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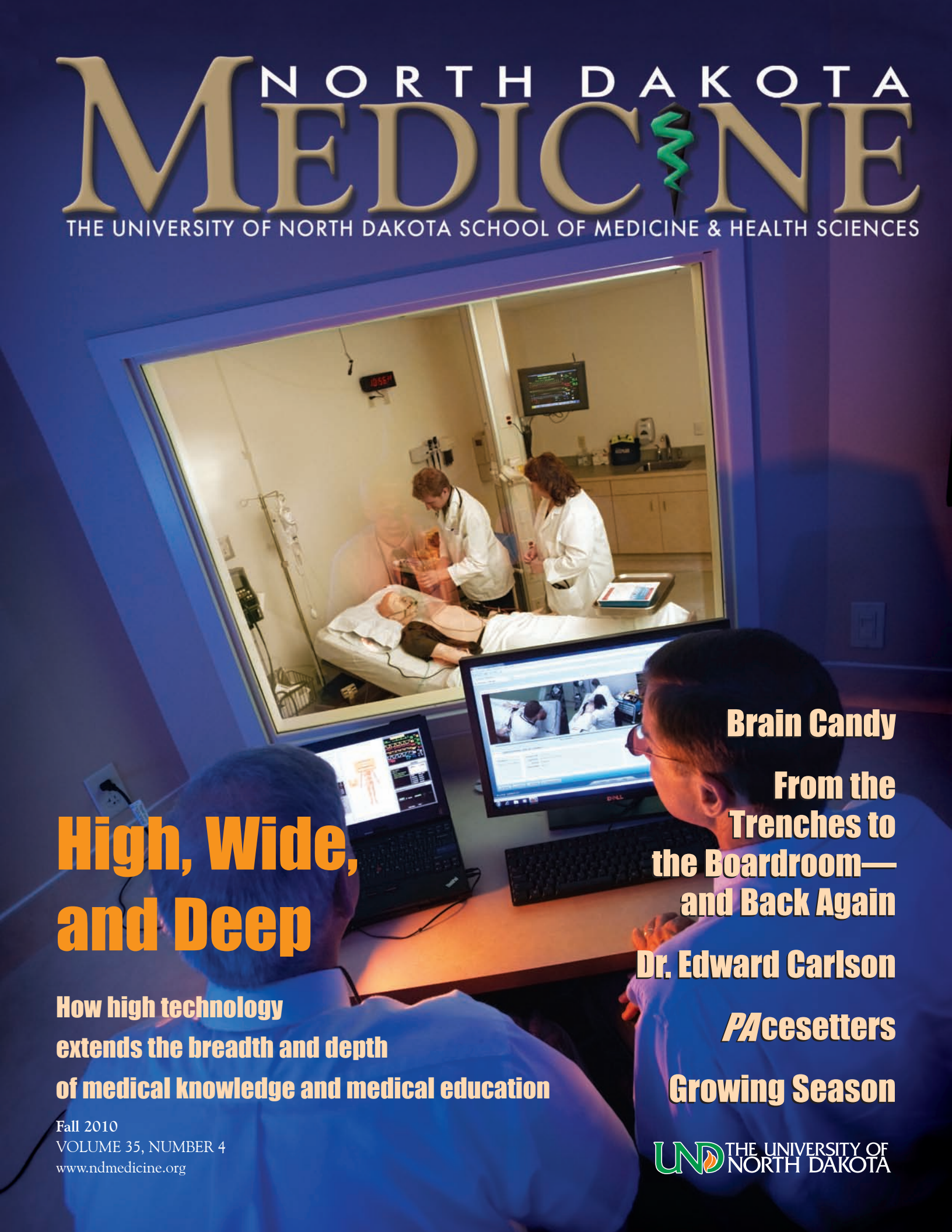

High, Wide, and Deep

How high technology extends the breadth and depth of medical knowledge and medical education

Brain Candy

From the Trenches to the Boardroom—and Back Again

Dr. Edward Carlson

*PA*cesetters

Growing Season

Fall 2010
VOLUME 35, NUMBER 4
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UND THE UNIVERSITY OF NORTH DAKOTA

YOU ARE INVITED!

Join fellow School of Medicine and Health Sciences alumni and friends, students, faculty and staff at three UND Homecoming 2010 events on Friday, Oct. 8 in Grand Forks.

Celebration of Sioux Award Winners Henry C. "Bud" Wessman and Mary Wakefield

10 a.m. - 11 a.m.

Vennes Atrium, School of Medicine and Health Sciences

Clinical Education and Simulation Center Open House

11 a.m. - 2 p.m.

725 Hamline Street

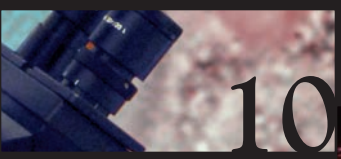
All-School Social

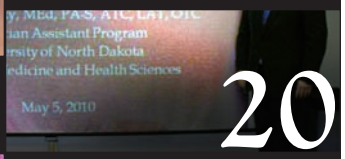
6 p.m. - 8 p.m.

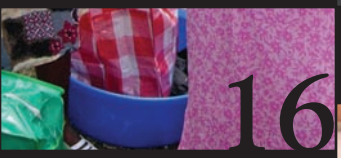
Alerus Center Eagle Room, Room 10

Please RSVP for each of these events to Shelley Pohlman, SMHS Office of Alumni and Community Relations, spohlman@medicine.nodak.edu or (701) 777-4305.

The University of North Dakota
School of Medicine & Health Sciences







UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES

ROBERT O. KELLEY, President, University of North Dakota

JOSHUA WYNNE, Vice President for Health Affairs
and Dean, School of Medicine and Health Sciences

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THE UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

FEATURES

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UND The University of North Dakota

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Transitions

THIS IS A TIME OF TRANSITIONS. The School had no sooner finished graduating 285 medical and health science students who constituted the Class of 2010 than it is welcoming a new class of eager and motivated students. The first-year students are well-prepared for the challenges that lie ahead, and all of the faculty and staff of the School look forward to working with them to make the most of their experiences here at UND.

Other transitions are occurring elsewhere in the School. As you may know, I was recently named the dean of the School of Medicine and Health Sciences after serving as interim dean for almost a year. I very much appreciate the confidence that President Kelley has shown by his selection of me, and I will do my utmost to live up to the high expectations that he—and you—have for this important position. I'd like to share with you some of the changes that are occurring at your School, and outline some of our goals for the future.

My trusted assistant, Judy Solberg, has joined me in the Office of the Dean as my chief of staff. She will coordinate the activities of the office, and ensure optimal collaboration with Senior Associate Dean Dr. Gwen Halaas and her operation in Academic and Faculty Affairs. I am pleased that Lori Sannes will continue as the administrative officer to the dean, and Tina Greenwaldt, who recently joined us as administrative secretary, will continue to ably handle many of the support functions for the office.

Another office undergoing major transition, physically, structurally, and philosophically, is the Office of Alumni and Community Relations. Previously called the Office of Public Affairs, the office has moved down the hall of the first floor of the School to occupy the office suite across from Academic and Faculty Affairs. More important than the physical move is the change in personnel in the Office. The new director of the office is Jessica Sobolik, who comes to us from the UND Alumni Association. A former All-American athlete at UND, Jessica brings a wealth of experience in alumni and customer service and support. She is rapidly building a range of services and products for our alumni, who deserve our gratitude for their generous contributions to the School and who we recognize as vital to the future of medical and health science education. For those who are Twitter or Facebook fans, please check out these websites to see a small sample of our new offerings: http://twitter.com/undsmhs and http://www.facebook.com/undsmhs. Supporting Jessica in the office is Assistant Director Denis MacLeod, who previously split his time serving both the School and its Center for Rural Health. He is a media and content expert, and is of particular help with our printed communications. Rounding out the office is Shelley Pohlman, assistant to the director, whose outstanding support was essential during the transition phase of the office. The most important change in the office is a shift from focusing on news media advocacy to building relationships with our alumni and other stakeholders—including the media, to be sure, but also including national, state, and local government leadership; other university and college officials; UND faculty, staff, and students; communities; and most important of all, the citizens of North Dakota, who foot the bill for about 30% of our operating expenses!

To better serve our students, we're making some changes in the

administrative structure of the School as well. Since education is the cornerstone of our mission, Dr. Gwen Halaas will assume expanded responsibilities as senior associate dean of Academic and Faculty Affairs. Although her oversight of the academic, faculty, and educational enterprise of the School is wide-ranging, areas of particular focus this academic year will include enhancing and updating the medical student curriculum, faculty development, and exploring ways to enhance our interprofessional offerings through cooperation, coordination, and integration with other health care educational resources at UND, in the North Dakota University System, and throughout the region.

Supporting Dr. Halaas in these efforts will be three assistant deans and one associate dean—two new part-time and two revised positions. We were able to create the new and revised positions in a budget-neutral manner by utilizing funds that were freed when I relinquished my former position as vice dean. The need for a new assistant dean for undergraduate and graduate education may not be apparent, yet it may surprise you that we help educate over 600 undergraduate students each year, including many nursing and premedical students. Our graduate (master's and PhD) students also deserve more attention, and the new assistant dean will be charged with optimizing their educational experience. The call for faculty development by full-time and voluntary faculty members has been loud and clear, and we are responding. Our talented and skilled faculty members want to become even more effective teachers and mentors, and the new assistant dean for faculty development will be charged with helping them do so.

The first revised dean's position is a refocusing of the currently vacant associate dean for education slot. Since Dr. Charles Christianson has been appointed associate dean of clinical education, the pre-clinical phase of medical student education has been underrepresented. Accordingly, this revised position of assistant dean of pre-clinical education will focus on this important component of medical student education. Finally, the associate dean for clinical education, Dr. Charles Christianson, will assume additional supervisory responsibilities for the oversight of our regional campuses, which constitute a vital component of our clinical education experience.

Other transformations are in the planning stages, but it's important to emphasize that we're not changing just for the sake of change. We're adapting to better meet our responsibilities to our students, the people of North Dakota, as well as our faculty and staff. To paraphrase UND President Kelley, we're a great School of Medicine and Health Sciences, and we aim to become exceptional. These improvements will help us do so.

What is on my docket for the coming year? First of all, I plan to visit all four quadrants of the state to listen and learn, and to share our story with North Dakotans. Part of that story will be to help build understanding and support for our plan to expand the class size for both medical students and the allied health science professions, and to add additional residency slots for post-graduate training of physicians. North Dakota is already experiencing a provider shortage, and it is forecast to get much worse. We have a plan to address the health care workforce needs of North Dakota, but the plan is not cheap, and will require community and legislative support.

Second, we will continue to work with the leadership of UND and North Dakota State University to offer a Master of Public Health degree and certificate program. The MPH program will be unique when implemented, as it will be a truly collaborative undertaking by UND and NDSU.

...the School of Medicine and Health Sciences **generates $2.61 for every** appropriated **dollar invested** in us!

Third, we will continue to build and develop our research prowess. Already acknowledged for our accomplishments in focused areas of research, including neurodegenerative disorders like Alzheimer's, eating disorders like bulimia, aging, vaccine production and infectious diseases, cancer research, the impact of the environment on health, and research into health care delivery to vulnerable populations, particularly rural residents and Native Americans, we plan to continue to enhance our research enterprise. Our research mission is important for reducing death and disability in our state but also important as an economic engine. It may, for example, surprise you to learn that over a quarter of the School's budget comes from external grants and contracts, much of it federal. Overall, the School of Medicine and Health Sciences generates $2.61 for every appropriated dollar invested in us!

Fourth, I hope to see the School have an enhanced role in health care advocacy, as we work with other state and local leadership in helping to forge a more efficient, less expensive, more patient-friendly, and better health care delivery system for the citizens of North Dakota.

Most important of all, I hope to help ensure an optimal educational experience for every student we touch. If we do this well, we will help ensure that we have the health care providers we need now and in the future.

I'm excited about the future, and look forward to working with all of you. Please feel free to be in touch. I can be reached through my office (701-777-2516) or e-mail (dean@medicine.nodak.edu).

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

Welcome reception for new UND Medical School Dean Joshua Wynne

On July 9, UND President Robert O. Kelley as well as city, state and regional leaders welcomed Joshua Wynne, MD, MBA, MPH, as the new vice president for health affairs and thirteenth dean of the UND School of Medicine and Health Sciences (SMHS). The reception was held in the Vennes Atrium of the School.

Wynne began his new duties as vice president of health affairs and dean on May 18. Wynne has served as interim vice president for health affairs and interim dean of the UND SMHS since 2009.

Wynne said he looks forward to this opportunity for the community to get to know him. He plans to hold "Get to Know the Dean" events at the other SMHS campuses in Fargo, Bismarck, and Minot.

Wynne is a senior physician executive with strong leadership, administrative, clinical, educational and analytical skills, and extensive experience in multiple aspects of academic health care systems. He is a 1971 graduate of Boston University, magna cum laude and Phi Beta Kappa, and an MD graduate of the same school, also magna cum laude and Alpha Omega Alpha, the national honor medical society. He completed his internal medicine residency and cardiology fellowship at Peter Bent Brigham Hospital, and spent the subsequent six years at the Harvard University-affiliated Brigham and Women's Hospital. He also holds an MBA from the University of Chicago and an MPH degree in Health Management and Policy from the School of Public Health, University of Michigan. He served in the United States Army as a battalion surgeon while stationed in the Republic of Korea from 1973 to 1975.

Wynne came to UND in 2004 as executive associate dean for the SMHS. Before that, he was senior analyst at the Institute for Strategic Analysis and Innovation, Detroit Medical Center. He was president of the faculty senate at the Wayne State University School of Medicine in Detroit, where he was vice president of Affiliated Internists. Wynne also served as chief of Wayne State's Division of Cardiology.

He has more than 200 publications, including 77 papers, 19 review articles, 45 book chapters, and 72 abstracts, as well as 23 grants. Wynne has delivered more than 250 talks and presentations to the medical and lay public in the local region, state, nation and internationally, including talks in Ireland, France, Poland, Hungary, India, Thailand, and the Dominican Republic.

First RuralMed Scholar inks contract with UND School of Medicine and Health Sciences

Stephanie Lee, a second-year medical student at the UND School of Medicine and Health Sciences, and Joshua Wynne, MD, MBA, MPH, vice president for health affairs at UND and dean of the SMHS, signed the first RuralMed Scholar contract on May 20. Lee is a native of Mercer, a community in west-central North Dakota with a population of 75 people.

"As Stephanie Lee and Dean Joshua Wynne signed the first RuralMed Scholarship contract, I was visualizing the long-term potential benefit of this new program," said Judy DeMers, associate dean for student affairs and admissions at the UND SMHS. "It is simply a win-win program."

President Kelley speaks with Summer Research Students.

On June 1, University of North Dakota (UND) President Robert Kelley, PhD, welcomed 50 undergraduate students from across the state, region and nation who will conduct research this summer at the UND School of Medicine and Health Sciences. Kelley spoke with the students about his undergraduate research experience in the field of developmental biology and how it sparked his curiosity, a thirst for knowledge that continues 45 years later.

Haese presents research at National Biological Honor Society Convention

Nicole Haese, a first-year graduate student in the Department of Microbiology and Immunology at the UND School of Medicine and Health Sciences, presented research at the Biennial National Beta Beta Beta Convention in Durango, Colorado, in May.

Jessica Sobolik named director at UND School of Medicine and Health Sciences

Dean Joshua Wynne has named Jessica Sobolik director of the Office of Alumni and Community Relations at the UND School of Medicine and Health Sciences. She will work in conjunction with the UND Foundation Director of Development Dave Miedema to foster relationships with alumni of the SMHS, including medical doctor, bioscience and allied health programs. Sobolik joined Assistant Director Denis MacLeod and Assistant to the Director Shelley Pohlman in the Office.

WEB EXCLUSIVE: For expanded versions of these stories, visit: www.ndmedicine.org

Judy DeMers announces retirement

Judy DeMers, the longtime associate dean for student affairs and admissions at the UND School of Medicine and Health Sciences, will retire Dec. 31.

DeMers says this about her tenure at the SMHS: "Over the past 27 years as associate dean, it has been my great pleasure to have worked with five medical school deans, many creative administrators, a highly talented faculty, truly dedicated staff, and very importantly, with more than 1,500 medical students. Although I like to think I have contributed to and enhanced the high quality of our programs and the successes of our students and graduates over the years, I know I will leave this winter having gained much more than I have given. It was never a job for me; it has always been a commitment to the students and to the state of North Dakota—a commitment I hope to continue in other ways in future years."

DeMers, a Grand Forks native, and valedictorian and summa cum laude 1966 graduate of the UND College of Nursing, is both a registered nurse and certified public health nurse who earned an MEd from the University of Washington in 1973.

As a nurse, health educator, and administrator, DeMers has earned several dozen awards and honors going back to the very start of her career, garnering the Beck Award for Nursing in 1965, several Nurse of the Year awards, including the statewide award in 1983; and several listings in Who's Who in America and Who's Who of American Women. She was named to the North Dakota Nurses Association Hall of Fame in 2002.

Dr. Joshua Wynne, UND vice president for health affairs and dean of the SMHS, had this to say about DeMers: "Judy embodies the best of the North Dakotan ethic, and all that is good at the School of Medicine and Health Sciences. She is honest, hard-working, smart, dedicated, helpful, and dedicated to her students. As chair of the executive associate dean search committee, she was responsible for attracting me to UND almost six years ago. So in no small measure, I owe Judy a debt of gratitude for my appointment as dean. She has given extraordinarily outstanding service to our students for decades, and while she will be irreplaceable, she has earned her 'retirement.' Knowing Judy, though, her retirement likely will be anything but 'retiring,' and I suspect she will continue to find ways to serve, as she has for decades. All of us wish her the best in the next phase of her illustrious career."

DeMers joined the UND faculty in 1969 as an instructor in public health nursing and was the associate director of, and instructor in, the MEDEX project in the SMHS Department of Family and Community Medicine from 1970 to 1972.

DeMers then spent time as a research associate in the Office of Research and Medical Education at the University of Washington's medical school through 1977 before returning to UND as assistant professor and director of the Family Nurse Practitioner Program, where she served until 1982. She also was director of the UND medical school's Focal Problems Course until 1989, and she served for a year as director of undergraduate medical education in the Department of Family Medicine.

From 1982 through 1983, DeMers was associate director of the SMHS Office of Rural Health and was promoted to the rank of associate professor. In 1983, DeMers was appointed to her current position. In 1982 DeMers was elected to the North Dakota House of Representatives, where she served until 1992. She was elected to the North Dakota State Senate in 1992 and served there until 2000.

Among many other consultancies, DeMers was an on-site evaluator for the American Medical Association's Committee on Allied Health Education Accreditation from 1979 to 1983. She also was a consultant to the North Dakota state Office of Protection and Advocacy.

In 2009, DeMers received the SMHS Hippocratic Dignity Award. This year, she earned the Outstanding Service Award from the American Association of Medical Colleges Central Group on Student Affairs at the group's national meeting in Austin, Texas.

In nominating DeMers for the award, Daniel A. Burr, PhD, assistant dean for student financial planning at the University of Cincinnati College of Medicine, said, "In the 30 years that I have been a member of the Group on Student Affairs, I know of no other colleague with a more impressive involvement in educational, social, and health care issues. We have been fortunate to have her as a member of our region for 27 years."

"Judy has never hesitated to challenge the status quo or ask the difficult question," said Burr. "She is a woman of few words, but they are strong. It is clear she speaks as one closely involved with her students and aware of the effects association policies can have on their lives."

DeMers has been, and remains, extraordinarily active in many national, regional, and local organizations and committees—the North Dakota Nurses Association, Development Homes Inc., the Red River Community Action Program, the UND Intercollegiate Athletic Committee, and Democratic NPL Party, to name a few—underscoring her ongoing professional and personal commitment to community service.

Dr. David Antonenko honored by UND School of Medicine and Health Sciences

A retirement reception to honor Dr. David R. Antonenko, professor of surgery and director of the Surgical Simulation and Education Center at the UND School of Medicine and Health Sciences, was held on Monday, June 7. Antonenko was recognized for his 21 years of teaching and leadership in the Department of Surgery at the SMHS. He practiced critical care medicine and general surgery for Altru Health System in Grand Forks, where he was director of Surgery Critical Care and director of Trauma Services.

Colleagues from around the region joined SMHS Dean Dr. Joshua Wynne in paying tribute to Antonenko's storied career. "He contributed to the education of a generation of medical students and surgical residents," said Wynne.

Dr. Robert Sticca, professor, current chair and program director of the Department of Surgery, noted Antonenko's national influence on the progress of surgery. Dr. Mark Siegel, medical director of Surgical Services at Altru Health System, said Antonenko was vital in the establishment of Altru Hospital as a Level-II trauma center. "He always has the care of the surgical patient in mind," said Siegel.

"Dr. Antonenko manifested three qualities: vision, tenacity and leadership," said Dr. Mark Jensen, chief of surgery for the VA Hospital in Fargo. "He provided exemplary service and support for our veterans, and he provided years of guidance and wisdom for our surgical faculty."

"He was a great teacher, great to work with, and a lot of fun," said Sandy Swanson, Dr. Antonenko's nurse for over 18 years.

Antonenko, MD, PhD, FACS, FRCS (C), FCCP, received his Doctor of Medicine degree from the University of Alberta in Edmonton and completed his general surgery residency training at the University of Alberta. He was also a Fellow in general surgery at the University of Alberta and Royal Alexandra Hospital in Edmonton. Dr. Antonenko completed a Trauma Critical Care Fellowship at Wayne State University in Detroit, Mich., and obtained his PhD in Experimental Surgery from the University of Alberta.

Antonenko was an associate professor of surgery at the University of Alberta as well as a tenured associate professor of surgery at Wayne State University School of Medicine, Detroit, before arriving in Grand Forks in December 1989. He was director of surgical education for the Department of Surgery from May 2005 to June 2008 and chair of the Department of Surgery from December 1989 to May 2005. He was program director of surgery from July 1990 to December 1992. Antonenko is Board Certified in General Surgery from the Royal College of Physicians and Surgeons of Canada with special interests in surgical critical care and trauma.

Antonenko played a pivotal role in establishing the Surgical Simulation Center for the SMHS in 2008. The Center helps to train general surgery, family practice, and internal medicine residents as well as medical students and some allied health professionals.

"By stimulating the desire to learn, you help the student and ultimately the patient," said Antonenko in thanking his colleagues. "Teaching surgery has been my life."

UND Undergrad Wins National Research Fellowship

Mariaha Lyons, a junior undergraduate student at the University of North Dakota, was recently awarded a 2010 Undergraduate Summer Research Fellowship. This is a competitive national award from The American Physiological Society, which gives Lyons hands-on research experience in the lab of an established investigator, learning to develop a hypothesis, design and troubleshoot experiments, collect and analyze data, and write up and present results. Each fellow receives a $4,000 stipend to cover living expenses during the 10-week fellowship. Fellows also receive travel funds to present their research at the Experimental Biology 2011 meeting in Washington, D.C., which is expected to attract nearly 14,000 scientists.

Lyons was the recipient of an Advanced Undergraduate Research Award from North Dakota EPSCoR in 2009. EPSCoR is the Experimental Program to Stimulate Competitive Research.

Drug Addiction Researcher Joins UND School of Medicine and Health Sciences

Lucia Carvelli, PhD, has joined the Department of Pharmacology, Physiology, and Therapeutics (PPT) at the UND School of Medicine and Health Sciences as an assistant professor. Her position will involve teaching and research. She will conduct research on the mechanism of action in drug addiction, specifically the effect of drugs, such as amphetamine and cocaine, on the dopamine transporter, which is a protein localized in the dopaminergic neurons in specific areas of the brain involved in movement, reward, and memory processes.

Before joining UND's PPT department, Carvelli was a research assistant professor and a research associate in the Department of Pharmacology at Vanderbilt University for nine years.

WEB EXCLUSIVE: For expanded versions of these stories, visit: www.ndmedicine.org

(bottom, left to right) Jason Van Valkenburg, Jared Mahylis, Morgan Skalsky, Brennan Forward and Andrew Burgard; (top, left to right) Evan Kemp, Taylor Mertz, Tyler Brolin and Michael Greenwood

School of Medicine and Health Sciences inducts members of Gold Humanism Honor Society

Nine senior medical students from the UND School of Medicine and Health Sciences were inducted into the Gold Humanism Honor Society on June 17. Keynote speaker Gwen Halaas, MD, MBA, associate dean for academic and faculty affairs, provided an inspiring commentary on the importance of community to the humanistic physician.

Joshua Wynne, MD, MBA, MPH, dean of the UND School of Medicine and Health Sciences gave the opening remarks and initiated the new members. He was assisted by Jon Allen, MD, assistant dean of the northeast campus and director of the School's simulation center.

In 2009, the UND chapter joined 72 other medical school chapters across the country in recognizing senior medical students who demonstrate exemplary humanism and professionalism throughout their medical education. Creation of the chapter was made possible by a grant from the Arnold P. Gold Foundation. Fifteen percent of the class was selected through a process that included peer nomination and subsequent confirmation by the School's Gold Humanism Honor oversight committee. Each student's clinical performance and record of community service was considered.

Members of the class of 2011 include

- Tyler Brolin
- Andrew Burgard
- Brennan Forward
- Michael Greenwood
- Evan Kemp
- Jared Mahylis
- Taylor Mertz
- Morgan Skalsky
- Jason Van Valkenburg

UND Doctors Receive Humanism in Medicine Awards

Heidi Bittner, MD

Katrina Gardner, MD

Heidi M. Bittner, MD, clinical assistant professor of family and community medicine at the UND School of Medicine and Health Sciences, recently was honored with the prestigious Leonard Tow Humanism in Medicine Faculty Award. Katrina Gardner, MD, a 2010 UND medical school graduate and Dickinson, N.D., native, received the Tow award for graduating medical students.

The Leonard Tow Humanism in Medicine Awards are sponsored by the New Jersey-based Arnold P. Gold Foundation. The awards recognize a physician and a graduating medical student who best demonstrate the foundation's ideals of outstanding compassion in the delivery of care; respect for patients, their families and health care colleagues; as well as demonstrated clinical excellence.

Bittner was nominated by Gardner for the award because "she makes her patients feel at the center of her attention, and she does this with humor, humility and understanding," said Gardner. "It is powerful medicine."

Bittner graduated from the UND School of Medicine and Health Sciences in 1991. She is certified by the American Board of Family Medicine and has completed a fellowship in high-risk obstetrics and neonatology. She has been practicing at Altru Clinic–Lake Region in Devils Lake since 1995. In 2007, Bittner was named the North Dakota Family Physician of the Year by the North Dakota Academy of Family Physicians. She has been a key to the success of UND's Rural Opportunities in Medical Education Program, a seven-month education experience for third-year medical students where they learn about problems commonly encountered in rural primary care.

Gardner was nominated for her award by a peer and by Stephen Tinguely, MD, associate professor and chair of the Department of Pediatrics at the UND SMHS. "Katrina exemplifies the characteristics of humanism and altruism that define the meaning of being a 'good doctor,'" said Tinguely. "I hope and pray that this soon-to-be young doctor will someday return to North Dakota as I would be so honored to be listed as one of her colleagues."

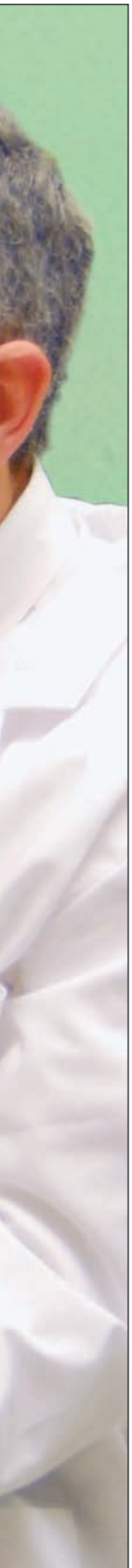
For her last medical school elective, Gardner worked at a missionary hospital in Cameroon. She is collecting PDAs from her classmates in order to provide "point of contact" medical information resources for the resident doctors at the hospital. Gardner is an inaugural member of the Gold Humanism Honor Society at the UND SMHS; she is a former two-year Peace Corps volunteer in Nepal; and she volunteered during a college summer in Quito, Ecuador.

High, wide, a

nd Deep

How high technology extends the breadth and depth of medical knowledge and medical education

By Juan Pedraza



WITH A GLASS TUBE BARELY LARGER than a human hair, Dr. Lucia Carvelli probes the surface of a single neuron for just the right spot.

The University of North Dakota (UND) pharmacologist and neuroscientist is looking for a connection—from the surface of that single neuron to an amplifier that'll tell her exactly when the dopamine transporter she's tracking crosses the neuron's wall. Carvelli (profiled elsewhere in this issue) aims to decipher the neural code that spells out why some people but not others get addicted to drugs.

Carvelli, a researcher and professor in the UND School of Medicine and Health Sciences (SMHS) Department of Pharmacology, Physiology, and Therapeutics, is one of dozens of scientists at the School who daily reveal more about the inner workings of the human body, the diseases that attack it, and ways to cure or prevent them. It takes powerful technologies—and teams of people to support them—to produce, analyze, store, and retrieve the mountains of data produced by this work.

There's a keen relationship between biomedical research—the kind that happens every day at the UND School of Medicine and Health Sciences—and the technology advances that eventually will lead to improved health care.

"We're all part of a big team," said Dr. Edward Sauter, the School's associate dean for research and a professor of surgery who pioneered noninvasive and minimally invasive techniques to predict breast cancer risk.

For Sauter, today's research enterprise—including all the advanced technology that supports it—is about collaboration.

"One of my first tasks when I arrived at UND was to explore ways to increase collaborations with other productive researchers," said Sauter, who earned his MD at the Louisiana State University School of Medicine and his PhD in molecular biology from the University of Pennsylvania. Sauter also holds a master's degree in health administration.

For Sauter and other SMHS faculty, technology, from ever-faster computers in every facet of teaching and research to the cyclotron and the scanning electron microscopes that the School operates, is very simply part of that equation. Today, Sauter notes, physicians, researchers, and teachers in a medical school setting demand the latest connectivity, electronic equipment, and productivity software to remain competitive. Everyone needs "right-now" access to relevant information.

> The **technology** we use is always about either **preventing** or **curing disease**.

No need, he says, to be wowed by the technology because its job is to serve, not overpower.

"The technology we use is always about either preventing or curing disease," he said.

In this story, we'll explore the work of 10 faculty members and staff from the School and the technologies they work with.

For example, some of the people work with the end product of a technology, such as an electronic content management system and special smart classroom electronics. Others use the power of high-speed computer clusters, which work like a supercomputer, to delve into the secrets of protein folding that, they hope, will tell us a lot more about drug addiction. Others handle the hardware; they install, manage, troubleshoot and maintain all the (mostly) electronic bells and whistles essential to keeping the School's research and teaching enterprises humming.

...researchers, bioinformaticians, physicians, and willing participants. They **are all critical**.

Edward Sauter, MD, PhD, MHA
Associate Dean for Research,
Professor of Surgery

After getting his MD and PhD degrees, Dr. Edward (Ed) Sauter followed his dream of becoming a cancer surgeon and researcher. The two in his life are tied closely together. Sauter was recruited to UND because, among other talents, he is an accomplished surgeon with expertise in translational research, especially the early detection of breast cancer.

Translational research is about developing the results of research into real-world solutions for patients. Today's translational science is like just about every other field of research—technology-intensive.

"When you conduct clinical and translational research, you can't really separate the patients you take care of from your search for new cures for the diseases you're dealing with," Sauter said. "Ultimately, you want to cure the disease that they have."

"Although we'd like to find disease earlier or ideally to prevent it, we don't know if the new or additional intervention, which the clinical trial provides, will have the desired outcome," Sauter said. "Some patients are willing to participate in a clinical trial to investigate whether a new intervention will be better than the standard of care; others elect not to. It is essential for a clinical and translational researcher to remember that both patients under your care as well as other potential study participants have the right not to enroll in a clinical trial, despite your belief that they are good candidates for enrollment and that study findings may lead to improved care for a given disease in the future. If the researcher also serves as the patient's doctor, the care of the patient always comes first."

Of course, Sauter said, without advances in technology, such as the kinds he uses daily in his work, advances in treatment and prevention would not be possible.

"In my field, the technology for collecting samples to detect breast cancer didn't exist 10 years ago," he said. "For example, I use a micro-endoscope, with a tip that's the diameter of a hair, that traverses the milk ducts in the breast to identify cellular changes in the duct lining before they become evident on mammography. Before this technology was available, it was impossible to collect these samples for determining disease risk. Today we can evaluate these samples for mutational and other 'epigenetic,' or nonmutational, changes in DNA, which increase the chances that a woman will develop breast cancer."

Sauter sees this technology driving a major paradigm shift in medicine.

"The micro-endoscope is an example of the current direction of medicine to personalize patient care," Sauter said. "Another critical component in our goal to personalize care is the assessment of large data sets from single- and multi-institution clinical trials, which requires robust computational power, as well as biostatisticians working with researchers to make sense of the vast amount of data that are generated in these studies."

"There is no doubt that personalized medicine will become increasingly important in patient care," Sauter said. "We already know that not every adult individual should receive the same dose of most medications, since we have different circulating blood volumes, and activate and metabolize the medications at different rates. The ability to dose medications considering these individual characteristics is on the horizon."

Genetic technologies also are vital components in the advancing standards of medical care.

"With cancer, for example, each tumor has a different genetic profile," Sauter explained. "To optimally treat a patient's cancer, we have to know the mutational and epigenetic events that led to its formation. This means we'll need to profile the tumor in order for the physician to prescribe the right medication(s) at the correct dose(s) to maximize tumor kill while minimizing normal cell kill and thereby side effects."

Sauter is already using such a genetic profile, Onco*type* DX Breast Cancer Assay, created by a company

called Genomic Health, to optimize care delivery to his patients. It's a noninvasive assessment of the tumor, a 21-gene test that provides information on whether or not to treat the woman with newly diagnosed breast cancer with tamoxifen or chemotherapy.

"There's also a 70-gene assay called MammaPrint (developed by Amsterdam-based Agendia), a molecular diagnostic test used to assess the risk that a breast tumor will spread to other parts of the body," Sauter said. "I call it genomic personalization for breast cancer therapy. Basically it helps us determine whether a patient should get chemotherapy."

There's a similar test for colon cancer, and others are on the way.

"These are examples of genetic medicine that are already in the clinic. This wave of personalized care is just getting started," Sauter said. "It takes big teams of people to do this: researchers, bioinformaticians, physicians, and willing participants. They are all critical."

Editor's note: To fully grasp the extent of the School's use of high technology, we have had to extend the boundaries of the magazine. Please continue reading the full story online at www.ndmedicine.org, where the following talented individuals share how their innovative use of technology keeps the School of Medicine and Health Sciences at the forefront of research and teaching.

James Haselton, PhD, Assistant Professor
Physiology, Pharmacology, and Therapeutics
Director, Graduate Studies

Jane Dunlevy, PhD, Associate Professor
Anatomy and Cell Biology

Jon Allen, MD, Assistant Dean,
Northeast Campus
Associate Professor of
Internal Medicine and
Director, Simulation Center

Jonathan Geiger, PhD,
Chester Fritz Distinguished Professor and Chair
Pharmacology, Physiology, and Therapeutics

Keith Henry, Assistant Professor
Pharmacology, Physiology, and Therapeutics

Kenneth Ruit, PhD,
Associate Professor and Vice Chair
Anatomy and Cell Biology
Director of Graduate Education

Jon Jackson, PhD, Assistant Professor
Anatomy and Cell Biology

Mario Borboa, BSN,
BS Computer Information Systems
Information Systems Specialist and Technician
Information Resources

Nasser Hammami, MS,
Assistant Professor, CIO
UND School of Medicine and Health Sciences

(From left) Cheryl Stauffenecker, Director Jon Allen, Tim Shea, and Jamie Hamilton at the SMHS Simulation Center

Brain Candy

Pharmacologist and neuroscientist Lucia Carvelli uses *C. elegans*, not gummi worms, as a tool to explore the molecular basis for addiction in the brain.

By Juan Pedraza

> **By studying** this system, we **learn** about basic **life functions**.

SO WHAT DOES BRITISH ROCK-'N'-roll bad boy Ozzy Osbourne share with the lowly nematode *C. elegans*?

Well, nothing really, except that this minuscule, transparent worm could clue us in on why Osbourne survived after years of flagrant alcohol and drug abuse.

"Osbourne will be studied by research teams and physicians at the Cambridge, Mass.-based company Knome, which provides whole genome sequencing and interpretation services to researchers and families, to find out if there's a genetic component to his survival," said Dr. Lucia Carvelli, a pharmacologist who recently joined Dr. Jonathan Geiger's team at the University of North Dakota School of Medicine and Health Sciences Department of Pharmacology, Physiology, and Therapeutics.

Carvelli, who grew up in Milan, Italy, is working with *C. elegans* to detail exactly what amphetamines, cocaine, and other addictive drugs do at the molecular level in the brain.

Her research could also shed light on Parkinson's disease, a neurodegenerative condition with no known cure, and attention deficit hyperactivity disorder (ADHD), both related to the malfunction of the dopaminergic system, the same system that causes some folks to get hooked on booze, crack, and other addictive drugs.

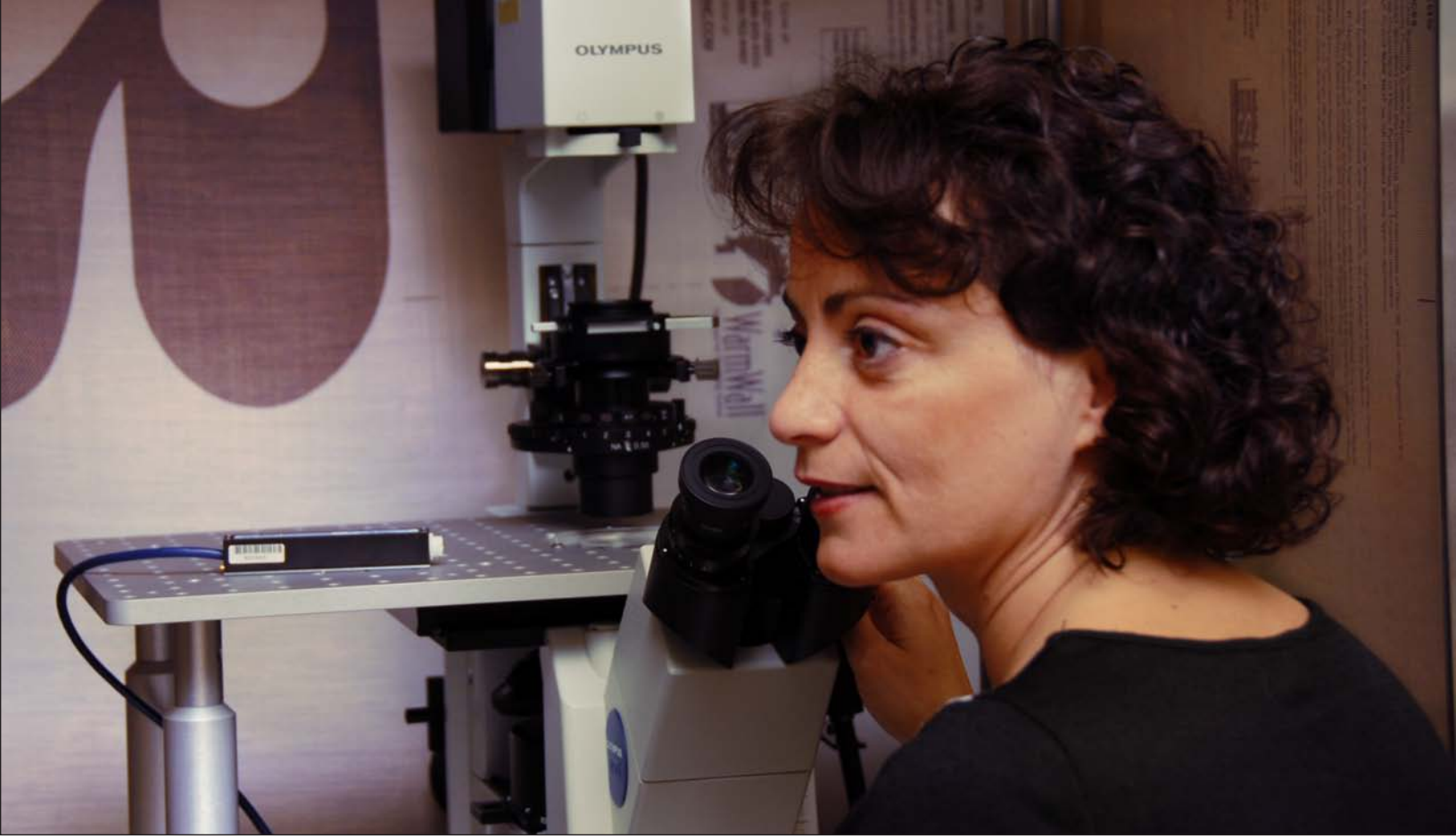
Carvelli got her PhD at the world-famous Mario Negri Institute of Pharmacological Research, where she developed her intense interest in the chemistry of pleasure-seeking neurons, the little guys that give us a kick when we eat a nice chunk of chocolate ice cream or kiss our favorite person. At the Institute, Carvelli received the Alfredo Leonardi Award as the top PhD student of the year in 1999.

Joining the UND SMHS' neuroscience research team in March, Carvelli quickly started some microscopic electrical detective work: she probes the molecular basis of drug addiction by systematically testing the electrical energy released when individual neurons release or receive dopamine.

"Basically, I'm researching the mechanism of action in drug addiction, specifically the effect of drugs, such as amphetamine and cocaine, on the dopamine transporter, which is a protein expressed only in the dopaminergic neurons that are localized in specific areas of the brain involved in movement, reward, and memory processes," said Carvelli with a grand smile, drawing rapidly on a whiteboard to explain the research she's so passionate about.

"It has important roles in learning and memory, in movement, and many other brain functions, including eating and sex," she said. "It's what helps us put pleasurable experiences in our memory and urges us to repeat those experiences. But, Carvelli said, this dopaminergic system is susceptible to tricks.

"Sure, that's how drugs of addiction work—they trick this system," she said. "They push some people to repeatedly engage in the pleasurable experience so that they become addicted, say, to eating, drinking, or injecting an addictive drug. You can say that these substances mess up the system. We know now that some people have a genetic predisposition to becoming addicted to certain substances



Lucia Carvelli in her laboratory.

or to addictive behavior—in other words, they cannot control their addictive behavior. That loss of control can lead to behaviors such as chronic overeating."

With more than 1 billion neurons and more connections than most modern computers, the human brain is still impossibly complex to probe directly, she explained.

"So that's why I use *C. elegans* in my research," Carvelli said. "Specifically, I'm studying how the dopamine transporter (DAT) functions and how it's implicated in the dopamine-related disorders I mentioned earlier, including ADHD and Parkinson's but also in bipolar disorder and schizophrenia."

She's doing all of this on the green fluorescent-dyed neurons—all eight of them—in the 1-millimeter-long, clear-skinned nematode that is the basic tool of her research, which is supported by a $500,000 grant from the National Institutes of Health (NIH) National Institute on Drug Abuse.

"Right now I'm focusing on the addiction-related effects of the dopaminergic system," she said. "When we say 'addiction,' it could be addictive drug abuse, such as amphetamines and cocaine. But addiction can also include things such as food, so by studying this system, we learn about basic life functions such as eating and sex, functions that are fundamental for life and are regulated by the dopaminergic system."

"So basically, the body has evolved so that every time you do something that's essential for life, it's pleasurable," she explained. "So you want to repeat that pleasurable activity. The brain memorizes that these are good things, and you learn that you want to do them again. The dopaminergic system is involved in that memorization process that tells us those things are good. The fact that some people are very much in control of themselves and some others are not is very appealing for me to study."

Before joining the School's PPT department, Carvelli was a research assistant professor and a research associate in the Department of Pharmacology at Vanderbilt University for nine years. She completed her postdoctoral research at the University of Texas Health Science Center in San Antonio, Texas.

Carvelli is a member of the Society for Neuroscience. She has authored and coauthored numerous articles, and has presented at national and international scientific conferences.

Except for the woman holding the box of candles, each of the others represents one family displaced by the Port-au-Prince earthquake. That day alone, 300 families were helped.

From the Trenches to the Boardroom —and Back Again

A health care leader shows the way through her service in Haiti

By Gary Niemeier

TO HEAR MARY ANN LAXEN, PA-C, MAB tell it, the equation is really quite simple: we are all equal, though not equally *in need*. Nowhere is this more dramatically apparent than in Haiti, struck on January 12 by the strongest earthquake there since 1770, leaving more than 3 million inhabitants in dire need of emergency aid. For Laxen, who retired in March as director of UND's Physician Assistant (PA) Program, it was a coming together of calamity and conviction. Although a year-long stay in Haiti had already been in the works, the disaster provided added impetus. She left Grand Forks immediately following her retirement.

Laxen is no newcomer to the region. She first visited Haiti in 1991 as part of an outreach effort, teaming up with the Haitian Health Foundation (HHF) and its medical director Dr. R. Bordeau. This human services organization, founded in the mid-80s, is based in the mid-sized town of Jérémie, about 150 miles west of Port-au-Prince. According to Laxen, over 30,000 people displaced by the earthquake have streamed into Jérémie, a place ill-prepared to receive them. "They come with nothing," Laxen said. "They'll need housing, food, and medical care. They need everything." They are the lucky ones: ten times that number perished in the quake and its aftermath.

She notes that medical care in Haiti is unlike anything Americans are used

to. "In Jérémie," she said, "if you go into the hospital, you have to bring your own gloves, your own IV, your own medicine, and sometimes your own mattress."

Laxen will devote her energies to the Center of Hope, an HHF facility for two of Haiti's most at-risk groups: children and pregnant women. Laxen admits a special interest in the children, many of whom suffer from a severe form of malnourishment called kwashiorkor. A diet lacking in protein allows the cells in the body to break down, resulting in swollen limbs. Ironically, the mother assumes the child is gaining healthy weight. "Before they realize it's abnormal, it's too late," she said. "We know we're going to lose about half these kids."

The situation with women is just as dire. "In Haiti, all women are high risk," Laxen said. "The Center of Hope focuses on very young pregnant women, 12- and 13-year-olds, and also women with multiples (twins), or women with high blood pressure or diabetes. They are watched and checked every day. They do their own cooking." Laxen is keenly aware of the social pressures on women in a country where they have no power. "The women can't say no," she said. "They may have many pregnancies and still end up with no children, or maybe one, after a few years." As a result, Laxen said the HHF pushes for breast-feeding, which not only provides much-needed nutrition but is also a natural form of birth control: "You will never at HHF find a bottle."

This kind of service comes naturally to Laxen, a native of Winsted, Minnesota. As a member of the Franciscan sisterhood, she developed early the egalitarian ideals that would mark her career. Armed with a nursing degree, she served during much of the 1970s as a nurse/coordinator in Taiwan, already displaying the talent for leadership she would tap in later years. She spent a decade in hospital administration, rising through the ranks and adding the titles chief operating officer and vice president along the way. Even then, thoughts of the underprivileged were never far away. Laxen said, "I didn't care if I was in the boardroom talking to people who own great organizations, or talking to the person cleaning the room. It didn't make any difference."

As a registered nurse, Laxen qualified for the PA program at UND, graduating in the spring of 1991. Then, she got a novel idea: "The nurse practitioner boards weren't until September, so rather than find a job, I volunteered to work in Haiti for those months. I loved it, but after taking the boards as planned, President Aristide was deposed, and I couldn't get back in the country." She worked as a PA and FNP on South Dakota's Rosebud Indian Reservation. By 1994, her experience and leadership talents came together in the field of PA education. After a stint as associate—and later acting—director at St. Louis University's Department of Physician Assistant Education, she was hired by UND as director of the PA program.

Laxen moved swiftly to change the curriculum from a certificate to a master's degree program (the first class graduated in 2005). To further broaden the appeal and utility of the program, she then moved to open admissions to a much wider group of health care professionals: physical and respiratory therapists, paramedics, chiropractors and pharmacists. Along the way, Laxen enjoyed the support of Dr. H. David Wilson, former dean of the School of Medicine and Health Sciences, and Dr. Elizabeth Burns, former chair of the School's Department of Family Medicine.

For all her achievements, Laxen is characteristically proudest of the simpler, more personal dimension—"that we've instilled in our students a basic value in treating the patient *first of all* as a human being, how we'd like to be treated." She's deeply committed to confronting inequalities in health care. "All of my jobs have made me very aware of the incongruities in a rich country like ours: the haves and the have-nots," she said. Typically, her solution is simplicity itself, putting herself where the need is greatest. "I do believe the way the Haitians do: 'What'll happen . . . *si Dieu veut* . . . God willing.' That's certainly how this one's ending for me."

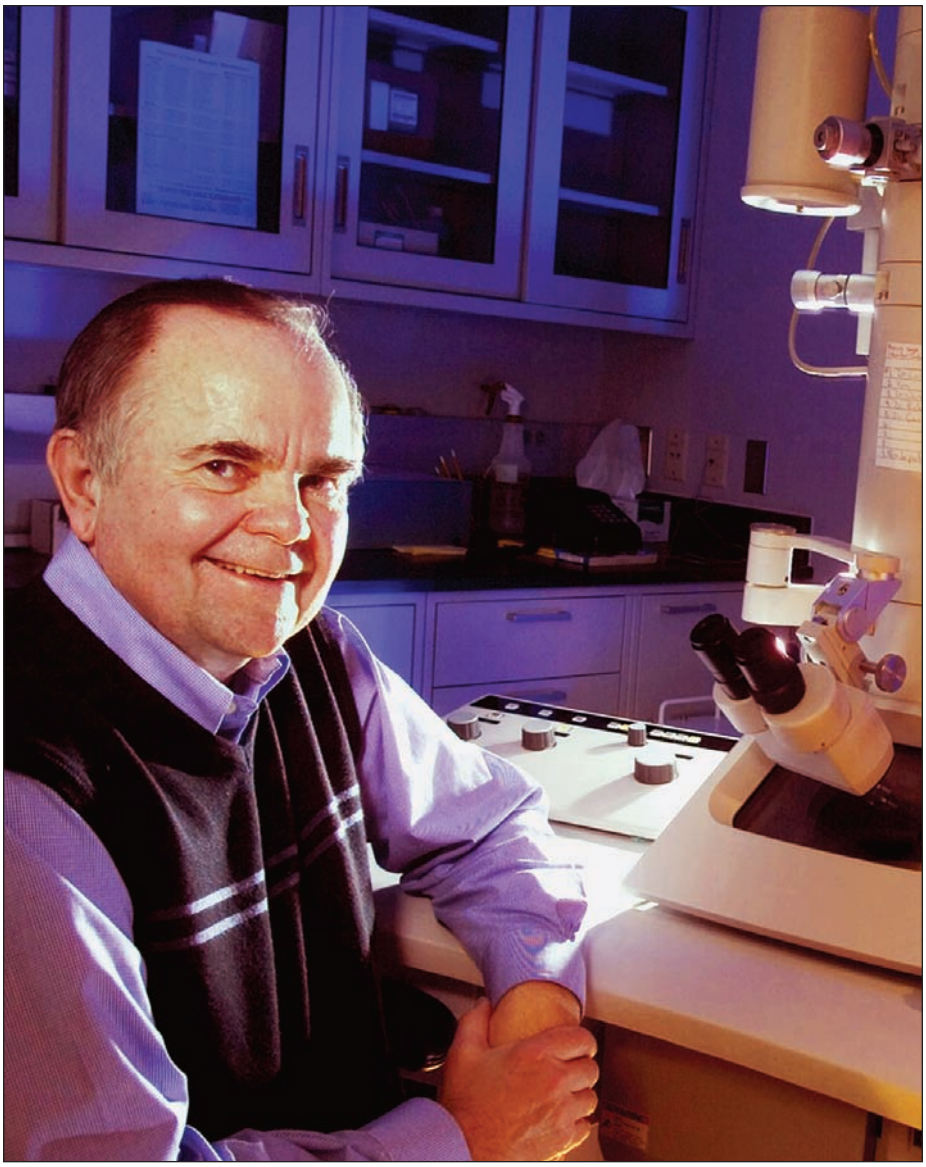
Mary Ann Laxen

WEB EXCLUSIVE: For links to Mary Ann's blog and to The Haitian Health Foundation, visit: www.ndmedicine.org

Dr. Edward Carlson

Abiding Scientist, Teacher, and Mentor

By Laura Scholz



EDUCATION IS IN DR. EDWARD Carlson's blood. His mother Rachel taught eight grades in a one-room schoolhouse in rural Wisconsin, and Carlson knew he'd follow in her footsteps the first time he stepped in front of a classroom.

"I had a brilliant high school biology teacher, and one of our assignments was to give a short lecture to the class. I really enjoyed the whole experience—prepping the materials, being in front of the classroom, and teaching my fellow students. I was immediately hooked," said Carlson, who recently completed 40 consecutive years in medical teaching, including nearly 30 as chair of UND's School of Medicine and Health Sciences' Department of Anatomy and Cell Biology.

What you might not know about this soft-spoken, dedicated professor, who retired as department chair on June 30, is that his teaching career nearly took an entirely different direction.

As a college student, the science aficionado was also a budding musician who played both trumpet and piano. He was unsure which path to pursue when freshman music theory got the better of him.

"I just wasn't into sight-singing and all that solfège stuff," he joked.

So, he switched his major to biology, and music's loss was UND's gain.

Carlson first came to UND as a PhD student in 1966 at the recommendation of an undergraduate professor at Bethel College in St. Paul, Minnesota.

"He was an alum and recommended that I apply to the PhD program," said Carlson.

A National Defense Education Act fellowship paid for his four years of schooling at UND and launched his career teaching future physicians.

After graduating from UND in 1970, Carlson moved on to warmer climes, spending seven years teaching at the University of Arizona and four years at UC-Davis.

What lured him back to North Dakota?

"Well, the opportunity to become chair of the department from which you've obtained your PhD only comes once in a lifetime, and it was such a

remarkable offer, I couldn't pass it up. But beyond that, it's absolutely the best environment for teaching, learning, and researching," said Carlson.

"The honesty and integrity of the administration and our students continually amaze me and inspire me to do my best. Our students are so bright and have an amazing work ethic—they help keep me feeling young and constantly thinking and discovering new things about science."

His favorite class to teach?

"As macabre as it sounds, gross human anatomy. You get to see the body in three dimensions. It's very hands-on, and you can actually reach in and feel and touch and experience how the body works. It's fascinating, and it's the one time during their training when students have that experience."

When he's not teaching students the complexities of human anatomy, you'll find Dr. Carlson in the lab, where he and his team are working on research that could have a huge impact on those suffering from type 1 diabetes. His specialty is in the body's connective tissues—basically the glue that holds the body together—and, specifically, the basement membrane, which covers the cells that line interior surfaces of blood vessels. In diabetics, high blood glucose damages these membranes, causing significant injury to major organs, like the kidneys and the eyes.

Carlson first became interested in the basement membrane during his teaching tenure in Arizona, when he worked on a research team trying to determine its composition and how to isolate it from the surrounding blood vessels. He and two other researchers figured out how to isolate the membrane, which led to National Institutes of Health-sponsored research into how alterations of the membrane affect diabetics.

"We're all familiar with antioxidants and how good they are for the body," said Carlson. "That's because they destroy oxidants and allow for repair of basement membrane damage caused by chronic diseases like diabetes. Right now, you can only inject and ingest antioxidants, but neither method is as effective as the body manufacturing its own."

Enter Carlson and his student research team, which together with their major collaborator, Dr. Paul Epstein, at the University of Louisville, have successfully tested the effects of an antioxidant gene in mice kidneys. So far, the gene has produced remarkable success in genetically engineered mice, where it has reduced the complications of diabetes by 30 percent to 40 percent. More recently, another gene was constructed in the Carlson lab that has the potential for even more protection against damaged diabetic blood vessels. The ultimate goal: develop these genes for humans.

That is why Dr. Carlson's "retirement" will be a phased one, taking place over the next five years, where he'll have full use of his laboratory, technician, and students, and will maintain his endowed professorship.

"I'm basically retiring *to* something, and that's my research. This phased retirement gives me a flexible schedule and allows me to continue my research, as well as the opportunity to teach patient-centered learning curriculum classes during one block each year."

And what will he do when he's not in the lab?

"I used to run, but I recently had a knee replacement, so now I enjoy working out with the cardio machines in our wonderful UND Wellness Center. I also enjoy working in my backyard, mowing the lawn, and taking care of our home."

He and wife Pam have been married for 15 years.

But most of all, his heart is with the university, where he's proud to have played his part in the education of some of the state's best young doctors.

> Our **students** are so bright... they help keep me feeling young and constantly **thinking** and **discovering** new things about science.

PAcesetters

Graduates of the Physician Assistant Program hit the ground running

Joshua Slatky

THEY HAIL FROM ALASKA TO Florida and from Washington to Rhode Island, representing 11 states. They range in age from 24 to 59, are smart—scholar smart—and possess serious street "cred." Actually, it's med cred: they have an average of 11 years of clinical experience. They are the Physician Assistant Class of 2010 at the University of North Dakota (UND) School of Medicine and Health Sciences (SMHS).

Here is a sampling of the 60 talented individuals in the class. Lucy Gambrill, RN, CEN, MSN, has 20 years of ER experience. Grant McFadden, MT (ASCP), has a BS in Clinical Laboratory Science and five years of experience as a clinical scientist. Joshua Slatky, MEd, ATC, LAT, OTC, has seven years of experience in sports medicine. Chuck Waltman, MS, ATC, has an MS in Sports Medicine from the United States Sports Academy and more than seven years of experience.

Their reasons for pursuing a physician assistant (PA) degree are as varied as their backgrounds. Gambrill's father died of acute leukemia when she was ten years old, which impressed upon her the need to seek a career in a medical profession where she could broaden her skills and she would always have a job.

"Being a PA gives me many more open horizons of practice and expanded autonomy compared to nursing," said Gambrill.

Slatky always enjoyed athletics, so a career in athletic training provided a "good balance between medicine and sports." An AT fellowship exposed him to the clinical setting, which allowed him to offer more to patients. Waltman wanted to further his career so he could extend his ability to "practice in orthopedics, sports medicine, or in an emergency room." McFadden's first interest was science, but over his career, he was drawn toward "being more involved with patient care."

The Physician Assistant Program is located in the Department of Family and Community Medicine in the UND School of Medicine and Health Sciences. Since its inception in 1970, the PA program has had continuous accreditation by the Accreditation Review Commission on Education for the Physician Assistant. Over the course of the program, students rotate between the classroom on the UND campus in Grand Forks and a physician's practice (preceptorship) in the student's home community.

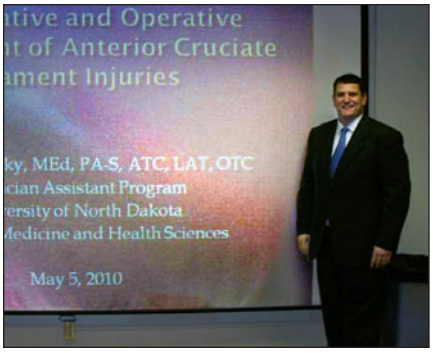
The Scholarly Project became part of the PA curriculum in 2004 when the program transitioned from a certificate program to a Master of Science program. The project is part of the course taught by Susan Kuntz, PhD, assistant professor in the Physician Assistant Program. The Scholarly Project has evolved over the years to include a written paper and an oral presentation. The students begin work on their scholarly projects in the final two semesters of the program. The topics of the papers are current medical questions that the students would like to further investigate. They perform a thorough search of the medical literature to answer their questions and further discuss how this information can apply to clinical practice.

The Scholarly Projects pursued by Gambrill, McFadden, and Waltman reflect the broad practice areas and complex nature of their profession:

etters

By Denis MacLeod

- Gambrill from Houston, Texas, researched "Sitagliptin: Competition to Metformin in Diabetes Type Two Management."
- McFadden from Maple Grove, Minnesota, investigated the "Use of Stool Replacement Therapy in Treatment of *Clostridium difficile* Associated Disease in the Elderly: An Alternative to Conventional Antibiotics."
- Waltman from Sebring, Florida, studied "The Effects of Swimming Lessons in Children to Reduce and Prevent Drowning."



Slatky during his presentation

Slatky had the winning presentation during the 2010 Scholarly Project session at the SMHS. Slatky, from Lubbock, Texas, won for his presentation titled "Long-Term Comparison of Conservative and Operative Management of Anterior Cruciate Ligament Injuries."

"The posters displayed by the Physician Assistant Scholarly Project demonstrated that these future physician assistants were able to develop insightful questions pertinent to clinical practice, and demonstrated their ability to review and assess published literature," said Roger Schauer, MD, associate profesor, Department of Family and Community Medicine, UND School of Medicine and Health Sciences.

In 2008, the PA program began starting a new class every two years and increased the class size from an average of 30 to an average of 60 students. This larger class size prevented the students from performing oral presentations, since they are only on campus for three weeks for the final didactic session. Therefore, this year the students were given the option to present either orally or in poster format: seven students gave oral presentations and 53 presented posters. The posters were made available to other faculty and students in the SMHS on May 4 and 5 in the Vennes Atrium. The presentations were evaluated by faculty, and the students also completed a peer assessment of each other's projects. This year Dr. Vikki McCleary and Dr. Jeanie McHugo assisted Dr. Kuntz in advising students while they prepared their projects.

"The poster presentations were a very effective learning environment for actively engaging the students and allowing for more extensive discussion than would be possible in the classroom," said Kuntz. "It is possible that this may become a biennial event after review of the student and faculty evaluations."

> ...these future **physician assistants** were able to **develop insightful questions** pertinent to clinical practice.

Growing Season

INMED's Annual Summer Institute

By Alexander Cavanaugh

Brianna Bradley (left) and JoMarie Garcia study hard over the summer.

TRAVELING FROM ALL OVER THE United States, 84 young adults came to UND to take part in the Indians into Medicine (INMED) yearly Summer Institute over six weeks in June and July. The academic enrichment program provided the students with room and board in a UND dormitory and saw them through six advanced courses. The students, under the direction of INMED's permanent staff, Summer Institute coordinator, nine counselors, two head counselors, and six instructors, spent the six weeks becoming familiar with life on a university campus away from their families and home communities.

The Indians into Medicine program is a component of the School of Medicine and Health Sciences (SMHS) that recognizes and works to correct the low number of American Indian doctors serving tribal communities. Through INMED's services during the academic year and its three summer programs—Summer Institute, Pathway, and Med Prep—INMED has assisted a significant number of American Indian students through their undergraduate and medical study careers. As of 2010, the program has seen 188 medical doctors graduate. However, before these young students pick up an application for UND, they have the opportunity to take part in the Summer Institute, which serves for many as the first steps to becoming a successful student and doctor.

While the students come from all over the country, the majority of Summer Institute participants represent the five-state area of North Dakota, South Dakota, Montana, Nebraska, and Wyoming, the states that are INMED's general focus. The goals of the Summer Institute, as explained by INMED Director Eugene DeLorme, are to provide students with the academic skills and preparedness to successfully transition into a university setting, and to familiarize the students with the physical environment at UND by acquainting them with the availability of resources and establishing some degree of comfort in the community in order to assist their social and psychological adjustment to attending an institution of higher learning away from their home communities.

During the program, the students took part in six high-level courses in chemistry, biology, physics, algebra, health, and communications. It wasn't all work for these students, however, as they took part in various evening activities that were offered in conjunction with the UND Wellness Center, the Memorial Union, and the Hyslop swimming pool. The students also

Jeremy Silva studies with Sierra Rain Sun.

participated in educational field trips to Sully's Hill and Fort Totten; Minnesota's Agassiz Environmental Learning Center, and the White Earth Indian Health Center in Fertile, Minn., where Dr. Zane Rising Sun, the clinical director of the facility, is a former INMED Summer Institute participant. To conclude the students' six weeks of hard work, they went on a three-day trip to Minneapolis and St. Paul, where the students visited the Underwater Adventures Aquarium in the Mall of America, the Science Museum of Minnesota, Valley Fair, and the Minnesota Zoo.

"One might think that taking 84 teenagers to a large place like Minneapolis and St. Paul might be a daunting challenge," DeLorme commented. "But in fact, we as a program have never experienced a single complaint about our students' behavior." He attributes this successful reputation not only to the dedicated staff but also to "these youth that have decided for themselves that they are going to advance themselves at each and every opportunity that presents itself."

Funding for the INMED Summer Institute comes from a grant provided by Indian Health Service and a grant in association with INBRE, the Idea Network of Biomedical Research Excellence. While these contributors provide the funds that support the program, the Summer Institute would not be possible without the dedicated efforts of Eugene DeLorme and the rest of the INMED staff, including Thelma Martin, Kathleen Fredericks, Nancy Martin, Colleen Clauthier, Pat Hoeper, and Alexia Riely.

"The opportunity to work with these young people who largely come from tribal communities, for myself and the staff, is one of the highlights of the year," DeLorme said. "These students are amazing. They give up their summers when others are playing or relaxing to achieve academic excellence."

At the end of the program, the students board buses, trains, and airplanes to travel back to their home communities. As they return to their everyday lives, they find the INMED Summer Institute to be a source of great memories and an experience they can look forward to and work toward as they excel in their studies during the rest of their school years and prepare for successful college careers.

In the Saddle

By Alexander Cavanaugh

Bobbi Rae Thuen receives congratulations from Dean Wynne at the 2009 White Coat Ceremony

Bobbi Rae Thuen has completed her first year of medical school, after two vigorous semesters of study, and is enthusiastic about her upcoming career as a medical professional.

Thuen was born and raised in Minot, North Dakota. An enrolled member of the Turtle Mountain Band of Chippewa, Thuen attended Des Lacs-Burlington High School in Minot and started her undergraduate study with nursing in mind, but after shadowing a pediatrician at Trinity Hospital the summer between her freshman and sophomore years, she knew that being a doctor was her calling. With this goal in mind, Thuen completed her undergraduate degree in Minot, majoring in biology with a chemistry minor.

Besides medicine, Thuen's passion is horseback riding. She and her sister started riding when Thuen was 8 years old; the family had attended a local rodeo fun night and later got involved with the amateur rodeo. After a couple of years, Thuen was driving all over the Midwest and competing in the professional rodeo circuit. Her youngest brother is also competing in rodeo events.

As of late, Thuen has temporarily left the rodeo lifestyle to pursue her medical training at UND. She applied to the School of Medicine and Health Sciences through INMED (Indians into Medicine), and after admission, she and her husband of two years moved to Grand Forks. "I like it," Thuen said about the School. "It's a really good program, and a bit more self-study. Students need drive, and there is lots of studying and group work." Moreover, she is happy that "the INMED ladies are always there to help," in reference to Kathleen Fredericks, Nancy Martin, Colleen Clauthier, and Pat Hoeper.

Thuen has applied for an Indian Health Service scholarship that would require her to work at an IHS hospital on the Turtle Mountain reservation for about a year after graduating, which Thuen is excited about. "I would get to do more of everything," she says about the versatility of IHS doctors. She feels that it will be more beneficial for her as a doctor to work in every area before she works directly in her field, which will be either pediatrics or family medicine. She narrowed her focus to these two fields both because of her love for children and her experience shadowing a pediatrician. In addition, she wants to serve a rural population, which is a dream that her service on the reservation will bring to reality.

Thuen cites her family as a major source of support for her. "My mom and dad were so supportive and always told me I could do anything that I aspire to. Also, my husband has been by my side throughout the whole process, and I couldn't make it through without him. They all keep my feet on the ground and hold me to my study breaks."

After her first year of medical school, Thuen has a few words of wisdom for those aspiring young medical students following her. "Try to have a life, too," she said, regarding the balance of study and personal time. "Some people study too much, so don't forget about family and hobbies. Keep what makes you, you."

Over the summer, Thuen returned to her family's ranch in Minot and gave horse riding lessons, broke horses, traveled to some rodeos, and shadowed doctors in family medicine and pediatrics.

There is no doubt that Bobbi Rae Thuen will be a great addition to the growing and diverse community of doctors and professionals in the medical field, and as medicine continues to advance in the coming years, Thuen and her classmates of 2013 will be the catalysts of change.

Keep what makes you, **you**.

Making a World of Difference

By Denis MacLeod

A maternity ward teacher and her baby with Gardner.

WEB EXCLUSIVE: Read Gardner's full story behind this picture at www.ndmedicine.org.

You must be the change you wish to see in the world.
—Mahatma Gandhi

We shall not cease from exploration
And the end of all our exploring
Will be to arrive where we started
And know the place for the first time.
—T. S. Eliot, *The Four Quartets*

"I NEED PIGS' FEET," WAS KATRINA Gardner's first thought. That evening, she bought some at a local meat market, so she could practice suturing. Gardner knew she would need that skill for her work the next day at the largest public hospital in Quito, Ecuador, where she would be put in charge of the burn unit and debride the flesh of burn patients and suture their wounds. As a junior at Smith College majoring in neuroscience, Gardner found her summer fellowship to create your "dream job" to be a formative clinical experience, especially since her initial goal was to improve her medical Spanish. Gardner, a native of Dickinson, N.D., doesn't come from a family with a medical background: they are farmers and ranchers, self-starters who make do with what is available to get the job done in spartan conditions.

For Gardner, service to others is the warp and woof of her character. She was active in student government at Smith College; in her senior year, she served as president of the Student Government Association and was named student government trustee in 2000. Gardner was a finalist for a Rhodes Scholarship (for study at Oxford University) and can claim the distinction of being Smith's first American Rhodes finalist on record. After graduating from Smith in 2000, she joined the Peace Corps and was off to Nepal to help with water sanitation. However, an ongoing war cut off the road to the area where she was assigned to work, so Gardner shifted her focus and became a teacher for fourth- and fifth-graders in the village of Baitadi and undertook many other community-building activities for the children and families in the village. During her two years in Nepal, Gardner met Ben Munro, an Australian member of Volunteer Service Overseas whom she would marry.

Gardner returned to North Dakota and received her white coat in August 2006, the start of another journey of service as a member of the School of Medicine and Health Sciences Class of 2010. "I had to go halfway across the world to realize that you are the greatest agent of change in the community you come from," said Gardner. In Gardner's third year at the School, she completed a five-month Rural Opportunities in Medical Education (ROME) rotation in Devils Lake under the supervision of SMHS alums Dr. Heidi Bittner and Dr. Derek Wayman.

"ROME made me feel like I was drowning at first," said Gardner. However, she gained valuable experience working on a medical team, learning inpatient and outpatient medicine, writing orders, and dictating medical records. All of which prepared her for a daunting rotation in Cameroon as a senior. "The ROME program is what prepared me," she said. "ROME for me was a life high. There isn't a better program out there."

For a fourth-year elective in obstetrics and gynecology, Gardner chose Medicine in West Africa, a rotation with Mbingo Baptist Hospital in rural northwest Cameroon, a seven-hour drive from the airport in the port city of Douala. UND alum Dr. Rodney Zimmerman helped to create this medical student elective in Cameroon. He is now practicing in Hazen, N.D., and spent the majority of his last 31 years performing medical mission work in Cameroon. Bittner connected Gardner with a scholarship from the community of Devils Lake to help finance the trip.

"I am forever grateful to the community, the physicians and the people of Devils Lake," said Gardner. She was accompanied in Cameroon by her husband. Munro built a micro dam while he was there to help retain water for use during the dry season. Given its location, the hospital provides its entire infrastructure: electricity, water, sewage treatment. The hospital has a foundry to produce metal beds and even maintains 300 head of cattle; biogas for cooking stoves is derived from the dung produced by the herd.

The **ROME** program is what **prepared me**. ROME for me was a life high. There isn't a **better program** out there.

Gardner visits with friends from the Fulani tribe.

> Practicing in **Cameroon** was a rewarding way to end my fourth year of **medical school**.

Mbingo receives patients from hundreds of kilometers around the hospital. The facility is a full-service referral hospital for the western provinces of Cameroon. Mbingo originally was started to treat Hansen's disease (leprosy); 30 of the hospital's 270 beds are still allocated to that purpose. Mbingo relies on medical staff from the United States and Europe to make up for a shortage of health care providers. The goal of its residency program is to bring residents from the government-run schools up to speed with modern medical practice.

"I feel fortunate to have received my medical education in the United States," said Gardner.

Dr. Dennis Palmer, the medical director of Mbingo, knew Gardner was interested in obstetrics, so he had Gardner independently conducting rounds right away, and she ended up supervising the OB ward and the neonatal intensive care unit. The midwives on staff handled normal deliveries, while Gardner took care of the complicated cases of mothers who were experiencing preeclampsia, delivering twins, or undergoing C-sections.

"Practicing in Cameroon was a rewarding way to end my fourth year of medical school," said Gardner.

Before returning to the United States, Gardner's final gesture was to serve future patients of Mbingo. She reached out to her 2010 classmates and began a grassroots effort to collect their used PDAs for use by the resident physicians at Mbingo. The PDAs would help residents to treat their patients by providing point-of-care medical information, knowledge that isn't easily accessible because Internet service is prohibitively slow or unavailable, and computers are scarce.

"I had an incredible response. Every person I talked to wanted to donate," said Gardner.

On Match Day this year, Gardner was thrilled to learn her family medicine–rural track residency training would be with Providence Sacred Heart Medical Center in Spokane and Colville, Washington, the nation's first rural training track program, which provides a comprehensive educational experience and will give Gardner intensive practice in obstetrics. Her experience in Cameroon and her residency training will have her well-prepared to work in a rural area.

"There are a lot of similarities between someone who is trained in a rural area and someone who works overseas. I think UND does a fantastic job with rural medical education. I got involved with the National Rural Health Association when I was at UND. I was a Student Caucus Board member for two years, and I saw other rural programs across the country, and I don't think there is a better program out there than ROME," said Gardner.

Eventually, Gardner's world journey will bring her home. "I do want to practice in rural North Dakota."

'10s

Brad Hoff, PA '10 has joined the medical staff at Carrington Health as a physician assistant.

Hoff, a native of Bowdon, N.D., graduated from the University of Mary with a bachelor's degree in Radiologic Sciences in 2004 and was employed at MeritCare in Interventional Radiology for five years. Brad continued his education at the UND School of Medicine and Health Sciences, where he received his Master in Physician Assistant Studies on May 15. Todd Schaffer, **MD '02**, served as Hoff's precepting physician.

Chuck Pelton, PA '10, a certified physician assistant, has joined Avera Neurosurgical Specialists in Aberdeen, South Dakota.

Pelton earned his Master in Physician Assistant Studies from UND in Grand Forks in May and recently completed clerkships with Avera Aberdeen Family Physicians, Aberdeen Surgical Associates, and Avera St. Luke's emergency room.

Emily Kringle, OT '10 and a member of the Kappa chapter of Pi Theta Epsilon, was recently elected to serve as vice president at the national level for Pi Theta Epsilon, an honor society for occupational therapy students and alumni. The society recognizes and encourages superior scholarship among students enrolled in accredited professional entry-level educational programs across the United States.

'00s

Wendy Brown, PA '08, was the recipient of the Innovative Pharmacy Practice Award 2010 for North Dakota, a national award sponsored by Elan Pharmaceuticals. The award is granted to recognize and honor a pharmacist who has demonstrated innovative pharmacy practice, method, or service directly resulting in improved patient care. Brown ascribes her selection to her adding the physician assistant credential from the University of North Dakota School of Medicine and Health Sciences to go along with her Doctor of Pharmacy degree from North Dakota State University (NDSU). In November 2009, Brown joined the independent allergy practice of Dr. Dan Dalan in Fargo, where she works part-time as a physician assistant and clinical office manager. She continues to teach in the pharmacy program at NDSU.

'00s

Joellen Roller, DPT '05, was selected to serve as the first dean of the School of Health Sciences at the University of Mary in Bismarck on July 1. Dr. Roller has served the university with distinction since 1995. She has served as program director of the Physical Therapy Department, chair of the Division of Human Performance Science, and was promoted to the rank of professor in 2009. Dr. Roller holds two doctorates, one in educational leadership from the University of St. Thomas and a second in physical therapy from the University of North Dakota. She has served as a physical therapist for more than 23 years and as an educator for more than 15 years. She has a distinguished record of scholarship and has published in the *Journal of Physical Therapy Education*; *Neurology*; and *Aquatics*.

Kevin Karls, MD '04, recently joined Mid Dakota Clinic in Bismarck. He will practice in the Gastroenterology Department.

Andrew Hetland, MD '04, has joined Mid Dakota Clinic in Bismarck. He will practice in the Otolaryngology Department.

'90s

Kamille Sherman, MD '99, FP Res '02, a family medicine doctor at Medcenter One Dickinson Clinic, successfully completed the American Board of Family Medicine's recertification examination recently.

Board certification in family medicine is a voluntary process by doctors who successfully complete an examination process and work diligently in their family practices.

'90s

Monica Mayer, MD '95, FP Res '99, has been named the new clinical director of the Indian Health Service Quentin Burdick Memorial Health Care Facility in Belcourt, N.D. Read more at *http://bit.ly/aEVYWy*

Lynn Ashley, MD '95, has joined Medcenter One in Bismarck. She will practice family medicine at the downtown walk-in clinic.

Eric L. Johnson, MD, FP Res. '92, assistant professor in the Department of Family and Community Medicine at the University of North Dakota School of Medicine and Health Sciences, was honored by the Grand Forks City Council as a Public Health Community Champion at the council meeting on April 5. Johnson was recognized for his work with patients and the community during National Public Health Week.

"His no-nonsense and nonjudgmental methods in providing direct patient care have been noted by patients," said Theresa Knox, a public health nurse with the Grand Forks Public Health Department who nominated Johnson for the award.

Johnson earned the award from the selection committee by furthering public health principles and practices. He serves the community, county, and state in several roles. Johnson is the assistant medical director of Altru Health System's Diabetes Center, the physician consultant for the North Dakota Tobacco Quitline/Quitnet, and assistant medical director of Valley Memorial Homes. He provides expert health and medical information to community members, policymakers, and the media.

"He has been tireless in his efforts to educate and advocate for the health of all workers in the community," said Knox. "He is a true public health advocate."

Laura Schindler, PT, NCS, COMT '92 received the honor of Woman Entrepreneur of the Year in Fayetteville, N.C., where she is owner of Advanced Physical Therapy Solutions. The recipient of the award must be a North Carolina resident who owns, has established, or manages a small business. Other considerations for the nomination are creativity, innovativeness, and personal contributions to and involvement with the community.

Opening her business in 2004 with two pieces of equipment—a therapy ball and a piece of PVC pipe—Schindler has seen growth from a staff of two to a staff of 25. In addition to providing top-quality, one-on-one patient care, her goal was also to offer a facility that could provide job opportunities for independent practitioners to collaborate and expand their practice in a progressive, state-of-the-art clinic.

Schindler's business has progressively expanded over the years, and she purchased a 12,000-square-foot building that became the permanent home of Advanced Physical Therapy Solutions this summer. She currently employs nine full-time physical therapists, three full-time physical therapy assistants, and three full-time certified athletic trainers. Many of the staff graduated from local universities or technical schools, wanting to sharpen their skills in a welcoming environment that offered mentorship and support to a new graduate.

Under her direction and guidance, Schindler's practice has become the largest outpatient physical therapy clinic in Fayetteville to be owned by a physical therapist. Her clinic is affiliated with Campbell University, Methodist University's Athletic Training Education Programs, and as Fayetteville Tech's Physical Therapy Assistant Program. She and her clinicians provide a site for students from these schools to learn and expand their knowledge base in a professional environment. Schindler also helps high school students make career decisions by providing job shadowing opportunities at her facility.

Her business stands apart by providing outstanding patient care and by providing the most current, evidence-based interventions. In addition, Schindler's generosity has branched out to other areas of the community as well. Wounded soldiers from Fort Bragg have been treated at no cost and she has also donated her time and facility to the Fayetteville Care Clinic to treat patients who have fallen through the cracks.

Many nominators spoke of Schindler's dedication and effectiveness as a physical therapist and successful entrepreneur. The words from one of her staff members summed it up: "Five years ago, Laura Schindler had a vision for herself and the Fayetteville community. She wanted to own a business that was unique and provided a valuable medical service to the community like no other in town. She wanted the consumers to be her best advertisement. She sought after additional staff that shared her same values and drive for success. Advanced Physical Therapy Solutions has become all she had dreamed and more. The potential of her practice in the community is without limit under her vision and leadership."

'80s

Mary Dockter, BSPT '89, has been chosen to be chair of the Department of Physical Therapy at the University of Mary in Bismarck. Dockter has been with the physical therapy program since 1998 and has served in the capacity of assistant academic coordinator of Clinical Education and most recently, director of Clinical Education. Dockter holds an MEd in College Teaching from the University of Mary, and a PhD in Higher Education from the University of North Dakota. She has published and presented in the areas of women's health, service-learning, and professional practice areas. She has been actively involved professionally in the NDPTA and APTA—most recently completing her role as director of education for the Section on Women's Health, during which time the Section was granted permission to award Women's Health Specialist Certification through the American Board of Physical Therapist Specialists. Dockter has taught primarily in the areas of professional practice issues, integumentary management, and women's health. She initiated the first PT Service-Learning team to Guatemala in 2002 and has led six teams to Guatemala. In 2008, Dockter initiated the first in-country GOD's CHILD Project Service-learning team, for which the project was awarded a $10,000 Make a Difference Day Award from Newman's Own. Dockter was awarded the Higher Education Teacher of the Year Award by the Bismarck-Mandan Chamber of Commerce in 2004.

Thomas Arnold, MD '84, an obstetrician/gynecologist at Medcenter One Dickinson Clinic, has been elected chairman of District VI of the American Congress of Obstetricians and Gynecologists. The organization is the premier women's health care organization in the United States and has more than 47,000 members in the western hemisphere. District VI is one of 11 districts in the congress and represents seven Midwest and Northern Plains states and two Canadian provinces. The district includes about 4,000 physicians.

Dr. Arnold is a fellow of the American Congress of Obstetricians and Gynecologists, and the American College of Surgeons. His three-year term as district chairman begins in the fall of 2010. Dr. Arnold joined Medcenter One Dickinson Clinic in 1988. He is a member of the UND SMHS Advisory Council.

'80s

Janet Jedlicka, PhD, OTR/L, BS '82, was recently recognized by the American Occupational Therapy Association (AOTA) as a fellow during the association's annual meetings held in Orlando, Fla. Dr. Jedlicka was recognized for excellence in leadership and professional education. To be recognized as a fellow, you need to be an occupational therapist and a current member of the AOTA, have made a significant contribution to the profession, be considered to be well-rounded, and have meaningful occupational therapy and other relevant involvement at the local, state, or national levels.

'70s

Debra J. Hanson, PhD, OTR/L '79, has been elected to a position on the American Occupational Therapy Association's Commission on Education (COE). The COE is a visionary group that identifies, analyzes, and anticipates issues in education. It generates education-related policy recommendations, works in conjunction with the Education Special Interest Section, and has interactions with the Accreditation Council for Occupational Therapy Education. Hanson will be representing academic fieldwork on the COE.

Rup Nagala, MD, Family Practice Residency '78, is the National Rural Health Association's 2010 Practitioner of the Year. Nagala is a physician at Southeast Medical Center in Oakes, N.D., and a clinical assistant professor at the University of North Dakota School of Medicine and Health Sciences. He helped establish a network of seven rural clinics, sponsored the education of nine physician assistants to staff the clinics, and provided leadership in the construction of the area's first assisted living center in 1996, a new hospital in Oakes in 2007, and a dialysis center in Oakes in 2008.

Harold R. Piltingsrud, BS Med '41 of Wadena, Minn., and formerly of Park River, N.D., passed away on June 2, at the Elder's Home in New York Mills, Minnesota, after a period of illness resulting from a debilitating stroke. He was 91 years old. He was born in Leeds, N.D., on September 11, 1918, to Harry and Ruth (Gronvold) Piltingsrud. Harold was the sixth child and first son of seven children. He grew up in Leeds, and while in high school was an active swimmer, played in sports, and achieved excellent grades.

He attended UND for four years followed by two years of pre-med at the University of Minnesota. He completed his MD at Temple University in Philadelphia, Pa., and served his residency in Wilmington, Del. Harold specialized in surgery and obstetrics to prepare him for family practice. Harold enlisted in the United States Army in 1942 and was a captain in the medical corps. From January 1944 to October 1946, he served overseas in Austria and France. On June 24, 1943, he married Susan Selkregg of North East, Pa. They were married for 60 years.

Upon returning from the war, Harold worked at the Grafton State School for two years. He joined Frank E. Weed at the Weed Clinic in Park River in 1948, where he practiced medicine for 34 years, retiring in 1982. An active man, Harold served on the Park River City Council for 11 years. He belonged to the Park River Federated Church, the Masonic Lodge, American Legion and VFW. He enjoyed reading, listening to music, traveling, and camping with his wife. He was an avid golfer and UND sports fan. He valued the time he had with his family and friends, and had a special relationship with his patients.

Harold W. Taylor, Jr., BS Med '49, 88, of Milwaukee, Wis., formerly of Cuba City, Wis., passed away on May 20 at St. Luke's Hospital in Milwaukee. He was born on March 9, 1922, to Harold Sr. and Louise (Wehlitz) Taylor in Jamestown, N.D.

After completing officer training at Columbia University in New York City, he served as naval navigator of LST-746 in World War II in the Pacific. While attending the two-year medical school at the University of North Dakota, he was married to Alice Mae Lawler and then transferred to complete his doctorate at the University Medical College in Norman, Okla. Harold then completed surgical residency at Toledo University Hospital in Toledo, Ohio, and moved to Cuba City, Wis., with his new wife. There he established a medical practice at the new Cuba City Hospital in 1954 and continued to practice there until his retirement in the mid 1980s. In 2003, Harold was awarded a 50-year membership to the Wisconsin State Medical Society.

William R. "Bill" Taylor, BS Med '49, 83, of Aberdeen, S.D., passed away April 22, at the Bethesda Home of Aberdeen. William Romayne Taylor was born Dec. 13, 1926, to Phineas Romayne and Mildred Almyra (Jacobson) Taylor in Minot, N.D. He was raised in Kenmare, N.D., and graduated from Kenmare High School in 1944. He attended North Dakota Agricultural College (NDSU today) in Fargo for one year and UND in Grand Forks for three years, where he was a member of Sigma Chi Fraternity. He attended the University of North Dakota School of Medicine and graduated with a Bachelor of Science in Medicine in 1949. He then attended medical school at the Bowman Gray School of Medicine, Wake Forest College in Winston-Salem, N.C., where he was a member of Phi Sigma Pi Fraternity. His internship in internal medicine was at the Touro Infirmary in New Orleans, La., where he was recognized as Intern of the Year in 1952. His residencies in internal medicine were at St. Luke's Hospital in Fargo, and Wood VA Center in Milwaukee, Wis. He received his medical licensure in 1958.

Arthur E. Mukomela, BS Med '55, a longtime Escondido, Calif., resident, passed away on May 21 at the age of 82. He was born on October 5, 1927, in Langdon, N.D. He attended Jamestown College and the University of North Dakota Medical School in Grand Forks before receiving his Medical Doctorate from McGill University in Montreal. Arthur served in the Navy for 25 years before retiring as a captain and later worked as a pathologist for Palomar and Pomerado Hospitals for 25 years. He was a fantastic cook who was known for his candy caramels. He enjoyed 40 years of marriage to his wife Shiela before her death in 1997. He married his wife Marilyn on September 17, 2000, with whom he enjoyed his retirement years of travel, square dancing, and attending his grandchildren's school and sport functions.

Robert E. (Skip) Shaskey, BS Med '56, of Sun City West, Ariz., died June 23 at age 77.

Skip was born May 29, 1933, in Fargo to Edward and Mabel Shaskey. His mother died when he was six years old and his father remarried Eileen Dale who parented both him and his brother Larry.

Skip graduated from Central High School in Grand Forks in 1951, where he discovered his love of academics and sports. He married Jacqueline McCreary in 1953. He completed his undergraduate degree and two years of medical school at the University of North Dakota. The family moved to Kansas City, Kan., for Skip to complete medical school.

John F. Wallerius, BS Med '59, of Green Bay, Wis., and The Villages, Fla., passed away on April 15, at the age of 78. Born September 13, 1931, in Grand Forks, N.D., to A. J. Wallerius and Alice (Forbes) Wallerius, he graduated from Sacred Heart Academy in Fargo in 1949. John attended the University of Minnesota on a Williams Scholarship and played center for the Golden Gophers basketball team. He graduated in 1953 with a Bachelor of Science degree. John served in the United States Army and was stationed in Wiesbaden, Germany. He was honorably discharged from service in 1956 with the rank of first lieutenant. John continued his education at the University of North Dakota where he earned his Bachelor of Science in Medicine in 1959. He was awarded a Doctorate in Medicine from Marquette University in 1961.

While at Marquette, John was elected to the Alpha Omega Alpha Honor Society. At St. Joseph Hospital in Milwaukee, John completed his internship and residency in radiology. In 1965, John joined Green Bay Radiology, S.C., where he practiced medicine until his retirement in 1989. During his career, he served as chief of staff of St. Vincent Hospital, chair of the Department of Radiology, and as secretary of the Brown County Medical Society.

Michael J. Kelly, BS Med '60, of Eagle Point, Ore., passed away May 9, in Medford, Ore. He was born Jan. 1, 1932, in Hillsboro, N.D. Michael graduated from the University of North Dakota with a Bachelor of Science in Medicine and from Northwestern University Medical School with an MD degree.

Dr. Kelly began his distinguished VA career as a staff physician at the Veterans Affairs Medical Center in Fargo, N.D., where he became chief of staff. He was a professor of medicine at the UND SMHS and a professor of pharmacy at North Dakota State University. In 1981, he transferred to the VAMC in Salisbury, N.C., where he served as chief of staff until 1987, when he transferred to the VA facility in White City, Ore.

While chief of staff at the Southern Oregon Rehab Center Clinics–White City (VA Domiciliary), Michael created an innovative culinary arts program. He secured funding for and greatly expanded the alcohol treatment program as well as the homeless program. Foreseeing the benefits of computer technology, he championed the development of electronic medical records at White City and throughout the VA system. His focus was on providing the most effective delivery of services to the veteran in need.

Michael received many prestigious awards for his accomplishments, but what probably tickled him most was the "KELLY AVE." street sign he received after having a street named after him at the SORCC upon his retirement in June 2000.

Francis Albin Jacobs, 92, of Grand Forks, beloved husband, father, and grandfather, passed away on June 12 at Valley Eldercare Center in Grand Forks, of natural causes.

Francis Jacobs was born February 23, 1918 in Minneapolis, Minn., the son of Anthony and Agnes Ann (Stejskal) Jacobs. He grew up in Minneapolis until 1930, when the family moved to Denver, Colo. There he attended Regis High School and graduated from Regis College in 1939. He did postgraduate studies at Denver University from 1939 to 1941. During World War II, he was a graduate student and doctoral candidate at St. Louis University under Nobel Prize winner Dr. Edward A. Doisy. There he conducted research on antibiotics for treatment of war casualties, for which he received a draft deferment and a citation from the U.S. Government Office of Scientific Research and Development. He earned a PhD from St. Louis University in 1949 doing cancer research, and was a postdoctoral fellow at the National Institutes of Health in Bethesda, Md., from 1949 to 1950. He was an instructor of physiological chemistry at the University of Pittsburgh School of Medicine from 1951 to 1952, and was an assistant professor from 1952 to 1954. He married Dorothy Caldwell on June 5, 1953, in Pittsburgh, Pa. They moved to Grand Forks in 1954 when he became an assistant professor of biochemistry at the University of North Dakota School of Medicine. In 1956, he advanced to associate professor and became a full professor in 1964, retiring in 1987 as professor emeritus.

Dale Flickinger Jr., former clinical professor of surgery at the UND SMHS, passed away May 5 at his home in Minot.

Dale was born January 4, 1928, in New York City to Dale and Vera (Campbell) Flickinger. He spent his childhood in Toledo, Ohio. He attended Purdue University for one year before entering the service in 1946. He earned the rank of sergeant as a rawinsonde operator tech. He received a Bachelor of Science in Biology and Chemistry at the University of Toledo in Ohio, and was a member of the Phi Gamma Delta fraternity. He then went on to earn a medical degree at Ohio State University on the G.I. Bill. He met and fell in love with Zoanne Bishop there, and they married in 1952.

He served his internship at Harvard Surgical Service, and did his residency at Boston City Hospital, including a research fellowship in surgery at Harvard Medical School, where he was chief resident in 1959–1960. He was certified by the American Board of Surgery in general surgery and was a Fellow of the American College of Surgeons.

Giving Back

By Jessica Sobolik

Dr. Stefan Laxdal, '61, and his wife Sue find ways to pass their good fortune on to others.

Years ago, Dr. Stefan and Sue Laxdal made it a priority to teach their six grandchildren about other cultures while instilling volunteer service in their lifestyles. "[Sue and I] have always felt blessed with our lives and lifestyle, and we want to give back in some way," said Laxdal, who earned his Bachelor of Science in Medicine from UND and worked as a radiologist in the Minneapolis area before retiring in 2005.

Today, the Laxdals volunteer time to groups such as Global Volunteers, founded with assistance from his wife, to specialize in short-term, vacation-abroad opportunities. Thus, when each of the Laxdals' grandchildren reach age 15, they are given the opportunity to choose where they travel with their grandparents to conduct volunteer service—anywhere in the world.

"Stephanie (Johnson), who is now in pre-med at The College of St. Scholastica in Duluth, Minn., went to Italy four years ago," Laxdal said. "Dylan (Johnson) went to Crete, Greece. Kaylie (Laxdal) went to Italy, and Samantha (Laxdal) just went to Poland. The other two, Kassidy and Chase (Laxdal), are waiting in the wings. We see this as part of our legacy to them."

On Samantha's trip, for example, which concluded in July, she and her grandparents worked at a language camp, helping high school students build confidence in speaking English. In addition to trips with his grandchildren, Laxdal has also taught English to Chinese medical students, and helped aboriginal Australian students with community development. He has done volunteer work in Peru and India. "The Chinese experience stands out most," he said. "It was impressive to be there as it blossoms into a global power, and to see its culture and experience the tremendous energy of the younger generation."

Laxdal recalled how a room of 120 Chinese medical students sat attentively as he taught. "You could hear a pin drop in that room," he said. "They are so respectful of their elders, their teachers. They were very willing to speak English because most of the literature is written in English. So I helped them with their pronunciation and understanding of medical terms. It was very rewarding work."

While in Poland serving for Global Volunteers, Laxdal, granddaughter Samantha (far left), two students, and Laxdal's wife Sue (far right) pause while hiking to Morskie Oko Lake in the Tatra Mountains of southern Poland.

As another way of giving back, the Laxdals are currently working with Dave Miedema, director of development for the UND School of Medicine and Health Sciences, to establish the Dr. Steve and Sue Laxdal Scholarship Endowment. Their endowment will benefit students interested in either radiology or primary care. "I love radiology, but the biggest need is probably in primary care," Laxdal acknowledged. One thing the Laxdals know for sure: their endowment will be perpetual, providing scholarship support every year. "The need won't go away," he said.

For more information about Global Volunteers, visit www.globalvolunteers.com.

For more information about creating a scholarship fund at UND, contact Dave Miedema at davem@undalumni.org or (701) 777-4933.

University of North Dakota FOUNDATION

Welcome M.D. Class of 2014

M.D. Class of 2014: Daniel R. Almquist, Catherine E. Arnold, Benjamin C. Axtman, Jessie L. Baglien, Mandie M. Baker, Julia O. Baltz, Joel D. Beachey, Travis E. Bentz, Brittany N. Berg, Charity L. Bishop, Stephane R. L. Blanchard, Ryan R. Bogner, Andresa K. Carlson, Nathan D. Carpenter, Amy M. Consson, Abby S. Davis, Adam W. Dell, Joseph P. Dinsmore, Kourtney C. Dropps, Stephn W. Drywater, Joel M. Erickson, Scott G. Erpelding, Christopher J. Failing, Christina M. Harmon, James R. Hegvik, Jason T. Henry, Elizabeth C. Hoff, Steve Inglish, Eric S. Jacobson, David M. Jensen, Krishan R. Jethwa, Brian L. Johnson, Brooke Johnson, Laura B. Johnson, Jason R. Jones, Michael C. Jundt, Lacey L. Kessler, Laura E. Knutson, Mamie R. Knutson, Sergey V. Kulikov, Patrick W. Lamb, Tyler J. Larson, Natalie F. Lichter, Samuel K. Lohstreter, William D. Longhurst, Laura R. Luick, Erin C. Maetzold, Jared A. Marquardt, Tara R. Mertz, Dane J. Mittenes, Brittany R. Muscha, Valerie Norris, Tarik Nurkic, Tabitha Ongstad, Ira A. Perszyk, Stephanie R. Porter, Jerdan M. B. Ruff, Tara A. Schmitz, Kirsten M. Schneider, Michael L. Schwalbe, Paul D. Selid, Amanda E. Skiftun, Caleb P. Skipper, Brittany K. Snustad, Kaleb L. Topp, Zane Z. Young

To see photos of more SMHS activities, visit our flickr page at http://www.flickr.com/photos/undsmhs/

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Taunya Schleicher, the mother of the case study patient the class learned from in their first week, speaks to the Class of 2014 about the physician's responsibility to the patient.

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At the School of Medicine and Health Sciences, something new is happening every day.