

Medical Bulletin

A window on health

What the eyes can tell us
about our well-being



FALL 2014 Contents



About the Medical School

THE UNIVERSITY of Minnesota Medical School encourages collaborations that spur innovations—discoveries that advance biomedical knowledge, patient care, and educational programs. The Medical School now trains 920 medical students and more than 800 residents and fellows and is home to 1,600 faculty physicians and scientists.

Brooks Jackson, M.D., M.B.A.

Medical School Dean and
Vice President for Health Sciences



UNIVERSITY OF MINNESOTA

Medical School

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ON THE COVER: photo by Jonah Gouin, istockphoto.com



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Medical School News

Blue-ribbon panel to advise Medical School

Gov. Mark Dayton in August launched a blue-ribbon committee to help ensure the U of M Medical School is a national leader in medical training, research, and care.

He charged the committee with delivering to the 2015 state Legislature policy and budget recommendations focused on the following:

- ensuring the Medical School’s national preeminence by retaining and attracting world-class faculty, staff, students, and residents;
- sustaining the U’s national leadership in medical research and health care innovation and delivery while capitalizing on the state’s investments in biomedical research;
- expanding the U’s clinical services to strengthen its ability to serve as a state-wide health care resource, as a training site for health professional students and residents, as a site for cutting-edge clinical research, and as a critical funding source for the U’s Medical School and health sciences; and
- addressing the state’s health care workforce demands, including the need for more primary care physicians to serve an aging population and people with chronic health problems.

More than 70 percent of Minnesota’s physicians have taken classes at or earned their medical degrees from the U of M Medical School. MB

For a list of the committee members, visit <http://mn.gov/governor> and select newsroom archives.



Rendering of the hospital with its new name

New name honors Masonic legacy

THE UNIVERSITY OF MINNESOTA has renamed its children’s hospital University of Minnesota Masonic Children’s Hospital following the announcement of a \$25 million gift from Minnesota Masonic Charities and in recognition of the Masons’ legacy of support.

The gift, made public on October 14, will be used to enhance the patient experience for children and families and advance research in areas such as neurobehavioral development, rare and infectious disease, and stem cell therapies. When combined with other gifts the Masonic Fraternity has made over the last six decades – including \$75 million to support cancer research and care since 2008 – it brings the Masons’ total support of the University to more than \$125 million.

“We are proud of our long-standing partnership with the University of Minnesota,” says Eric Neetenbeek, Minnesota Masonic Charities president and CEO. “The Masonic Fraternity is passionate about helping Minnesotans lead longer and healthier lives. By supporting the children’s hospital, we hope to facilitate new treatments and cures that will benefit patients and families across the state and around the world.”

“The University of Minnesota owes a great deal of thanks to Minnesota Masonic Charities for helping us develop leading academic medicine programs that are making a difference in people’s lives,” says University President Eric Kaler, Ph.D. “Top-quality health care is only possible when we have strong community support.” MB

New law bans minors from tanning beds

Teenagers have often used tanning beds to get a sun-kissed look before big events like prom or a vacation. But on August 1, Minnesota teens were forced to rethink their tanning habits.

Gov. Mark Dayton in May signed a bill into law that prohibits minors from using indoor tanning beds, making Minnesota the eighth state to pass such a law.

The research that led to this change in policy was driven by the Masonic Cancer Center's DeAnn Lazovich, Ph.D., M.P.H. She provided critical testimony during the legislative session about her research that has overwhelmingly linked indoor tanning to melanoma, one of the deadliest forms of skin cancer.

People who tanned indoors were 74 percent more likely to develop melanoma than those who had never tanned indoors, according to Lazovich's studies. The more times a person tanned indoors, the higher the risk.

The legislation was proposed in 2013 and passed in 2014, a timeline much faster than Lazovich expected.

Prior to the legislation, Minnesota law required all those under 16 to have parental permission to use indoor tanning beds, but salons weren't always enforcing the rule. Now Lazovich hopes banning indoor tanning for all minors will make it easier to enforce.

"It's definitely a good start," she says. MIB



U campuses go smoke- and tobacco-free

As of July 1, University of Minnesota facilities, buildings, and grounds on the Duluth, Crookston, Rochester, and Twin Cities campuses are smoke- and tobacco-free.

U leaders intend for the new policy to enhance the health of students, faculty, staff, and visitors by encouraging healthy lifestyle choices and limiting involuntary exposure to harmful secondhand smoke.

"The University is committed to protecting the health and well-being of all campus community members," says President Eric Kaler, Ph.D. "We all 'share the air,' and a smoke- and tobacco-free environment will provide many benefits to our community." MIB



Johns appointed interim regional campus dean for Duluth

Alan Johns, M.D., M.Ed., was one of the first students at the University of Minnesota Medical School's Duluth campus more than 40 years ago, and in July he became its interim dean.

"I'm certainly excited. I've had connections with this school since I was 20 years old," says Johns, who also has served as assistant dean for medical education and curriculum since 2011.

Johns succeeds former regional campus dean Gary Davis, Ph.D., who announced in April that he was stepping down.



Alan Johns, M.D., M.Ed.

Since it opened, the Duluth campus has turned out more than 1,700 medical doctors, many in rural and Native American communities — two of the school's stated areas of focus.

"You could go to any small town and find two or three physicians who are former UMD students," says Johns, who also is an internist at Essentia Health in Duluth.

The search for a permanent regional campus dean is under way; a decision is expected in the spring. MIB

\$50M to advance regenerative medicine in Minnesota

STATE LEGISLATORS AGREED last spring to fund efforts that could unlock new cures and treatments for some of the most devastating health conditions facing our population, allotting nearly \$50 million over the next 10 years to regenerative medicine research in Minnesota.

Rep. Erin Murphy, a registered nurse and majority leader of the Minnesota House, and Sen. Katie Sieben, assistant majority leader, spearheaded the legislation, which was supported by the University of Minnesota Stem Cell Institute and the Mayo Clinic Center for Regenerative Medicine.

The new law provides \$4.35 million in grant funds annually, starting next year. A committee of outside experts will

evaluate proposals based on how they affect Minnesota communities, whether they hold the promise of creating jobs, and possible industrial and clinical applications. A five-member board that includes a representative from the U, Mayo Clinic, private industry, and two other stakeholder groups will make the final funding decisions.

Scientists are investigating regenerative medicine's ability to help cure ailments such as dementia, diabetes, and cardiovascular disease by boosting the body's natural ability to heal itself; using healthy cells, tissues, or organs from a living or deceased donor to replace damaged ones; or delivering specific types of cells or cell products to restore function in diseased tissues and organs.

"The fact is, we've reached the ceiling on many current treatment methods, especially for chronic diseases, and regenerative medicine may open new doors and opportunities," says Jakub Tolar, M.D., Ph.D., director of the University's Stem Cell Institute. "Because of the ability of the body's complex mechanisms to rebuild themselves on so many levels, regenerative medicine can be an exceptional tool in just about any discipline." ^[MIB]

IMAGE COURTESY OF REDISH LAB



On the researchers' "Restaurant Row," rats showed signs of regret when they passed up a preferred food only to encounter a less-preferred food – and they couldn't go back.

In studies, rats show evidence of regret

When graduate student Adam Steiner walked in and announced, "My rats are expressing regret," Department of Neuroscience professor A. David Redish, Ph.D., could hardly believe it.

Redish uses rats to probe fundamental mechanisms of decision-making and sees no reason other animals' brains shouldn't resemble humans'. But the idea of regret in rats still came as a surprise, and it required solid evidence – which he and Steiner have now supplied.

In June the researchers reported in *Nature Neuroscience* that rats can recognize when they've made a bad choice and change their behavior in response.

That, says Redish, is the essence of regret. And it means rats may act as stand-ins for humans as researchers probe how the brain makes decisions.

"When we understand how rats make decisions, it tells us something about how humans do it," says Redish. "The more we understand about how decision-making processes work, the more we can understand about how they go wrong and how to fix them." ^[MIB]

Read more about the experiment at z.umn.edu/ratregret.



Early elective deliveries make up more than 3 percent of nation's births

Labor induction or cesarean delivery without medical reason before babies reach 39 weeks gestational age, when they are considered full-term, can be associated with health problems for the newborns, according to University of Minnesota research published in the journal *Medical Care* in June.

Led by School of Public Health assistant professor Katy Kozhimannil, Ph.D., the study is the first of its kind to show who is having these “early elective deliveries” and whether these deliveries happen following labor induction or cesarean.

“Our study showed that early elective deliveries made up more than 3 percent of U.S. births each year over the past 20 years. This may seem to be a small number, but with 4 million births a year in the U.S., each percentage point represents 40,000 babies,” says Kozhimannil. “In addition, we showed that there are important sociodemographic differences

in the chances a pregnant woman has an early elective cesarean or an early elective induction of labor.”

The chance of early elective induction was higher among women who were age 35 or older, were white with higher education levels, were privately insured, or gave birth at rural or nonteaching hospitals.

Early elective cesareans were more likely for women who were younger than age 20 or age 35 or older, were black, had higher education levels, or gave birth at smaller-volume hospitals.

The study found that infants born by early elective cesareans were 60 percent more likely to stay longer in the hospital and more than twice as likely to have respiratory distress compared with infants born on or after 39 weeks. Infants born via early elective induction were also more likely to stay in the hospital longer than expected. ^[MB]

Longtime Duluth educator named Rural Health Hero

A charter faculty member of the University of Minnesota Medical School's Duluth campus has received the Rural Health Hero award from the Minnesota Department of Health and the Minnesota Rural Health Association.

James G. Boulger, Ph.D., director of the Center for Rural Mental Health Studies and of alumni relations

for the Medical School's Duluth campus, is being honored for more than 40 years of educating and mentoring family medicine physicians. The Duluth campus boasts one of the largest percentages of its graduating class

choosing to become rural physicians and family medicine physicians in the nation.

Boulger holds a doctorate in psychology and has been instrumental in building the program to succeed in its missions of training students who plan to practice family medicine in rural Minnesota and American Indian communities. ^[MB]



James Boulger, Ph.D.

Global Outreach | Missy McCoy

LOCATION: Ngaoundéré, Cameroon MISSION: Finding social context behind disease



Leaky pipes

Drip.

Drip.

Drip.

Sweat poured like a river out of my pores, streaming down my back as I tugged at the giant tumor with my trembling hands. I held the soaking monster out of view of the surgeon as he meticulously tied one-handed knots around the neck vessels threatening to burst.

Drip.

Drip.

The patient's blood puddled on the stained floor, swirling into a tributary on its slow journey toward the drain four feet away.

Drip.

Drip.

The mold-encrusted air conditioner gasped, desperately attempting to expel air. A three-inch spider scuttled past. It sank in that I was far away from my pristinely sterilized, disposable-everything, rigorously documented surgical rotation in a world-class teaching hospital.

I focused on this mother of six, with her soft dark eyes, wisps of gray starting to appear in her tightly braided hair. I held her hands before the anesthesia took hold, and remembered how rough and strong they were, hands that told a story of harvesting manioc and groundnuts. I needed her to be strong right now.

More blood dripped.

Her massive tumor, a surgical “zebra,” was caused by iodine deficiency (a rarity in my own country). How ironic, I thought, in sub-Saharan Africa – land of the zebras. I had to remember she was one of the fortunate ones with the meager funds to receive treatment. As I placed a drain and sutured the gaping incision back together, I imagined sewing the broken pieces of her life back together, in this drippy hospital, a part of a gushing broken system.

Drip.

Drip.

Drip.

I walked home, still dripping in sweat, thirsty and exhausted. I was still not accustomed to the baking sun of the dry season of the southern Sahel. A crowd gathered ahead of me on the road. A broken pipe jetted water into the air. The pipes here are practically constructed for failure. Brittle plastic pipes, which beneath the dirt road are exposed by erosion from rainfall. With time, passing vehicles inevitably rupture the pipes, leaving all those downstream affected.

Precious water snaked its way toward my Cameroonian family's little home at the bottom of the hill. Where does the blame lie in a cracked community water main? Who would pay for this damage and the strain it caused? Surely working through this together would be more

SUBMIT YOUR WORK

The *Medical Bulletin* is seeking compelling photos and stories featuring U of M Medical School student, alumni, or faculty experiences abroad. Selected submissions will be published in future issues of the *Medical Bulletin*. For more information or to submit your photo or story, email managing editor Nicole Endres at nendres@umn.edu.

useful than making accusations, as was now happening. For now, assigning blame was a purely human response in the face of stress.

The next morning on my walk back up the hill, the water still flowed, my sweat still dripped, and my mind brimmed with questions. How was my dear patient recovering? Would the 54-year-old with charming crow's feet and the soft, French-speaking voice I had listened to so attentively still remember me? When I arrived, I glanced to her bed. She was nowhere to be found. Odd. My heart pounded. Where had she been transferred?

A vital pipe had burst.
She died in the night.

The surgeon tensely explained to me he was sure the nurses had been negligent. The nurses found her after the vessel in her neck had ruptured. They desperately grabbed sponges, removed the drain to divert the flow away from her airway, and did the best they could with what they had. It was too late.

Had the nurses been negligent? Perhaps they would tell a different story of poorly written job descriptions, inadequate training, and corruption that had led to missing paychecks for months. This system was leaking in so many places; it was practically constructed for failure.

Drip.
Drip.

Tears streamed onto my green surgical scrubs. My heart threatened to burst, pounding so hard I was sure it would be overheard. Overwhelmed, I sank into an empty rust-covered wheelchair in the cluttered corridor, sobbing. This scene would have played out so differently at home. Anger was palpable in the air around me.

On my way home, the crowd still surrounded the burst water main. Now using buckets and bottles to detain excess water, my neighbors made the most of their scarce resources to alleviate the issue. I wondered, who was responsible? Maybe the manufacturing company was at fault for making such weak pipes. What about the driver who ran over the pipe? Maybe the leak was just another consequence of a government failing to invest in infrastructure for its citizens. How could my neighbors, women selling 10-cent bags of groundnuts for a living, solve all these problems?

Likewise, who was responsible for the tragic death of my humble patient? Was it the powerful surgeon, giving commands from the high ground? Was it the overworked nurses, trying to follow the post-op orders from below? Maybe the lack of functioning equipment was to blame. Looking closer, maybe it was the hospital itself, selling health as a commodity rather than providing it as a human right.

Drip.
Drip.
Drip.

Privilege and power do not easily trickle down. The memory of my patient has inspired me to charge upstream, alongside nurses and neighbors, in more authentic partnership. We must work toward a more cohesive system, one that starts with the problems upstream, in order to stop the hemorrhaging downstream for the ultimate realization of a world with fewer leaky pipes. MIB

Missy McCoy is a University of Minnesota Medical School student in the Flexible M.D. program.



A window on diagnosis and

What the eyes can tell us about our well-being

As poets and others have observed, the eye is the window of the soul. □ But for a long time, medicine has also known that our eyes—with 2 million working parts, they rank only behind the brain in terms of complexity—provide more than an aperture into our spiritual state of being.

They are also a window that allows doctors and researchers to peer into the state of our physical and mental well-being. Today, researchers and clinicians at the University of Minnesota are rapidly expanding the scope of disorders that can be diagnosed by examining a patient's eyes—and in some cases, using that information yielded by the eye as a starting point for uncovering treatments for ailments that affect both body and mind.

“What kinds of diagnoses can be made through the eye?” asks Erik van Kuijk, M.D., Ph.D., who leads the University's Department of Ophthalmology and Visual Neurosciences. “In addition to diseases of the eye itself, we can

discover signs of high blood pressure, infectious diseases like TB and HIV, and lupus, among others. We can diagnose atrial fibrillation, rheumatoid arthritis, and sometimes diabetes.”

The list goes on—and keeps growing. “Syphilis, MS, brain tumors, Lyme disease, some cancers and genetic disorders,” says Michael S. Lee, M.D., a professor in the departments of Ophthalmology and Visual Neurosciences, Neurology, and Neurosurgery and holder of the Mackall-Scheie Research Chair in Ophthalmology. “All can be diagnosed through the eye, sometimes definitively; in other cases, as part of a battery of clues pointing toward a disorder,” adds Lee, whose

healing

own practice spans work in the clinic and the research lab from thyroid problems to schizophrenia.

The eyes have it

Of all the disorders that manifest themselves in the eyes, perhaps the most familiar are those associated with dysfunctions of the thyroid gland.

“The explanation we usually give our patients is that thyroid disease is to the immune system like a match that lights fires in both the thyroid gland and in the eye,” explains Andrew Harrison, M.D., who specializes in ophthalmic plastic and reconstructive surgery and codirects the University’s Center for Thyroid Eye Disease with Lee and Erick Bothun, M.D. “The thyroid portion is treated by endocrinologists, while we work with the eyes. It’s a strong interdisciplinary team.”

According to Harrison, the most common ocular symptom of thyroid disease is eyelid retraction, an uncomfortable and irritating condition in

which the upper eyelid retracts until the entire pupil is visible. About 90 percent of people who have thyroid disease suffer from this condition.

Another common symptom is a bulging of the eye. “These are often seen together and, when they are, it’s almost always caused by thyroid disease. Many thyroid patients also experience inflammation of the eye muscles that causes the eye to turn in or down,” he says.

“Nobody knows for sure why thyroid conditions do this,” Harrison continues. “It probably results from the immune system detecting antigens on the eye as a result of an autoimmune disease.”

In his area of practice, the most worrisome symptom is droopy eyelids. Only careful diagnosis can determine whether the condition is benign—the result of aging or a birth defect—or the result of far more serious conditions, like a tumor or an aneurysm.

PHOTO: SCOTT STREBLE



Ophthalmic plastic and reconstructive surgeon Andrew Harrison, M.D., provides relief to people who suffer from thyroid disease that affects the eyes.

The expanding list of disorders, both physical and mental, that can be diagnosed by means of the eye has led to a growing acknowledgment of the value of linking clinical ophthalmology with interdisciplinary research.

“A patient with a droopy eye and a fixed and expanded pupil is often suffering from an expanding brain aneurysm,” Harrison says. “The good news is that a timely diagnosis can lead to lifesaving preventive surgery.”

Bringing blindness into the light

One of the major complications of diabetes is diabetic retinopathy, which causes a host of symptoms, ranging from blurred vision to total blindness.

“People who have had diabetes a long time have a good chance of suffering from diabetic retinopathy—about an 80 percent chance after 20 years of diabetes,” says scientist Eric Newman, Ph.D., a Distinguished McKnight University Professor in the Department of Neuroscience.

With funding from, among other sources, a 2013 Innovative Ophthalmic Research Award from the Research to Prevent Blindness Foundation and a grant from Fondation Leducq of France, Newman leads a team of researchers in the search for neurological causes of retinopathy and for treatments that may prevent eye damage.

Doctors have long known the proximate cause of diabetic retinopathy: as with all components of the central nervous system, the retina needs a large supply of blood to function properly. As diabetes causes capillaries throughout the body to deteriorate, blood flow to the retina is reduced. Further complicating matters is the likelihood that new blood vessels begin to develop in the eye in response to the shutdown of capillaries. These blood vessels cause pressure on the already stressed retina, leading to further damage.

Research has revealed that the breakdown of capillaries and formation of

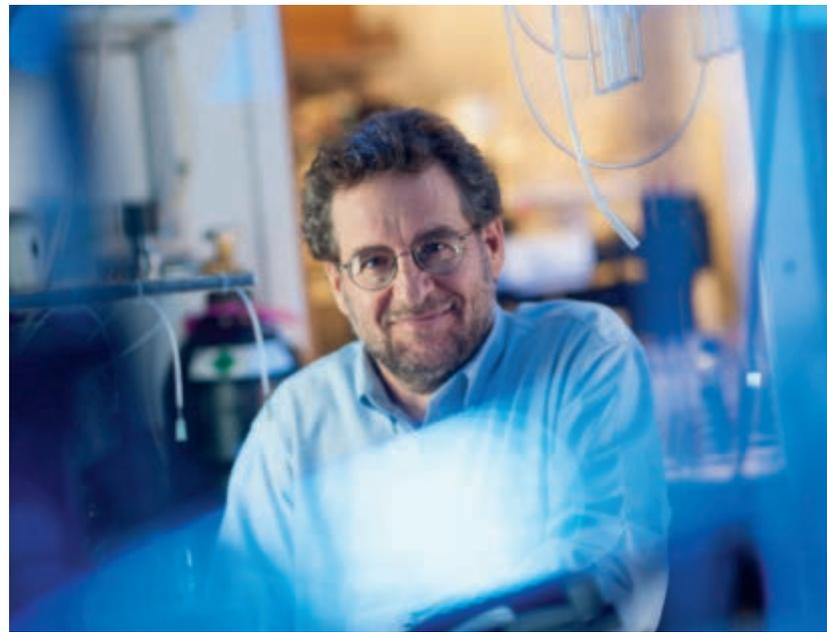
new blood vessels happen late in the game. “In a diabetic patient, you find that the dilation of blood vessels in response to light is reduced by as much as 60 percent well before any morphological change in the retina occurs,” Newman explains.

Meanwhile, changes in what are called glial cells in the retina can be detected long before the onset of full-blown retinopathy. Glial cells surround and protect neurons. Once it was believed that these cells had only a passive, support function role, but now researchers, including Newman, have discovered that glial cells are key players in controlling blood flow and also can release chemicals that affect neuronal activity.

Newman recently received a grant from the organization Research to Prevent Blindness to repeat experiments with diabetic patients that he conducted with diabetic rats treated with a readily available chemical supplement that stimulated the activity of glial cells—and it slowed the progress of retinopathy.

“In our animal experiments, injecting this chemical into the bloodstream can restore normal blood flow in 15 minutes,” he says. “We believe that the same thing will happen in diabetic patients when this chemical is administered orally.”

As research by Newman’s team moves into studies involving humans, there are serious hurdles to overcome; for example, the supplement can be harmful to humans in high doses, so Newman will look into the possibility of topical applications and will experiment with related substances that might have the same ameliorative effects but without the toxicity.



Despite those hurdles, Newman foresees the possibility of an exciting breakthrough for the millions of diabetics in the United States and beyond. “This could potentially be a very cheap way to prevent blindness in diabetics,” he says.

Scoping out schizophrenia

In the 1970s, when angel dust emerged as a popular drug among the disco crowd, emergency departments around the country began reporting that patients were being rushed from the dance floor to the ED exhibiting symptoms identical to those found among people who have schizophrenia—visual and auditory hallucinations, experiences of profound dissociation, disordered thinking, bouts of paranoia, and others.

Researchers soon discovered that angel dust interfered with the functioning of a receptor called NMDA, found in the nervous system. Later, research would find that NMDA receptor dysfunction is implicated in schizophrenia.

This connection has led University neuroscientist Robert F. Miller, M.D., holder of the 3M Bert Cross Chair in Visual Neuroscience, to look for ways to identify people who might develop schizophrenia by examining the ganglion cells of the retina using an enhanced form of a 10-minute eye test called a pattern ERG. By having patients stare at a brightly lit checkerboard pattern of shifting dark and light squares, it’s possible to stimulate the ganglion cells—and determine, by their response, whether NMDA sites located on those cells are compromised, Miller says.

Since NMDA cells located on the retinal ganglion are identical to those found in the brain, he says it’s reasonable to assume that deficient NMDA receptors in the eye means there are deficient NMDA receptors throughout the nervous system.

Newly funded with a \$400,000 grant from the National Institute of Mental Health, Miller and colleagues Lee and C. Gail Summers, M.D., along with

LEFT

Robert Miller, M.D., is evaluating whether an enhanced eye exam could predict who might develop schizophrenia.

RIGHT

Neuroscientist Eric Newman, Ph.D., is studying whether a chemical supplement could prevent blindness in people who have diabetes.



PHOTO: SCOTT STREBLE

Erik van Kuijk, M.D., Ph.D., says collaboration between ophthalmologists and neuroscientists is critical to finding new treatments for eye diseases.

Department of Psychology assistant professor Angus McDonald III, Ph.D., are working with people suffering from schizophrenia as well as a group of unaffected subjects. Each person in the study undergoes an eye exam that includes a pattern ERG.

“The study isn’t complete yet, but it appears that we are beginning to see considerable differences [in responses to the pattern ERG] between schizophrenics and matched control subjects,” Miller says.

While his work won’t cure schizophrenia, Miller believes it’s possible that, by detecting NMDA receptor dysfunctions early enough, before the symptoms of the full-blown disorder surface, it might be possible to prevent its onset or reduce the severity of the disease by preventing or reducing the neurological damage in people who have schizophrenia. That damage, Miller says, is probably the source of the disorder’s symptoms.

“If we can show that our observations are very predictive, then we can move on to test people who we know are at risk genetically, for example, the identical twin of a patient suffering with the disease,” he says. “Assuming the disorder is caused by NMDA receptor dysfunction, we could treat those at-risk patients and perhaps overcome the deficiency before it is too late. By the time people show symptoms of schizophrenia, in late adolescence or early adulthood, it is too late to reverse the brain damage, which probably sets in progressively during childhood and early adolescence.”

Eve of a revolution

The expanding list of disorders, both physical and mental, that can be diagnosed in whole or in part by means of the eye has led to a growing acknowledgment of the value of linking clinical ophthalmology with interdisciplinary research.

This understanding spurred the 2012 renaming and refocusing of the Medical School’s Department of Ophthalmology and Visual Neurosciences (formerly the Department of Ophthalmology), which today includes 60 clinical and four research faculty members among its staff of more than 100 people.

“In our department, ophthalmology, we were treating eye diseases and doing research on the pathogenesis of eye disorders, while in the neuroscience department, they were looking specifically at the mechanism of disease,” observes van Kuijk. “We thought it was important to begin talking to one another and pursue more active collaboration between the two fields—to combine ‘benchtop to bedside’ research and applied clinical care in one department.”

This kind of collaboration, van Kuijk believes, has put the field on “the eve of a revolution” in advanced diagnosis and treatment of a host of disorders.

“But we will only succeed through interdisciplinary collaboration,” he says. “Not by ophthalmologists working alone.” ^[MIB]

Richard Broderick is a freelance writer who lives and works in St. Paul, Minnesota.

The great divide

University scientists take aim at the vast disparities that segregate us into a nation of medical haves and have-nots

TAKING A FEW MINUTES between haircuts, Brian Davis relaxes on one of the black metal stacking chairs lined against the wall in the waiting area of his shop, Brian D's Old School Barbers, in North Minneapolis.

"African American men," he says, gesturing at himself, "we don't talk about retirement. For us, we work and then we die."

We're talking about health disparities, about why African Americans suffer at much higher rates of disease than do their Caucasian American counterparts, and why African Americans may not seek medical screening to help catch serious illness before it becomes fatal illness.

CLOSING THE GAP

The Medical School offers several programs aimed at reducing health inequities by building a more diverse workforce, including:

- an internship designed for minority students who are interested in medical careers;
- Urban Community Ambulatory Medicine and MetroPAP clerkships, which bring students face-to-face with the underserved communities that suffer most from health disparities and encourages them to consider careers in urban primary care medicine;
- the Center of American Indian and Minority Health on the Duluth campus, which helps Native American students pursue health care careers; and
- the Minnesota's Future Doctors program, which helps college-age students from communities under-represented in medicine prepare for admission to medical school.

"There's a fear of hospitals that goes back a long, long way," says Davis. "A lot of African Americans think, 'Hospitals, that's a place you go to die, not to get help.'"

Davis has thought a lot about health disparities that plague his friends and neighbors in North Minneapolis, and he's stepped into a leadership role by volunteering to host Clipper Clinics in his barbershop. The brainchild of Kola Okuyemi, M.D., M.P.H., director of the U of M Medical School's Program in Health Disparities Research, Clipper Clinics are mobile operations that set up shop for the afternoon in a neighborhood barbershop or beauty salon and invite residents to come in for free blood pressure, cholesterol, glucose, and HIV screening.

"I remember one guy," says Davis, "who happened to be passing by and came in for screening. His blood pressure and blood sugar turned out to be through the roof, and they rushed him off to Hennepin County Medical Center. Later, he came by and told us, 'Man, you all saved my life.'"

The haves and have-nots

The problem of health disparities has been well documented. Famously, Martin Luther King Jr. brought it up in his remarks to the Medical Committee for Human Rights in 1966, when he reportedly said, "Of all the forms of inequality, injustice in health care is the most shocking and inhumane."

Among the disenfranchised when it comes to health care are people in poverty, African immigrants, African Americans, Native Americans, Latinos, the LGBTQ community, and homeless people.

Under the enormous umbrella of "health disparities," certain statistics (from the Centers for Disease Control and Prevention) stand out starkly:

- African Americans are *seven times* more likely to die from HIV/AIDS than Caucasian Americans.
- *Twice as many* babies born to African Americans, Native Americans, and Native Alaskans die before 1 year of age, as compared with Caucasian Americans.
- In 2009, homicide rates were *665 percent higher* for African Americans than for Caucasian Americans.
- The African American preterm birthrate is *60 percent higher* than Caucasian Americans'.

The list seems endless. Rates for high blood pressure, prostate and breast cancers, obesity ... all higher among minority and lower socioeconomic status groups as compared with middle-class whites.

In our own backyard, too

Minnesota consistently rates as one of the country's healthiest states—and is recognized as having one of the top health care systems—with a glaring exception: "Minnesota has the largest health disparities in the country," says Okuyemi, "even larger than states where there is a deeper level of poverty. Yes, we have one of the best health care systems, but it doesn't reach out to everyone."

"It might not surprise you to learn that life expectancy for a black male living in urban D.C. is 59, while for a white male living 15 miles away in Potomac, Maryland, it's 82," says Jasjit Ahluwalia,

M.D., M.P.H., executive director of the U's Center for Health Equity. "But would it surprise you to learn that the life expectancy of people living in certain parts of northeast Minneapolis is 20 years fewer than for people who live 15 miles away in Wayzata?"

Critical mass

The number of scientists researching health disparities, designing programs to mitigate the problem, and influencing public policy to affect long-term change has reached a critical mass that has given the University of Minnesota gravitas in this area.

In the Medical School and beyond—in nursing, public health, pharmacy, and dentistry as well—dozens of projects are focused on eliminating the gap between the healthy and the unhealthy, and numerous community clinic partnerships are seeking to improve health care in underserved parts of Minnesota.

"The U is a great place for disparities research because of the growing infrastructure here," says Katy Kozhmannil, Ph.D., an assistant professor in the School of Public Health, who studies health policy that affects reproductive-age women and their families. "It's one thing to care about disparities, but another thing to effectively build organizations that can innovate around this problem."

Badrinath Konety, M.D., M.B.A., is one of the innovators. Director of the U's Institute for Prostate and Urologic Cancers, he leads the Center for Healthy African American Men through Partnerships (CHAAMPS), a pioneering new center that looks



There's a 20-year life expectancy difference between people living in some parts of Minneapolis and those 15 miles outside of the city, says Jasjit Ahluwalia, M.D., M.P.H.



Kola Okuyemi, M.D., M.P.H., designed a mobile clinic operation that brings basic health screening tests to Minneapolis barbershops and beauty salons.



Badrinath Konety, M.D., M.B.A., is leading an effort to improve the disproportionately high rates of disease and violent death among African American men.



PHOTOS: SCOTT STREBLE

beyond physiological causes of disease to simultaneously explore environmental, behavioral, and psychosocial factors that contribute to much higher rates of disease and violent death for African American males.

“The fact that African American men suffer from disproportionately high rates of disease has been well documented,” says Konety, “but the conditions that lead to those diseases have gotten much less attention. Establishing strong community partners and developing ideas that float up from all of those partners will be key to our mission.”

Working with these partners—which so far include 100 Black Men Inc., the National USA Foundation, and the Minnesota Vikings with the National Football League—CHAAMPS’ investigators will design and implement programs to intervene with at-risk African American males of all ages, from elementary school on up, with the aim of improving living conditions, diets, family relationships, education related to critical health topics, and more.

“Impacting certain rates of cancer among African American males may be a longer haul,” says Konety, “but lowering the incidences of heart disease, violence, and prostate cancer? I think all of those are more immediately viable. We’re very optimistic that our collaborative approach will make a difference.”



Policy change, not just doctors in the trenches, is critical to truly reducing health disparities, believes Katy Kozhimannil, Ph.D.

Confronting entrenched bias

By designing Clipper Clinics to go out into the community and confront the problem, Okuyemi's team has acknowledged the deep-seated lack of trust that some people have for the medical establishment. But that's just one of many challenges.

"There are serious issues of trust in the Native American and African American communities," says Okuyemi, "but there are also issues of discrimination and bias, sometimes unintended, when some people access the health care system."

Those are the much more troubling problems that elude easy fixes.

"Studies have shown that health care providers have implicit bias," explains Okuyemi. "When it comes to pain, for instance, blacks and Latinos get different treatment than do whites. There seems to be a preconception that blacks have a higher tolerance for pain, and they're prescribed pain meds at a lower rate."

These types of implicit biases apparently take root as early as age 7, when, according to recent studies, children rating the severity of pain suffered for the same reason—say, getting a hand slammed in the door—assigned lower levels of pain to black children.

It's a complicated issue, Ahluwalia says. "The problems are huge and entrenched. I've heard more than one doctor say, 'My job is to be a doctor, not a social worker.' It doesn't mean they aren't good doctors, but the truth is, we all need to work together as a team to break through these problems."

A changing landscape

Building a more diverse medical workforce is just one part of the solution, he says—and the U is working on that as well (see sidebar on page 14).

Okuyemi, who recently got a grant to train doctoral candidates and postdocs in building successful diversified workforces, says, "The leaders here are doing something about that, but when we say, 'We need more black and Latino doctors,' it doesn't start with the medical school application committee. Applicants need good grades in college, but they needed good grades in high school to get into college, and they needed the right direction and support in grade school to make them successful in high school. ... You see how massive the problem really is."

The problem may be daunting, agrees Ahluwalia, but he's optimistic that he, and his many like-minded colleagues at the U, can help turn the tide. "This is my career passion, and I've been gratified to see the landscape here at the U change over the past eight years or so when it comes to focusing on disparities. But the issue of health equity has to become part of a national dialogue because, as a nation, what we value is equity, and what shames us is inequality." ^{MIB}

Barbara Knox is a freelance writer and editor living in Minneapolis.

INTERVENING ON BEHALF OF WOMEN

"A lot of health disparities can't necessarily be remedied by traditional medicine," says Katy Kozhimannil, Ph.D., an assistant professor in the School of Public Health who is passionate about her disparities work. She focuses most of her research on health policies that affect reproductive-age women and their families. This year, her research findings helped convince the Minnesota Legislature to pass a significant new public health policy allowing Medicaid dollars to pay for doula services for pregnant women. "We've learned that reducing disparities means intervening much further upstream, beginning with a healthy pregnancy and birth," Kozhimannil says.

Whole healing

An infusion of integrative therapies helps kids manage pain and feel better faster—without more drugs

BY ELIZABETH FOY LARSEN

Twelve-year-old Alexis Barton found that Reiki treatments by Megan Voss, D.N.P., throughout the process of her stem cell transplant reduced her pain and anxiety.

Megan Voss, D.N.P., walked into the room of a 12-year-old girl who was recovering from a bone marrow transplant (BMT) at the Pediatric Blood & Marrow Transplant Center at University of Minnesota Masonic Children's Hospital. The girl was in intense pain, but it was difficult to determine what was causing her discomfort.

Voss' role with patients goes beyond assessing vital signs and monitoring medications. That's because as the integrative therapies program manager for pediatric BMT, Voss provides patients with additional therapies that complement the more mainstream traditional Western methods.

To help ease her patient's pain, Voss used Reiki, a hands-on Japanese technique that noninvasively harnesses the energy force that its practitioners believe surrounds all living beings. In addition to providing relaxation, Reiki has been shown to decrease stress and increase healing. In fact, Voss' patient fell asleep within five minutes of beginning the treatment.

When the session ended, she told her mother and Voss that not only was her pain better, she also was much less anxious. The transformation was nothing short of dramatic.

Moments like this are becoming increasingly common at University of Minnesota Masonic Children's Hospital.

Thanks to lead philanthropy from Children's Cancer Research Fund and a new collaboration between the Center for Spirituality & Healing and the Pediatric Blood & Marrow Transplant Center, all of the roughly 90 kids undergoing blood or marrow transplants every year at the hospital will have access not only to Reiki, but also a menu of other integrative therapies, including aromatherapy, acupoint, massage, healing touch, guided imagery, hypnosis, and stress management techniques.



Megan Voss, D.N.P.

In addition to lessening stress, integrative therapies have been shown to reduce nausea and manage pain with fewer side effects than medications.

"Today, there is more recognition that we have to provide care and support for all aspects of health in order to get the best outcomes," says Brenda Weigel, M.D.,

who directs the Division of Pediatric Hematology/Oncology and is an associate professor of pediatrics at the University of Minnesota Medical School. "Well-being isn't just physical. It also includes spiritual, mental, and emotional health."

This whole-person approach is now considered the gold standard of leading pediatric BMT and oncology programs.

"A bone marrow transplant is one of the most life-threatening, complex procedures we do," says John Wagner, M.D., who directs the Division of Pediatric



Lynn Gershan, M.D., says that both resiliency and compliance increase when patients are an active part of their own treatment processes.

BMT and holds the Hageboeck Family/Children's Cancer Research Fund Endowed Chair in Pediatric Oncology and McKnight Presidential Chair in Hematology and Oncology. "We want to figure out ways to reduce the patient's pain, to reduce the patient's and the family's anxiety, and to promote healthy living before and after the transplant."

That is why University leaders, including Wagner and Center for Spirituality & Healing director Mary Jo Kreitzer, Ph.D., R.N., hope to create one of the world's most comprehensive and innovative integrative health programs for children who are undergoing blood and marrow transplants. In addition to Voss, University of Minnesota Masonic Children's Hospital has hired Lynn Gershan, M.D., as medical director of pediatric integrative health and well-being. She will begin by working with outpatients in hematology and oncology at the hospital's Journey Clinic.

An active part of your own healing

Unlike mainstream medicine, many integrative techniques can be taught and modified so that they can be performed by even young patients or their caregivers.

"In medicine, many of the ways we care for patients are passive: 'Take this pill and feel better,'" says Gershan, who is also board-certified in medical acupuncture. "Now we can say, 'In addition to taking this pill, we are going to teach you some relaxation strategies that you can

learn so that you can contribute to your healing.' The evidence shows that both your resiliency and your compliance increase."

Having a hand in your own care is empowering for all patients. But it's especially so for children, who aren't always able to articulate how they feel about having a very serious disease that requires invasive and often painful treatments, not to mention months of hospitalization.

"If you are 6 years old and you are in the hospital for chemotherapy and have a central line and are having surgery for tumors, your life is now dictated by your disease," says Jason Albrecht, manager of patient/family interactive services for University of Minnesota Masonic Children's Hospital. "Integrative therapies give patients options. And with options comes a sense that you have more control."

That's also true for parents and families, whose lives are completely upended not only by the shock of their child's diagnosis but also by the disruption to their daily lives that many families face.

"Many integrative therapy techniques can be taught to parents so that they can actively nurture their child in a positive, holistic way," says Lyn Ceronsky, D.N.P., system director for palliative care at University of Minnesota Medical Center.

Under one roof

Voss' and Gershan's full-time work in BMT, hematology/oncology, and the Journey Clinic is a welcome addition to the treatments—including music therapy, art therapy, guided imagery, and massage—that have been per-

INTEGRATIVE THERAPIES

ACUPOINT A Chinese medicine staple, acupoint works like acupuncture but without needles. It stimulates points on the body to restore the circulation of Qi, or energy flow.

AROMATHERAPY The use of essential oils to promote well-being. Aromatherapy has been shown to reduce nausea and increase relaxation.

GUIDED IMAGERY Using words and music to help a patient create imagined scenarios that promote relaxation and healing.

HEALING TOUCH An energy therapy that uses gentle hand techniques to help shift the patient's energy field in order to accelerate emotional, spiritual, and physical healing.

MUSIC THERAPY The evidence-based use of music interventions to manage stress, alleviate pain, enhance memory, or promote healing. Music also can help patients articulate their experiences in a way that they might not be able to articulate in an ordinary conversation.

REIKI A healing technique that uses light, nonmanipulative touch to promote balance and healing. Reiki can result in increased relaxation, pain relief, decreased anxiety, and a general sense of well-being.

formed by child-family life professionals and a network of volunteers in other parts of the hospital for years. In addition to doing research, both plan to teach nurses and hospital staff integrative techniques to help them in their roles as caregivers.

“The goal is to train staff so that we can provide seamless care,” says Voss. “If a patient wakes up at 3 o’clock in the morning, a nurse can offer an integrative therapy to help them sleep.”

“This is allowing us for the first time to really integrate all of these services under one roof,” adds Weigel, holder of the Lehman/Children’s Cancer Research Fund Endowed Chair in Pediatric Cancer. Both she and Wagner also are Masonic Cancer Center members.

While the work is starting in pediatric hematology/oncology and BMT, the ultimate goal is to make these treatments available to all children at the hospital, whether they are undergoing a kidney transplant or a tonsillectomy.

Despite the hospital’s commitment, funding these treatments remains a challenge, since many integrative therapies aren’t covered by health insurance.

“It’s important to get philanthropic support,” says Gershan. “These approaches can help how a body reacts to stress. And who could be more stressed than a kid who is coping with cancer and chemotherapy?” ^{MB}

Elizabeth Foy Larsen is a Minneapolis-based freelance writer and author who writes frequently about youth issues.

To make a gift and help bring integrative therapies to more kids at University of Minnesota Masonic Children’s Hospital, visit giving.umn.edu/giveto/integrativetherapy or contact Elizabeth Patty at 612-625-6136 or patty@umn.edu.



PHOTO: SCOTT STREBLE

A note on healing

WHAT IS IT ABOUT MUSIC that’s so therapeutic? Though the relaxing qualities of music may seem intangible to many of us, there are certainly tangible aspects, too, says music therapist Annie Heiderscheit, Ph.D.

“Rhythm is such a foundational element to music, but it’s also a foundational element to our body,” she says, “from our breathing to our heart rate to our brain waves to our digestion to how we walk and how we talk. We can use rhythm to slow down our breathing, slow down our heart rate, slow down our brain waves ... to foster this relaxation response.”

The stresses of being sick and being hospitalized tend to push up those vital signs, which over time weakens the immune system—which in turn keeps kids in the hospital longer.

Music therapy is considered an integrative therapy that can be used alongside traditional Western medicine to potentially speed the healing process or, at the very least, improve patients’ quality of life. Though researchers around the world are adding to a growing body of knowledge about the value of music therapy, today much of the evidence that suggests it works is anecdotal.

Enter cancer survivor Ruth Bachman. Throughout her treatment and continuing today, practices such as yoga and meditation helped Bachman move through the fears and uncertainties of cancer.

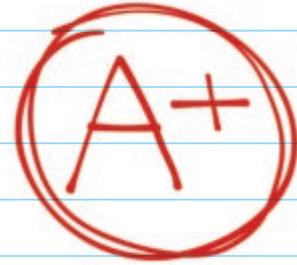
In gratitude for the care she received from physicians associated with the Masonic Cancer Center, University of Minnesota, she has set out to raise funds for collaborative research on integrative cancer care.

Bachman’s Hourglass Fund is currently supporting a pilot study of a soothing instrument called a reverie harp, directed by Heiderscheit and partnering with University pediatric BMT physician John Wagner, M.D.

“I have heard that the patients and their parents are finding the presence and use of the reverie harp to be a meaningful form of relaxation and communication during the very stressful time of BMT,” Bachman says. “I could not have asked for a more meaningful program or two better researchers to be leading it.”

– Nicole Endres

Teachers who get an



What makes a great teacher stand apart from the pack?

Enthusiastic. Knowledgeable. Funny. Organized. Passionate. Available.

When asked to name the qualities that make good teachers great, University of Minnesota Medical School students, professors, and administrators alike rattled off this list without hesitating.

And many also agreed that great teachers of medicine, specifically, must have an additional set of attributes to truly excel:

They're patient. Compassionate. Great listeners. Able to provide context and relevance to real-life scenarios. Approachable. They're simply good doctors—and good human beings.

“Everyone’s challenge is to make sure we’re producing humane, professional, mindful, good listeners who also have skills and the ability to think critically,” says Kathy Watson, M.D., senior associate dean for undergraduate medical education for the Medical School. “But a great clinical teacher can bring the patient’s story into all the discussion of the pathophysiology and statistics and science that weave that person’s story in skillfully, just by listening and having a conversation at the bedside or in the clinic.”

James Nixon, M.D., sees hundreds of students’ critiques of faculty members per year in his job as the Department of Medicine’s vice chair for education. And he has seen three common themes emerge from evaluations of the most highly rated teachers: they’re good with patients, they’re good diagnosticians, and they’re available.

“Part of it is just taking the time and making the time to realize there are students with you and that you were a student yourself not so long ago,” Nixon says. “It’s because someone took that time with you that you chose this field and were able to become a good doctor yourself. It’s the way we can all give back to the next generation, and, ultimately, they might be who’s taking care of us, so it’s to our benefit to make sure they’re good doctors as well.”

– COMPILED BY NICOLE ENDRES



ILLUSTRATION: JIM DRYDEN

What makes someone a great teacher?

“A great teacher is inspirational. Teachers must love their subjects and must love to teach. Great teachers care about and respect their students and are passionate about helping students fulfill their potential.”

– J. Brooks Jackson, M.D., M.B.A., Medical School dean and the University’s vice president for health sciences

“They ask you to take what you have learned and actively apply it to the world around us. They push you to tie together all the pieces, so that you have a fuller understanding and can think on your feet.”

– Brian Berglund, fourth-year medical student

“They’re role modeling all of the pieces of being a physician. So they’re nice to the patients, they’re nice to everybody who works in the hospital, they’re nice to the students, they’re pleasant to be around. The student could look at them and say, ‘Oh, that’s someone I want to be like when I’m done with my training.’”

– James Nixon, M.D., vice chair for education in the Department of Medicine

“I like a teacher who can incorporate some humor into their lecturing. No matter how interesting, every subject can get dry throughout the course of a semester. A great teacher, every once in a while, will land a good joke to keep students paying attention. Humor can relieve the tension in a room full of stressed-out, confused students.”

– Nate Juergens, second-year medical student

What stands out about the best teacher you've ever had?



Are there born teachers or not? That is one great question. Maybe a little bit. But I think we always overestimate how natural teaching is. Good teaching is a lot of hard work. If you see a teacher [for whom teaching] seems like it's pretty effortless, that person has put in a lot of hard work.

— Alan Johns, M.D., M.Ed., interim
Duluth regional campus dean

“He was this person who just kind of seemed bigger than life. It seemed like he knew everything about everything related to being a doctor and had just this limitless knowledge. And not only did he have this limitless knowledge but he would teach you—however much time you had to learn, he would teach. He was great at the bedside with the patients and seemed to know everybody and could make a personal connection with them. He was very energetic and enthusiastic, and loved being a doctor and loved being a teacher. It just came through in everything he did.”

— James Nixon, M.D., on Dwayne Andrews, M.D., whom Nixon met on his internal medicine rotation at the University of Oklahoma College of Medicine, where Andrews is now executive dean

“He’s truly inspiring. He is so well read and has such fundamental knowledge. I always thought Dr. Severson could teach anything.”

— Interim Duluth regional campus dean Alan Johns, M.D., M.Ed., on Arlen Severson, Ph.D., a Medical School Duluth campus faculty member since the school opened its doors in 1972

“It’s the intangibles. She’s a brilliant surgeon. She just has phenomenal relationships with her patients. She is so empathetic.”

— Fourth-year medical student Maddy Lenhard, on Julie Switzer, M.D., an assistant professor in the Department of Orthopaedic Surgery

“They are super excited about their respective topics and have sharp senses of humor. Weinhaus has a pretty dry wit, almost to the point where you don’t know when he’s joking until a few months into the course, but it keeps you paying attention, waiting for a little gem. Katz is more theatrical, with each lecture like a one-man Broadway show. I found him hilarious; who knew that the kidney has so much built-in comedic material?”

— Second-year medical student Nate Juergens, on anatomy professor Anthony Weinhaus, Ph.D., and kidney physiology professor Stephen Katz, Ph.D., both in the Department of Integrative Biology and Physiology

“George loves medicine. He loves talking with patients. He seems to have not forgotten anything about science. He meticulously and systematically applies scientific reasoning individualized to every patient, and he does it with fun and laughter. Mirth. He’s the best teacher I’ve ever seen.”

— Kathy Watson, M.D., on George Sarosi, M.D., whom Watson describes as having “won every teaching award ever” and who was chief of staff at the Minneapolis VA Health Care System while Watson was chief resident there in the early 1980s

“I had this kind of lengthy write-up about all these different things about what I thought was supposed to be in the write-up, and he said to me, ‘Well, what do you really think is going on?!’ He brought me front and center to the point.”

— Department of Family Medicine and Community Health professor Sharon Allen, M.D., Ph.D., who now poses the same question to her students, on her surgery rotation preceptor in medical school

Teaching tips from the pros



“As one of my own mentors once told me, I like to ask questions in a gentle Socratic method. What do they know about the problem we are seeing? What don’t they know about the problem we are seeing? What information do we need to search in the literature? I think asking questions engages the learner, helps them (and me) know what information they do not know, so then we can discuss the topic in further detail, emphasizing what is important to know and what else can we hope to learn in this situation.”

— Anne Blaes, M.D., an assistant professor of hematology/oncology and a recipient of the Medical School Year 3 Distinguished Clinical Teaching Award and the Educational Excellence Award for the Department of Medicine, among others

“Every good teacher says this: You have to be prepared to learn from and with the students.”

— Kathy Watson, M.D., a recipient of the All-University Distinguished Teaching Award and the Parker J. Palmer Courage to Teach Award from the Accreditation Council for Graduate Medical Education

“You want to get to [your students’] level of understanding, which is sometimes a challenge because it’s comfortable to stay at your own level. Be flexible and be tuned in to where they are. And be responsive to them. Be willing to learn and be a student yourself.”

— Sharon Allen, M.D., Ph.D., who has received the Herz Faculty Teaching Development Award and the Outstanding Medical School Teacher Award in the Clinical Sciences and is a 2014 Harold S. Diehl Award winner

When you’re hiring new faculty members, how do you know you’ve got a great teacher in the room?

“I think a lot of the qualities are the same ones you look for when you admit a medical student. Really. You’re looking for someone with an intense curiosity and who is driven and focused on improving health and health care for groups and individuals and has a demonstrated track record. Who is a good critical thinker but original and open to new ideas. Adaptable. Someone who, above all, wants to teach for the patients and about the patients. Someone who is a good listener and really believes in the dynamic interaction that goes on. Someone who wants to keep growing.”

— Kathy Watson, M.D., senior associate dean for undergraduate medical education for the Medical School

Scholarship Winner | Josh Farley

Doing good for other military veterans

THERE'S A 19TH CENTURY oil painting at the Minneapolis Institute of Arts (MIA) that captivates third-year medical student Josh Farley. Called *Peace Concluded*, the John Everett Millais work depicts a Crimean War officer—seemingly recovering, perhaps from a battle wound—at home with his young family. One daughter plays with four toy animals that represent the countries involved in the war: a lion (Britain), bear (Russia), rooster (France), and turkey (Ottoman Empire). The other child holds a dove, presumably meant to symbolize peace.

What's harder to read are the faces of the officer and his wife, and the lingering impact the war might have on their family. They're clearly materially affluent, and it's mainly a picture of resolution and relief. But the viewer can't help wondering: Are there scars? How deep?

Those are the kinds of questions Farley—a war veteran himself, who served in both Iraq and Afghanistan—had occasion to ponder of patients he met in his recent psychiatry rotation at the VA Health Care System in Minneapolis. Farley believes the depth of compassion and empathy he gained through his own experience allowed him to make connections he otherwise might not have.

"I had one patient, a little older than me, with similar military experience to mine," Farley says. "He'd had a hard time



Josh Farley first thought of pursuing a career in health care after a harrowing Army tour in Afghanistan.

with employment—he had severe depression, PTSD, substance abuse.

"He came in for a suicide attempt ... he just was not talking. I was reluctant to disclose my history, but I felt like in this case it might be helpful. And he opened up to me; I was able to convince him to get into more intensive treatment," Farley says. "It really made me reflect on my own experience. With some of the younger veterans, I found I really could connect with them; I understood a lot of

what they were going through. I realized this might really be something I wanted to do."

He's able to consider it thanks in part to the Hartig Family Endowed Scholarship. The award—along with other scholarships he's received since starting medical school at the University of Minnesota, including the Hillard and Blanche Holm Fund; Rosen, Pflaum Rosen, and Hedwig V.W. Rosen Memorial Fund; and Christos and Gertrude Manolis Endowed Scholarship—allows Farley to focus on his studies without worrying about crushing debt.

"It's difficult being a student who doesn't have [other] external help," Farley says. "That applies to all of my classmates who are nontraditional students. This really helps."

Farley believes the depth of compassion and empathy he gained through his own military experience allows him to make connections with veterans.

Loss, injury, and progress

Farley's first thoughts of working in health care came a decade ago, after a harrowing Army stint in Afghanistan. Then a sergeant and team leader, he became intimately acquainted with loss and suffering.

"We lost a lot of guys to IEDs and to firefights," he recalls. "We had a couple guys who lost their legs, and I had one of my own soldiers get severely burned. It was horrible. Those guys, they wanted to die."

But what he saw months later, when he met them again at the Army base in Vicenza, Italy, filled him with hope.

"They were doing better. They had prosthetics, and the guy who'd been burned had some skin grafts. I maybe hadn't thought of medicine at that point, but I was amazed [by their progress]." Perhaps his calling lay in helping to foster that kind of healing.

Diffusing the 'macho' mindset

After getting out of the Army, the Pennsylvania-reared Farley took a few courses at Temple University, then applied as an undergraduate to the University of Minnesota. He was accepted, electing to study neuroscience with the goal of getting into medical school.

For a while, at least, his military experiences helped him put the stress of academic life into perspective. "For the first year or two, I was able to say to myself, well, at least I'm not getting shot at in Afghanistan," Farley says with a laugh.

Unwinding with friends helps. A self-described "beer snob" who takes pride in his home brews, Farley also relaxes by working out, watching movies, and visiting art museums like the MIA, where he contemplates paintings such as Millais' *Peace Concluded*.

Currently, he's leaning toward a medical career in psychiatry or internal medicine, preferably working with other vets. The "macho" mindset that still pervades the military makes helping veterans a bit tougher, Farley says — but it's a challenge he would relish.

"If you got injured in the military, you were looked upon as weak," he says. "If you broke a bone in training, you were kind of looked down upon. You're supposed to be tough, to be able to overcome any obstacle... and [the stigma] is even worse with depression or mental illness. You didn't really want to talk about it when you got out, and you certainly didn't want to talk about it while you were there."

Patient by patient, Farley would like to help change that. "I really feel like I could do some good." MIB

By SUSAN MAAS, a freelance writer who lives in Minneapolis

Medical School appoints its first assistant dean for clinical education

Aiming to bridge the gap between medical education and clinical practice, University of Minnesota Medical School leaders have created a new position to address the breach: assistant dean for clinical education.

Anne Pereira, M.D., M.P.H., is the first person charged with the task. A 1995 Medical School alumna, Pereira completed her public health degree with a

focus on clinical effectiveness while completing her general internal medicine fellowship at Harvard Medical School. She returned to the University of Minnesota to focus on the growing need for a smooth transition from medical school to clinical practice.

Before assuming her new role in August, Pereira served as program director of the internal medicine residency program at Hennepin County Medical Center (HCMC), program codirector of HCMC's combined emergency medicine/internal medicine residency program, and assistant chief for education and faculty development in its Department of Medicine. MIB



Anne Pereira, M.D., M.P.H.

Alumni Spotlight | Mary Owen, M.D.

Stepping away from the front lines and coming back to CAIMH

GROWING UP IN ALASKA as the daughter of a nurse, Mary Owen wanted nothing to do with medicine.

Her inspiration to become a doctor came later, when she was in Anchorage after graduating from college.

“I went to the Alaska Native Medical Center and saw that while the patients were Native people, there were no Native doctors and just a few Native nurses,” she says. “I already knew I needed to go back to school, and after seeing the absence of Native health professionals, it seemed that would be the way to go.”

Owen had planned to go home and treat members of her tribe, the Tlingit. As she applied to medical schools, she looked for programs that recognized the importance of getting Native Americans into health care positions to serve their communities.

The University of Minnesota Medical School’s Duluth campus has had that commitment for more than 40 years; the school opened in 1972 and graduated two Native Americans among its first class of doctors. Owen received her M.D. from the University in 2000 and

Since we know that minority physicians are more likely to go back to underserved areas, it just makes sense to invest in programs that are aimed at recruiting minority students.

— Mary Owen, M.D.

completed her family medicine training with the U’s North Memorial residency program in 2003.

Today Owen is back on the Duluth campus in a new role: director of its well-known Center of American Indian and Minority Health (CAIMH), where the mission is raising the health status of Native Americans by supporting and educating Native American students pursuing careers in health care.

A new perspective

Owen had been working as a family physician at the Southeast Alaska Regional Health Consortium in Juneau, but the CAIMH job brought her back to Duluth.

“The point of the center is to help students get past the many barriers to obtaining higher education and help them understand everything you have to do to get into medical school,” she says.

And that support starts much earlier than at the college level. The center offers programs for students of all ages, from kindergarten to graduate school, throughout the year.

Owen says she’s excited to be involved in medicine from a new standpoint.

“In clinical medicine, sometimes you feel like you are patching people up only to have them come back after two weeks with the same problem,” she says. “If we really want to address health and chronic disease, we also need to



PHOTO: JEFF FREY

After a career as a family physician in a Native community in Juneau, Mary Owen, M.D., is now seeing medicine from a different perspective as director of the U’s Center of American Indian and Minority Health.

address the lack of adequate housing, jobs, education, and poverty—things that impact a person’s health.”

And that’s a big task. But by working at CAIMH, Owen believes she can address these larger issues by sharing her experiences as a frontline physician.

“I hope to inspire students to become doctors in part by sharing some of these experiences and to help with teaching by bringing in clinical experience,” she says. “My vision is to positively impact Native American health first by increasing the number of Native American and Alaska Native physicians in the workforce and second by building a bridge between the University of Minnesota Medical School and local tribes to bring research to the communities in a way that is culturally sensitive and appropriate.

“Since we know that minority physicians are more likely to go back to underserved areas, it just makes sense to invest in programs that are aimed at recruiting minority students.”

Returning to Duluth

Since her first day on the job at CAIMH in July, Owen says she feels like she’s hit the ground running. In her spare time, she and her family—which includes husband John Krumm and teenage daughter Elia—are enjoying Duluth’s culture of local food and outdoor living. “We enjoy biking, reading, hiking, and meeting folks involved in community activism,” she says.

Colleagues say they’re glad she’s back.

Interim regional campus dean Alan Johns, M.D., M.Ed., was on the search committee that chose Owen and says he admires her work with the Indian Health Service.

“That is hard work,” says Johns. “It takes a lot of determination, and I think she can bring that to our school. You’re trying to get students to relate to the future—well, she has walked the walk.”

CAIMH associate director Anna Wirta Kosobuski knew Owen when Owen was a medical student.

“It was very clear that that was the reason she came to medical school,” Wirta Kosobuski says. “Her goal was to become a physician and to serve Native communities—and that shows through in everything she’s done. She’s outstanding—so positive and strong and committed.” ^[MIB]

By CATHERINE CONLAN, a freelance writer in Two Harbors, Minnesota



RESIDENTS HEAD BACK TO SCHOOL

STARTING THIS FALL, some family medicine residents will have the opportunity to go back to high school—and to provide care for teens through the little-known Minneapolis School-Based Clinics.

Housed in all seven Minneapolis public high schools, the clinics provide a variety of health care services, including mental health, health education, and nutrition consultation.

Nicole Chaisson, M.D., M.P.H., medical director of the program, describes the clinics as hidden gems. “No one knows about them, even though they’ve been around forever,” she says.

In fact, for the past 40 years, these school-based clinics have been providing direct care to adolescents, who are more likely than some populations to be medically underserved. Now the clinics will also provide medical residents the opportunity to learn more about adolescent health care in a nontraditional medical setting.

“It’s important for families to know that their future doctors have actually worked with teenagers before they

get out in their own practice,” says Chaisson, who also is associate program director of the University of Minnesota Medical Center Family Medicine Residency Program.

She will be matching six third-year family medicine residents to school-based clinics in Minneapolis as part of an outpatient adolescent medicine rotation that also includes training at Teen-Age Medical Services and the Hubert H. Humphrey Job Corps Center.

“Teens can be a vulnerable population, and sometimes they are misunderstood by health care professionals, but they are actually really great to work with,” Chaisson says.

Besides, the clinics may offer teens an extra perk: “Maybe it could spark an interest in medicine for somebody,” she says. “It may connect students who use those clinics to the greater world of medical education.” ^[MIB]

By KALI DINGMAN, a student at the University of Minnesota

Medical Alumni Society honors four outstanding graduates

FOUR UNIVERSITY OF MINNESOTA Medical School alumni were honored for their work in the service of the medical profession at the Medical School Alumni Awards Banquet on September 18 at the McNamara Alumni Center on the University of Minnesota's East Bank campus.

The University of Minnesota Medical Alumni Society (MAS) is honoring these graduates with the following awards:

HAROLD S. DIEHL AWARD

The lifetime achievement Harold S. Diehl Award is granted to individuals who have made outstanding contributions to the University of Minnesota Medical School, the University as a whole, and the community. It was established in honor of the Medical School's fifth dean, Harold Sheely Diehl, M.D.



SHARON ALLEN, M.D., Ph.D.

Allen is recognized by many for her selfless devotion to medical student education. The 1981 resident alumna has become a role model for what it takes to be an outstanding physician

through the long-term Physician and Patient and Essentials of Clinical Medicine courses, through which she has skillfully taught dozens of first- and second-year students to interview patients and perform physical exams. A faculty member of the Department of Family Medicine and Community Health at the University since 1982, Allen is also a National Institutes of Health-funded smoking cessation researcher and an active clinical practitioner.

EARLY DISTINGUISHED CAREER ALUMNI AWARD

The Early Distinguished Career Alumni Award is given to a physician for exceptional accomplishments within 15 years of graduating from or completing his or her residency at the University of Minnesota Medical School.



BRADLEY BENSON, M.D.

A leader by example and a consummate physician, Benson combined his passions for teaching and clinical excellence when he became director of the University's Medicine-Pediatrics Residency Program in 2002. In this role, he guided and mentored nearly 100 residents through their four years of residency training. Now director of the Department of Medicine's Division of General Internal Medicine, Benson, a 1999 resident

alumnus, also has built and led an outstanding academic hospitalist program and has developed competency measures for doctors-in-training that are now used throughout the United States and Canada.

DISTINGUISHED ALUMNI AWARD

The Distinguished Alumni Award recognizes University of Minnesota Medical School alumni who have made outstanding contributions to their communities — at the local, regional, or national level — through medical practice, teaching, research, or other humanitarian activities.



ROBERT BÖSL, M.D.

A member of the Medical School Class of 1979, Bösl has served the small west central Minnesota town of Starbuck since 1982 and is now the city's only physician. When the local hospital closed in 2005, Bösl and his wife, Vickie, took out a home loan and invested their retirement savings to build a modern clinic so the town would continue to have access to care locally. Before attending medical school, he

served as a medical corpsman in the U.S. Army during the Vietnam War, earning a Purple Heart and Bronze Star, among several other military honors.



MARK JACOBSON, M.D., M.P.H.

After a transformative trip to Africa as a first-year medical student, Jacobson has compassionately and skillfully devoted his career to improving health for the people of Tanzania. Besides employing community-level strategies to improve water quality, nutrition, and sanitation practices, Jacobson — despite having faced seemingly insurmountable mental, physical, and financial barriers — also opened Selian Lutheran

Hospital and Arusha Lutheran Medical Center in Tanzania to meet the region's health demands. In addition, the 1978 Medical School graduate has hosted more than 30 University of Minnesota medical students who were completing international rotations, and many have called their experiences "life-changing." 

Supporting a new generation of physicians

Since he was in eighth grade, Charles Vang knew he wanted to be a doctor. The combination of science and humanities and his desire to help people sparked his interest in medicine.

As an undergraduate at Macalester College and throughout medical school at the University of Minnesota, Vang never took his eyes off the prize. Thanks to his determination and a boost from the U's Minnesota's Future Doctors (MFD) program, Vang has completed his medical degree and is now a family medicine resident at St. Joseph's Hospital in St. Paul.

MFD helps college-age Minnesotans from communities underrepresented in medicine – ethnic minorities, students from low-income families or rural areas, and first-generation college students – prepare for admission to medical school. Beginning their sophomore year of college and ending at graduation, MFD participants explore hospitals and clinics; meet current medical students, residents, and physicians; and learn how to prepare a competitive application to medical school.

“I believe that the MFD program played a critical role in helping me achieve my goal of becoming a physician,” Vang says. “The MFD program provided direction, which was appreciated, as my [previous] role models in medicine were limited.”

Vang is among the first six MFD participants admitted to the University of Minnesota Medical School to complete their medical degrees. Since the program was launched in 2007, 25 percent of MFD students have been admitted to medical schools across the country, and 50 percent are now enrolled as undergraduate students with the intent to pursue medical school after graduation. The others are entering or pursuing other graduate or professional programs, or are working outside of medicine.

Program director Simone Gbolo says the program clearly benefits students from underrepresented communities.

“There are barriers to accessing medical school for students from communities that are underrepresented in medicine. If you don't have programs like this – that motivate, advise, and support students and that address these challenges – barriers will continue to exist,” Gbolo says.

Initially, a generous gift from an anonymous donor helped get the MFD program started. Over time, funding sources have grown, and today most of the program's funding comes from the Medical School.



PHOTO: SCOTT STREBLE

Charles Vang, M.D., one of the first medical school graduates to have completed the Minnesota's Future Doctors program, is now a family medicine resident at St. Joseph's Hospital in St. Paul.

As the program expands, Gbolo says it's important to understand its larger impact: “MFD is not only fueling our pipeline for training future physicians from communities that are underrepresented in medicine but fueling that pipeline on a national level as well.” [MB](#)

By KALI DINGMAN, a student at the University of Minnesota

Sea change

Fifty years after the first Surgeon General's Report on Smoking and Health, the tide has turned — but work remains

In 1964, you could pick up a pack of cigarettes for around 30 cents, stroll into a movie theater, and light up as you watched *Mary Poppins*. You could blow smoke rings over the produce while you shopped for groceries,

chain smoke on planes, even inhale unfiltered Camels in your hospital bed after heart surgery. And you were in good company while you did it: almost 43 percent of Americans were right there smoking with you.

But on a Saturday morning in January of that year, U.S. Surgeon General Luther Terry walked into a press conference and announced that cigarettes were hazardous to your health. He didn't beat around the bush: If you smoked, he said, you faced a 70 percent higher risk of death.

That press conference was the public face of the landmark 1964 Surgeon General's Report on Smoking and Health, a report the *New York Times* promptly called "bold and devastating." Now widely considered to be one of the most important public health achievements of our time, that report triggered a sea change that would alter smoking's place in our culture.

Former Medical School Dean Harold Diehl, M.D., in January 1956 demonstrates a smoking machine used to collect tar for research.

U of M scientists play key roles

In 1962, the University of Minnesota's head of epidemiology, Leonard Schuman, M.D., was one of 10 scientists asked to serve on the Surgeon General's Advisory Committee on Smoking and Health. Since then, countless University scientists have followed in his footsteps with research that has led to new understanding of how smoking causes disease, how to treat it, and how to help people stop smoking.

Stephen Hecht, Ph.D., Wallin Land-Grant Professor of Cancer Prevention and a member of the Masonic Cancer

Center, University of Minnesota, has been at the center of tobacco research since the early '70s. He helped identify many tobacco carcinogens, including the tobacco-specific nitrosamines, which form during the tobacco-curing process and are considered to be some of the most egregious cancer-causing agents.

Since the Surgeon General's report, Hecht says, smoking has declined to about 18 percent of the population. "And lung cancer mortality started to decrease in the mid-'90s, which was completely due to fewer people smoking," he adds.

Despite important scientific advances, Hecht cautions, smoking remains a leading cause of death: Lung cancer is still the No. 1 cancer killer, accounting for some 150,000 deaths per year in the United States, almost 90 percent of them smoking-related.



PHOTO: UNIVERSITY ARCHIVES

“People don’t realize that, unless it’s caught early—which it rarely is—lung cancer is incurable,” says Hecht. “The average five-year survival rate is still about 15 percent, just where it was in the 1950s. So some of the most important progress we’ve made is in convincing people to stop smoking. That’s where the experts on addiction come in.”

The tough road to quitting

Dorothy Hatsukami, Ph.D., is one of those experts. Internationally recognized for her work on nicotine addiction and tobacco cessation, she wears many hats at the U, serving as associate director of cancer prevention and control for the Masonic Cancer Center, Forster Family Chair in Cancer Prevention, and director of the Tobacco Research Programs, among other roles.

“Our team here in the early ’80s was one of the key groups that helped to characterize physical addiction to tobacco,” she explains. “And once we knew that, we could begin to figure out what medications could be used to help people stop smoking.”

In the early ’80s, Hatsukami’s colleague Harry Lando, Ph.D., a professor in the School of Public Health, was among the first to develop behavioral treatments to help smokers quit. Later, nicotine gum and patches came on the market.

“Now teams here are working on anti-nicotine vaccines that create antibodies that target the nicotine molecule so the smoker doesn’t experience the

positive effects of nicotine,” says Hatsukami. “Our endgame for tobacco control would be to get rid of the use of all cigarettes and other combustible tobacco products by developing more effective treatments and policies, such as reducing levels of nicotine in cigarettes to nonaddictive levels.”

Major progress, battles still to fight

“We’ve made significant progress in 50 years,” says Kola Okuyemi, M.D., director of the U’s Program in Health Disparities Research. “The norm has changed; smoking has become socially undesirable. But tobacco is still a big problem in a number of vulnerable groups like Native Americans, the homeless, LGBT youth, and people in poverty.”

A snapshot of events that followed in the wake of the ’64 Surgeon General’s report show just how comprehensive that progress has been. First came warning labels on cigarette packs (1965); followed by a TV and radio cigarette advertising ban (1971); Minnesota’s landmark Indoor Clean Air Act, the first in the nation (1975); and a slew of smoking bans, including on airplanes (1988), in hospitals (1993), and in bars and restaurants (Minnesota’s was passed in 2007). Today in Minnesota, sin taxes have caused the cost of premium cigarette brands to skyrocket to more than \$10 per pack.

“I’m very proud of the U and the work so many gifted scientists here have generated that has, and will potentially be,



translated into public programs and policies,” says Hatsukami. “But in the course of our research, we see a lot of smokers who struggle with their addiction to cigarettes, and the medical morbidity we see, particularly in the lower socioeconomic groups, is very disconcerting. We still have a lot of work to do.” [MIB](#)

By BARBARA KNOX, a Minneapolis-based writer and editor and frequent contributor to the *Medical Bulletin*

In Memoriam

ROLF L. ANDREASSEN, M.D., Class of 1946, Minneapolis, died March 5 at age 91. Dr. Andreasen was a founder of Minneapolis Cardiology Associates, the Minneapolis Heart Institute, and the Minneapolis Heart Institute Foundation. He was preceded in death by his first wife, Mary Ellen. He is survived by his second wife, Norma; 6 children; 17 grandchildren; and 2 great-grandchildren.

JOHN E. APPLIN, M.D., Class of 1954, San Diego, Calif., died November 27, 2013, at age 85. He is survived by his wife, Kathleen, and his children.

JAMES R. BERGQUIST, M.D., Class of 1950, Ely, Minn., died May 16 at age 94. Dr. Bergquist founded a private obstetrics and gynecology practice. He was preceded in death by his wife, Joan, and 1 child. He is survived by 3 children, 5 grandchildren, and 2 great-grandchildren.

KATE E. BIRKENKAMP, M.D., M.P.H., Class of 2011, Rochester, Minn., died April 17 at age 29. Dr. Birkenkamp was an internal medicine resident at Mayo Clinic and conducted HIV research in Uganda. She is survived by her parents, 1 sibling, her boyfriend, and many friends and relatives.

ADRIAN H. BODELSON, M.D., Class of 1946, Santa Fe, N.M., died February 9 at age 90. Dr. Bodelson practiced obstetrics and gynecology and served as chief of staff at St. Vincent Hospital in Santa Fe. He is survived by his wife, Corinne; 10 children; 30 grandchildren; and 3 great-grandchildren.

HENRY E. BRANDT, M.D., Class of 1953, Minneapolis, died February 25 at age 86. Dr. Brandt taught family medicine at Hennepin County Medical Center in Minneapolis and was an attending physician for Eden Prairie High School Athletics. He is survived by his wife, Jeanne; 4 children; and 6 grandchildren.

ROGER W. BROCKWAY, M.D., Class of 1952, Duluth, Minn., died May 25 at age 88. He practiced in Minnesota and Colorado. He is survived by his wife, Connie; 2 children; and several grandchildren and great-grandchildren.

EDGAR C. BURSETH, M.D., Class of 1943, Mora, Minn., died June 11 at age 95. Dr. Burseth practiced medicine in Mora for nearly 30 years. He was preceded in death by his wife, Dorothy, and 1 child. He is survived by 2 children and 7 grandchildren.

MICHAEL R. BUSIAN, M.D., Class of 1974, Morris, Minn., died April 27 at age 67. Dr. Busian served as medical director of the Stevens County Ambulance Service and coroner for Stevens County. He is survived by his wife, Cynthia, and 2 children.

FREDERICK T. ELLINGSON, M.D., Class of 1962, Bismarck, N.D., died March 29 at age 78. Dr. Ellingson established the Ellingson Eye Clinic in Bismarck. He was preceded in death by 1 child. He is survived by his wife, Yvonne; 1 child; and 2 grandchildren.

OSCAR G. ENSTROM II, M.D., Class of 1958, Lincoln, Calif., died February 5 at age 81. Dr. Enstrom worked at Kaiser Permanente in California for more than 25 years. He is survived by his wife, JoAnn; 2 children; and 3 grandchildren.

CAROL M. ERWIN, M.D., Class of 1972, Brownsville, Texas, died March 12 at age 72. Dr. Erwin practiced family medicine and surgery. She is survived by 2 children.

GEORGE S. EUGSTER, M.D., Class of 1967, Spokane, Wash., died May 4 at age 73. A cardiologist, Dr. Eugster helped create the Heart Institute of Spokane and what is now Heart Clinics Northwest. He is survived by his wife, Susan; 3 children; and 7 grandchildren.

ROY H. GOOD, M.D., Class of 1952, Fari-bault, Minn., died May 1 at age 90. Dr. Good was a family practitioner in Northfield, Fari-bault, and other Minnesota towns. He was preceded in death by his first wife, Helen. He is survived by his second wife, Lana; 4 children; 2 stepchildren; 11 grandchildren; and many great-grandchildren.

JACK F. HAAS, M.D., Class of 1952, Northfield, Minn., died July 4 at age 93. He was preceded in death by his wife, Rosemary. He is

survived by 5 children, 11 grandchildren, and 9 great-grandchildren.

EUGENE W. HANSON, M.D., Class of 1956, St. Petersburg, Fla., died May 20 at age 85. Dr. Hanson was a general practitioner in Kenneth City, Fla., for more than 30 years. He was preceded in death by his first wife, Nancy. He is survived by his second wife, Barbara; 4 children; and 8 grandchildren.

MATTHEW S. HARRISON, M.D., Class of 1990, Taos, N.M., died February 21 at age 52. Dr. Harrison was director of inpatient rehabilitation at St. Luke's Hospital in Duluth and later a sports medicine physician in Taos. He is survived by his wife, Beckett, and 3 children.

SEYMOUR A. HARTMAN, M.D., Class of 1944, Encino, Calif., died April 19 at age 93. Dr. Hartman practiced internal medicine. He is survived by his wife, Colleen; 5 children; 13 grandchildren; and 7 great-grandchildren.

RODNEY B. HARVEY, M.D., Class of 1946, Mahtomedi, Minn., died November 22, 2013, at age 91. Dr. Harvey taught physiology at a number of schools, including the University of Minnesota Medical School. He was preceded in death by his wife, Dolores. He is survived by 3 children and 4 grandchildren.

ROBERT L. HEGRENES, M.D., Class of 1962, Hutchinson, Minn., died April 12 at age 77. A family physician, Dr. Hegrenes was preceded in death by his wife, Phyllis. He is survived by 3 children, 5 grandchildren, and 1 great-grandchild.

PAUL L. HODGE, M.D., Class of 1967, Butte, Mont., died July 11 at age 72. Dr. Hodge practiced pediatrics and worked in urgent care. He is survived by his wife, Marlys; 3 children; and 2 grandchildren.

LARRY R. HOVDE, M.D., Class of 1956, Pepin, Wis., died April 30 at age 83. Dr. Hovde practiced family medicine in California for more than 20 years. He was preceded in death by 1 child. He is survived by his wife, Edna; 6 children; and 5 grandchildren.

Alumni Connections

JOHN S. HUFF, M.D., Class of 1953, Bloomington, Minn., died July 21 at age 85. Dr. Huff practiced otolaryngology and taught at the University of Minnesota Medical School. He was preceded in death by his wife, Mary, and is survived by 8 children, 17 grandchildren, and 1 great-grandchild.

RALPH D. HYDEN, M.D., Class of 1967, Santa Barbara, Calif., died April 20 at age 76. A surgeon, Dr. Hyden is survived by his wife, Helga.

MICHAEL J. KOZAK, M.D., Class of 1957, Golden Valley, Minn., died May 2 at age 91. Dr. Kozak practiced family medicine. He is survived by his wife, Lidia; 2 children; and 2 grandchildren.

PAUL R. LEON, M.D., Class of 1954, Aberdeen, S.D., died April 11 at age 85. Dr. Leon founded the School for Radiological Technology at St. Luke's Hospital and introduced nuclear medicine and radiation cancer therapy to the region. He was preceded in death by his wife, Therese, and is survived by 6 children, 28 grandchildren, and 15 great-grandchildren.

ROGER I. LIENKE, M.D., Class of 1946, Oklahoma City, Okla., died December 25, 2013, at age 91. He practiced pediatrics and family medicine and created the family practice residency at the University of Oklahoma Medical School. He was preceded in death by his wife, Nancy, and is survived by 4 children, 7 grandchildren, and 3 great-grandchildren.

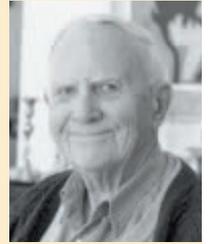
MALCOLM I. LINDSAY JR., M.D., Class of 1961, Rochester, Minn., died February 19 at age 78. He worked for Mayo Clinic's Division of Community Internal Medicine for 30 years and was chair for 8 years. He is survived by his wife, Karin; 4 children; and 6 grandchildren.

ROBERT B. LITIN, M.D., Class of 1953, Portland, Ore., died June 22 at age 87. Dr. Litin practiced medicine for nearly 60 years. He was preceded in death by his wife, Rita, and 1 child. He is survived by 2 children and their families.

JERROLD M. MILSTEIN, M.D., Class of 1964, Bellevue, Wash., died July 12 at age 75.

ROBERT W. GOLTZ, M.D., Class of 1944, La Jolla, Calif., died March 23 at age 90. Dr. Goltz led the Department of Dermatology at the University of Minnesota Medical School from 1970 to 1985. He also served as the first professor of dermatology at the University of Colorado, Denver, and act-

ing chief of dermatology at the University of California, San Diego. Dr. Goltz was known for his groundbreaking work on inherited genetic skin conditions. He was preceded in death by his wife, Patricia. He is survived by 2 children, 4 grandchildren, and 4 great-grandchildren.



ROBERT L. GOODALE, M.D., Ph.D., a 1968 resident alumnus, Minneapolis, died July 17 at age 84. A pioneering surgeon, Dr. Goodale was founding director of the Department of Endoscopy at University of Minnesota Hospitals and was instrumental in

introducing laparoscopic technology to U.S. medicine. "He set the standards and taught the rest of us," says his colleague Henry Buchwald, M.D., Ph.D. Dr. Goodale is survived by his wife, Katherine; 4 children; and 5 grandchildren.



FREDERIC "FRITZ" J. KOTTKE, M.D., Ph.D., Class of 1945, Minneapolis, died May 23 at age 96. Dr. Kottke was internationally recognized for his contributions to physical medicine and rehabilitation and was on the University of Minnesota Medical School fac-

ulty for more than 40 years and served as the first chair of the school's Department of Physical Medicine and Rehabilitation. He was preceded in death by his wife, Astrid, and 1 child. He is survived by 3 children, 6 grandchildren, and 5 great-grandchildren.



He worked at the University of Washington for nearly 30 years and directed the Division of Pediatric Neurology. He is survived by his wife, Leslie; 2 children; and 5 grandchildren.

WILLIAM D. MISBACH, M.D., Class of 1946, Carlsbad, Calif., died February 21 at age 91. Dr. Misbach practiced medicine and pediatrics in Minnesota and California. He is survived by his wife, Virginia; 4 children; 5 grandchildren; and 7 great-grandchildren.

JAMES R. MONNAHAN, M.D., Class of 1952, Provo, Utah, died May 11 at age 88. He established Mountainview Radiology Associates and was chief of radiology at Payson

Hospital in Provo. He is survived by his wife, Marian; 3 children; and 5 grandchildren.

MARGARET V. NELSON, M.D., Class of 1966, Madison, Wis., died May 2 at age 73. Dr. Nelson practiced medicine for nearly 30 years, spending more than 20 years at University of Wisconsin Health Services. She is survived by 2 children.

RONALD J. NELSON, M.D., Class of 1960, Maplewood, Minn., died April 27 at age 80. Dr. Nelson helped found and served as president of East Metro Health Organization in St. Paul and served as chief of staff at St. John's Hospital in Maplewood. He was

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IN MEMORIAM *continued*

preceded in death by his wife, Sandra. He is survived by 4 children and 7 grandchildren.

ALFRED G. PEARSON, M.D., Class of 1963, San Diego, Calif., died May 6 at age 80. Dr. Pearson was a family physician in the San Diego County area for more than 50 years. He is survived by his wife, Ruth, and 1 child.

EDWARD N. PETERSON JR., M.D., Class of 1954, Pawleys Island, S.C., died May 24 at age 84. Dr. Peterson practiced obstetrics and gynecology and taught and conducted research throughout the United States. He is survived by 4 children and 2 grandchildren.

MARTHA PITEL, Ph.D., Class of 1954, Oak Park, Ill., died April 19 at age 93. Dr. Pitel led the Department of Nursing at the University of Kansas, chaired the nursing education program at Northwestern University, and served as director of the American Nurses' Foundation.

ROBERTA G. RICE, M.D., Class of 1943, Kansas City, Mo., died April 1 at age 96. She worked at the VA Medical Center in Grand Island, Neb.; Marshall University in Huntington, W.Va.; and Yonsei University in Seoul, South Korea. She is survived by several relatives.

NORTON ROGIN, M.D., Class of 1943, St. Louis Park, Minn., died March 4 at age 95. Dr. Rogin practiced medicine and surgery and worked with Minnesota's Social Security Disability board. He is survived by his wife, Elaine; 5 children; and 6 grandchildren.

ALBERT H. ROTH JR., M.D., Class of 1962, Laramie, Wyo., died March 21 at age 80. Dr. Roth was a family practitioner in Minnesota for 20 years and director of the University of Wyoming's Student Health Service. He is survived by his wife, Eleanor; 4 children; 2 grandchildren; and 1 great-grandchild.

NANCY LEAVENWORTH SCHADER, M.D., Class of 1982, Longmont, Colo., died May 15 at age 61. Dr. Schader was an ophthalmologist. She is survived by her husband, Robert; 1 child; and 2 stepchildren.

MARTIN M. SHAPERMAN, M.D., Class of 1946, Sherman Oaks, Calif., died March 1 at age 89. Dr. Shaperman served as chief of imaging services at Kaiser Foundation Hospital in Panorama City, Calif., for nearly 30 years. He is survived by his wife, Julie.

WALTER SUBBY JR., M.D., Class of 1939, Golden Valley, Minn., died February 6 at age 99. A pathologist, Dr. Subby was preceded in death by his wife, Margaret, and 1 stepchild. He is survived by 4 children, 8 grandchildren, and 10 great-grandchildren.

ALAN P. THAL, M.D., Ph.D., Class of 1957, Golondrinas, N.M., died March 14 at age 88. Dr. Thal chaired the Department of Surgery at Wayne State University and conducted research in thoracic and esophageal surgery at the University of Kansas Medical Center. He is survived by his wife, Felicia; 3 children; 10 grandchildren; and 5 great-grandchildren.

ROBERT L. VERNIER, M.D., Temecula, Calif., a member of the University of Minnesota Medical School pediatrics faculty for four decades, died May 2 at age 89. Dr. Vernier helped to establish percutaneous kidney biopsy as a diagnostic tool and created a foundation for understanding the ultrastructure of normal and diseased kidneys. Dr. Vernier is survived by his wife, Molly; 4 children; grandchildren; and great-grandchildren.

Student wins award for stem cell research

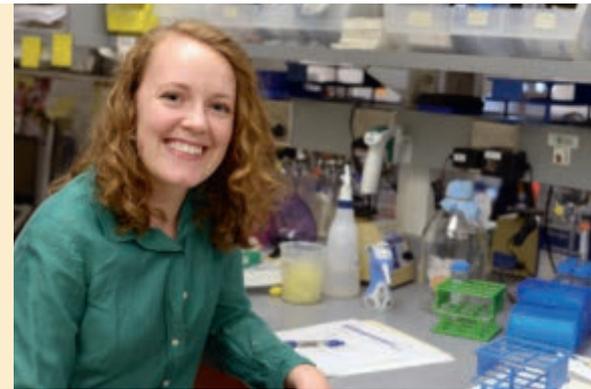
In a family of science people, third-year University of Minnesota medical student Sarah Parker hasn't fallen far from the tree.

While her mother is an elementary school teacher, her father is an internal medicine physician. Two of her three older siblings are medical doctors. The other has a doctorate in physics. One grandfather was a physician, too.

"I always had medicine in my mind, just because I think I was constantly exposed to it," says Parker, who hopes to follow a different branch of science than her family members: a career in blood and marrow transplantation (BMT) with a research focus on stem cell therapies.

After her first year of medical school, Parker got a job in the lab of Masonic Cancer Center member and BMT physician Bruce Blazar, M.D., making induced pluripotent stem cells from T cells. She liked the work and won a fellowship from the Howard Hughes Medical Institute during her second year, allowing her to take a year off from medical school to focus on research.

In May Parker received a 2014 Hematology Opportunities for the Next Generation of Research Scientists Award from the American Society of Hematology to continue her work there, which now involves making T cells from embryonic stem cells in culture.



Sarah Parker is researching whether a dose of T cells from culture could be given with a blood or marrow transplant to help a patient's immune system recover faster.

"People are very interested in having a continually renewable cell source that you could make a lot [of T cells] from," she says — herself included. MIB

— Nicole Endres

Medical Bulletin

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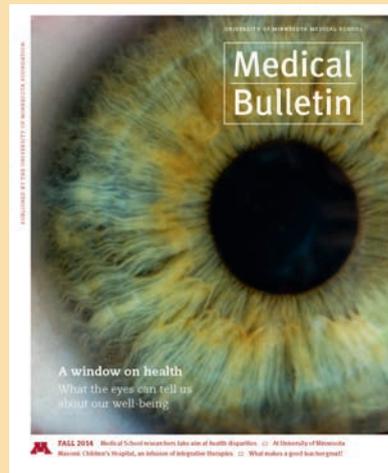
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