

NORTH DAKOTA MEDICINE

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Practice Makes Perfect

**Practice with New Patient Simulators Teaches
Young Physicians Perfect Fundamentals**



Call Him “Doctor Doctor”

Unique Teaching Assistants

Significant Impact

“The primary purpose of the University of North Dakota School of Medicine and Health Sciences is to educate physicians and other health professionals and to enhance the quality of life in North Dakota. Other purposes include the discovery of knowledge that benefits the people of this state and enhances the quality of their lives.”

—North Dakota Legislature

“We are what we repeatedly do. Excellence, then, is not an act but a habit.”

—Aristotle



As we near the end of the year and approach the second decade of the twenty-first century, I reflect on the year past and envision what is to come for the School of Medicine and Health Sciences. Excellence is the common thread woven into the past, present, and future of the School. The School demands a standard of no less than excellent from its students, faculty, and staff. Aristotle’s reminder to us at the School is that excellence is not only something to attain but also what we constantly seek. We cannot rest on our laurels; the race for excellence is never over. The School’s pursuit of excellence comprises education, service, and scholarship and research in our mission to enhance the quality of life for North Dakotans.

In 2009, the University of North Dakota School of Medicine and Health Sciences is the top medical school in the country for the percentage of students who select family medicine for residency, according to rankings released by the American Academy of Family Physicians (AAFP).

The University of North Dakota School of Medicine and Health Sciences is one of the best in the nation for its commitment to rural medicine based on the rankings released in the 2010 edition of *America’s Best Graduate Schools* by *U.S. News & World Report*.

Eight senior medical students from the University of North Dakota School of Medicine and Health Sciences were the first members inducted into a new chapter of the Gold Humanism Honor Society, which recognizes senior medical students who demonstrate exemplary humanism and professionalism throughout their medical education.

The Physician Assistant program met every established standard for function, structure, and performance needed to

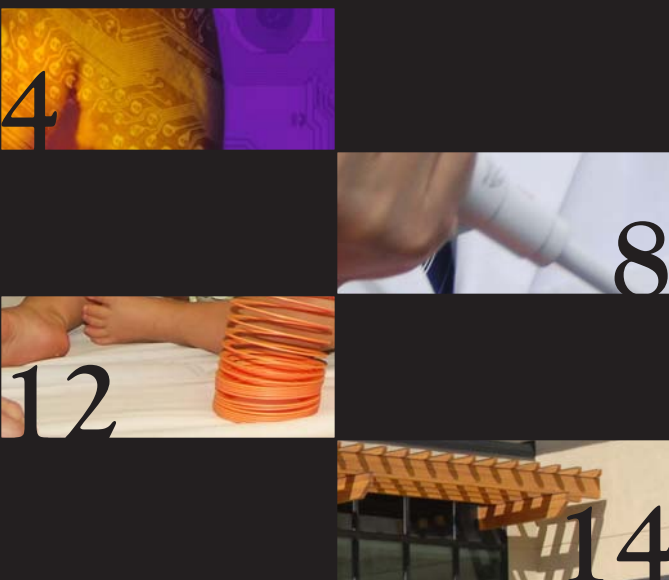
be accredited for the next seven years, according to the Accreditation Review Commission on Education for the Physician Assistant. The PA program has had continuous accreditation since its inception in 1970 at the UND School of Medicine and Health Sciences.

The School received the largest grant in its history, \$15.9 million, for the North Dakota IDEa Networks for Biomedical Research Excellence (INBRE). Half of the budget will support research projects at predominantly undergraduate institutions in the state. The University of North Dakota School of Medicine and Health Sciences in collaboration with North Dakota State University will administer the statewide network. Major projects will be led by researchers at Cankdeska Cikana Community College, Dickinson State University, Mayville State University, Minot State University, Turtle Mountain Community College, and Valley City State University.

The examples I have used highlight the interdependence of the two core missions of the School: the education of medical and allied health care students who will serve the citizens of North Dakota and the region, and the creation of new knowledge (research) and scholarship. Indeed, those three ingredients—education, service, and scholarship and research—form the core missions of *all* medical and allied health schools, and are ingrained in our mission as defined by the North Dakota Legislature.

None of us at the School achieves excellence on our own. Securing the quality of our students, faculty, and staff are the citizens of North Dakota and our generous benefactors who have recognized the School’s merit with their unceasing and generous assistance. The School’s mission is to enhance the quality of life for all North Dakotans; achieving our mission ultimately rests on the backing from North Dakotans and our benefactors. Thank you for your support.

Joshua Wynne, MD, MBA, MPH
Interim Vice President for Health Affairs
and Interim Dean



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 SCHOOL OF MEDICINE AND HEALTH SCIENCES

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Practice Makes

Clinical Education and Simulation Center will provide far-reaching benefits

THE NEWEST ADDITION TO THE SCHOOL of Medicine and Health Sciences will not only keep the University of North Dakota in the forefront of medical education but also serve as a valuable resource for the entire region.

The Clinical Education and Simulation Center, located on the west side of the Clinical Education Center, is already complete. By spring, the simulators will be in place, and the facility will be fully functional by fall 2010, said the center's director, **Jon Allen, MD '84**.

The building's main floor includes about 5,200 square feet. A 1,900-square-foot basement will provide storage for equipment, oxygen, medical air, and other items required by the center.

The main floor houses four simulator rooms that will be so realistic, students will feel as if they're walking into an emergency room, intensive care room, or a regular hospital room, depending on the scenario for which the room is set up.

"Everything is as it would be in the hospital," Allen said.

And the realism doesn't end there. The rooms will be equipped with human simulators that are so remarkably lifelike they can talk, cry, breathe, and bleed. Running on a computer system, the human simulators can mimic hundreds of human medical conditions, ranging from heart attacks and seizures to allergic reactions and drug overdoses.

Human simulators can cost anywhere from \$30,000 to over \$500,000. According to Allen, the ones ordered for the sim center average in the \$55,000 range and will include at least four adult human patient simulators, a baby simulator, a mother and baby birthing simulator, and four cardiac patient simulators. Some also will be portable, meaning they can be used in an ambulance.

"We can reproduce almost any medical situation," Allen said.

Instructors can watch their students working in the sim rooms through one-way glass, and audio equipment will allow them to communicate as necessary. In addition, video cameras will digitally record what happens in the sim rooms.

"We review the scenario on video and talk about what went right and what went wrong and how to improve in debriefing sessions that follow," Allen said.

Partners with a Passion for Patient Care

According to Allen, about four years ago, the former medical school dean, **H. David Wilson, MD**, and others in the program began dreaming of this project.

"We knew we had to get into simulation sometime," Allen said. The day is likely coming, he explained, when sim centers will be required in order for medical schools to receive accreditation.

They decided to approach Blue Cross Blue Shield of North Dakota (BCBSND) for help in making the dream a reality. BCBSND recognized the ultimate benefits the sim center will bring to patient care and agreed to supply up to \$4.25 million toward the project.

"The bottom line is patient safety. That's why we're doing this," said Allen. "Blue Cross Blue Shield had this great vision. We couldn't do it without them."

We can reproduce almost any medical situation.

According to **Denise Kolpack**, vice president for communications at BCBSND, the insurer agreed to help get the project going with grants of \$1.5 million for construction and about \$2 million to purchase simulators. BCBSND also is kicking in \$150,000 annually for up to five years if the sim center is widely marketed to the entire North Dakota health-care community, which is part of the plan. UND's sim center will not only be incorporated into the curriculum for medical students but also available for conferences and training sessions for practicing doctors who want to sharpen their skills or learn new procedures. In addition, the center will be available to train nursing students, resident physicians, physician assistant students and practitioners, physical therapists, public health workers, fire and rescue teams, military health personnel, paramedics, alumni, and other interested health care providers.

"After two years of discussions, the BCBSND board of directors made the decision to support this project based on the BCBSND mission to help provide quality access to all North Dakotans, and this project was a specific, tangible way to support that mission," Kolpack said. "The simulation lab will strengthen health-care delivery to all corners of the state. The program will offer critical hands-on training and practice to medical and nursing students, practicing clinicians, and volunteer emergency responders who are especially critical in delivering care in rural North Dakota."

Perfect

Doing It Right

In an effort to make sure UND's sim center is the best it can be, Allen talked with officials at a number of sim centers across the United States and visited several others, including the Mayo Clinic in Rochester, Minn., the University of Kentucky in Lexington, Harvard University in Boston, and the University of Miami. He also took a course at Mayo on how to write the curriculum and build the sim center.

people who will also be using the facility—representatives from UND's Nursing, Aerospace, and Technology departments and the hospital commander at the Grand Forks Air Force Base.

Randal Severson, the Emergency Medical Services coordinator at Altru Health System in Grand Forks, is also among those serving on the advisory committee. Severson said the sim center will be a valuable resource for

The simulation lab will **strengthen health-care** delivery to all corners of the state.

Part of that effort has been involving as many stakeholders as possible. An advisory committee that has helped with the project includes

the new critical care paramedic program he started at Altru, as well as for training paramedics in more invasive procedures.

Working Together



UND's sim center is not the only place in the area that will have human simulators. In fact, it's not the only place on campus that can say that. The simulation center at UND's College of Nursing recently celebrated its one-year anniversary. Stephanie Christian, chair of the Department of Practice and Role Development and a clinical associate professor in the College of Nursing, also is serving on the School of Medicine and Health Science's sim center advisory committee. She said the adult, pediatric, and toddler human simulators located in the Learning Resource and Simulation Center on the first floor of the College of Nursing are meeting the current simulation needs of UND nursing students. As simulation

continues to be integrated into the nursing curriculum, the School of Medicine and Health Science's Simulation Center will enhance this mission. A larger simulation center such as the School of Medicine and Health Science's Simulation Center will allow the University's students in health-care disciplines to participate in interdisciplinary simulation, much like the interdisciplinary approach used in all health-care settings.

Allen said he welcomes the opportunity to work with other sim centers in the area.

"We want to be a regional participant," he said. "We want to work together with other sim centers to provide training for better patient care."



Jon Allen, MD '84, researched several simulator options in preparation for the med school's sim lab.

Allen agrees. He remembers learning such procedures on real patients in real situations.

"That's all we had available to us for years," he said.

When Allen was learning to insert a catheter, for instance, he first watched an experienced doctor perform the procedure. The second time, a doctor guided Allen's hand as he tried the procedure himself. The third time, Allen performed the procedure as the experienced doctor watched. And all this was done on real patients. Now, with simulators, students can practice any procedure 20 or 30 times on their own, until they're comfortable and "they have the procedure down," Allen said.

Severson said the sim center also will provide his staff with the valuable opportunity to practice teamwork and stay

sharp on skills they don't use very often.

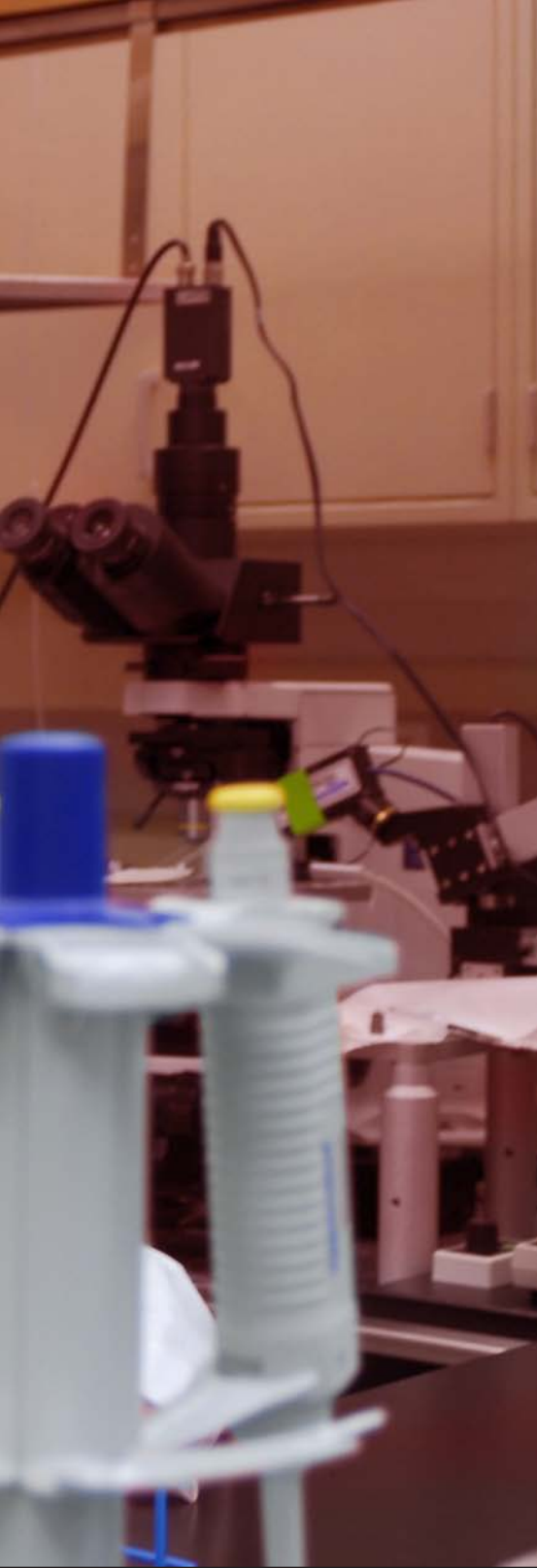
"There's no pretending anymore," Severson said of the sims' reactions. "You can kill them."

Because students treat the simulators as they would real patients, and because the simulators themselves react in such a real way, students also get to work out some potential anxiety issues. If students have already practiced an emergency with a simulator, they are less likely to be as anxious when a similar scenario plays out in the real world because they have already been through it, Allen said. This can help cut down on potential medical mistakes and increase efficiency, thus potentially slowing the rising cost of health care. 🌿

- Brenda Haugen



Call Him “Doctor Doctor.”



SAOBO LEI IS BOTH A PHYSICIAN and a PhD neuroscientist with a lifelong drive to learn the intricate details about how the brain works—and what can go wrong and why. That quest now has him here at the University of North Dakota School of Medicine and Health Sciences as assistant professor in the Department of Pharmacology,

Physiology and Therapeutics, probing the intimate details of how individual neurons—the brain’s basic building blocks—behave at the cellular level.

“We’re very interested in discovering what exactly neurons do in terms of learning and memory,” said Lei, who got his MD degree at Sun Yat-sen University and his PhD at the University of Alberta. And those connections will lead to a more intimate and accurate understanding of brain problems, such as memory loss, learning disabilities, anxiety, and a host of diseases such as Alzheimer’s and epilepsy.

In scientific parlance, Lei said, “We use a variety of techniques including electrophysiology, immunocytochemistry, imaging, tissue culture, molecular biology, and in vivo physiology and animal models to study the functional changes of the central nervous system in physiological and pathological conditions.”

What that all boils down to is figuring out what happens between neurons involved in memory and learning and other brain functions.

“We want to know how they do what they do, how and why those functions change and cause problems, and what chemicals can be used to help those neurons do what they’re supposed to do,” Lei said. This voyage of discovery starts with microscopically thin slices of brain tissue that Lei and his research team put into little test chambers.

“Then we inject the sample with various chemicals such as neurotransmitters—substances that help neurons communicate with each other—and neuropeptides,” he said. These peptides are protein-like molecules that also are used by neurons to communicate with each other and are related to a number of brain functions, from eating behavior to learning and memory.

Lei and his team are particularly interested in two areas of the brain that

We use a variety of techniques to study the **functional changes** of the central nervous system in **physiological** and **pathological conditions**.

are critical to learning and memory: the hippocampus and the entorhinal cortex (EC).

The hippocampus is a relatively small—but vitally important—region inside the middle of the brain. If something goes wrong in that area, lots of bad things can result, including amnesia and the loss of ability to form or retain new memories. It's one of the first and most critically affected areas in people with Alzheimer's. Other symptoms of hippocampus dysfunction include spatial disorientation.

The entorhinal cortex is a complex multifunctional area toward the rear of the brain. Scientists like Lei are still trying to figure out more precisely what it does and what goes wrong when it malfunctions.

chemical, in turn, causes the receiving neuron to create its own electrical impulse, Lei said. That's the basic messaging system within the brain—and that's how everything works and is regulated, from the heartbeat that keeps us alive to the millions of messages per second required for us to drive a car.

"These synaptic activities and ion channel functions are modulated by numerous modulators, including neurotransmitters and neuropeptides," Lei said. "We are exploring the underlying cellular and molecular mechanisms using molecular biology, pharmacology, and transgenic animal models."

The functional changes of neurons induced by the neurotransmitters and neuromodulators are likely responsible

The **health** of North Dakotans, and people everywhere,
will be **better** as a result
of the **kinds of research** that we are doing here.

"It's a very important memory center, and it is the main supplier of inputs into the hippocampus," Lei said. "It processes our external sensory inputs before sending that information to the hippocampus."

Basically, the entorhinal cortex-hippocampus system plays a key role in memory and learning. Problems in the EC will often lead to symptoms such as a loss of your sense of direction."

Lei and his team members use a variety of techniques and tools to probe the one-on-one actions among neurons in these two important brain regions.

"Using infrared video microscopy and patch-clamp recording techniques, we record the electrical currents that flow from the sending neuron across the synapse to the receiving neuron," Lei said. The synapse is a microscopic gap between the ends of axons, or nerve fibers, across which electrical signals jump from one neuron to another; at the synapse, these electrical pulses cause the release of a chemical known as a neurotransmitter. This

for many physiological functions such as learning and memory; if they don't work right, they're also responsible for disorders such as epilepsy and anxiety, and neurodegenerative diseases including Alzheimer's and parkinsonism.

"We also use in vivo disease models—specially bred rats and mice—to study the roles of the neuromodulators in these clinical disorders," Lei said.

The discoveries that Lei, his team, and other researchers in the area are pursuing will help chemists formulate new highly targeted drugs to treat diseases and dysfunctions such as Alzheimer's, epilepsy, and amnesia.

Lei recently had his paper "GABAB Receptor Activation Inhibits Neuronal Excitability and Spatial Learning in the Entorhinal Cortex by Activating TREK-2 K⁺ Channels" accepted for publication by one of the top international academic neuroscience journals, *Neuron*. The research it describes represents another step along the road to effective treatment of these diseases.

It's research that's caught national attention.

Lei recently was awarded a prestigious and highly competitive R01 five-year grant totaling \$1.52 million by the National Institutes of Health (NIH) to study the cell-level mechanism that triggers anxiety; work that's closely related to his research into the electrical behavior of neurons.

"Anxiety is among the most common psychiatric disorders and affects about 20 million people in this country," said Lei. Anxiety is treatable with drugs, but only with moderate success because scientists still do not have a complete picture of the brain mechanisms that produce it. Moreover, most available anti-anxiety medications have side effects—sometimes very serious—or they create problems with tolerance or dependence, Lei said. Solving this issue demands a much more accurate picture of what's going on at the level of individual neurons and their interactions with other neurons.

Jonathan Geiger, PhD '82, chair of Lei's department and himself a well-established neuroscientist, recruited Lei from NIH because of Lei's widely recognized work in the field. Geiger's aim: build a world-class neuroscience research center at UND.

"The research enterprise here is on a very steep incline," Geiger said. "Ultimately, it's about being a key part of the medical school's plans to build a critical mass of like-minded neuroscientists, so the success will be self-perpetuating. The health of North Dakotans, and people everywhere, will be better as a result of the kinds of research that we are doing here."

"We know so much more about the brain than we did years ago," Geiger said. "It's an interesting and complicated organ." But also one of the most feared, Geiger said, "because if something goes wrong in the brain—whether it's seizures, effects of drug use, dysfunction—people can be isolated, ostracized, stigmatized."



"So it's really important to try to figure out how the brain works, what can go wrong, and how to fix the problems so that we can help people living with and suffering from various conditions," Geiger said. "And that's what research such as Dr. Lei's is all about." 🌿

Jonathan Geiger, PhD

- Juan Miguel Pedraza

Unique Teaching Assistants



DPT students get real-life experience through labs with local residents

Brandy Johnson learns valuable pediatrics skills with Joy and Melissa Brown.

YOU WALK INTO THE ROOM TO treat a person who has had a stroke, but you have never met a person with a brain injury. You are trying to explain a diagnosis to the parents of an infant, but you have never even held a baby.

The Department of Physical Therapy at the UND School of Medicine and Health Sciences is helping students overcome this initial nervousness of dealing with real patients by offering labs and clinics as part of their class work that lets them practice on the real thing.

Each fall third-year doctor of physical therapy (DPT) students conduct two pro bono physical therapy clinics for area residents.

"This group of students will go back out in the clinic next spring and one of their clinical experiences will be either with adults or with pediatrics that have neurological types of conditions," said **Cindy Flom-Meland, PhD '04, MPT '93**, assistant professor in the department and organizer of the clinic. "This gives them an opportunity to see that people are people."

The 12 to 15 clinic patients each semester are previous patients of PT faculty members or referrals from clinics in town. All the clients have experienced some sort of neurological episode, such as a stroke, multiple sclerosis, spinal cord injury, or brain tumor surgeries. These clients no longer qualify for benefited PT services or may not have insurance, so the department's clinic fills that need.

"Our goal is to provide a service to the community and to these clients, and also a learning opportunity to our students," said Flom-Meland.

Team approach

The students work in groups of two to three per client with a faculty advisor and see the patient once a week for six weeks during the semester. They evaluate and talk to the patients about mutual goals for the therapy and work with them at the department, at their homes or workplaces, and even at their health clubs.

"We work in diverse environments to help it be more real for the students and also for the clients themselves to help them get back to what they like to do in their everyday lives," said Flom-Meland.

Richard Roberts, a technology support specialist with UND's Information Technology Systems and Services, has been attending the clinic for four years since having brain surgery to remove a tumor.

"I've had the actual injury, so I give them the opportunity to practice on the real thing," explained Roberts. "Going to the clinic there and working with the students there has helped me get some of the movement and some of the function back."

"It was really nice to be able to see people with actual pathologies instead of just reading about them or doing tests and pretending to treat healthy classmates," said **Matthew Huber, DPT '09**. "Not only do you know how to treat a patient, but also explain the treatment to them. That is one of the hardest parts, being able to explain what is going on and what you are going to do in language that someone not in the medical field is going to understand."

Youngest assistants


A much younger set of teaching assistants are enlisted in two pediatric classes within the DPT program. In a second-year required course and a third-year elective course, students have the opportunity to become familiar with working with the youngest patients and their parents.

"Many students find pediatrics an intimidating part of our field because they have had little experience with children and dealing with children's parents," said **Peggy Mohr, PhD '93**, associate professor in the department. "The families really do reinforce our content without even really knowing what our content is."

These assistants range in age from a few days to ten years. During infant development labs, students observe children from birth to 18 months and interview family members to learn about normal childhood motor and social development. Each child goes home with a "teaching assistant" certificate.

In the third-year class, students also work with elementary-aged kids to check bone alignment, range of motion, and gross motor skills.

"It's really good practice for the students to keep the child motivated, to keep them on task, and to learn how to interact with them," said Mohr.

"Having children come in who are unfamiliar with our tests and terminology challenges us to use lay terms and explain our procedures," said **Greg Paintner, BSPT '08**, a third year DPT student who participated in the labs as both a student and as a parent. "Having them there got me even more excited to get into the clinic and begin a career working with kids." 

-Amanda Scurry

Significant IMPACT

New Center for Rural Health service provides hospitals with proof of the economic impact they have on their communities.



Watford City, on the western border of North Dakota, has a healthy local economy thanks in part to the significant impact of the area's hospital, McKenzie County Health System.

SURE. THEY KNOW HOW IMPORTANT THEY ARE, but how do they prove that to everyone else?

The North Dakota Medicare Rural Flexibility (Flex) Program at the UND medical school's Center for Rural Health will take the next two years to determine the economic impact each rural hospital has on its community. Through this new project, staff at the Center for Rural Health will produce individualized reports for each of the 36 critical access hospitals in the state.

"The main goal of the Flex Program is to support small rural hospitals and one way to do that is to increase their visibility and contribution to their local economies, as well as the state," said **Marlene Miller, MSW**, Flex Program director and interim co-director at the Center for Rural Health.

General, state-level data have been available, but nothing this specific for each hospital service area. Until now, most hospitals have estimated their impact, being financially unable to independently hire a consultant to back it up.

Providing proof

The hospitals already know they are major players in their regions' economies, and through this new service, the Center for Rural Health will serve as a neutral research entity to validate this impact.

"Unlike most other states, in North Dakota the hospital really is probably the largest employer, and it is my impression that we have not done a good job, as health care personnel, of getting that message out," said **Dan Kelly**, CEO of McKenzie County Health System in Watford City, N. Dak. "While we are here to take care of the health care needs of the communities that we serve, the other real factor is that we are a major economic advantage to the county and surrounding communities."

"A lot of people don't pay attention to health care until they need it," said Miller, "and to that point, they don't really have a good understanding of how health care impacts their local community."

"With all the general clamor about health care today and the reform that we are going through, I think that we



Photo courtesy of Neal Shipman, the McKenzie County Farmer, Watford City, ND

have to be more proactive about telling our story,” said Kelly, whose hospital acted as a test case for the project. “If hospitals don’t survive, there is going to be a major void that is going to occur. Not only would we be without health services, but hundreds and hundreds of people would be without employment.”

The multiplier effect

Center for Rural Health staff will combine information provided by the hospitals, such as payroll, number of employees and service area, with purchased IMPLAN data from the Minnesota Implan Group Inc. The data are updated every two years and provide county-level information on the relationship between the hospital and

hundreds of sectors of the local economy. The result is what is called a multiplier effect; a representation of how each dollar the hospital spends multiplies in the community.

“That salary dollar spent in the community multiplies,” Kelly explains. “I pay an employee, then that employee goes to the grocery store, that grocer pays money to the printer, and on and on and on.”

According to the first report done on McKenzie County Health System in Watford City, the 125 jobs that the hospital directly provides, creates another 39 jobs elsewhere in the county. Likewise, the hospital’s \$5,071,074 in salaries generates another \$940,552 of income in the county.

Each hospital will not only be provided with the complete report but also with tools on how to use it to their advantage. They will receive talking points and even a PowerPoint slide presentation to help make their case with legislators, local economic development corporations, new recruits to the hospital, or to the community as a whole.


The entire process will be redone every two years for each hospital using updated data as a regular Flex Program service to the hospitals.

Economic partnerships

The Center for Rural Health is working with the North Dakota Hospital Association, the North Dakota Department of Health, and the North Dakota Health Care Review, Inc. to promote the new service.

While they are collecting the data, they also hope to collect ideas on how hospitals and communities can work together on economic development.

“There are some terrific examples in North Dakota where small hospitals work in partnership with their local economic development corporations to meet the needs of their communities,” said Miller.

By collecting case studies of how other communities have done it, Miller hopes more communities learn from them and do it too. 

-Amanda Scurry

**If hospitals don't survive...
hundreds and hundreds
of people would be
without employment.**

A Bright Future for Infectious Disease Research in the Upper Red River Valley



David Bradley, PhD
Associate Professor and Chair,
Department of Microbiology
and Immunology,
The University of North Dakota
School of Medicine
and Health Sciences

AT THE NATIONAL LEVEL THERE HAS been a significant increase in infectious disease research. National Institutes of Health's (NIH) National Institute of Allergy and Infectious Diseases ten-year budget reflects the increased focus on infectious diseases (a 237.9% increase in funding compared to a 115.4% increase in the total NIH budget for this same period). The upper Red River Valley is also experiencing its own boom in infectious disease research. Several events have led to the increase in both the number of researchers and in research funding in the infectious diseases sector:

- The efforts of U.S. Senator Byron Dorgan to acquire funds directed at expanding infectious disease research in the Red River Valley Corridor and funding through the Centers of Excellence program by the state of North Dakota.
- The collaborative relationship between the School of Medicine and Health Sciences (SMHS), UND Research Foundation (UNDRF), and Schlitz Foods Inc. in investigating therapeutics and vaccines for emerging viral infections, utilizing goose antibodies and eggs. This work has resulted in the formation of two new North Dakota-based biotechnology companies and attracted significant federal and state funding that has led to the addition of six new researchers, created openings for six more, and employed 25 new support personnel. This project has also provided funding at the SMHS for three graduate students and a technician.
- The understanding of the need for biosafety levels 2 and 3 (BSL-2/3)

laboratories both for university and for commercial partners, and then the will and determination to build these by UNDRF. This is being realized in the Research Enterprise and Commercialization-1 (REAC-1) building.

- NovaDigm Therapeutics, Inc. transitioned their vaccine development efforts from Los Angeles to their new corporate laboratory based in the REAC-1 building. Their priority program is a vaccine for methicillin-resistant *Staphylococcus aureus* and *Candida*. NovaDigm currently employs five staff in Grand Forks and is expecting to add more soon.

As the newly appointed chair of the SMHS's Department of Microbiology and Immunology, I have both the privilege and responsibility of leading the department as it grows to be an integral player in this infectious disease research. In the very near future, the department will be hiring four additional faculty whose research expertise will be in either host (immunology) or pathogen (viral or bacterial) interactions. Together with the three research laboratories currently in the department, the Department of Microbiology and Immunology will be positioned to grow the research relationships with corporate partners in the upper Red River Valley, gain the necessary mass to be competitive for various group and multidisciplinary funding opportunities in infectious disease, and prepare medical, graduate, and undergraduate students with an excellent educational and research foundation in infectious disease for the future of North Dakota and us all. 🌱

Halaas Named Associate Dean at UND Medical School



Gwen Wagstrom Halaas, MD, MBA, a family physician and associate professor of family medicine and community health at the University of Minnesota, has been named associate dean for academic and faculty affairs at the University of North Dakota (UND) School of Medicine and Health Sciences.

Dr. Halaas is a graduate of Concordia College, Moorhead, and Harvard Medical School.

She completed her family medicine residency with the University of Minnesota Medical School at Bethesda Hospital in St. Paul. Halaas also earned a Master of Business Administration in medical group management from the University of St. Thomas.

Halaas has practiced family medicine and worked in medical education in Minnesota as assistant director and director of two family medicine residency programs, director of the Rural Physician Associate Program and founding director of the Center for Interprofessional Education. The Minnesota Academy of Family Physicians honored her as "2008 Teacher of the Year." Halaas has extensive

administrative experience in health care organizations. She was medical director for U Care at the University of Minnesota, and she served as associate medical director of HealthPartners, a health care system in Minnesota.

"I am very pleased that Dr. Halaas will be joining the School's senior management team," said **Joshua Wynne, MD, MBA, MPH**, interim vice president for health affairs and interim dean of the UND medical school. "She brings a wealth of experience and is highly regarded by her colleagues at the University of Minnesota. We are delighted that we were able to recruit her to the University of North Dakota."

Halaas has lectured nationally and internationally on rural health education and interprofessional education. She is nationally known for her work in ministerial health and wellness and has written two books—"Clergy, Retirement and Wholeness" and "The Right Road: Life Choices for Clergy."

She is profiled in Dr. Fitzhugh Mullan's book, "Big Doctoring in America: Profiles in Primary Care," which profiles 15 dedicated health care providers whom Mullan describes as humanist, comprehensive, efficient and flexible; doctors who build on the rich legacy of the past and the rich tradition of care in medicine and nursing.

Halaas and her husband Rev. Mark Halaas, a pastor for the Evangelical Lutheran Church in America, have three adult children: Per, Liv and Erik.

UND Physician Assistant Program Earns Continued National Accreditation

The University of North Dakota (UND) Physician Assistant program meets every established standard for function, structure and performance that are needed to be accredited for the next seven years, according to the Accreditation Review Commission on Education for the Physician Assistant (ARC-PA). The PA program has had continuous accreditation since its inception in 1970 at the UND School of Medicine and Health Sciences.

"Accreditation wouldn't have been possible without the dedication and the quality of the faculty and staff supporting the PA program," said **Mary Ann Laxen, MAB, PA-C**, associate professor of family medicine and director of the program.

Physician assistants work collegially with and under the supervision of physicians, especially in primary care in rural areas of North Dakota and other rural and underserved areas within the United States. The University of North Dakota Physician Assistant Program is one of 140 PA programs in the United States and is the only PA program in North Dakota.

The program admits health professionals who have years of experience working as nurses, clinical laboratory scientists, paramedics, respiratory therapists, dietitians, military health care providers and related professions. Seventy students are accepted into the program every two years. The next class begins in May 2010.

"Mary Ann, the faculty and all the staff of the Physician Assistant Program have done an excellent job training individuals to become PAs. It is appropriate the ARC-PA recognize their accomplishments and the quality of education delivered with the longest accreditation available," said **Robert Beattie, MD '89**, chair of the Department of Family Medicine.

Graduates of the Physician Assistant Program must pass the national certification exam before beginning practice. The first-time pass rate for UND graduates in 2008 surpassed the national pass rate. With the present class, the PA program admitted its most diverse class ever, according to Laxen. Students originally came from Nigeria, Brazil, British Guyana, Vietnam, Laos and the Middle East. Various ethnic groups, such as American Indian, are also represented.

The UND PA program has over 1,500 graduates who are employed throughout the United States, Canada and overseas. Over 65 percent of the graduates are employed in primary care practices.

In a letter to UND President Robert Kelley, ARC-PA Executive Director John McCarty said, "The ARC-PA appreciates the commitment and dedication to quality PA education as demonstrated by your participation in the accreditation process."

Doctor of Medicine Class of 2013 Begins Studies at the UND School of Medicine and Health Sciences



Sixty-six first-year medical students, members of the Doctor of Medicine (MD) Class of 2013, started their journey this fall to become physicians at the University of North Dakota (UND) School of Medicine and Health Sciences.

The students, 24 men and 42 women, range in age from 21 to 38 years, with the average age of 24. They come to medical school with work experience in an array of fields and academic degrees in biochemistry, biology, chemistry, zoology, psychology, and exercise science. One student holds a PhD degree, one has earned a law degree, and some hold various master's degrees. Seventy-six percent of the students are from North Dakota.

"The Class of 2013 is a group of exceptional students, reflecting the high academic standards of the UND School of Medicine and Health Sciences. They also enter medical school with a variety of impressive health care and humanistic activities to their credit," says **Judy DeMers, MEd**, associate dean for student affairs and admissions.

Medical students' first week is dedicated to orientation, including introduction to the four-year, patient-centered curriculum. Special emphasis is placed on the students' new roles and expectations of them as health care professionals.

Orientation concluded with the White Coat Ceremony on August 7 at the Alerus Center, when students received their first white coats, the physician's traditional garment, which were donated by the North Dakota Medical Association. They recited the Oath of Hippocrates, an ancient vow to uphold basic professional principles.

Keynote speaker for the ceremony was **Jon Tingelstad, MD**, chair of UND School of Medicine and Health Sciences' National Advisory Council. He addressed "Words that Begin with the Letter 'P.'"

Each student received a lapel pin engraved with "Humanism in Medicine" donated by the Arnold P. Gold Foundation. After the ceremony, the school hosts a picnic for students, family, and friends.

"Recognizing the importance of providing humanistic medical care and establishing this as a goal is a truly satisfying way to end the first week of medical school for our new students. The ability to share the White Coat Ceremony with family and friends makes it even more meaningful," says DeMers.

UND Center for Rural Health Receives Funding to Support Rural Hospitals

For the 11th consecutive year, the Center for Rural Health (CRH) at the University of North Dakota (UND) School of Medicine and Health Sciences has received funding to support rural hospitals through the North Dakota Rural Hospital Flexibility (Flex) Program.

The CRH has received a grant in excess of \$636,000, which is an increase of approximately three percent from the previous year. Funds from the federal Office of Rural Health Policy are used by the CRH to administer the North Dakota Flex program, a state-based partnership that works with and assists rural hospitals to stabilize and sustain their local health care infrastructure.

"In North Dakota, we use partnerships between the federal government, the state, and rural hospitals to strengthen and improve the rural health care infrastructure," said **Marlene Miller, MSW**, CRH Flex program director. "Specifically, we combine grant dollars and community development techniques to help critical access hospitals address local and area needs."

Since it began in 1998, the North Dakota Flex program has provided nearly \$4 million directly to rural hospitals, which has benefited about 120 rural communities. In addition to grants, the Center for Rural Health uses Flex funds to provide technical assistance to rural providers for performance improvement planning, staff surveys, and leadership development. These services help facilities look at their communities' needs and assist them with their planning activities.

"Funds have been used in very meaningful ways," said Miller. "In North Dakota, funds have been used in the areas of health information technology, quality improvement, strategic planning, hospital finance, leadership development, board training, trauma system support, and emergency medical services."

The Flex Program relies on each of the state's hospitals to ensure its success. "Working collaboratively is at the heart of the Flex Program, and North Dakotans are known for working well together, sharing scarce resources, and providing quality care to our rural citizens," said Miller. Eight rural hospital administrators from across the state form the Flex Program Advisory Committee, and they provide advice on the program's goals and activities.

The Center for Rural Health's Flex program operates in partnership with the North Dakota Health Care Review, Inc., the North Dakota Healthcare Association and the North Dakota Department of Health.

UND Med School Receives Largest Grant In Its History: \$15.9 Million for INBRE Research Program



Don Sens, PhD

North Dakota will receive \$15.9 million over five years for a National Institutes of Health (NIH) program aimed at increasing research opportunities, investigators, and resources in biomedical research.

Health and the environment are the focuses of research conducted under the North Dakota IDeA Networks for Biomedical Research Excellence (INBRE) program. Half of the budget will be used to support

research projects at predominantly undergraduate institutions in the state.

The statewide network will be administered by the University of North Dakota (UND) School of Medicine and Health Sciences in collaboration with North Dakota State University. Major projects will be led by researchers at Cankdeska Cikana Community College, Dickinson State University, Mayville State University, Minot State University, Turtle Mountain Community College, and Valley City State University.

"This marks a major accomplishment for North Dakota," said interim vice president for health affairs and interim dean **Joshua Wynne, MD, MBA, MPH**, of the UND medical school. "It will advance the level of scientific inquiry throughout the state and encourage students to pursue meaningful and productive careers in the biomedical sciences."

Don Sens, PhD, INBRE principal investigator and a professor in the Department of Pathology at the UND medical school, said the program provides a broad range of

benefits in biomedical research and science education encompassing research universities, baccalaureate institutions and tribal colleges across North Dakota.

"North Dakota INBRE's goals complement Senator Byron Dorgan's Red River Valley Research Corridor initiative," he said. "It improves the collaborative research environment between UND and NDSU and extends this network to include other colleges and universities across the state. It also complements workforce training in the biosciences."

The Institutional Development Awards (IDeA) program under the NIH National Center for Research Resources (NCRR) assists states such as North Dakota that have historically received relatively little research funding from the NIH. The objective is to develop an infrastructure that supports biomedical research, creates opportunities for students to pursue careers in biomedical research, and assists researchers in becoming more competitive for NIH funding.

North Dakota's INBRE emphasizes capacity building at undergraduate institutions within the state. The goal is to improve North Dakota's research competitiveness by increasing the number of students who continue their education at a research university—such as UND or NDSU—where they can receive advanced training in biomedical research fields. To do this, INBRE funds research projects at the four-year schools and supports their faculty through mentors and facilities at UND and NDSU.



Bradley Named Chair of Microbiology and Immunology at UND Medical School



David Bradley, PhD

David Bradley, PhD, has been named chair of the Department of Microbiology and Immunology at the University of North Dakota (UND) School of Medicine and Health Sciences. An associate professor of microbiology and immunology, Bradley joined the UND medical school in 1998. He completed his doctoral degree at the University of South Dakota School of Medicine and took postdoctoral training at the

University of North Carolina, Chapel Hill, and the Mayo Clinic College of Medicine. Within the Department of Microbiology and Immunology, he served as director of Graduate Education from 2004 to 2008 and as interim chair from January to June of 2009.

Bradley and his laboratory team investigate immune responses in both autoimmune and infectious diseases. A primary focus is research aimed at creating avian diagnostic and therapeutic antibodies to emerging viral pathogens. His research has been funded by a number of sources, including the U.S. Department of Energy, National Institutes of Health, National Science Foundation, the state of North Dakota, and the Arthritis Foundation.

He has written numerous articles for research journals and book chapters, is a peer reviewer for several scientific journals, and serves on both the National Institutes of Health and Department of Defense study sections.

"This is an exciting time of growth for the Department of Microbiology and Immunology," said Bradley. "It's a chance to build on our expertise in infectious disease and recruit excellent new talent to UND."

Grant to UND School of Medicine and Health Sciences Will Expand Training in Doctor–Patient Communication Skills

The Department of Family and Community Medicine at the University of North Dakota (UND) School of Medicine and Health Sciences will receive \$445,000 over three years from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Bureau of Health Professions, Division of Primary Care to strengthen the communication skills of medical students. **Rosanne McBride, PhD**, a clinical psychologist in the department and co-director of Clinical Sciences Education for the first-year curriculum, is the principal investigator of this project. This grant will help students understand the behavioral, emotional, and social factors that affect health as well as how to manage these factors by strengthening students' ability to communicate effectively with their patients.

"This training fits well with the direction of national health care reform," said McBride. "To a great extent, our health care system has been problem-focused—addressing health issues only after they have become problematic. Growing trends for the future are placing a greater emphasis on preventing disease and promoting wellness and the things people can do to stay healthy."

Medical advances now allow people with serious illnesses like heart disease and cancer to live longer, so physicians also need to be better trained to help patients adopt lifestyles that result in better disease management, improved quality of life, and decreased mortality. This can range from helping patients decrease tobacco use to identifying and treating depression, a factor that can often interfere with maintaining a healthy lifestyle. "To be effective in these activities, doctors need to improve their face-to-face communication with patients, so doctor and patient can work as partners to manage each patient's unique health concerns and ways of staying healthy," said McBride.

The grant will extend and strengthen the School's existing communication skills training program. "Learning to communicate effectively with patients is a skill—much like driving a car," said McBride. "You can't learn it from just hearing a lecture or reading a book—you actually have to practice the skill to become good at it." For communication skills, this means being able to practice interacting with patients—actual "hands-on" practice.

Students in training frequently practice using "standardized patients" or actors trained to behave as patients with specific health concerns such as diabetes or depression. This state-of-the-art communication skills training requires considerable investment of resources up front to recruit, train, and compensate standardized patients and expand faculty supervision of student experiences. This up-front investment is well worth it because it can significantly lower health care costs down the road. Namely, better doctor–patient communication plays a large role in



Rosanne McBride, PhD, consults with student Michael Greenwood.

improving health outcomes and chronic disease management, improving patient satisfaction and quality of life, maintaining wellness and preventing health problems, decreasing medical errors, and decreasing malpractice liability.

The UND medical school is consistently among the top medical schools in the country for producing family practice physicians, according to rankings released by the American Academy of Family Physicians, and 40 percent to 45 percent of our graduates enter primary care specialties. Good communication is important for doctors in primary care specialties like family medicine, general internal medicine, and pediatrics because they manage a broad range of patient concerns over time, including mental health concerns like depression or anxiety as well as prevention and management of chronic disease.

In North Dakota, 81 percent of the state is designated by the federal government as a primary care health professions shortage area, and 90 percent of the state is designated as a mental health professions shortage area. The UND medical school places a high degree of importance on preparing students for entry into primary care to encourage future practice in North Dakota's health care shortage areas. As the focus of health care changes, arming students with good communication skills is a crucial aspect of preparation for both primary care and all medical specialties.

Search Begins for New Director at Center for Rural Health

Joshua Wynne, MD, MBA, MPH, interim vice president for health affairs and interim dean of the University of North Dakota School of Medicine and Health Sciences has appointed a search committee to help select the next director of the Center for Rural Health (CRH) at the medical school. Wynne chose **Rob Beattie, MD '89**, to chair and to guide the search committee. The new director will



Rob Beattie, MD

assume the position formerly held by **Mary Wakefield, PhD**, who was appointed in February by President Obama to serve as administrator of the Health Resources and Services Administration.

"The Center for Rural Health has been under the able leadership of Interim Directors **Brad Gibbens, MPA**, and **Marlene Miller, MSW**. We now need to find a permanent director to lead the group, and I have appointed a search committee to recommend a short list of candidates for the CRH directorship," said Wynne.

The search committee has broad representation and is composed of the following individuals:

- Rob Beattie, MD, chair, clinical professor and chair, Department of Family and Community Medicine
- Judy DeMers, MEd, associate dean, Student Affairs and Admissions

- Lynette Dickson, MS, program director, Center for Rural Health
- Louise Dryburgh, CEO, FirstCare Health Center
- Dennis Elbert, PhD, dean, UND College of Business and Public Administration
- Senator Robert S. Erbele, North Dakota Legislature
- Tracy Evanson, PhD, associate professor, Family and Community Nursing
- Jacque Gray, PhD, assistant professor, Center for Rural Health
- Kimberly Krohn, MD, program director, Center for Family Medicine–Minot and associate professor, Department of Family and Community Medicine
- Karen Larson, deputy director, Community Healthcare Association of the Dakotas
- David Molmen, MPH, CEO, Altru Health Systems

Housed at the School of Medicine and Health Sciences, the Center for Rural Health is designated as a Center of Excellence in research, scholarship and creative activity by the University of North Dakota. The center's mission is to connect resources and knowledge to strengthen the health of people in rural communities. The CRH serves the people of the state, region and nation. As a resource, CRH staff members identify and research rural health issues, analyze health policy, strengthen local capabilities, develop community-based alternatives, and advocate for rural concerns.

Small Hospitals Receive Funds Through UND Center for Rural Health

The Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences distributed over \$267,000 from the Small Hospital Improvement Program (SHIP) to 35 small rural hospitals in North Dakota.

"For the 8th consecutive year North Dakota's eligible small rural hospitals have received an average of \$8,000 each year," said **Marlene Miller, MSW**, program director at the Center for Rural Health. "To date, the program has brought well over \$2 million to North Dakota's small rural facilities."

Administered by the Center for Rural Health, SHIP is funded through a grant from the federal Office of Rural Health Policy. The purpose of the program is threefold: (1) to support small rural hospitals in providing quality care to rural residents; (2) to ensure privacy of patient information; and (3) to fund financial studies designed to help with complex health care billing, coding, and reimbursement processes. Funds have been used to upgrade equipment for financial operations and information technology, and for staff training, consultation, and educational materials.



Surfing the

State of the Artist: A Career in Medical Imagery



JUST LIKE THE WINDSURFING FOR which he is known, the mind of **Edward Fogarty, MD**, skates freely over the changing terrain of medical technology, seeking to shine a light on its benefits. Fogarty is chair of the Department of Radiology, UND School of Medicine and Health Sciences, and a radiologist in private practice at MedCenter One, Bismarck. Voluble and articulate, he is a self-confessed tech geek with a passion for giving back. His career is one defined by relentless advances in technology—something he clearly finds exhilarating.

There is a certain measure of pre-ordainment to Fogarty's life. He grew up in the smallest U.S. city with two medical schools, ten blocks between Creighton University and the University of Nebraska, both destined to play large roles in his life. At the age of 14, he saw his brother injured in an ATV accident, and the crisis got him thinking about medicine as a career.

Still, as the oldest son of an attorney father and an artist mother, he had some difficulty in narrowing his choices. Initially drawn to physics as an undergrad, he shifted to biology, with a desire to do research. He had an inkling about working in clinical medicine, but it took a stint in radiology in his fourth year of medical school to make the lightbulb glow brightly. "It just hit me in the midst of this rotation... I'd spent my life surrounded by complex images on the walls of our home with thought provoking philosophical discussions floated across the floor in between." Fogarty realized that radiology, which combines physics and biology presented visually, also requires someone with verbal fluency. The speciality perfectly manifested his heritage, skills, and interests. He still needed encouragement: he credits radiologist **Jean Saigh, MD**, at the University of Nebraska for her role as mentor.

After graduating with a degree in biology (with honors) from the University of Chicago in 1993, Fogarty earned his MD from the University of Nebraska College of Medicine in 1998. The following year, his first exposure to UND came through its "transitional year" internship program at MeritCare Hospital in Fargo. He then returned to Omaha, where he completed a four-year radiology residency program at Creighton University Medical Center. During that time, he was recognized as Chief Resident. In 2003, he joined MedCenter One as a staff radiologist.

Winds of Change

A Technophile's Dream Job

Even as he mentions kite sailing as a way of integrating physics into an extreme sport, he never strays far from his view of radiology as the ultimate playground for a tech-obsessed doctor. Without question, he says, the computer has been the biggest agent of change. It has allowed for CT (computed tomography) scanners that can image the entire heart, taking a rapid series of photographic "slices" in just one beat. (He proudly notes that MedCenter One has the only 320-slice scanner in North Dakota.)

But mention that most vital of organs, the brain, and Fogarty really gets excited. Stroke victims, for instance, have always been vulnerable to the time delays typical with MRI (magnetic resonance imaging) scans, which take up to 45 minutes. "The ability to have CT data," he says, "in all of three minutes, tracking the blood flow through the brain—this enables the neurologist or ER doc to say with confidence, 'this person is having a stroke *right now*,' and they administer a powerful, yet risky drug that can eliminate the blockage in the affected cerebral artery. It's pretty amazing to see that!"

Fogarty also points to an important shift in radiology from its traditional role of "defining *structure* to find pathology," to an evolving new frontier where *function* itself is being revealed. Breast specific gamma imaging and PET (positron emission tomography) imaging provide a functional roadmap where active cancer cells are targeted (labeled). These functional tests make cancers easier to diagnose and allow the care team to track responses to therapy with greater precision. Fogarty states the obvious benefit: "Cancer drugs are not a walk in the park. This information means we don't have to overtreat patients."


From "the Bends" to Brain Healing

Fogarty's open-mindedness has led to an out-of-the-box opportunity in defining how hyperbaric oxygen therapy (HBOT) is helping brain-injured patients. He's teamed with Dr. Paul Harch of Louisiana State University, an unsung hero of medicine, using HBOT to improve the neurological function of many brain-damaged patients. Dr. Harch's understanding evolved out of the treatment of brain-injured divers.

With the ongoing warfare in Iraq and Afghanistan, blast injury to the brain has become an epidemic, and Fogarty is clearly passionate about extending the benefits of HBOT to these "silent injuries," often suffered by soldiers from roadside bombs. He notes, "The patriotism and graciousness in North Dakota is such that we have a greater percentage of our citizens at risk. We are not doing enough to define, by imaging, the real pathology. It's how I'd like to give back to the community."

Fogarty and Harch have published a case report on the method of healing the brain by HBOT and tracking this with functional neuroimaging. He credits two North Dakota natives, Steve Reimers and Linda Butts, for introducing him to Harch. "He's a real pioneer, and I just happened to be a lucky guy, the squirrel that came across this cache of medical chestnuts."

As if he weren't busy enough, Fogarty is also working with **Jon Allen, MD '84**, the director of UND's Clinical Education and Simulation Center, to make classic radiology cases available to students by computer.

What drives this windsurfing doctor to achieve so much? "It's a calling. I'm in the right place at the right time, and every day there's something new. I've never had a boring day." 

- Gary Niemeier

The ability to have **CT data** in all of **three minutes...** enables the neurologist or ER doc to say with confidence, 'this person is having a stroke *right now*.'

WHILE MANY STUDENTS SPEND their summers in the surf and sun, UND student **Jenna Akkanen** had a very different summer “vacation.” Akkanen, who’s finishing her master’s degree in occupational therapy, spent her summer doing fieldwork in New York City at Barrier Free Living, the country’s only domestic violence shelter specializing in services for individuals with disabilities. While on site in Harlem, Akkanen worked with staff to develop extensive treatment plans for residents and their children—with memories and valuable work experience that last far longer than a summer tan.

This Minnesota native has long had a passion for caring for others. While still a teenager, she received her CNA (certified nursing assistant) license and worked in skilled nursing and assisted living facilities throughout high school and college.

was easy, given the school’s great reputation and medical program.

“I wanted to stay at UND if at all possible,” said Akkanen.

She applied and was accepted into the master’s OT program, which places great emphasis on real-world internships.

But how did this Midwestern woman end up all the way across the country in the Big Apple?

Internships are an important component of UND’s OT program. Each student is required to complete five one-week internships and two 12-week internships.

Akkanen said her “passion for people” and her desire to experience “different cultures and places” made her immediately interested in working in New York City.

While UND didn’t have any direct connections with facilities in New York, Akkanen called some hospitals in the city

Making the Most of my

OTs are very much **needed...**
because we can have such
a **positive impact**
on survivors’ **lives.**

“I have loved health and medicine since I was old enough to appreciate it,” said Akkanen. “I knew very early on that I wanted to have a career in a health field. I love helping people; it’s a very rewarding feeling.”

Her interest in occupational therapy began during her first year at UND. While working as a CNA in a nursing home, the then pre-med student began speaking with an occupational therapist (OT) in a resident’s room. Akkanen asked the OT about her work.

“When she described it to me, I became very interested in occupational therapy, did some research, and observed her working with some residents. I decided that I really liked the work, that it was well suited to my strengths, and decided to pursue a career in OT.”

Already an undergraduate at UND, the choice of UND for graduate school

and was referred to Barrier Free Living. She contacted the facility’s OT supervisor, flew out for an interview, and landed her dream summer internship at Freedom House, Barrier Free Living’s emergency shelter for domestic violence survivors and their children.

Akkanen was drawn to Freedom House not only because it is the only domestic violence shelter in the country that specializes in individuals with disabilities but also because it is a very nontraditional setting for OTs. While on site, Akkanen worked directly with residents and their children on specific target issues, such as money and time management, coping and parenting skills, and education and vocational development. While attending and facilitating classes for residents such as cooking, yoga, parenting and computer skills, Akkanen also helped the housing

Jenna Akkanen at Freedom House.



Summer Vacation

and entitlements department with departmental organization, created banners and flyers for facility events, and developed a work-skills program to help residents build their resumes and become more marketable to future employers.

While the work could be emotionally draining, Akkanen found it immensely fulfilling.

"OTs are very much needed in settings such as domestic violence shelters, because we can have such a positive impact on survivors' lives," she said.

The most rewarding aspect of her experience?

"Definitely working with residents and watching them progress into independent and stronger individuals," said Akkanen. "Whether it was advocating for themselves, getting their GED, or improving their parenting skills to stop the violence, it was an incredibly rewarding experience."

And it didn't stop there. Akkanen is now doing a physical disabilities rotation at a rehabilitation hospital near Las Vegas and hopes to work with individuals with spinal cord injuries, traumatic brain injuries, and strokes.

"I really could not have chosen a more perfect career for myself," she said. "Because there are a variety of settings and populations I can work with, there will always be something new to experience and learn. I can be as creative as my imagination will let me, and I get the opportunity to help individuals help themselves be as independent as possible. At the end of the day, I will go home feeling proud of what I've done and, hopefully, have made a difference in someone's life."

Who else can say that about their summer vacation?



- Laura Scholz

'00s



Sarah Dahl, DPT '09, has joined Altru's Outreach Therapy department. Dahl provides services at Altru's outreach site in Mayville.



Megan Schill, MSOT '09, has joined Altru's Outreach Therapy department. Schill provides services in Langdon.



Michael Brousseau, BSPT '07, a physical therapist, recently joined the Medcenter One Occupational Health Clinic in Bismarck.

Brousseau evaluates and treats work-related injuries and oversees patient rehabilitation. He also performs pre-placement testing, pre-injury screening, functional capacity assessments, work-conditioning programs, jobsite analysis, and ergonomic assessments.



Joshua Deere, MD '06, has joined Altru Family Medicine Center upon completion of his residency at Altru's Family Medicine Center in Grand Forks. Originally from rural northwestern Minnesota, Dr. Deere acted as resident representative for Grand Forks Family Medicine Residency to the American Academy of Family Physicians of North Dakota.

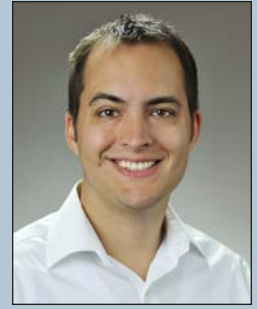
Lisa Jamsa, MD '06, joined the Family Medicine Department at Innovis Health of Wahpeton. Dr. Jamsa is a member of the American Medical Association, American Academy of Family Practitioners, and North Dakota Academy of Family Physicians. As a family medicine physician, Dr. Jamsa specializes in pediatrics, obstetrics/gynecology, geriatrics, and sports medicine.



Bonnie Kvistad, MD '06, joined the Pediatrics Department at the Southwest Children's Clinic in Fargo. Dr. Kvistad monitors the development of infants, children, and adolescents to assess their needs and to diagnose and treat diseases.

'00s

Jeff Andersen, MD '05, has recently joined MeritCare in Mayville. Before joining MeritCare, Dr. Andersen practiced across North Dakota, working as a locum tenens physician as well as spending time working in New Zealand. Dr. Andersen is board-certified in family medicine.



Jordan Coquette, MD '05, has joined MeritCare's obstetrics and gynecology department at the Southpointe Clinic in Fargo.

Alyssa Hoverson, MD '05, recently joined Truyu Aesthetic Center in Grand Forks. After completing her medical degree with the UND School of Medicine and Health Sciences, she did a medical internship with MeritCare Hospital of Fargo. Hoverson then joined Mayo School of Graduate Medical Education, where she completed her dermatology residency. She is a member of the American Society for Dermatologic Surgery, the American Academy of Dermatology, and the Women's Dermatologic Society.



Rhonda Schafer-McLean, MD '05, PhD, recently joined the obstetrics and gynecology department at the Mid Dakota Clinic Center for Women Prime Care in Bismarck in late July. She completed an obstetrics and gynecology residency at the University of Colorado in Denver, where she received the OB/GYN Teaching Award.



Alex Thompson, DPT '05, CSCS, recently completed board certification in strength and conditioning through the National Strength and Conditioning Association. He is currently training area athletes and is available for consultation regarding conditioning programs for individuals of all ages. Dr. Thompson is the manager of West River Physical Therapy Department.

'00s



Marissa Wisdom, MD '05, has joined the Obstetrics and Gynecology department at the Mid Dakota Clinic for Women in Bismarck. Dr. Wisdom has completed a four-year obstetrics and gynecology residency at the University of Iowa Hospitals and Clinics. Dr. Wisdom is a junior Fellow in the American College of Obstetricians and Gynecologists.

Duncan Ackerman, MD '03, has joined The Bone and Joint Center in Minot. After his medical training, Dr. Ackerman received an additional five years of training with the Mayo Clinic in the Orthopedic Surgery Residency Program. He subsequently completed a one-year fellowship in Hand and Microvascular Surgery at the Mayo Clinic in Rochester, Minn.

Tanya Skager, MD '01, has begun her duties as a full-time physician at the Richardton Medical Clinic. Before joining the clinic, Skager practiced medicine in South Dakota.

'80s



David Strand, MD '89, general, bariatric, breast, and thoracic surgeon with the Surgical Institute of South Dakota in Sioux Falls, has been appointed chief of the medical staff at Avera McKennan Hospital and University Health Center. At Avera McKennan, he has served as chair of the pharmacy and therapeutics committee and as the chief of surgery.

He currently is chair of the South Dakota Committee on Trauma. He is certified by the American Board of Surgery and has advanced training in laparoscopic bariatric surgery.

Richard Vetter, MD '88 (Family Practice Residency '91), was chosen as North Dakota's top family physician. The award is presented to a physician who displays pride in practicing family medicine. His name will be submitted to the American Academy of Family Physicians for consideration at the national level. Dr. Vetter is currently practicing at Innovis Health in West Fargo.

'90s



Edward Fogarty, MD (Transitional Residency '99), a board-certified radiologist at Medcenter One, co-wrote a case study that was recently published in the medical publication *Cases Journal*. The case study is titled "Low pressure hyperbaric oxygen therapy and single-photon emission computed tomography brain imaging in the treatment of

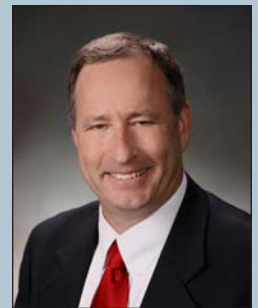
blast-induced chronic traumatic brain injury/post-concussion syndrome and post traumatic stress disorder."

Jeffrey Tionson, MD '95, has joined the emergency medicine department at MeritCare downtown hospital in Fargo. Tionson previously worked at Union Hospital in Elkton, Md.

Kim Konzak-Jones, MD '92, of Grand Forks was re-elected vice president of the North Dakota Academy of Family Physicians Foundation. Dr. Konzak-Jones is currently practicing with Altru in Grand Forks.



Greg Greek, MD '85 (Family Practice Residency '88), was re-elected as secretary/treasurer of the North Dakota Academy of Family Physicians Foundation. Dr. Greek is currently practicing at Altru in Grand Forks.



Tom Cariveau, BS Med. '81, received the Friend of Family Medicine award during the North Dakota Academy of Family Physicians annual meeting in Fargo.



Pierre A. Rioux, MD '81, DFAPA, coauthored a new study, "Multifaceted Inpatient Psychiatry Approach to Reducing Readmissions: A Pilot Study," which was published in the September 2009 issue of *The Journal of Rural Health*.

Rioux is medical director of Austin (Minn.) Medical Center's psychiatric inpatient unit—a part of Mayo Health System—and an instructor in psychiatry at Mayo Clinic.

Access to psychiatric services in rural areas, particularly inpatient psychiatric care, is limited and care may not be as comprehensive as in metropolitan areas. The purpose of the study was to evaluate the effect of the MIPA approach to psychiatric inpatient care on readmission rates in a rural hospital setting.



Major General Larry Smith, BS Med. '36, died June 18, 2009 at the age of 95. He was the son of Doctor Joseph Smith and Lora Aird, a schoolteacher. He entered military school in 1927, ran the school newspaper after a year in military school, earned a scholarship at Pittsburg Military Academy at Owatonna, Minnesota, and attended medical school and pre-

law school. He received a bachelor of science degree at The University of North Dakota in 1936 and attended Northwestern University Medical School in 1937 and 1938. He was licensed to practice medicine and surgery in the states of North Dakota and Minnesota in 1939. He joined the U.S. Army at the start of WW II; he was transferred to the U.S. Air Force in 1947. He attended the Aviation Medicine Navy School at Bethesda, Maryland, in 1955, and he was certified by the American Board in Preventive Medicine and Aviation Medicine in 1956. He served as Command Surgeon at Hickman Air Force Base in Hawaii. During WWII, he participated in overseas duty in Iceland and the China-Burma-India theater. He served as Deputy Surgeon of Strategic Air Command at Andrews Field and Medical Group Commander at Keesler, Mississippi. He was also a pilot until 1967 and served as flight surgeon, surgeon general, and command surgeon. His distinguished military service spanned nearly 34 years. He was preceded in death by his father, Joseph Smith, mother, Lora Aird; brother, Aird Smith; and sister, Miriam Avakian. Survivors include his wife, Claudine Smith; daughter, Laurel Smith; stepdaughters, Dominique Wallace and Anna Hoey.

Sidney O. Hughes, BS Med. '44, 86, died peacefully in the early hours of Saturday, February 21, 2009, at Winona Community Memorial Hospital, the hospital where he cared tirelessly for others as a physician for over 40 years.

Sidney was born June 19, 1922, in Mandan, North Dakota, to Charles Hughes and Flora Kollitz. He graduated from Mandan High School in 1940, attended Jamestown College from 1940 to 1944, then attended the University of Pennsylvania at Philadelphia for Medical School from 1946 to 1950, completing his internship at Presbyterian Hospital from 1947 to 1948 and serving as Assistant Instructor of Medicine at the University of Pennsylvania from 1948 to 1950.

He served stateside as a private first class in the Army from 1943 to 1946 during WWII. He was called to active duty December of 1950, serving in the Army stationed at Percy Jones General Hospital for 11 months. In January 1952, he was stationed in Korea at the 121st Evacuation Hospital, where he served as Captain in a MASH unit. He also volunteered as a physician at a local orphanage while in Korea.

He married Colleen J. Lindsay on June 15, 1947, in Mandan. They moved to Winona in 1953 when he took a position as a doctor at the Winona Clinic with an internal medicine specialty, certified by the American Board of Internal Medicine. He served on the Winona Clinic Board from 1974 to 1991. His professional affiliations included the American College of Physicians, Minnesota State Medical Association, and Winona County Medical Association. He retired from full-time practice in 1999, but continued to practice part time at the Winona State University Health Care Center for several years.

He served as the primary caregiver for Colleen after she was diagnosed with Alzheimer's disease until her death in 2001. Upon his retirement, he continued his life-long service to the community by volunteering with Meals on Wheels, providing respite care for other caregivers through the Elders Network program, and reading to second-graders at Washington-Kosciusko Elementary School.

With Colleen, he enjoyed traveling to Europe and hiking, fishing, sailing and camping with his four daughters. More recently, with his partner Theda Hester, he enjoyed spending time on Sanibel Island in Florida in the winter, and visiting his daughters and their partners.

He is survived by his four daughters (and their partners): Honore Hughes (and Julie Gram) of St Louis, Mo.; Melissa Hughes (and Rob Harrison) of Conner, Mont.; Holly Hughes (and John Pierce) of Indianola, Wash.; and Stacy Hughes Anderson (and Neal Hughes Anderson) of Winona, Minn.; his sister Dorothy Pederson of Bloomington, Minn., and his colleague and partner of recent years, Theda Hester.

Clarence “Bud” W. Jordahl, BS Med. ’52, 80, of Milwaukee, Wis., died Saturday, June 20, 2009. Bud’s family received friends on Saturday, June 27 at Fox Point Lutheran Church.

Bud was born in Minot, North Dakota. He graduated from the University of North Dakota, graduated from Albany Medical College, and interned at Upstate Medical Center in Syracuse, N.Y. He served in the Public Health Service on the Navajo Indian Reservation. He did his internal medicine residency at the New York Hospital-Cornell Medical School, where he was chief resident. He completed further studies in pulmonary medicine at the University of Pennsylvania. Bud came to Milwaukee in 1962 to Marquette Medical College. He later had a consulting practice in pulmonology, was medical director at Northview Home in Waukesha and ran the Tuberculosis Control Center for the City of Milwaukee. Bud will be remembered for his strong spirit and wonderful sense of humor. His family greatly appreciates the prayers, love, and concerns of their many friends. They especially appreciate the medical care of his doctors and the staff at Columbia Hospital.

Bud was the beloved husband of Donna (née Boschee), the dear father of Ann (Stephen Sennott) Jordahl, William (Deb) Jordahl, and Eric (Laura) Jordahl. He was the brother of Marjorie Jordahl, Betty (Martin) Osmundson, and the late Gene W. Jordahl. He was also the grandfather of Brianna and Hille Sennott; and Adam, Anna, Haley, Lily, and Caleb Jordahl. Bud is further survived by nieces, nephews, and many other relatives and friends.

Alan Bloom, MD (Family Practice Residency Program ’89), died Thursday, June 11, 2009, at Sanford Hospital in Webster, S. Dak. His funeral was on June 16 at St. John’s Lutheran Church in Webster. He was buried at the Webster Cemetery with military rites.

Alan Ray Bloom was born Thursday, April 6, 1950, to Fred “Pete” and Geraldine (Pies) Bloom in Webster. He was baptized and confirmed at American Lutheran Church in Webster. The family lived on a farm south of Webster in Wheatland Township, Day County, where he attended country school through the fifth grade and then transferred into Webster, where he graduated from high school in 1968. He attended South Dakota State University in Brookings from 1968 to 1972, where he was involved with ROTC and graduated with a Bachelor of Science in Chemistry. On September 11, 1971, he married Sylvia Knapp in Waubay. From 1973 to 1978, he served active duty as a pilot with the U.S. Air Force as a Commissioned Officer. He received his pilot training in Big Spring, Texas, and in 1974, he received his B-52 training at Merced Air Force Base in California. In 1977, he attended Squadron Officer School in Montgomery, Ala. He was stationed at Wurtsmith Air Force Base in Michigan from 1974 to 1978. While in Michigan, he received his Master of Arts in Public Administration in 1976. The couple

moved to Vermillion, S. Dak., where he received a Master of Science in Biology in 1980, and he graduated from the University of South Dakota Medical School in 1985.

He was an aircraft maintenance officer and squadron commander with the Iowa Air National Guard in Sioux City from 1980 to 1988. He completed his Family Practice Residency in 1988 through the University of North Dakota. The family then moved to his native Webster, S. Dak., where he began his medical practice at the Day County Medical Center, which continued until the present. He received a fellowship with the American Academy of Family Physicians in 1991. He served with the S. Dak. Air National Guard in Sioux Falls from 1988 until 1994 as clinic commander and state air surgeon. On June 13, 1992, he was united in marriage to Rita (Nielsen) Grupe at St. John’s Lutheran Church in Webster. The couple resided in Webster. He retired in 1994 as a lieutenant colonel with more than 20 years of military service.

Dr. Bloom was a member of St. John’s Lutheran Church in Webster. He also was an avid hunter and a member of many wildlife organizations, including the Isaak Walton League. As a young man, he was active in 4-H, an accomplished pianist, and church organist for the American Lutheran Church. He was a life member of Herbert McKennett Post 40 American Legion.

Survivors include his wife, Rita, of Webster; one son, Alan Grayson (Michelle) Bloom of Laurel, Md.; two daughters: Alla (David) Bartell of Fargo, N. Dak., and Allegra (Clint) Duerre of Bristol, S. Dak.; two stepsons: Ross Grupe of Webster, S. Dak., and Ben (Natasha) Grupe of Rapid City, S. Dak.; one stepdaughter, Elizabeth (Dan) Basye of Watertown, S. Dak.; four grandchildren: Soren and Claire Bartell and Georgia and Max Duerre; and five stepgrandchildren: Abbie and Kiera Grupe and Tyler, Rianne and Dane Basye. He was preceded in death by his parents and a sister, Gaye.



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PARTING SHOTS



Jon Tingelstad, MD, BS Med. '58, chair of the UND School of Medicine and Health Sciences' National Advisory Council, delivers his keynote address, "Words that Begin with the Letter 'P,'" to the Class of 2013 at the White Coat ceremony on August 7.



Sudarshan Kadirvelu, MD, and **Nikhil Batra, MD**, second-year family and community medicine residents; and **Suman Regmi, MD**, a third-year family and community medicine resident, represented the UND School of Medicine and Health Sciences at the 2009 American Academy of Family Physicians Annual Conference of Residents and Students July 30 - August 1 in Kansas City, Mo. Dr. Regmi and his wife, **Suima Aryal, MD (Family and Community Medicine Residency '09)**, will practice medicine in Wahpeton, N. Dak., when he completes his residency.



The Department of Family & Community Medicine's National Center of Excellence in Women's Health hosted their annual Women's Health Connection on Saturday, September 19, at the UND Memorial Union. **Patty Purpur**, a Grand Forks native and a nationally recognized health and fitness expert, is shown delivering the keynote address.



In October, over 100 students and faculty attended the 2009 North Dakota INBRE Annual Symposium for Undergraduate Research. INBRE (IDeA Network of Biomedical Research Excellence) builds biomedical research capacity by serving research universities, baccalaureate institutions, and tribal colleges within the state. **Dr. Mikhail Bobylev** (front) and his research group from Minot State University presented research focused on the discovery and development of novel formamide anti-fungal agents. Behind Dr. Bobylev (L to R) are undergraduate students **Jaklyn Sansaver**, **Braden Buckhard**, **Steven Lewis**, **Tanner Scofield**, and **Jantze Hedges**.

"North Dakota Medicine Goes Green"

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Dave Miedema, director of development and planned giving for the medical school, Jan Granum, MS '67, and John Vennes, PhD, MS '52, celebrate Dr. Vennes's birthday on August 28. Jan Granum was a former lab assistant for Dr. Vennes.