dr. Kersey will be turning his attention back to the lab, where he’ll no doubt continue to inspire us all.

Deborah E. Powell, M.D.
Dean, University of Minnesota Medical School
McKnight Presidential Leadership Chair

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.
Minneso’s Future Doctors’ inaugural class of 23 — 9 of whom are pictured above — represent a more diverse population than past Medical School classes of the past.

“IT CAN’T THINK OF ANYTHING I’d rather do than help people,” says college sophomore Georgette McCauley with a bright smile that belies a childhood spent in the turmoil of civil war. McCauley says her family, which fled Liberia for the United States in 2001, was often on the move because of the war, making it difficult for her to attend school. Frequently, she says, the family had to lie on the floor of their home to avoid getting shot.

Now a student at St. Mary’s University in Winona, McCauley is focused on her future, not the past, and says she wants to help other Liberian refugees become more comfortable with Western medicine.

Thanks in part to a new program cosponsored by the University of Minnesota Medical School and Mayo Medical School, she may get that chance. The program, called Minnesota’s Future Doctors, targets promising undergraduate students from communities that are underrepresented in medicine and offers them the opportunity to explore firsthand what it’s like to be a doctor.

The students attend three six-week summer sessions, the first and third years at the University of Minnesota Medical School and the second year at Mayo Medical School in Rochester. They study the sciences, shadow general practitioners and specialists, consult on patient care, start preparing for the Medical College Admission Test, and hear from doctors and medical students about life during and after medical school.

McCauley, who participated in the program’s inaugural session this summer, says the experience has helped build her confidence. “I’m fortunate to be here because so many people in my country don’t have this opportunity — especially in education — because of the civil war.”
Confronting inequity

Minnesota’s Future Doctors is the brainchild of University medical students Gareth Forde and Matthew Fitzpatrick, who in 2005 began exploring ways to address the growing gap between Minnesota’s increasingly diverse population and those who provide its health care.

For example, 5 percent of Minnesota residents are African American, but African Americans make up only 1 percent of the state’s doctors and medical students. Latinos account for 4 percent of the state’s population but only 2 percent of its doctors. Similar disparities exist for American Indian, Asian, and other non-white populations.

“This is a huge national issue,” says Forde, a fourth-year medical student. “I think every medical school in the country is scrambling to figure out how they’re going to effectively address diversity.”

When Forde and Fitzpatrick looked at what other medical schools were doing to recruit students from underrepresented populations, they found that most offer a short program over a single summer. Convinced that students would gain more from an in-depth program with greater continuity, they designed a three-year experience that tracks.

Finding diversity

According to program director Jo Peterson, Ph.D., the goal of Minnesota’s Future Doctors is to create a health-care pipeline that will produce more doctors from diverse backgrounds who are interested in returning to their communities to practice medicine. The program’s first class of 23 includes Thai, Hmong, African, African American, Latino, and American Indian students. Eight of these students are from rural Minnesota. Because many of them are committed to working in underserved communities, some of them will likely practice primary care—including family medicine, pediatrics, and internal medicine, Peterson says. And that could help relieve a looming shortage of family physicians in Minnesota.

Creating an Office of Minority Affairs and Diversity, involving students and faculty from diverse backgrounds in the interview and admissions process, and offering more scholarships to a broader range of students. One successful University program, the Center of American Indian and Minority Health, founded on the Duluth campus in 1989, encourages American Indian students to choose careers in medicine or health care and helps keep them on that track.

But more needs to be done to achieve ethnic, racial, and economic diversity, Powell says, noting that 60 percent of all medical school students in the country come from families with incomes in the top 20 percent. The Future Doctors program offers another way to address that inequity, Powell says.

Forde and Fitzpatrick got buy-in from others, too, including Mayo Medical School Dean Keith Lindor, M.D. Lindor liked the idea of a three-year program targeting Minnesota students—students who, upon graduation, were likely to stay and practice in their home state, says Barbara Porter, associate dean for student affairs at Mayo. With both Lindor and Powell on board, the program began to take shape. It’s a unique collaboration that taps the strengths of both schools, says Porter.

“Together, we provide the students with a wonderful training ground.”

“I said, ‘This is what I’m looking for: highly motivated, high-potential, underrepresented, rural, economically challenged, and first-generation [to attend college]—all in one person.’ And I had 91 recommendations—in two months,” Peterson marvels.

The applicants’ moving and inspirational stories made it difficult to whittle down the candidates, Peterson says. In fact, there were so many deserving and promising students that she added a less intensive program during the academic year to give more students a chance to participate.

Students in that program are just as high-achieving as the summer group, Peterson says, but they face fewer challenges; their parents may have graduated from college, or they might be better off financially.
students say their participation in the Minnesota’s Future Doctors program has strengthened their desire to become physicians and to one day use their skills to help their communities.

To ensure a broad reach, Peterson visited schools that don’t often put students on the path to medical school. Ismaehr-ehl Mondal Sierra, a 22-year-old Guatemalan immigrant, is one of three summer-program students who attend community college. A second-year student at Anoka-Ramsey Community College, Mondal Sierra says becoming a doctor is all he’s ever dreamed of. “I’ve known that medicine was my path since I was a little kid.”

Mondal Sierra’s parents divorced when he was young, and his mother worked to support him and his sister. During the summer, she often sent him to spend time with one of his uncles, a physician. One summer, Mondal Sierra and his uncle lived in a remote village where they shared a house with Cuban doctors who were providing care for the poor.

“My grandmother died of complications with Diabetes,” says Nelson. “It was to the point where she went to the hospital only because she had to have her leg amputated.”

Nelson believes that training more Native American doctors would lead to care that is more sensitive to differences in culture and lifestyle, which, in turn, would help build Native Americans’ trust in conventional medicine. With ties to both the Fond du Lac Ojibwe and the Lac Courte Oreilles in Wisconsin, Nelson says she’s thinking about joining the Indian Health Service when she finishes medical school and practicing at the Fond du Lac reservation, near Duluth, or at another reservation where the need is great.

Mondal Sierra and his fellow students live together in campus housing while the Future Doctors program is in session. They pay no room and board or tuition, receive $1,650 per summer, and are reimbursed for transportation and other expenses. Yet, despite the many benefits the program offers, many of these students will still encounter barriers on the road to medical school—cost being one of the most formidable. Many of the students come from families that have no experience with debt and may be opposed to the very concept. “It’s a second-year student at a nokan village where they shared a house with Cuban doctors who were providing care for the poor.

“that experience made me realize how many kids suffer from a lack of care, even in my own country,” says Mondal Sierra.

Mondal Sierra’s family immigrated to the United States four years ago, hoping for better opportunities. But the transition hasn’t always been easy. Because of his family’s immigration status, Mondal Sierra is ineligible for financial aid, so he works part-time during the school year and full-time during the summer.

“I’m struggling most of the time to get my homework done because I have to work,” he admits. “It affects my grades.”

When he heard about Minnesota’s Future Doctors, he rushed to fill out the application. “When I read it through, it was amazing how it told everything I wanted to know about how to approach medical school.”

Managing the cost

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McCauley hopes to return to a more peaceful Liberia someday and educate young people—especially young people—about AIDS and other sexually transmitted diseases.

Mondal Sierra says the program has broadened his horizon. “This summer it became clear to me how I can connect with the growing Latino community in Minnesota and in other parts of the country,” he says. “Sharing the same ethnic background can help me address some of the issues they face.”

Looking toward the future

Like many of the Future Doctors participants, 22-year-old Veronica Nelson, a Native American from rural Wisconsin, hopes to become a primary care doctor so she can help to bridge the cultural gap between the largely white medical system and her own community.

Nelson, a student at the University of Minnesota-Duluth, says many of her relatives and childhood neighbors mistrust the mainstream medical system, sometimes refusing to seek medical care until the situation becomes critical.

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To hear students discuss the Future Doctors program and their career interests, go to www.mmf.umn.edu/mb/future/audio.

To view sample contents of the students’ electronic portfolios, go to www.mmf.umn.edu/mb/future/portfolio.

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Beyond the basics

Innovative program helps junior faculty break into the world of clinical research

For Daniel Mulrooney, M.D., M.S., assistant professor of pediatric oncology, it’s the classic Catch-22. To do biomedical research, you need time, funding, and know-how. To get time, funding, and know-how ... you need research experience.

Mulrooney spends much of his time at the University of Minnesota Children’s Hospital, Fairview, caring for young patients who have cancer. He’s also very interested in studying the “late effects”—those that show up after years or even decades—of chemotherapy and radiation therapy on children, and learning what he and others can do to minimize them. But when he applied for federal funding to conduct research on the topic, Mulrooney discovered he lacked the track record needed to land a major grant.

Then he heard about the University of Minnesota’s Career Advancement Program for Clinical Research Scholars (CAPS). Part of a nationwide National Institutes of Health (NIH) initiative, CAPS was established in 2005 to help early-career faculty in the health sciences break into clinical research.

Mulrooney applied to the University’s program and was accepted as one of seven inaugural scholars. Under the guidance of a multidisciplinary team of mentors, he has since begun recruiting survivors of Hodgkin’s lymphoma for a preliminary study of biomarkers of inflammation and vascular injury.

“I think CAPS is a terrific program,” he says. “This is just what a junior faculty member needs to navigate the waters and learn what you otherwise wouldn’t know how to achieve.”

Boosting clinical research

Clinical research has faced tough times in recent years. Traditionally, new treatments and cures emerge from a pipeline that extends from basic science (studying how living systems work) to translational research (studying how to apply new knowledge to human health) to clinical trials and, ultimately, patient care. Basic scientists have been making great strides in understanding how molecules, cells, tissues, and organs function.

But the translation of this new knowledge to new approaches to prevention, care, and cure has lagged. Although there are many reasons for this, two critically important ones are more competition for less federal money and the pressure on physician-researchers to produce revenue through patient care.

“Clinicians interested in doing research find themselves taking academic positions, and suddenly all of their...
time is taken up by clinical duties, system demands, and the need to generate income," says CAPS program director Russell Luepker, M.D., M.S. Without some type of support that allows them to reduce their clinical hours, Luepker says, even the most dedicated find it difficult to get the research experience they need to successfully compete for major grants. In 2003, the federal government began funding a massive initiative known as the NIH Roadmap, which aims to speed the delivery of findings from basic science research to the clinical clinicians who can apply them to patient care. Part of that initiative involved awarding grants to 12 academic health centers around the country to develop programs to boost clinical research by providing support and mentorship for early-career medical professionals. Luepker, a professor of epidemiology, led the effort to get the University of Minnesota on board and ended up with $13.8 million from the NIH to start CAPS.

James Neaton, Ph.D., M.S., professor of biostatistics, and Elizabeth Seagust, M.D., professor of medicine, are associate program directors. “The program greatly enhances the training opportunities for clinical research,” Neaton says. Seagust agrees, and points out that CAPS is good not only for the University but for the rest of the world as well. “It’s so critical that we have health professionals who will apply their clinical skills to research questions,” she says. “We need these people if we are going to solve the big problems.”

Buying time
CAPS offers three key types of support to clinical faculty launching their research careers in medicine, nursing, pharmacy, dentistry, and public health. The first is funding. Scholars receive up to $25,000 in research support annually as well as travel money, graduate tuition, and textbook reimbursement. Even more valuable, CAPS supplies the dollars needed to cover 75 percent of its scholars’ salaries for the three to five years it takes them to develop a research program solid enough to successfully compete for NIH grants and other support. That buys them “protected time”—a portion of their work week in which they are committed to doing research. Through such opportunities, the first CAPS scholars have been able to initiate research programs related to their professional areas of interest, including understanding schizophrenia, improving cancer treatment, and investigating novel applications for antiviral drugs.

“Each [scholar] is doing a different project with a different team in a different department, yet they’re all doing amazing things,” says CAPS mentoring and evaluation director Carole Bland, Ph.D., assistant dean for faculty development and professor of family medicine and community health in the Medical School.

Kamakshi Lakshminarayan, M.D., Ph.D., an assistant professor of neurology, is using her protected time and tuition benefits to pursue a master’s degree in health services research and policy. “My professional goal is to advance and improve the clinical care of stroke patients, both at the individual and the population levels,” she says, adding that CAPS has given her the opportunity to work toward that goal.

Learning the ropes
Besides financial support, CAPS offers faculty opportunities for formal and informal guidance as they learn the basics of biomedical inquiry. In the past it was possible to learn the ropes by spending time in others’ labs—what Seagust calls the “follow along and you’ll figure this out” approach. But today’s clinical science approach. But today’s clinical science demands intensive training in everything from using sophisticated analytical technology to dealing with sensitive legal issues.

The University’s CAPS Scholars

The four researchers make up the first CAPS cohort and began their work in summer 2006:

Lisa Chow, M.D., assistant professor of medicine, is studying the link between insulin resistance and lipid metabolism in skeletal muscle.

Sarah Cooley, M.D., assistant professor of medicine, is investigating whether stimulating an individual’s immune system can be an effective approach to treating cancer.

Kamakshi Lakshminarayan, M.D., Ph.D., assistant professor of neurology, hopes to identify approaches to patient care that provide the best outcomes for people who have had a stroke.

Adam Carpenter, M.D., assistant professor of neurology, is investigating neurodegeneration in multiple sclerosis.

Lisa Chow, M.D., associate professor in obstetrics, gynecology, and women’s health, is researching neoadjuvant chemotherapy (given before the primary treatment) in ovarian cancer.

Jeffrey Wozniak, Ph.D., L.P., associate psychologist in child and adolescent psychiatry, is examining cognitive and behavioral consequences of prenatal alcohol exposure.

Five of the eight new CAPS scholars, selected in February, are from the Medical School: David Boulware, M.D., M.P.H., assistant professor of infectious diseases and international medicine, is studying HIV immune reconstitution inflammatory syndrome.
CAPS is all about providing a support structure that allows scholars to succeed. The program gives them the tools to get the work done.

— Jasjit S. Ahluwalia, M.D., M.P.H., M.S., director, University of Minnesota Office of Clinical Research

CAPS scholars learn the ropes by taking classes in clinical research management and career development and by participating in regional and national meetings that address issues they face as new investigators. The University’s Office of Clinical Research (OCR), which works closely with CAPS, offers biweekly seminars on a variety of topics and periodically brings in distinguished visiting scholars who provide valuable insights and advice.

“How to write a grant, how to do a scientific presentation, how to work with industry ... It’s been so diverse, things I never would have thought of,” Mulrooney says.

CAPS scholars can also sign up for one-on-one help with biostatistics, budgeting, pharmacology, legal and regulatory matters, scientific writing, institutional review board issues, and other dimensions of research they might be facing for the first time.

“It’s all about providing a support structure that allows scholars to succeed,” says OCR director Jasjit S. Ahluwalia, M.D., M.P.H., M.S. “CAPS gives them the tools to get the work done.”

Multidisciplinary mentorship
Multidisciplinary mentorship is the third component of CAPS’ three-pronged approach. Each CAPS scholar gathers a mentoring team of at least three people — two in fields directly related to his or her subject of study, and the third a biostatistician — who then work together to help guide the scholar.

“Mentoring is a significant part of this program,” says Bland. “We want to produce clinical scholars who are comfortable and competent in addressing important clinical questions through an interdisciplinary framework.”

Professor and interim head of pediatrics Joseph Neglia, M.D., M.P.H., who is Mulrooney’s primary mentor, appreciates the extensive mentoring CAPS promotes. “One of the roles of more senior faculty is the mentoring and development of more junior faculty — we’re going to do that no matter what,” Neglia says. “But the CAPS program has allowed some additional resources for that.”

CAPS scholar Lisa Chow, M.D., an assistant professor of medicine, is studying the link between lipid metabolism in skeletal muscle and insulin resistance. Her goal is to find better ways of preventing and treating type 2 diabetes. Chow says mentorship is critical for young faculty embarking on a research career.

“When you’re starting out as a new and young investigator, you might not know all the subtleties,” she says. “The mentor team has been essential in helping me define the research questions and identify available resources.”

Its multidisciplinary emphasis sets CAPS apart from other, more traditional mentorship programs. Mulrooney’s team, for instance, includes Neglia, biostatistician Neaton, and Robert Hebbel, M.D., Regents Professor and vice chair for research in the Department of Medicine.

“I’m looking at adult survivors of childhood cancer, so it’s particularly helpful to have one foot in pediatrics and one in adult medicine,” Mulrooney explains.

Medical School Dean Deborah Powell, M.D., says she’s happy to see senior faculty playing this important role.

“Clinical research reflects the passion of our physicians and scientists to improve care for patients,” Powell says. “Our Medical School has excellent, seasoned clinical researchers who are exemplars of lifelong learning. I am excited that they have been recruited as mentors to encourage and educate the next generation of young faculty who wish to pursue clinical research.”

CAPS scholars undergo formal assessments every six months by the program’s Multidisciplinary Advisory Committee, whose 20 members, drawn from close to a dozen different fields, review the scholars’ work and feedback from mentors, and then offer advice on ways to improve the experience.

“They take a higher, objective view to see that you’re on track,” says Lakshminarayan.

Moving on
The second round of CAPS recruitment, completed last February, brought in another eight scholars to join the seven already on board. Subjects of inquiry include jaw-muscle pain, multiple sclerosis, prenatal alcohol exposure, and the impact of aerobic exercise on dementia.

A third group of candidates will be reviewed this fall, and Luepker anticipates having a total of about 20 active scholars three years from now. But as important as moving faculty into the program, he says, is moving them out again. The ultimate goal is a cadre of well-trained clinical researchers with a track record and support system that facilitates access to major research funding.

“Our goal is to get people moving on to regular NIH grants,” Luepker says. Funding for the CAPS program is in place through 2010. Ahluwalia is currently leading a major effort to join a new, multifaceted NIH program supporting and stimulating clinical research called the Clinical and Translational Science Awards. If he is successful, the CAPS program will continue to nurture future scholars as part of the larger grant.

Meanwhile, Luepker is delighted with the progress so far. If CAPS scholars are any indication, he says, the future for clinical research nationwide, and particularly at the University of Minnesota, is brighter than ever.

“I’m really impressed,” Luepker says. “[These scholars] have a lot of enthusiasm and energy. I think they’re going to make us proud through what they accomplish.”

BY MARY HOFF
For many years, John Kersey, M.D., has been the face of the University of Minnesota Cancer Center. Both as a groundbreaking researcher and as the center’s founding director, he played a key role in bringing together researchers and clinicians from across the University to transform cancer research and patient care.

So when Kersey stepped down as director in March, his colleagues thought they knew why.

And they were right. Kersey traded his directorship and seventh-floor corner office in the Masonic Cancer Research Building for a smaller office a couple of floors down so he could devote more time to his longtime love: research.

“John has always been very devoted to his research, and obviously he still is,” says pediatrics professor emeritus Norma Ramsay, M.D., who first worked with Kersey in the 1970s. “This move is a logical extension of his career that will benefit both John and the Cancer Center.”

In fact, Kersey will remain a familiar face on the seventh floor — the site of his laboratory since the Masonic Cancer Research Building opened in September 1996. The same man who led the team that performed the world’s first successful bone marrow transplant for treating lymphoma hopes to discover better treatments for childhood leukemia and lymphoma.

“To be a part of the team that is hoping to remove cancer from the earth is very exciting,” says Kersey, who holds the Children’s Cancer Research Fund Land-Grant Chair in Pediatric Oncology.
NEW DIRECTOR, SIMILAR DIRECTION

AS LEADER of the Breast Cancer Research Program at the University since 1999, Douglas Yee, M.D., created a model for translating basic laboratory research into patient care. His lab research on the growth regulation of tumors provided the foundation for the development of new anti-cancer drugs focused on growth-factor receptors. “That is my proudest accomplishment in the Breast Cancer Research Program,” Yee says.

“We made an observation in the lab, and now we can finally use that information to develop new drugs and, through the conduct of clinical trials, see how effective they are in people with cancer.”

Now Yee, who was named Cancer Center director in March, aims to help other faculty advance their research by providing the infrastructure to support their efforts.

“I try to encourage people to think about how their laboratory findings would work in a more complex model, which is treating patients with a disease,” he says. “The great thing about this University is that there are lots of different people with different backgrounds. No one can take research all the way from discovery to treating patients. We have to be able to build the teams and the resources to make that happen.”

That philosophy, shared by Yee and Cancer Center founding director emeritus John Kersey, M.D., created a common bond between them when Kersey recruited Yee to the Cancer Center almost a decade ago. As the Cancer Center enters its next decade, Yee plans to build on Kersey’s success in moving research from bench to bedside. “It’s a real honor for me to follow Dr. Kersey as Cancer Center director,” Yee says. “His career has demonstrated the strength of translational approaches to cancer. He has been both a mentor and a role model to me.”

Although his leadership of the Cancer Center required countless hours of meetings and administrative duties, Kersey—known for his quiet, methodical style—always made time for research. In fact, being an administrator was never really part of Kersey’s career plan, though it’s certainly part of his legacy.

Today the Cancer Center is not only one of just 39 National Cancer Institute–designated Comprehensive Cancer Centers, it is also home to more than 400 members and receives more than $90 million annually in research funding.

More important, it has provided a place for researchers to share ideas and build on one another’s work. Interdisciplinary research initiatives in the Cancer Center have led to major breakthroughs in bone marrow transplantation as well as in breast, bone, childhood, and tobacco-related cancers.

“John was the person who brought all these people together,” says Stephen Hecht, Ph.D., a leading researcher in tobacco-induced cancers whom Kersey recruited to the University of Minnesota. “This is a very collaborative center now, and the director gets the credit for that.”

Homegrown talent

Kersey has devoted his entire medical career to the University of Minnesota. Born and raised in the Twin Cities, Kersey graduated from the Medical School in 1964. He then completed residency in pathology and pediatrics here before joining the faculty of the Departments of Pediatrics and Laboratory Medicine and Pathology in 1971.

In 1974, Kersey became director of the Blood and Marrow Transplant Program. The following year, he led the team that performed the world’s first successful bone marrow transplant for treating lymphoma, on 16-year-old David Stahl.

“Back then, with the word ‘cancer’ you thought ‘death,’” says Stahl, now a father and technical illustrator working in Golden Valley, who is believed to be the longest-living survivor of malignant lymphoma: “Dr. Kersey saved my life.”

Despite these successes, Kersey believed he and other cancer researchers could do more. Cancer research was being conducted in many different departments and schools across the University, but the researchers weren’t working together.

“There was no cohesiveness, no multidisciplinary approach to care or research,” he says. “We often worked in independent silos, and information wasn’t being shared among basic scientists, clinicians, and epidemiologists.”

Shaping a cancer center

In the 1980s, Kersey began talking to his colleagues and then—Medical School Dean David M. Brown, M.D., about creating a cancer center to bring researchers and their ideas together.

“I didn’t have any idea who should be in charge of it,” says Kersey. “I just knew that our research would benefit if more people interacted with each other.”

Brown was committed to the idea early on, but there was resistance from some faculty and the University as a whole. “Most people said, ‘Show me. Show me that’s better,’” says Kersey. “Occasionally, people said, ‘We don’t really need it.’ And I think they were wrong. We did need it, and we still need it.”

Finally, after years of discussions, the idea for a cancer center garnered support, and the Board of Regents approved it in 1991.

Brown quickly zeroed in on Kersey to lead the new Cancer Center. After a national search, Brown says Kersey was the clear front-runner.

“John was an outstanding and renowned scientist whose cancer research continued to be cutting-edge over several years, and he was highly respected by his colleagues at the University and nationally,” Brown says. “I knew he had the leadership skills to unite the faculty and to gain the support of the community, the University, and the National Cancer Institute.”
Tucker LeBien, Ph.D., associate director of basic research at the Cancer Center, has known Kersey for 30 years. LeBien attributes much of the Cancer Center’s success to Kersey’s “people savvy.” “John’s legendary skill is listening to what people are interested in and then pulling them together to work toward a common goal,” says LeBien, holder of the Apogee Enterprises Chair in Cancer Research. “I’ve never witnessed anyone who is as good at that as he is.”

Building a winning team

After the Cancer Center’s initial funding was in place, the need for a new research facility to attract top-notch researchers became apparent. Thanks in part to funding from the Masons of Minnesota, the Masonic Cancer Research Building was constructed with more than $30 million in philanthropic support, becoming the first building on campus to be constructed entirely through private dollars. With this state-of-the-art space as a selling point, Kersey began to assemble an all-star cast of researchers. Hecht was the center’s first major external recruit. “John impressed me as this open, honest guy, in the true Midwestern spirit,” says Hecht, who holds the Wallin Land-Grant Chair in Cancer Prevention—the first of 15 endowed chairs established in the Cancer Center—and the American Cancer Society Research Professorship. “I liked him immediately. If I hadn’t liked or trusted him, I don’t think I would have come.”

Then Kersey recruited David Largaespada, Ph.D., out of postdoctoral training to lead the center’s research in cancer genetics and to assume the Margaret Harvey Schering Land-Grant Chair in Cancer Genetics. Douglas Yee, M.D., a nationally renowned breast cancer physician-scientist, was next. Kersey calls Yee, who is the new Cancer Center director, one of his best recruits. “Part of the reason I came here is because of John Kersey’s efforts to bring laboratory findings to patients,” says Yee, who holds the Tickle Family Land-Grant Chair in Breast Cancer Research. “I think that’s why we all do what we do—we really want to affect the outcome of the disease.”

A reason to celebrate

By the late 1990s, Kersey’s vision for a collaborative Cancer Center was becoming a reality. Leaders were ready to apply for an NCI core grant and for designation as a Comprehensive Cancer Center. Many cancer centers have struggled for years to get that designation, but LeBien says the University was “spectacularly successful” on its first try, in 1998. “We popped the cork on a champagne bottle I’d had on my shelf for a long while,” Kersey says.

Since then, the Cancer Center has achieved international prominence in cord-blood transplantation and has discovered techniques to more efficiently identify cancer genes. Its members have created the first animal model for studying and disabling cells responsible for bone cancer pain, identified cancer-causing substances in tobacco, and initiated studies on how genetics, diet, lifestyle, family history, and other factors affect the risk of developing breast and gynecologic cancers.

Their work contributed to research that has led to a significant increase in childhood cancer survival rates—from about 10 percent in 1959 to better than 85 percent today. They also have participated in a prominent long-term follow-up study on medical and social issues faced by survivors of childhood cancer.

A shift in focus

Kersey isn’t totally out of administration yet. In addition to his research responsibilities, he’ll serve the Cancer Center as founding director emeritus, providing a historical perspective and serving as a consultant to Yee and other Cancer Center leaders. But Kersey is glad to return to his roots in research. He recently led a research team that developed the first mouse model with the gene for acute lymphoblastic leukemia, a rare and frequently fatal form of blood cancer that most often occurs in babies less than a year old. Kersey hopes this model will help his team develop better, safer treatments for the disease.

He has set other priorities as well. “Fishing and grandkids…no golf,” Kersey says. “The grandkids are my top priority. They are the most enjoyable of all.” He’s also looking forward to spending more time with his wife, Anne, at their log house on Lake Superior, where they’ll hike and explore the great outdoors. But he’s certainly not ready to retire. Not yet.

“I really like the stimulation of an environment with a lot of students and young people and enthusiasm for ideas,” Kersey says. “That’s an important part of my psyche.”

*By Nicole Endres*
Gary Davis, Ph.D.

Davis to lead Medical School’s Duluth campus

Gary Davis, Ph.D., has been named the new director of the Medical School’s Duluth Campus. Davis, a licensed clinical psychologist, joined the Medical School’s Duluth campus in 1975, and has chaired the Behavioral Sciences Department since 1984. “Duluth is a great community with a strong healthcare system, and I am excited to lead the Medical School’s efforts here,” Davis said.

Medical center, children’s hospital achieve Magnet status

University of Minnesota Medical Center, Fairview, and University of Minnesota Children’s Hospital, Fairview, have achieved Magnet status. The designation is valid for four years. "We are proud to be able to work with the faculty and staff on this campus, as well as with the deeply committed physician-teachers from greater Minnesota, in meeting that challenge," Davis said.

U gains in ‘Best Hospitals’ rankings

University of Minnesota Medical Center, Fairview, made impressive gains in this year’s U.S. News & World Report’s “Best Hospitals” edition. The medical center ranked among the top 50 hospitals in the country in nine medical specialties, with eight of the nine specialties ranking higher than last year. Specialties receiving top-50 rankings in 2007 were cancer; digestive disorders; ear, nose, and throat; endocrinology; gynecology; heart and heart surgery; kidney disease; neurology and neurosurgery; and respiratory disorders.

Medtronic grant supports American Indian program

A two-year, $150,000 grant from the Medtronic Foundation will support the University’s Center for American Indian and Minority Health (CAIMH) to support Native American students in health careers. "We truly appreciate the Medtronic Foundation’s gift and leadership," says CAIMH director Joy Dorscher, M.D. "With Medtronic’s help, we can continue to educate Native American students and encourage them to return to their communities to deliver culturally sensitive medicine."

Medical School hires new head of otolaryngology

The Medical School’s Department of Otolaryngology has selected Bevan Yueh, M.D., M.P.H., as its new head following a national search. Yueh, a skilled head and neck surgeon and an outstanding clinical researcher who has studied treatment outcomes extensively, says he is an award-winning teacher lauded for his ability to mentor students and take an active role in training residents. "Dr. Yueh is an outstanding clinical researcher who has studied treatment outcomes extensively. A native Minnesotan, Yueh comes from where he was a professor in the Department of Otolaryngology, director of the Clinical Outcomes Unit, and an affiliate member of the Fred Hutchinson Cancer Research Center. He earned his M.D. at Stanford University School of Medicine and his M.P.H. at Yale University School of Epidemiology and Public Health."
Eustis takes the helm as Fairview CEO

University of Minnesota alumnus Mark A. Eustis started Aug. 1 in his new role as Fairview Health Services’ president and CEO. Eustis was most recently president of Regional Ministry Operations for Ascension Health in St. Louis — the nation’s largest nonprofit health system. A Minnesota native, he earned a bachelor’s degree in business and a master’s degree in hospital and health-care administration from the University.

“Mark’s experience integrating academic medicine into community hospitals makes him a perfect choice to continue strengthening Fairview’s 10-year pioneering partnership with the University of Minnesota,” says Jon Campbell, chairman of the Fairview board of directors.

Eustis replaces David Page, Fairview’s president and CEO since 1997, who will retire in October.

Researchers use noninvasive device to detect brain disorders

RESEARCHERS FROM THE Medical School and the Brain Sciences Center at the Minneapolis Veterans Affairs (VA) Medical Center have discovered a simple, painless way to detect Alzheimer’s disease, schizophrenia, and other complex brain disorders using a device that tracks magnetic signals in the brain.

The research, which appeared in the August 27 issue of the Journal of Neural Engineering, may allow physicians to diagnose brain disorders earlier, monitor their progress, and track the effectiveness of different treatments for these diseases.

Apostolos Georgopoulos, M.D., Ph.D., University of Minnesota professor of neuroscience, neurology, and psychiatry, and his research team used magnetoencephalography (MEG) to record tiny magnetic fields in the brain as research subjects stared at a point of light for 45 to 60 seconds.

By applying various mathematic algorithms to the MEG data, the researchers were able to classify the 142 research subjects by diagnosis. They found that they were able to identify six types of disorders with 100 percent accuracy: Alzheimer’s disease, schizophrenia, chronic alcoholism, multiple sclerosis, Sjogren’s syndrome, and facial pain.

“This elegantly simple test allows us to glimpse into the brain as its working,” Georgopoulos says. “In the future it could be applied when studying the effect of new treatments or drug therapy.”

All behavior and cognition in the brain involve networks of nerves continuously interacting at very fast speeds. The MEG’s 248 sensors record those interactions by the millisecond — measurements that represent the workings of tens of thousands of brain cells.

Georgopoulos and his team will collect more data on the six disease groups and will begin to analyze whether the technique works with other brain disorders such as depression, posttraumatic stress disorder, autism, and Parkinson’s disease.

Christensen named “Rural Health Hero”

Raymond Christensen, M.D., assistant dean for rural health at the University of Minnesota Medical School-Duluth Campus, was recently named Minnesota’s “Rural Health Hero” at the Minnesota Rural Health Conference in Duluth for advocating on behalf of today’s health-care consumers and educating tomorrow’s rural health providers. He received the award shortly after being installed as Grand Master of the Masons of Minnesota — a 154-year-old fraternal organization with more than 16,000 members.

Among other accomplishments, Christensen helped develop the trauma system in northeastern Minnesota and northwestern Wisconsin, the Arrowhead EMS Association, the Northern Lakes Health Care Consortium, the Minnesota Center for Rural Health, the Minnesota Office of Rural Health and Primary Care, and the Rural Health Resource Center.

Sexual health expert receives award, takes leadership roles

Eli Coleman, Ph.D., director since 1991 of the Medical School’s Program in Human Sexuality, was elected president of the International Academy of Sex Research at the academy’s annual meeting in August.

Coleman’s election to the position followed his recent appointment as inaugural holder of the University’s endowed chair in sexual health — the first of its kind in the world — and his receipt in April of the Gold Medal Award 2007 at the XVII World Congress of the World Association for Sexual Health.

Coleman has written more than 130 articles and book chapters on sexual health. Under his leadership, the Program in Human Sexuality has become one of the world’s largest and most comprehensive centers for sexual-health treatment, research, and education.

CMRR researcher receives Gold Medal Award

University of Minnesota Medical School professor Michael Garwood, Ph.D., received the 2007 Gold Medal Award at the Joint Annual Meeting of the International Society for Magnetic Resonance in Medicine and the European Society for Magnetic Resonance in Medicine and Biology this summer.

Garwood, associate director of the Center for Magnetic Resonance Research (CMRR) at the Medical School and a member of the Cancer Center’s Breast Cancer Research Program, is internationally recognized for incorporating magnetic resonance imaging with magnetic resonance spectroscopy technology to noninvasively diagnose cancer and monitor response to cancer therapies.

During his acceptance speech in Berlin, Garwood thanked CMRR director Kamil Ugurbil, Ph.D., who won the Gold Medal in 1996.

Powell receives Distinguished Service Award

Deborah Powell, M.D., dean of the Medical School and assistant vice president for clinical sciences, in July received the Association of Pathology Chairs’ Distinguished Service Award — the group’s highest honor.

Powell is the first woman to receive the award, which has been presented annually since 1986 to an individual who has made substantial contributions to academic pathology in research, in education, or in advancing the discipline of pathology in the medical community and to the public.

“Dr. Powell has been one of the leading individuals in the country for advancing medical education and adapting to the challenges and opportunities of the 21st century,” says James Crawford, M.D., Ph.D., president of the Association of Pathology Chairs. “She is held in the highest regard by the academic pathology community for her national leadership, and it is our privilege to recognize her with our highest honor.”

Christensen was elected to the American Board of Family Medicine in 2001. He currently serves on the boards of the World Association for Sexual Health; the Minnesota Rural Health Conference; the Northern Lakes Health Care Consortium; the Minnesota Center for Rural Health; the Minnesota Office of Rural Health and Primary Care; and the Rural Health Resource Center.

Researcher uses noninvasive device to detect brain disorders
President’s Column

Medicine is constantly changing.

For health-care providers, that daily reality is both exciting and challenging. Of course, medical education has to keep up, too — certainly the University of Minnesota Medical School has evolved and grown over the years.

Did you know that our Medical School has graduated 16,233 M.D. students since its first graduating class in 1884? Currently, 5,672 of these medical doctors practice in Minnesota — an essential contribution to our state.

In many ways, the Medical School is much like it was years ago. Students still experience the thrill of their first anatomy class and learn the art and science of medicine from faculty members committed to excellent care, research, and service.

But in other ways, the Medical School has changed dramatically, especially with the development of new technologies. Alumni attending this year’s reunion activities will find notable differences in the tools used to train future physicians. Today’s medical students are learning many skills — such as drawing blood and inserting chest tubes — with state-of-the-art virtual-reality models and patient simulators.

In addition to a tour of the Academic Health Center or if you need help locating a classmate, simply contact Alumni Relations at MAS@mmf.umn.edu or 800-922-1663.

Have a healthy and productive fall as we welcome the Class of 2007.

Sincerely,

Martin J. Stillman, M.D., J.D., F.A.C.L.M.
Class of 1977
President, Medical Alumni Society

I’m looking forward to reconnecting with my classmates as we celebrate our 10-year reunion this fall — and nine other classes will celebrate their reunions as well. Even if you can’t make it back to the University of Minnesota for your reunion, I encourage you to learn more about how technology and research are taking medical education — and our profession as a whole — to the next level. If you would like to arrange for a tour of the Academic Health Center, or if you need help locating a classmate, simply contact Alumni Relations at MAS@mmf.umn.edu or 800-922-1663.

Well connected

Mentoring program offers learning opportunities for students and physicians

LESS THAN A YEAR AFTER meeting her mentor through the Connections Physician-Student Mentoring Program, medical student Adrienne Schwartz, M.P.H., found herself working as part of his research team at the Minneapolis Veterans Affairs Medical Center for a summer.

Her mentor, Gregory Filice, M.D., an infectious disease specialist and professor in the Medical School’s Department of Medicine, now plans to publish the research paper Schwartz helped draft that summer — listing Schwartz as a coauthor — and to present it at a national meeting.

In addition to providing this career-advancing opportunity, Filice, a resident alumnus of the University, is glad to advise Schwartz on the challenges of the medical school — as someone who has been there before. Together they have discussed their backgrounds, career interests, hopes, and aspirations.

“As students, we are introduced to many great physicians throughout medical school, but it’s nice to know a physician who sees you come in, encourages you along the way, and then sees you graduate four years later,” says Schwartz, now a third-year medical student.

“You mentor not only wants to see you succeed, but does his or her best to help make that success a reality.”

About 160 medical students are matched with community physicians each year through the Connections mentoring program. All physicians in the Twin Cities area are eligible to take part in the program, which is offered cooperatively by the University of Minnesota Medical School, the University’s Medical Alumni Society, the Minnesota Medical Foundation, and Hennepin and Ramsey Medical Societies.

“I enjoy working with young people early in their careers,” says Filice, who has been a Connections program mentor since 2002. “Doing that helps us reflect on what we do. It’s a growth experience for mentors as well as students.”

New mentor-student pairs will have a chance to meet at this year’s Connections program kickoff breakfast on November 9.

Students and physicians who would like to participate in the program should register by Friday, October 19, at www.mmf.umn.edu/goto/mentor or by contacting Emily Heagle at 612-624-9165 or e.heagle@mmf.umn.edu.

Alumni receives award for book on homicide

Psychiatrist Carl P. Malmquist, M.D., has received the prestigious Manfred S. Guttmacher Award for his book Homicide: A Psychiatric Perspective, now in its second edition.

Malmquist, who describes murder as “an indelible part of our behavior as humans,” is a nationally recognized expert in juvenile and adult psychiatry and forensic psychiatry. He also is a professor of social psychiatry in the University of Minnesota’s Department of Sociology, teaching in the areas of law, criminology, and deviance. His class “Killing” is consistently one of the most popular courses at the University.

The annual Guttmacher Award honors outstanding contributions to literature on forensic psychiatry. Malmquist received the award in June at a meeting of the American Academy of Psychiatry and the Law.

“The award means a lot,” says Malmquist, a member of the Medical School Class of 1959. “Because the award is for the best written work of the year in psychiatry and law, lots of lawyers get it, and especially people on the West and East Coasts. As a psychiatrist from the Midwest, I feel honored to receive the award.”

Malmquist became interested in studying homicide while serving as a psychiatric consultant for various state district courts and in the federal court system. He wanted to know what leads some people — but not others — to homicidal behavior. After decades of studying the topic, he says he still doesn’t have all of the answers.

“We’re all aware that there’s a dark side to everybody, at least in a potential sense, but some people act it out in real life,” Malmquist says.
Alumni Spotlight | Sarah Nunneley

Feeling the pull of aerospace medicine

AS A YOUNG DOCTOR in aerospace medicine, Sarah Nunneley, M.D., M.S., didn’t want merely to observe her study participants spinning in a human centrifuge. She wanted in.

For one study, Nunneley sat across from her study subjects in the centrifuge while drawing arterial blood samples. They spun at 3 Gs—or three times the normal gravitational pull—for six to eight minutes at a time. “By the way, I get motion sick fairly easily,” Nunneley adds.

But it was exactly what she had always wanted. Growing up with a father in aviation law and a mother who read science fiction to her, Nunneley dreamed of a career in aerospace. By age 30, she had become the first woman to complete a residency in aerospace medicine and a year later was the first woman to be board certified in the field.

Nunneley, a member of the Medical School Class of 1967, spent the next 27 years studying how the human body reacts to aerospace-specific situations. She has conducted experiments on thermal stress, altitude, rapid decompression, acceleration, as well as varying combinations of these environmental factors to examine how they affect normal functioning. She also has served as a medical consultant and medical monitor for NASA-funded studies intended to simulate astronaut activities.

“I would go around thinking, ‘They are paying me to do this, and I would have done it just for fun!’” says Nunneley.

Breaking down barriers

During medical school, Nunneley considered specializing in a number of fields. After spending two summers working in the University’s Division of Pediatric Cardiology, learning that seemingly simple measurements of rates, pressures, flows, and oxygen saturations could help explain complex physiological functions, she became more interested in physiology. But when she decided to apply for residencies in aerospace medicine, Nunneley hit a glass ceiling. She wrote to the navy—“as most people in the field train in the military, and her father had served in the navy during World War II”—but naval officials told her that women weren’t allowed on ships. Next she wrote to Harvard University, whose officials said they weren’t sure women were eligible for that residency.

The Ohio State University was different; officials there invited her for an interview. “When I was recruiting study participants for the centrifuge, my first question was always, ‘Do you like carnival rides?’” says Nunneley.

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“Women have been everywhere—from the battlefield to space flight—so it’s no longer peculiar to see a woman in this field.”

SARAH A. NUNNELEY, M.D., M.S.

NICKNAME: Sally

HOMETOWN: Minneapolis

CURRENT RESIDENCE: Lexington, Va.

M.S. DEGREE: preventive medicine

SPENT SPARE TIME IN MEDICAL SCHOOL: Earning a pilot’s license

HOBBIES: “I ride horseback competitively. I walk and jog most days as well. I’ve also taken up gardening.”

NEATEST THING ABOUT WORKING IN AEROSPACE: “Getting to play with the big toys—the centrifuge, the altitude chambers, the thermal chambers, and all of their associated equipment—and working with some really wonderful people over the years.”

“Do you like carnival rides?”

“Women have been everywhere—from the battlefield to space flight—so it’s no longer peculiar to see a woman in this field.”

BY NICOLE ENDRIS

Alumni Connections
In Memoriam

KENNETH E. AHOLA, M.D., Class of 1946, died June 29 at age 84. A World War II veteran, Dr. Ahola cofounded the Mesaba Clinic in Hibbing, where he practiced medicine until his retirement in 1976. He is survived by his wife, Helen; three children; and ten grandchildren.

LESLIE E. ARNOW, M.D., Class of 1947, Convent Station, New Jersey, died June 8 at age 97. Dr. Arnow was a University of Minnesota faculty member for eight years. He later worked for the drug division of the March Chemical Company, then served as president of the Warner-Lambert Research Institute. In 1995, Dr. Arnow received the University’s Distinguished Alumni Achievement Award. He was preceded in death by his wife, Jennie; one child; and fifteen grandchildren.

JAMES A. BERLIN, M.D., Elizabeth Pelinka, he is survived by one child.

FRANK J. CARTHEY, M.D., Class of 1952, New Ulm, Minnesota, died February 17 at age 87. After completing medical school and his family practice internship at the University of Minnesota, Dr. Carthey briefly served on the Medical School faculty. A World War II veteran, he went to practice in New Ulm, where he delivered more than 3,000 babies and served as president of the New Ulm Medical Clinic, Union Hospital Medical Staff, and Southern Minnesota Academy of General Practice. He is survived by his wife, Georgia; five children; and twelve grandchildren.

DAVID M. CRAIG, M.D., Class of 1952, Portland, Oregon, died June 3 at age 90. In addition to earning his M.D. degree, Dr. Craig completed his medical residency and fellowship at the University of Minnesota. The World War II veteran went on to have a private practice in St. Paul. Dr. Craig was preceded in death by his wife, Carol Harrin. He is survived by five children, ten grandchildren; and two great-grandchildren.

KENNETH L. DIBLAM, M.D., Class of 1980, New Ulm, Minnesota, died July 27 at age 62. Dr. Diblam practiced medicine at the University of Minnesota Medical Foundation board of trustees. He is survived by his wife, Shauna; and two children.

M. MEVIR GOLDFINE, M.D., Class of 1951, Palm Desert, California, died March 30 at age 79. Dr. Goldfine was a physician for more than 50 years in Oakland and San Leandro, California, and served on the Minnesota Medical Foundation board of trustees. He is survived by two children and one granddaughter.

ALBERT G. MILLER, M.D., Class of 1948, St. Paul, Minnesota, died August 3, 2016, at age 93. Dr. Miller, a pediatrician, earned his M.D. degree and completed his residency at the University of Minnesota. He also served as member of the Minnesota Medical Foundation board of trustees. Dr. Halper is survived by his wife, Barbara; four children; four grandchildren; and one great-grandchild.

JOHN R. HANN, M.D., Class of 1982, St. Cloud, Minnesota, died April 17 at age 56. Dr. Hann is survived by three children and their mother, Susan.

BETTY S. GILSON, M.D., Class of 1943, Friday Harbor, Washington, died March 23 at age 92. Dr. Gilson later moved to Seattle, Washington, where she helped to establish the University of Washington School of Public Health and Community Medicine and developed the Sickness Impact Profile, now a mainstay of medical quality assurance. She was preceded in death by her husband, Dr. John Gilson, and is survived by two children.

DONALD G. MCKIQUE, M.D., PH.D., Edina, Minnesota, died June 19 at age 76. After completing his surgical internship and residency at the University of Minnesota and serving in the navy, Dr. McKiernan became a thoracic surgeon for the Minneapolis Veterans Administration Medical Center, where he eventually became chief of surgery. McKiernan was a member of the University of Minnesota’s surgical faculty for more than 35 years. He also chaired numerous medical organizations and committees, held a number of visiting professorships, and authored medical textbook. In 1995, the Minnesota Surgical Residents Society named him Surgical Alumnus of the Year. Dr. McKiernan is survived by his wife, Lucy; two children; and two grandchildren.

JOHN R. SCHOTZKO, M.D., Class of 1967, Wabasha, Minnesota, died January 30 at age 73. Dr. Schotzko was a family practitioner who helped establish Doctor’s Park in Marshall. He is survived by his wife, Steila.

HARRY A. WHEELER, M.D., Class of 1952, Mandan, North Dakota, died April 22, at age 98. As an obstetrician and pediatrician in Mandan for more than 50 years, Dr. Wheeler delivered more than 3,000 babies. He also served as a coroner for Morton County, North Dakota, for more than 30 years. Dr. Wheeler was preceded in death by his wife, Avanell; one great-grandchild; and one great-grandchild.
December 1957. As snow swirls around a garage-turned-workshop in northeast Minneapolis, the young man inside hunches over a collection of wires, resistors, switches, and other electrical bits and pieces. History is being made: The man is Earl Bakken, and the device taking shape in his hands is the world’s first wearable transistorized pacemaker. By summer, his invention will be keeping young children alive after open-heart surgery. By 2007, the device and others based on it will have given millions of individuals around the world a new chance to lead healthy lives.

“The invention of the implantable pacemaker has extended the lives and improved the quality of life of uncountable numbers of children and adults,” says David Benditt, M.D., cardiology professor and codirector of the University’s Cardiac Arrhythmia Center. “It has clearly benefited mankind to a greater extent than any other single medical technology.”

Symposium to celebrate, challenge

A daylong scientific symposium celebrating the 50th anniversary of the invention of the wearable transistorized pacemaker will offer both retrospective and prospective looks at one of the most exciting trajectories ever of a biomedical device.

“The Pacemaker: Past, Present, and Future,” sponsored by the Department of Surgery and LifeScience Alley, will be held December 13 in Mayo Auditorium at the University of Minnesota. Presenters at the event include pacemaker inventor Earl Bakken; Johns Hopkins Medical Institute heart surgeon Vincent Gott, M.D., who trained under C. Walton Lillehei, M.D., Ph.D.; David Steinhaus, M.D., medical director of Medtronic; and David Benditt, M.D., professor of cardiology at the University. They will address various innovations in pacemaking over the years and look at emerging advances, including the use of robots to place leads, the effect of pacing on the brain, and the development of biologic pacemakers using gene therapy.

For more information or to register, go to www.shibb.umn.edu, or e-mail organizer Paul Iaizzo, Ph.D., at liaizzo01@umn.edu.

AABOVE: University alumnus Earl Bakken worked long hours in his workshop to create the first wearable transistorized pacemaker.

LEFT: March 1961, C. Walton Lillehei, M.D., Ph.D., listens to his patient’s heart, which was beating regularly again, thanks to the recently invented pacemaker.

The device has “revolutionized cardiovascular medicine,” agrees Lillehei Heart Institute director Daniel Garry, M.D., Ph.D., holder of the St. Jude Medical Cardiovascular Chair in Biomedical Engineering and director of the Department of Medicine’s cardiology division. “And it has given rise to a number of new inventions that have been applied increasingly not only to heart rhythm abnormalities but to heart failure as well.”

The original device, which gave rise to the dual-chamber pacemaker, then to the biventricular pacemaker, has also contributed to the development of implantable cardioverter defibrillators, which are used today to monitor for and automatically correct abnormal rhythms in individuals with prior heart problems. This cascade of innovation all started with a conversation between Bakken and University of Minnesota open-heart surgery pioneer C. Walton Lillehei, M.D., Ph.D. (Medical School Class of 1941), a half-century ago. Sometimes after Lillehei operated on a child to fix a congenital heart defect, the child’s heart would temporarily lose its ability to keep a regular beat. Lillehei’s solution was to connect such patients to an electrical device that delivered regular pulses. But this AC-powered pacemaker was bulky—about the size of a microwave oven—and had to be plugged into a wall outlet connected to a central electrical-supply system.

After a power failure at the University’s hospital on October 31, 1957, drove home the precariousness of depending on an external source of electricity, Lillehei asked Bakken, an electrical engineering alumnus who helped maintain equipment at the hospital, to try to come up with something better. Bakken’s first instinct was to put a car battery on a cart and use it to drive the big pulse-delivering machine. Then he remembered an article he had seen in Popular Electronics describing how to build a compact metronome using a tiny battery and transistors. Working from the metronome directions, Bakken wired and soldered together a portable pacemaker. Powered by a tiny 9-volt battery, this smaller device—about the size of a peanut butter sandwich—could deliver just the right jolt to healing hearts.

When the transistorized pacemaker was ready, Bakken took it to the hospital’s research lab to try it on a dog. To his delight, it seemed to do the job. The day after, when Bakken stopped by, he was astounded to see that Lillehei had already attached the device to one of his patients.

By the end of 1958, Bakken’s garage-based company, Medtronic, had received orders for five dozen of the devices. In the 50 years since, Medtronic, Inc., has become a global leader in the medical device industry, and more than 2 million pacemakers have been used to keep hearts and their owners going strong.

By Mary Hoft

Courtesy of the University of Minnesota Institute for Engineering in Medicine.

Philanthropy sustains a strategic partnership

Alumni Earl Bakken and C. Walton Lillehei, M.D., Ph.D., helped launch a tradition of biomedical innovation at the University of Minnesota.

Today, generous philanthropic support from the Lillehei family, Bakken and his wife, Doris; and Medtronic, Inc., the now-global medical device company Bakken cofounded, is sustaining what these two trailblazers started 50 years ago. Here are just a few of the University programs that are benefiting:

- The Lillehei Heart Institute was created through generous donations from Katherine R. “Kay” Lillehei, Walt’s widow, and the Lillehei family, which continues to support heart research.

- Medtronic, Inc., funds the Medtronic Visible Heart Research Professorship, held by Paul Iaizzo, Ph.D., and provides equipment and supplies to the University’s Visible Heart Laboratory—housed in the space where Bakken and Lillehei tested the first battery-powered pacemaker. The company generously supports the Cardiac Arrhythmia Center as well.

- In honor of the company’s cofounder, the Medtronic Foundation established the Medtronic Bakken Chair in Cardiovascular Repair, held by leading University heart researcher Doris Taylor, Ph.D.

To his delight, it seemed to do the job.
Opportunity

knocks for IRA holders

Act now to benefit from income-tax incentives that make charitable giving more appealing than ever. If you are age 70½ or older, you can use your individual retirement account (IRA) to make an immediate, lifetime gift to the Minnesota Medical Foundation to support health-related research, education, and service at the University of Minnesota.

Now and through the end of the year, you can make a charitable contribution of up to $100,000 without adverse tax consequences. Specific rules apply. To learn more, contact your plan administrator or the Minnesota Medical Foundation at 800-922-1663.

Visit our Web site at: www.mmf.umn.edu/giftplanning

Celebrating a Century of Alpha Omega Alpha at the University of Minnesota

Please join your Alpha Omega Alpha colleagues at a banquet celebrating the Minnesota chapter’s 100th anniversary and induction of the chapter’s newest members to the honor medical society.

December 5
6:00 p.m. Reception
6:30 p.m. Dinner followed by new member induction and program
MINNARAKA ALUMNI CENTER UNIVERSITY OF MINNESOTA

December 6
12:05 p.m. Department of Medicine Grand Rounds on rheumatoid arthritis
MOOS TOWER 2-620

To learn more, contact Jim House, M.D., AOA chapter councilor, at house001@umn.edu.

Minneapolis Medical Foundation

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