Fall 2009

children's health

A publication for those who support the University of Minnesota Department of Pediatrics and University of Minnesota Amplatz Children's Hospital

A shot in the arm

University pediatrics researchers are working to discover new vaccines for devastating diseases—from cytomegalovirus to brain cancer

A century ago, exposure to infectious diseases often meant serious illness and—too often—even death. But because of medical and technological leaps, vaccines have disarmed many of these infectious agents.

Today vaccines help protect us from many diseases by stimulating our immune systems to fight off the germs we encounter in our daily lives. Effective vaccines already exist for several infectious diseases, such as polio, measles, and hepatitis, but vaccines for other harmful diseases have yet to be discovered.

Physician-researchers in the University of Minnesota Medical School's Department of Pediatrics are working to develop vaccines for several of those diseases and reduce their burden on children and families everywhere.

And one group of University researchers, led by pediatric neuro-oncologist Christopher Moertel, M.D., and scientists John Ohlfest, Ph.D., and Walter Low, Ph.D., is investigating a different way to use vaccines—to treat, not prevent, a noncommunicable illness: brain cancer.

A new way of thinking

Vaccines generally contain a weakened or inactive form of the germ that causes a certain disease. When those germs are injected into our muscles or fatty tissue, they're not potent enough to cause disease, but they *are* strong enough to trigger our immune systems to respond by producing "antibodies" to fight them off. Those anti-bodies stay with us so if we're exposed to a live strain of the disease in the future, our

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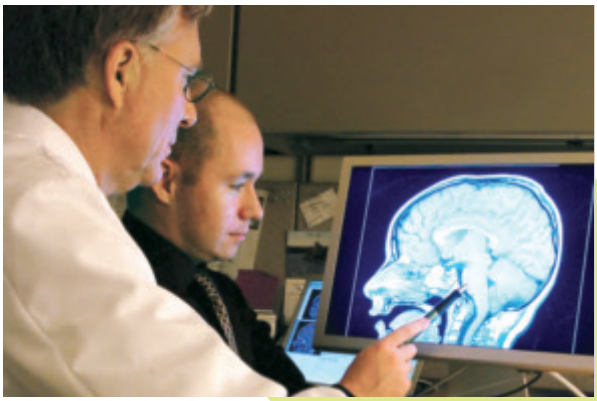
Photo courtesy of Children's Cancer Research Fund



Christopher Moertel, M.D. (left), and John Ohlfest, Ph.D., expect that a brain tumor vaccine they've created will be available to patients through clinical trials this winter.

Vaccines continued from cover

bodies will be able to destroy the germs.

Moertel's brain cancer vaccine works according to a similar principle, he says. The vaccine combines immune cells called dendritic cells from each patient with brain tumor antigen—a substance that prompts the immune system to produce antibodies—before giving them back to the patient.

The combination coaxes patients' own immune systems to attack brain tumor cells and kill the cancer.

Currently, treating the types of brain cancers Moertel's therapy is targeting—medulloblastoma, ependymoma, and glioblastoma—requires a combination of therapies, including extensive surgery, radiation therapy, and chemotherapy. This treatment regimen takes a toll on patients and can cause lasting side effects, especially in young children.

Because the experimental vaccine therapy uses patients' own dendritic cells—found in small quantities mainly in the skin, lymph nodes, and inner lining of the nose, lungs, stomach, and intestines—it shouldn't be so harsh, Moertel says.

"Effective immunotherapy for brain tumors could revolutionize the field by increasing cure rates while minimizing the side effects," he says.

So far the vaccine has been successful in treating mice that have brain tumors. Now, with continued funding from the Children's Cancer Research Fund and the Gateway Foundation, the team is gearing up to extend this treatment to both children and adults through a phase I clinical trial. Moertel expects the trial to begin this winter at the University, the sole location of the study.

"Patients at University of Minnesota Amplatz Children's Hospital are at a place where leading-edge therapies—including innovative surgery, radiation therapy, chemotherapy, and immunotherapy—are brought from the lab to their bedside," says Moertel, who is clinical director of the hospital's Pediatric Neuro-Oncology Program, the first comprehensive research-based brain tumor program in the Midwest and one of only a few in the country.

Photo by Richard Anderson

Research by Patricia Ferrieri, M.D., has been instrumental in developing experimental vaccines that aim to protect mothers and their babies from Group B streptococci.

Ensuring health through prevention

Vaccine research in other areas of the Department of Pediatrics focuses on the more traditional use of vaccines—to prevent infectious diseases.

Cytomegalovirus (CMV) is harmless to most healthy adults, but it can cause hearing loss and brain damage in fetuses whose mothers are infected for the first time during the pregnancy. It's the second-leading cause of mental retardation after Down syndrome.

Mark Schleiss, M.D., head of the Division of Pediatric Infectious Diseases, is working to understand the biology behind CMV and develop strategies for preventing harm to newborns.

One of those strategies is to develop a vaccine for women of childbearing age, Schleiss says. But despite numerous efforts, researchers have not yet found a safe and effective vaccine to protect the developing fetus.

In the past year, Schleiss and his colleagues took a major step forward in tests involving an animal model of CMV. By deleting genes that allow the virus to evade immune system defenses, the team created a disabled live virus vaccine that reduced the risk of harm from CMV exposure to offspring during pregnancy while also reducing the risk of adverse effects from the immunization.

Schleiss hopes to build on these results to eventually perfect a vaccine that protects babies from CMV.

Opportunity for impact

Pediatrics professor Patricia Ferrieri, M.D., has been collaborating with colleagues at the University of Pittsburgh Medical School, Baylor College of Medicine, and Harvard Medical School on a vaccine for *Streptococcus agalactiae* or Group B streptococci (GBS). Like CMV, this

bacterial pathogen threatens newborns and fetuses with serious infection if their mothers have the GBS bacterium.

A preliminary trial of a vaccine in non-pregnant women has shown a marked decrease in genital acquisition of GBS in those who received the vaccine. This holds promise for preventing the transmission of GBS from women of childbearing age to their babies, Ferrieri says.

Ferrieri has been instrumental in developing animal models of GBS infection that mimic the disease in newborn infants as part of an overall strategy to develop a way to protect mothers and their babies against this potentially fatal infectious disease. For several years, Ferrieri's work has focused on specific GBS proteins that induce protective antibodies, and some of these proteins have been incorporated into experimental vaccines.

The entry of vaccine companies—with their use of molecular genetic approaches—into this research field has had a huge impact on the work, says Ferrieri, who directs the Clinical Microbiology Laboratory at University of Minnesota Amplatz Children's Hospital.

"The opportunity has never been greater than now to move forward with these novel vaccine constructs," she says.

Continuing the search

Edward Kaplan, M.D., a pediatric cardiologist and an infectious disease expert, is looking for ways to outwit yet another ubiquitous and elusive vaccine target: Group A streptococci.

Most commonly known as a cause of sore throat—some 5 to 7 million cases each year in the United States alone—Group A strep can also lead to heart damage, kidney disease, and necrotizing fascitis—the bacterium of "flesh-eating" fame. Yet after decades of searching, a Group A strep vaccine is still unavailable.

The challenge, Kaplan says, is the bacteria's biodiversity. There are about 130 versions of Group A strep. That means it's hard to decide which to vaccinate against.

Kaplan is working with P. Patrick Cleary, Ph.D., of the Medical School's Microbiology Department on a promising approach to combating this disease.

"From a prevention, public-health point of view, everything is ripe for a vaccine," says Kaplan, who is head of the Streptococcal Reference and Research Laboratory. "One of these days, such an important vaccine will be available."

New hospital building takes shape

Take a virtual tour

The new home for our University of Minnesota Amplatz Children's Hospital continues to take shape. While crews construct the new facility, they're also renovating the adjacent hospital building, which will connect mothers' services and the neonatal intensive care unit to the new children's hospital building. By winter, crews hope to finish the exterior structure and move on to the interior pediatric intensive care unit and blood and marrow transplant unit.

Can't wait to see the new building? Visit ***uofmchildrenshospital.org*** *to take a narrated virtual tour of the new University of Minnesota Amplatz Children's Hospital facility, opening in 2011. Get a 3-D view of some of the new hospital's features, including larger patient rooms and care spaces designed just for kids.*

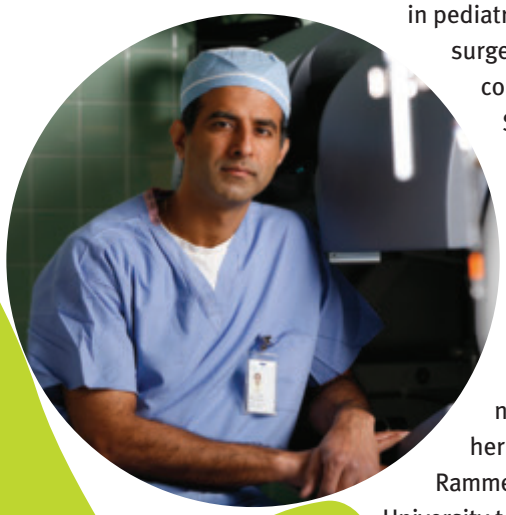
Helping hands

Ella Rammer

With high-tech treatment, one little girl enjoys a quick recovery after surgery

Aseem Shukla, M.D., can't just snap his fingers to fix a problem inside an ailing child's body. But for all the indications he leaves behind, you might think that's how he does his job.

Thanks to the late Leo C. T. Fung, M.D., University of Minnesota Amplatz Children's Hospital is one of the nation's pioneering centers in pediatric robot-assisted surgery—a tradition that continues today with Shukla's expertise. He uses the "hands" of a da Vinci® Surgical System to perform intricate surgical maneuvers through tiny incisions.



Aseem Shukla, M.D., is among the top pediatric urologic surgeons in the nation.

Ella Rammer was not yet 3 years old when her parents, Matt and Sarah Rammer, brought her to the University to have her hearing tested. The doctor who examined her, Frank Rimell, M.D., noticed that as a newborn Ella had been treated with a lifesaving antibiotic that can also cause kidney problems.

Rimell sent the Rammers to Shukla, who found an unrelated congenital defect in Ella's right ureter—the tube connecting her kidney and bladder—that prevented urine from flowing through it properly. Without repair, the obstruction could result in kidney failure. But luckily, Shukla found it before it became a major problem.

After considering the treatment options Shukla presented to them, the Rammers chose robot-assisted surgery for their little girl.

"When we have children older than a year who have kidney obstructions or anatomical problems, we attempt to use the laparoscopic robotic approach whenever we can," Shukla says. "They heal better [and have] less pain, shorter hospital stays, and good cosmetic results."

Remotely controlling the robotic fingers "just as you would your own hands" while peering at an enlarged image of the surgical site provided by a tiny video camera inserted into Ella's body, Shukla was able to cut the straw-thin ureter, remove the obstruction, and suture everything back together almost without a trace.

"Ella was back on her feet in no time," says Matt Rammer. "You can't see the scars now on her abdomen at all."

Today Ella is a happy, busy preschooler, skipping, swimming, and helping her dad catch big fish whenever she gets a chance.

"University of Minnesota [Amplatz] Children's Hospital gave us answers and solutions to Ella's health-care needs," Matt Rammer says. "Anybody who has kids [and] they are questioning their hearing or anything—go to the U."

University's children's hospital again ranks among nation's best

U.S. News & World Report has once again named University of Minnesota Amplatz Children's Hospital one of the country's best children's hospitals.

University of Minnesota Amplatz Children's Hospital was nationally ranked 20th in treatment for cancer, 26th for kidney disorders, and 29th for diabetes and endocrine disorders this year. Last year the hospital was ranked in two categories—cancer and respiratory disorder treatment.

The report names the top 30 hospitals in 10 medical specialties based on reputation, outcomes, and other care-related factors such as advanced technologies and affiliation with a medical school.

‘For decades to come’

Couple hopes gift to Adopt A Room will give ill children and their families brighter days

As their three children were growing up, Rich and Mary Ostlund had become very involved in their kids’ extracurricular activities. But when their youngest child went off to college, Rich and Mary suddenly had more time on their hands—and a bold idea.

“We wanted to find two or three charities that we could give as much time to as [we gave to] our kids,” Rich says.

A colleague introduced the Ostlunds to the University Pediatrics Foundation (UPF) through WineFest, the organization’s premier event that raises money for pediatrics research, education, and care at the University of Minnesota. A few years later, UPF’s board of directors invited Rich to join the group officially. Rich says he was happy to sign on, especially with an organization that supported children.

“It was an area where we felt we could have a lasting impact—to help sick kids and their families for decades to come,” he says.

A new commitment

The Ostlunds’ commitment to pediatrics at the University has only grown since Rich joined the UPF board in 2003. Rich became chair of the board in 2008, and he and Mary recently made a gift of $200,000 to sponsor a room at University of Minnesota Amplatz Children’s Hospital (UMACH) and another $50,000 to be used at the discretion of the Department of Pediatrics chair.

Through UPF, the Ostlunds met Brian Schepperle and David Millington, the two dads who conceived the idea for Adopt A Room. “I was so impressed with their passion, what they were doing, and what they had been able to accomplish,” Rich says.

Both Schepperle and Millington have lost young daughters to disease, and both of their families had spent significant amounts of time in hospital rooms, which always seemed cramped and uninviting.

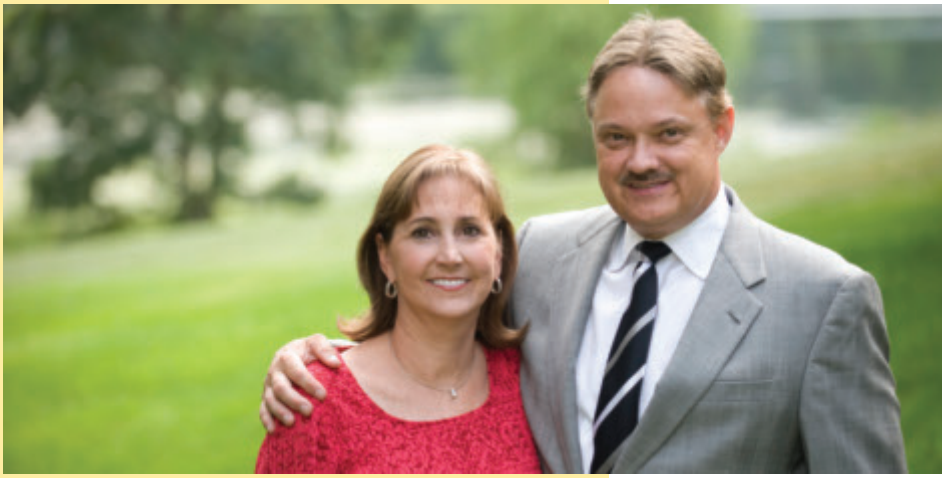
But through “adopted” rooms in UMACH’s new facility, scheduled to open in 2011, the already larger-than-standard rooms will be upgraded to include such family-friendly features as tables for eating dinner and doing homework, large-screen TVs for watching movies and connecting with school, and bedside consoles that let children control their environment. The goal is for each room in the hospital to be sponsored by donors.

Chance to make a difference

The Ostlunds believe that life gives people opportunities to make a difference, and this was one of theirs. They hope their “adopted” hospital room will brighten ill children’s days and will help keep families together during tough times.

Mary and Rich Ostlund

Photo by Scott Streble

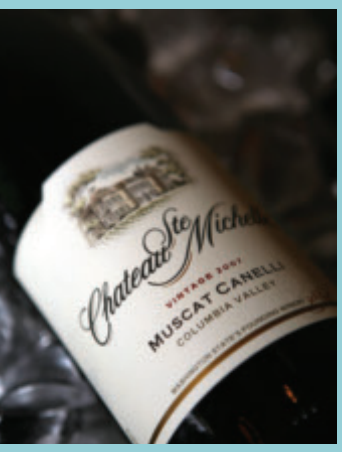


“Countless Minnesota families’ precious children and grandchildren will depend on the Amplatz Children’s Hospital as their lifeline and source of hope,” Mary says. “It’s comforting to know that there is world-class research and care they can receive here in our home state.”

“Our hope,” adds Rich, explaining why he and Mary agreed to share their story, “is that this gift might be magnified by inspiring others in our community to consider supporting children’s health in this way and to continue a tradition in both our families of doing what you can to make our community a better place to live.”

To find out how you or your company can adopt a room, contact Elizabeth Patty at 612-273-8638 or e.patty@mmf.umn.edu.

A toast to you



WineFest No. 14
A TOAST TO CHILDREN'S HEALTH

Tim and Judy Dove were honorary event chairs. (Photo by Mike Feltault) Chateau Ste. Michelle was the event's honorary winemaster. (Photo, left, by Studio Laguna Photography)

WineFest No. 14, held May 8 and 9 at the Depot in Minneapolis, was yet again the food and wine charity event of the year. This delightful epicurean celebration supports the internationally renowned University of Minnesota Department of Pediatrics and University of Minnesota Amplatz Children's Hospital, where physician-researchers develop and deliver innovative treatments and cures for childhood diseases. Since its inception, WineFest has raised more than $7.5 million for seed funding for promising junior scholars, critical medical equipment, and breakthrough research.

Save the date for WineFest No. 15 on May 7 and 8, 2010.

First-ever UMACH golf tournament raises more than $88,000

The first University of Minnesota Amplatz Children's Hospital Champions for Children Golf Classic netted more than $88,000 to benefit UMACH. Minnesota Vikings guard Steve Hutchinson (left), celebrity host, was joined by many other media and sports personalities for the event, which was held June 8 at the exclusive Windsong Farm Golf Club in Independence, Minn.

Save the date for the second annual Champions for Children Golf Classic on June 14, 2010.

Alumni reconnect with pediatrics at the U

University of Minnesota pediatrics faculty and alumni gathered June 4 at the Town & Country Club in St. Paul to reconnect and learn about recent developments in children's health at the University. Heidi Roy Hubbard, M.D. (right), a member of the resident alumni class of 1997, cohosted the event and spoke about the impact University alumni are making in the community. Hubbard also has made a generous gift to establish a new Pediatric Education Resource Center and Resident Physician Lounge at University of Minnesota Amplatz Children's Hospital. She hopes her commitment will inspire others to join her in investing in tomorrow's pediatricians. To learn how you can support resident education, contact Courtney Billing at 612-273-8596 or c.billing@mmf.umn.edu.

Sign up for e-updates

Join our mailing list to receive the latest news about children's health from the University of Minnesota through e-updates at **www.mmf.umn.edu/subscribe**.

Gifts in action

Philanthropy advances University's work on autism spectrum disorders

Twin Cities philanthropists Alfred and Ingrid Lenz Harrison challenged other donors in 2007 to give to the Autism Spectrum Disorders (ASD) Initiative at the University of Minnesota by offering a dollar-for-dollar match—up to $1 million. And generous advocates stepped up to the challenge.

With this $2 million in support from the community, the University is moving forward with the ASD Initiative, which aims to:

- recognize the unique and often complex medical needs of children with autism and empower parents to most effectively help their children
- support basic and clinical research programs focused on understanding the causes of autism as well as ways to improve diagnosis and treatment
- coordinate with other community health-care providers, and
- provide outreach and education programs throughout the region.

Since the challenge grant was met, the Department of Pediatrics has launched its Clinical Autism Program. This program includes two clinics: the Autism Spectrum and Neurodevelopmental Disorders Clinic, which specializes in comprehensive ASD evaluations and provides parent consultations, and the Primary Care Clinic, which serves as a "medical home" for children and adolescents with medical issues and ASDs. The clinics share a care coordinator to ensure communication between caregivers and to help connect children and families with appropriate intervention services.

The ASD Initiative also has received a boost from two major grants. A $900,000 grant from the U.S. Department of Health and Human Services' Maternal and Child Health Bureau supports the Minnesota Leadership Education in Neurodevelopmental and Other Related Disabilities (LEND) program, which trains future leaders who will serve children with autism and other neurodevelopmental disabilities. And a $200,000 grant from the Minnesota Department of Human Services will fund a research evaluation of a parent-driven model of quality improvement in primary care for children with ASDs.

Alfred and Ingrid Lenz Harrison

Reap the benefits of leaving a legacy gift from retirement accounts

Retirement accounts are typically set up to allow people to save money on a tax-deferred basis during their working years. Over time, the value of a retirement account may increase beyond what the owner needs in retirement.

But leaving an IRA or other retirement account in estate plans for a loved one can have serious tax consequences, causing double taxation of the assets.

That's why many donors have found that using retirement plan assets to make a gift to charity can be an ideal way to leave a legacy. When a person names the Minnesota Medical Foundation as beneficiary of a retirement plan, the individual's estate receives a charitable estate tax deduction for the full value of the account. Because the foundation is a tax-exempt charity, no income taxes are ever due on the donated assets.

Making a gift of retirement assets doesn't require an attorney's services. Donors may simply fill out a beneficiary designation form with their account custodian or retirement plan administrator.

To make a gift of retirement assets to children's health at the University of Minnesota through the Minnesota Medical Foundation, here's some sample language for the beneficiary designation form:

"XX percent (XX%) of my IRA account at [name of custodian], Account Number _____ , shall be distributed to the Minnesota Medical Foundation, 200 Oak Street SE, Minneapolis, Minnesota 55455 (federal tax ID 41-6027707) free of trust [optional: for specific research, program, department, or fund]."

For more information on making a gift of retirement assets to children's health at the University of Minnesota, contact our gift planning specialists at 612-625-1440, 1-800-922-1663, or giftplanning@mmf.umn.edu, or visit ***www.mmf.umn.edu/giftplanning****.*

University of Minnesota

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On My Mind

We as pediatricians clearly are committed to children's health. And most of us also tend to think of children's health more broadly—not just as medicine. We feel a responsibility to advocate for children—whether about their care, their nutrition, their education, or their safety.

That's why our Department of Pediatrics is reaching out locally and internationally to improve children's overall well-being. This year, we're partnering with several community organizations to keep kids healthy through advocacy and outreach.

The 2009–2010 University of Minnesota Alumni Association Statewide Speakers Tour features our physicians and researchers talking about pressing children's health topics such as autism, childhood obesity, and the new University of Minnesota Amplatz Children's Hospital. We'll be bringing children's health information to more than 50 Minnesota communities. Visit **www.minnesotaalumni.org/events** for details about upcoming programs near you.

The Minnesota Vikings are again sponsoring the Vikings Tackling Influenza program, which helps us deliver seasonal flu vaccines to the most vulnerable children and inform families about ways to stay healthy during the flu season. These tips will be presented during Vikings games, at **www.uofmchildrenshospital.org/tacklingflu**, and on your local radio stations.

Meanwhile, our specialists are bringing their clinical expertise to more children throughout the state—now even closer to their homes—by spending a day or two each week seeing patients in communities including St. Cloud, Maple Grove, Willmar, and Duluth.

These are just a few of the many ways we're improving health for children outside of our walls. We're so grateful to have your support as we continue this important work.

Sincerely,
Aaron Friedman, M.D.
Head, Department of Pediatrics
Ruben-Bentson Chair in Pediatric Community Health

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