

NORTH DAKOTA MEDICINE

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Hands-on Teacher

Surgeon Mark Jensen's deft, professional touch helps to recruit health care students

Commencement 2011

Oil Futures

Rural Assistance Center

Summer 2011
VOLUME 36, NUMBER 2
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FEATURES

- Hands-on Teacher** 10
Surgeon Mark Jensen's deft, professional touch helps to recruit health care students.
- Commencement Class of 2011** 14
MD and DPT graduates celebrate.
- Oil Futures** 16
The SMHS lipid group proves to be a sound investment.
- Rural Assistance Center** 18
The nation's resource for rural and human services health information.
- Obstetrician-Gynecologist Workforce: The Challenges Ahead** 21
Ob-Gyns play a critical role in national health care.
- Medical Students Reach Out to Help** 30
First- and second-year students help people without health care.
- Dis 'n' DAT** 34
For biochemist Roxanne Vaughan, DAT's the thing.

DEPARTMENTS

- Dean's Letter 4
News Briefs 6
Guest Author - Debra Bell 20
Student Profile - Sherine Talaat 22
Alumni Profile - John and Karen Gray 24
Alumni Notes 26
In Memoriam 28
Workforce 32
Campus Spotlight: Fargo 36
Spotlight: Occupational Therapy 37
Gift Planning & 38
Parting Shots 39

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A Pivotal Forerunner and Legislative Foresight



This has been a wonderful year for the School of Medicine and Health Sciences, although tinged with sadness with the passing of our esteemed colleague, Dr. John Vennes. A native of Zahl, N.D., and a Sioux Award winner, John died in May at the age of 86. He was a remarkable man who gave freely of his time and wisdom. His career at the SMHS spanned almost 60 years, and he knew or served 11 of the past 13 deans of the school, including me. He served as chair of the microbiology department, interim dean of the school, and later as an associate dean. The Vennes Atrium is named in his honor. His book, *North Dakota, Heal Thyself*, written with journalist Patrick McGuire, chronicles the first 100 years of the School, and shows how it came to be one of the leading community-based schools in the nation. His influence will be enduring.

But with every loss there is gain. Also in May, we celebrated the graduation of 55 medical students, 47 occupational therapy students, 45 physical therapy students, 8 athletic trainers, and 63 clinical laboratory scientists. Some of them will do more training (as will all of the medical students), but many plan on practicing in North Dakota. The graduation weekend was special in other ways—Sen. Kent Conrad was the UND commencement speaker, and former Rep. Earl Pomeroy was our own commencement speaker. Earl was also honored by the University with the awarding of an honorary Doctor of Letters degree. I was impressed by the excellent opportunities that our graduates are moving to, whether employment or additional training. It is clear that our graduates are sought after, and are

widely viewed as superbly trained. Best wishes and congratulations to all!

Just before graduation, the North Dakota Legislature completed this year's biennial session. It was a most successful session from the standpoint of the School. At a time when many states have been forced to reduce their support of higher education and their public medical schools due to budgetary constraints, the SMHS was grateful for the strong support we got from the Legislature. The School was granted almost \$7 million in additional funding, or about a 17 percent increase in base funding! We were extremely pleased—and grateful—for the support of the Legislature. The key components of the additional funding package include the following:

- 1) Master in Public Health (MPH) program, to be conducted jointly with our colleagues from North Dakota State University. We had proposed to the Legislature that the requested \$1.2 million in funding be evenly split with NDSU, reflecting the truly integrated nature of the program. Our half of the funding will be used to recruit a program director and additional faculty members for the School, as well as at other colleges at UND.

- 2) Geriatrics Training Program, funded for \$1.2 million, to provide faculty and staff who will develop educational modules to be used throughout the state to outline "best practices" in geriatrics care for the practitioners throughout the state.

- 3) Expansion of the medical school class size by eight students, the health sciences class size by 15 students, and the residency size by 10 residents, with \$1.8 million in new funding. Slated to begin in the summer of 2012, the class

size expansion will be focused on providing more primary care providers to deliver care in North Dakota. Coupled with enhanced efforts addressing retention of our own graduates for practice in North Dakota, this expansion of the class size will help to address the current and especially the anticipated looming shortage of providers.

4) Although a new building to house the expanded class size was not approved this session, the School received funding to complete a formal space and architectural study to evaluate the facility space needs now and in the future. In addition, the Legislature authorized a study to be performed before the next session of the Legislature to analyze (and hopefully validate!) our petition for future further expansion of the School. We would hope that if the space and interim studies both confirm the School's need for further expansion, the next Legislature will revisit our request for the addition of more instructional space and further support for class size expansion at the SMHS.

Two other major projects are ongoing, one related to research and the other to education. On the research front, this past year has been quite rewarding, as evidenced by a nearly 50 percent increase in research funding compared with the prior year. Nevertheless, the funding prospects for the future are of concern, as there is great apprehension locally and nationally regarding the future availability of funds. Given such a competitive environment, we need to make sure that we structure our research enterprise optimally, so as to maximize the likelihood of success. Accordingly, the School will be restructuring its research effort in two major ways—first, by combining our four basic science departments into one; and second, by reorganizing our research efforts around multidisciplinary research clusters rather than discipline-specific groupings.

As far as our educational efforts, we have been a leader in small group

learning, and in promoting inter-professional health provider education. We will continue these efforts. But both students and faculty are concerned that our small group learning experience is, at times, too passive. We're looking for ways to improve and refine our already outstanding pedagogical approach.



The late Dr. John Vennes with Dean Joshua Wynne in the fall of 2010.

In closing, I thank you for your interest in *your* School of Medicine and Health Sciences. Please drop me a note, e-mail, or phone call with any questions or comments. Better still, drop by for a visit and tour! If you haven't seen the campus in a while, you'll be surprised—and impressed!

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

Eric Johnson receives national committee appointment

Eric Johnson, MD, FP Res '92, assistant professor, Family and Community Medicine, UND School of Medicine and Health Sciences, was recently appointed to the American Diabetes Association Primary Care Committee. The national committee, with 12 members from around the country, will be part of ADA primary care initiatives and have input on diabetes management guidelines and position statements.

Dr. Johnson also created a diabetes informational Facebook page, which will have newsfeeds and links to slide decks and podcasts. View the Facebook page by searching for "Eric L. Johnson MD North Dakota Diabetes."

UND receives \$2.9 million grant for West Nile Virus Research

Senators John Hoeven and Kent Conrad and Congressman Rick Berg announced on April 25 that the University of North Dakota will receive a \$2.9 million competitive grant from the U.S Department of Energy (DOE) for research into treatments to combat the West Nile virus.

DOE's investment allows UND, in partnership with Avianax and the Mayo Clinic, to continue work to develop treatments and diagnostic products that use goose antibodies to fight the West Nile virus. David Bradley, PhD, associate professor and chair of the Department of Microbiology and Immunology at the SMHS, is a leading researcher of infectious diseases at UND and provides his expertise to the project.

Antibodies from geese have shown promise in treating patients infected with the virus, and this funding will advance preclinical studies to assess the safety and efficacy of the products against the West Nile virus. The project, which is also funded by the UND Center of Excellence for Passive Therapeutics, will also develop methods to increase the production of the goose antibodies to create the therapies.

"The strategic partnerships we're creating through our state's Centers of Excellence programs not only help to create good jobs and attract federal investments to our state, but also create products that save lives and combat some of our nation's health challenges" said Hoeven.

"The West Nile virus is a real threat and is spreading—both here in North Dakota and across the nation. It poses a real danger, both to humans and livestock, and it must be addressed," Senator Conrad said. "Researchers at UND are on the frontline of this battle to combat West Nile virus, and this federal grant will further support their efforts."

"I'm proud that North Dakota is a partner in the research and development of this treatment that holds such potential to benefit our health care system," said Berg. "This initiative will help create good North Dakota jobs and reaffirms UND's leadership in research and technology."

Thorson earns Kupchella Preventive Medicine and Wellness Award

Haley J. Thorson, RN, public health nurse and tobacco prevention coordinator with the Grand Forks Public Health Department, has received the Charles E. Kupchella Preventive Medicine and Wellness Award. Named for former University of North Dakota President Charles E. Kupchella, the fifth-annual Kupchella Wellness Award was presented to Thorson during the School of Medicine and Health Sciences MD Class of 2011 commencement awards ceremony on Sunday, May 15.

As the tobacco prevention coordinator for the Grand Forks Health Department, Thorson garnered praise for her leadership and dedication in authoring and developing the Grand Forks Smoke Free Workplace and Public Place Ordinance, which went into effect on August 15, 2010. She was cited for her perseverance and positive attitude in seeking to improve the health of the citizens of Grand Forks.

The award was made possible by a gift to the UND Foundation from Manuchair Ebadi, retired associate dean for research and program development at the UND School of Medicine and Health Sciences.

Awards honor rural and public health

Awards were presented at the Dakota Conference on Rural and Public Health on March 23–25 in Mandan. The Dakota Conference is a joint effort by Altru Health System of Grand Forks; the North Dakota Public Health Association; the North Dakota Rural Health Association; the UND College of Nursing; and the UND School of Medicine and Health Sciences' Center for Rural Health and Department of Family and Community Medicine.

The North Dakota Public Health Association presented two awards:

- Public Health Worker of the Year to Wanda Agnew, Bismarck Burleigh Public Health;
- Outstanding Service to Joce Koch, Custer Health, Mandan.

The North Dakota Medicare Rural Hospital Flexibility Program's Making a Difference Award went to Sanford Medical Center Mayville.

The Dakota Conference on Rural and Public Health planning committee presented three awards:

- Outstanding Rural Health Professional to Robin Iszler, Central Valley Health District, Jamestown;
- Outstanding Rural Health Provider to Gerald D. Larson, Park River Dental Office;
- Outstanding Rural Health Volunteer to Wayne Evans, Mountrail County Medical Center/Mountrail Bethel Home, Stanley.

ND EPSCoR announces undergraduate research award winners

The North Dakota Experimental Program to Stimulate Competitive Research (ND EPSCoR) announced the 2011 Advanced Undergraduate Research Award (AURA) winners at UND. The goal of AURA is to encourage undergraduate students to consider a career that involves research in science, engineering, or mathematics. AURA provides undergraduate students with an opportunity to participate in faculty-mentored research projects at the state's two research universities. Participants are awarded up to \$6,500 for full-time research activities during the summer session and for part-time research activities during the fall semester. Awardees are expected to apply for a nationally competitive undergraduate scholarship during their AURA experience. ND EPSCoR is a program supported by the National Science Foundation and the State of North Dakota at both UND and North Dakota State University.

UND AURA winners, their home towns, their faculty mentors, and the research projects in which they will participate are

- Amber Nielsen; New England, N.D.; Dr. Van Doze, Department of Pharmacology, Physiology, and Therapeutics; "Adrenergic Regulation of Neurogenesis & Cognitive Functions."
- Rochelle Wickramasekara; Negombo, Sri Lanka; Dr. Lucia Carvelli, Department of Pharmacology, Physiology, and Therapeutics; "Unrevealing Molecular Mechanisms of DA Transmission Involved in Amphetamine Treatment of Attention-Deficit Hyperactivity Disorder (ADHA)."

UND School of Medicine and Health Sciences recognizes volunteer faculty

The School of Medicine and Health Sciences presented the Dean's Special Recognition Awards for Outstanding Volunteer Faculty to the following individuals during commencement ceremonies on Sunday, May 15.

- Joseph E. Adducci, MD, Clinical Professor of Obstetrics and Gynecology, Williston
- Charles O. Allen, DO, Clinical Assistant Professor of Family and Community Medicine, Bismarck
- Brent P. Bruderer, MD, Clinical Associate Professor of Surgery, Bismarck
- Marcus M. Fiechtner, MD, Clinical Professor of Surgery and alumnus (BS Med '63), Bismarck
- Barbara J. Hample, PA-C, Clinical Instructor of Internal Medicine and alumna (Physician Assistant '94), West Fargo
- Cheryl Huber, MD, Clinical Assistant Professor of Clinical Neuroscience, Bismarck
- James A. Hughes, MD, Clinical Assistant Professor of Internal Medicine, Bismarck
- Matthew M. Iwamoto, MD, Clinical Assistant Professor of Radiology, Bismarck

North Dakota students earn awards at International Science and Engineering Fair

Tanner John Coppin from Hankinson, Vahid Fazel-Rezai from Grand Forks, and Caleb Kyle Meyer from Hope were awarded prizes at the Grand Awards Ceremony at the Intel International Science and Engineering Fair 2011 on May 13 in Los Angeles. North Dakota's winners earned the right to compete at the Intel ISEF 2011 by winning top prizes at the state fair held at the University of North Dakota on April 8. To enhance student participation, the North Dakota IDEa (Institutional Development Award) Network of Biomedical Research Excellence (INBRE) paid all fees—costs usually borne by middle schools and high schools—for students to partake in North Dakota's regional and state science and engineering fairs. The ND INBRE is administered by the UND School of Medicine and Health Sciences in collaboration with North Dakota State University.

Biswaranjan Pani wins 2011 University of North Dakota Distinguished Dissertation Award

Biswaranjan Pani, PhD, a postdoctoral student in the Department of Biochemistry and Molecular Biology at the UND School of Medicine and Health Sciences, won the 2011 University of North Dakota Distinguished Dissertation Award. Pani's winning dissertation was selected from the 70 dissertations nominated for the award. He earned his PhD in Biochemistry and Molecular Biology from UND in 2009.

- Terry M. Johnson, MD, Clinical Assistant Professor of Clinical Neuroscience and alumnus (MD '81), Bismarck
- Thomas W. Mausbach, MD, Clinical Professor of Pediatrics, Fargo
- Andrew J. McLean, MD, Clinical Professor of Clinical Neuroscience and alumnus (MD '87), Fargo
- Robert G. Oatfield, MD, Professor of Internal Medicine, Bismarck
- James A. Schmidt, MD, Clinical Instructor of Family and Community Medicine and alumnus (MD '04), Minot
- Nathan L. Vetter, OD, Clinical Assistant Professor of Internal Medicine, Fargo

As a community-based medical school, the UND School of Medicine and Health Sciences relies on more than 900 part-time or volunteer faculty in over 30 communities throughout the state to educate medical students and residents. They assist in teaching the patient-centered curriculum and conducting performance-based assessments of the professional competence of the 241 students enrolled in the four-year Doctor of Medicine program.

UND ranks No. 1 nationally for percentage of grads choosing family medicine

Ten medical schools that have contributed the most to the pipeline of family physicians were honored when the American Academy of Family Physicians (AAFP) presented its Top Ten Awards during the Society of Teachers of Family Medicine Annual Spring Conference on April 29 in New Orleans. The awards recognize schools that, during a three-year period, graduate the greatest percentage of students who choose first-year family medicine residency positions.

The University of North Dakota (UND) School of Medicine and Health Sciences (SMHS) is the top medical school in the country for producing family medicine physicians, with 19.6 percent. The overall U.S. match rate for family medicine this year is 8.4 percent, according to the AAFP. Other regional schools recognized by the AAFP were the University of Minnesota Medical School, with 15.6 percent, and Sanford School of Medicine of The University of South Dakota, with 15.0 percent.

"This award would not be possible without the tireless efforts of our volunteer faculty throughout the state. It is the modeling of their dedication to patients that makes the biggest impact on students," said Robert Beattie, MD, clinical professor and chair of the Department of Family and Community Medicine. "The relationships established between community preceptors and students, many times, last a lifetime and greatly influence their future role as physician. Thank you to all of our faculty members."

"We are very pleased to be recognized as the nation's most effective medical school in encouraging students to pursue the specialty of family medicine," said Joshua

Wynne, MD, MBA, MPH, UND vice president for health affairs and dean of the UND SMHS. "We are working hard to address North Dakota's need for physicians and other health care workers, especially those in the field of family medicine. Although our percentage is the best in the country, the small size of our class means that we still don't produce enough family physicians for the needs of the region. That's why we are so pleased that the Legislature has funded an increase in our class size, which will enable us to produce even more of the health care providers that North Dakota needs."

The UND medical school has several unique programs designed to educate students about the benefits of family medicine. The nationally recognized Rural Opportunities in Medical Education (ROME) program places third-year medical students in several rural communities in North Dakota for a seven-month rotation.

For more than 16 years, the Students/Resident Experiences and Rotations in Community Health (SEARCH) program has provided health profession students an opportunity to spend a month working in interdisciplinary teams in rural North Dakota communities.

In 2010, UND's SMHS signed its first RuralMed Scholar. The goal of the RuralMed Scholarship Program is to recruit, educate and retain physicians who will practice family medicine in rural North Dakota. The program absorbs the tuition costs for all four years of medical school for students who agree to practice family medicine in a rural area of North Dakota for five years.

Vaughan chosen by the National Institutes of Health as a national biomedical research gatekeeper

Roxanne Vaughan, PhD, professor in the Department of Biochemistry and Molecular Biology at the School of Medicine and Health Sciences, has accepted the National Institutes of Health's (NIH) invitation to serve as a member of the NIH's Center for Scientific Review (CSR) Molecular Neuropharmacology and Signaling Study Section. Vaughan was selected on the basis of her demonstrated competence and achievement in her scientific discipline as evidenced by the quality of her research accomplishments, publications in scientific journals, and other significant scientific activities, achievements and honors.

The NIH's Center for Scientific Review is the portal for NIH grant applications and their review for scientific merit. It organizes the peer-review groups or study sections that evaluate 70 percent of the research grant applications sent to the NIH, which is the nation's medical research center and is the largest source of funding for medical research in the world.

"Service on a study section also requires mature judgment and objectivity as well as the ability to work effectively in a group," said Toni Scarpa, MD, PhD, and

director of the CSR, in his announcement to UND's SMHS. "Qualities we believe Dr. Vaughan will bring to this important task."

"Dr. Vaughan's appointment speaks very highly of the regard that the science community has for her," said Katherine Sukalski, PhD, associate professor and interim chair of the Department of Biochemistry and Molecular Biology at the UND School of Medicine and Health Sciences.

Vaughan's research focuses on the major role that dopamine, a critical neurotransmitter, plays in drug addiction. She earned her PhD in Zoology from Virginia Polytechnic Institute and State University, and she completed a Postdoctoral Fellowship with the Department of Biological Chemistry at Johns Hopkins University School of Medicine. Vaughan was a Senior Staff Fellow in the Laboratory of Molecular Neurobiology at the National Institute on Drug Abuse before her appointment at the UND School of Medicine and Health Sciences.

"I am honored to be chosen for this assignment," said Vaughan. "I hope that this will provide a platform for increasing the visibility of UND at the national level."

Frank Low Research Day is a success

The 31st Annual Frank Low Research Day held on April 21 at the Memorial Union on the UND campus was a success.

Strong attendance came from UND's College of Nursing and the School of Engineering and Mines, the Grand Forks Human Nutrition Research Center, the Department of Biochemistry at North Dakota State University, the School of Engineering at the University of Manitoba, and the Department of Obstetrics and Gynecology at the Mayo Clinic in Rochester, Minn. The 115 posters presented this year beat last year's record of 82 (in 2009 there were 75; in 2008, 62). The winners of the best poster awards were, by category,

Health Sciences

First Place: Ana Sobolik and Laura Gunderson. "Living with a spinal cord injury: A workshop for parenting and play"

Second Place: Tina Nybladh and Jennalee O'Keefe. "The role of occupational therapy in the treatment of autism: a survey of occupational therapists employed in pediatric practice settings."

Basic and Clinical Sciences

First Place: Amy Moritz, James D. Foster, and Roxanne A. Vaughan. "Kinetic regulation of DAT transport capacity by reciprocal phosphorylation and palmitoylation."

Second Place: Jason Askvig, David Lo, Laura Leiphon,

and John Watt. "The role of the Jak-STAT pathway in magnocellular neuron survival."



Honorable Mention

Elizabeth Freidel, Megan Larson, and Anne Haskins. "Antecedent Techniques Used to Regulate Aggressive Behavior in Patients with Brain Injuries: A Teaching Module."

Jennifer Teiken, Bryon Grove, Paul Epstein, and Edward Carlson. "Production of a new transgenic mouse (Jtmt) that specifically overexpresses the antioxidant metallothionein in endothelial cells."

Maureen Soh, Scott H. Garrett, Chandra Bathula, Don A. Sens, Seema Somji, and Mary Ann Sens. "Expression of Enolase 2 in Cd+2-, As+3-transformed human breast epithelial cells (MCF10A) and human breast tumors."

Vanessa Armstrong, Sharlene Rakoczy, and Holly M. Brown-Borg. "Differential Expression of DNA Methylation Enzymes in the Ames Dwarf Mouse."

Danielle Jessen and Matthew Nilles. "A Small Molecule Inhibitor of the Type 3 Secretion System Targets the Translocon of Y. Pestis."

UND doctors receive Humanism in Medicine awards

John J. Hagan, MD, clinical associate professor and vice chair of internal medicine at the University of North Dakota School of Medicine and Health Sciences Southwest Campus in Bismarck, was honored with the prestigious Leonard Tow Humanism in Medicine Faculty Award at the medical school's commencement on May 16. Taylor G. Mertz, MD, a 2011 UND medical school graduate, 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. The Gold Foundation sponsors the annual Leonard Tow Humanism in Medicine Awards at over 85 of the nation's medical schools. The awards are made possible through a generous donation from entrepreneur and teacher Leonard Tow.

"Dr. Hagan is a true example of compassion in medicine, cultural sensitivity, nonjudgmental treatment, and commitment to professional and ethical standards all while working in a challenging environment," said Jean Gustafson, MD, UND Class of 2011, in nominating Hagan for the award.

Hagan is the physician for the North Dakota Department of Corrections and Rehabilitation in Bismarck. He graduated from the Boston University School of Medicine in 1991. He completed his residency training in internal medicine at the former Fitzsimmons Army Medical Center in Aurora, Colo., and he is certified by the American Board of Internal Medicine. Hagan has won the UND Family Practice Center-Bismarck's Excellence in Teaching Award three times. He is a four-time recipient of the UND School of Medicine and Health Sciences' Teacher of the Year award.

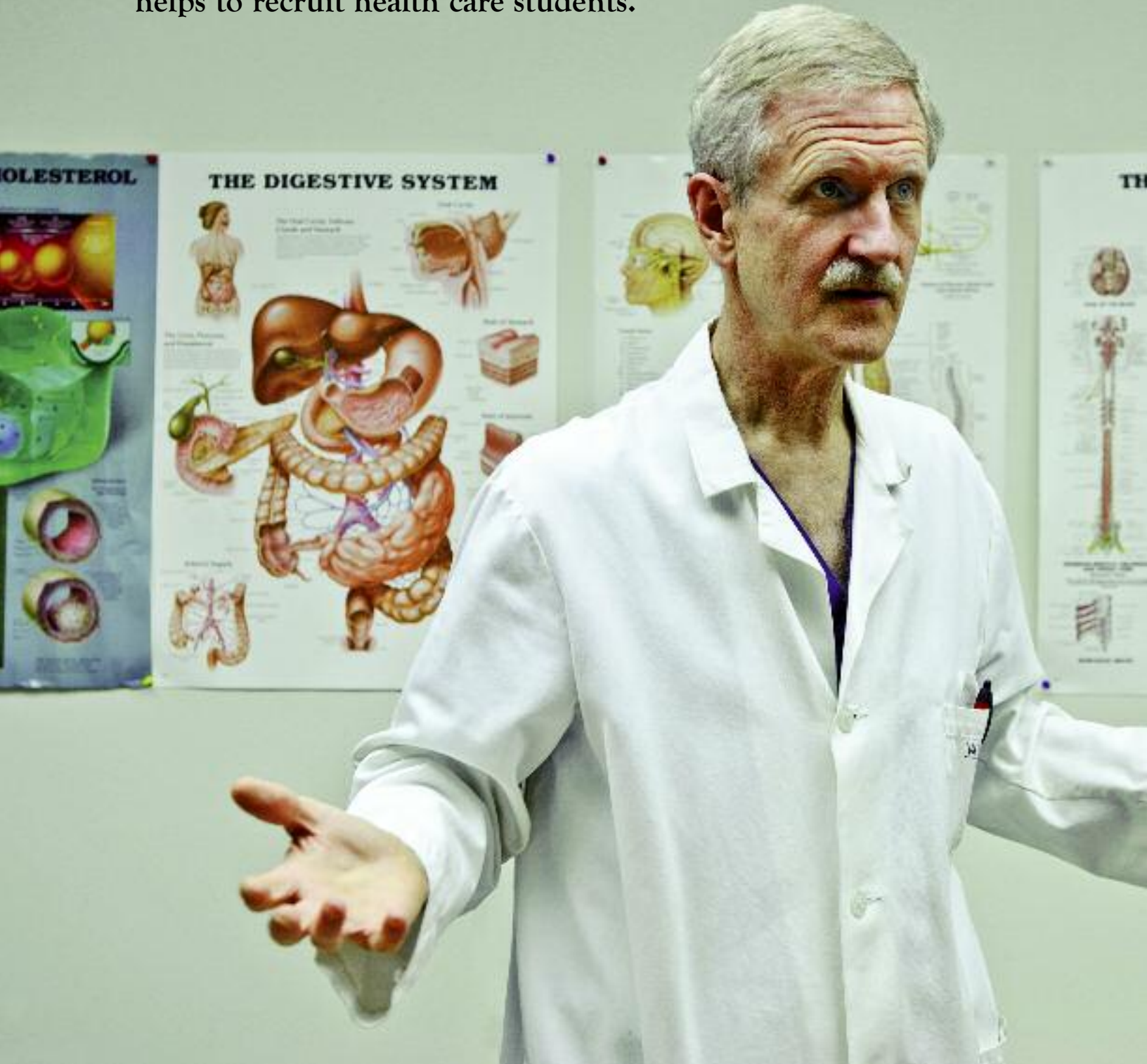
"Out of my two years of clinical rotations, the month I spent with Dr. Hagan was the most influential four weeks of my schooling," Gustafson said.

Fargo native Taylor G. Mertz, MD 2011, was nominated by classmate Zachary Ernst. "Taylor determined his specialty based on which would allow him to help the most people," Ernst said. "This is humanism at its core."

"I distinctly remember a conversation during our third year when I was struggling to choose a specialty," Ernst said. "Taylor had already decided on family practice, as he was truly interested in primary care and helping people. He said to me, 'I chose family practice more for the people than the medicine. I do enjoy the medicine, but I really enjoy the people.'"

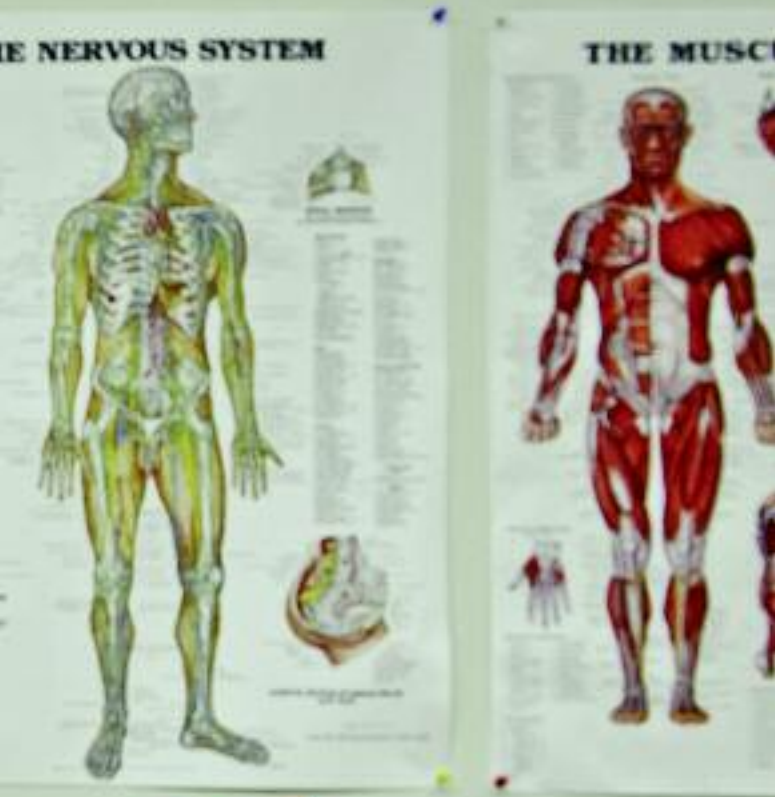
Hands-On

Surgeon Mark Jensen's deft, professional touch helps to recruit health care students.



Teacher

By Juan Pedraza



So here it is—a human cadaver, the first any of these high school students has ever seen, much less actually touched.

“I think it’s a marvelous experience, great for me, because I can discover whether this is the field I really want to get into,” said Hope, a senior who heads to college soon to major in biomedical engineering.

Hope is one of a dozen or so students from Michael Preston’s West Fargo High School Anatomy and Physiology class who were in Dr. Mark Jensen’s cadaver lab at the University of North Dakota School of Medicine and Health Sciences Southeast Campus in Fargo.

It’s a key part of the science outreach philosophy that drives Jensen’s connection with the potential next generation of health practitioners.

“I see this as an excellent opportunity to encourage kids to learn more about medicine, nursing, and other science fields,” said Jensen, a general surgeon and surgical oncologist who teaches at UND and is the chief of surgery at the Veterans Administration Hospital adjacent to the UND SMHS Southeast Campus.

“The great thing about the cadaver lab is that a student can learn from their mistakes here without risking anything, sort of like ‘crashing’ in a flight simulator,” said Jensen, a former flight surgeon at the U.S. Army Aviation Center at Ft. Rucker and with the North Dakota Air National Guard Happy Hooligans.

“...this as an **excellent opportunity** to encourage **kids to learn** more about medicine, nursing, and other science fields.”

“In here, you can see the wash of understanding coming over a student,” Jensen said. “This is about exploring options for the future. I went to a big high school in Minneapolis, and I thought that I wanted to be a musician when I went to Augustana College. I went into medicine. You could say that I was open to change.”

The visiting class has several students who want to be physicians; others have expressed an interest in dentistry, while yet others are thinking about nursing or physical therapy. One student says she’s going to be a special education teacher. Another is a high school journalist who wants to pursue journalism as a career.

“This is great!” said Sarah, a junior who works part time in a shoe store but has been interested in medical science and surgery since the second grade. “An experience like this is about helping me to choose what I want to do.”

Dana thinks she wants to be a dentist, but, like Jensen before her, is open to change. The young woman next to her says she’s interested in neonatal nursing based on her experience working in a day care center. Peter, a self-avowed gamer, says he’s not sure what he wants to be, but the cadaver lab experience lights up the potential for designing

“...we need to **stimulate** our own **youngsters** into health-care and science-related fields.”

arthroscopic games for surgical trainees.

About 75 percent of this high school class is aiming for medicine or allied health professions, says Michael Preston, the West Fargo High School Anatomy and Physiology teacher who's in his 11th year in the classroom. He graduated from East Grand Forks (Minn.) High School in 1989, got a degree in biology from UND, then a teaching certificate from Mayville State University.

“They're going to become doctors, nurses, physical therapists, occupational therapists, respiratory therapists,” Preston said. “They're taking anatomy and physiology in high school to get a jump start in their studies related to

their intended health career majors. I see a lot of kids attracted in the health and medical fields because there are growing opportunities because of the well-publicized shortages, such as in nursing and among physicians. So more kids are seeing opportunities to get into careers where there is no job shortage.”

Jensen's cadaver class is a special gift to the teaching community.

“If I had the opportunity, I'd love to do this twice a year,” Preston said.

“Actually, I do it as many times as Dr. Jensen would allow us. Right now, it's once a year, and it's really terrific.”

“For our students, Dr. Jensen's cadaver lab is a priceless experience,”



Preston said. "A lot of them know what they want to do, but they don't know what it takes to do it, so it's great that they have the opportunity to talk with Dr. Jensen about medical school and the allied health professions, what they can expect, and the like. It gives them an opportunity to ask questions about what direction they should go, for example, should they go straight into biology, or should they take biology and fine arts."

The real-world experience in a real cadaver lab is enlightening, Preston said.

"In Dr. Jensen's class, they actually get to see what we're studying," Preston said.

Sure, students are fearful and apprehensive at the beginning. But Jensen, always garbed in blue scrubs and white lab coat with his name embroidered on it, sits all his young visitors down at a large conference table in a room next to the lab and puts them at ease.

"They don't know what to expect when coming into the cadaver lab, but then they see it's a body just like ours, and they begin to explore the marvelous intricacy of the body and how deeply interesting it truly is," Preston said. "Dr. Jensen has made this real easy for us, a seamless process, but we do alert our students that they're walking into a professional environment. It's a great outreach effort on UND's part."

Jensen tells these high school students that they're sharing an experience that binds all the medical professions together. That includes his surgery residents.

"The surgery residents, right after medical school, do operations on the cadaver," Jensen said. "It's like a flight simulator, where I can allow the residents to make mistakes, and they'll learn from those mistakes. Where we can't make mistakes is in the operating room. But in the cadaver lab, we can do complex, dangerous operations without risk. Ultimately, the idea is to reduce risk in the operating room and advance education here rather than solely in the operating room."

The high school class idea came during a conversation at Fargo South High School a few years back.


"I was giving one of those so-you-want-to-be-a-surgeon career day talks one day, and I told the anatomy teacher, Mr. Dale Hertel, that I had a cadaver lab and would his students be interested in coming to my class," Jensen said. "Well, he was on top of that immediately. So we started the program, developed the curriculum for the class, and added other Fargo-area schools. I'd like to deploy this out to the rest of the state because we need to stimulate our own youngsters into health-care and science-related fields."

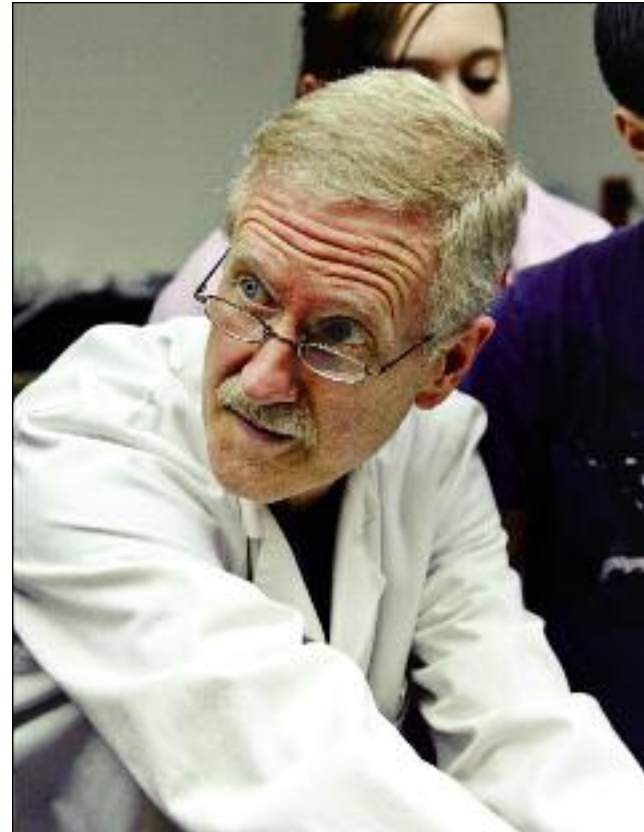
Since then several Fargo-Moorhead area high schools send students once annually to Jensen's anatomy seminar. A total of 174 high school students participated this year.

The carefully crafted curriculum includes an explanation of the cadaver (which comes from UND's Deeded Body Program, which also is explained) and an introduction to the basics of human anatomy. The students also learn about surgery training. Then the real work begins: students start with the head, neck, and upper extremity, as Jensen asks them to learn each of the body parts they're looking at.

Details include figuring out which facial muscles make us smile, which major arteries supply the heart, and how lung cancer affects breathing. Jensen explains in vivid descriptions how stomach stapling works and helps students understand how babies develop and are born.

"Then we let them ask questions about any demonstrated anatomy or any anatomy not seen," Jensen said. "After that, they can ask general questions about health careers."

For this group of high schoolers, at least some of the answers are right before them on the gurney. 



“They're going to become doctors, nurses, physical therapists, occupational therapists, respiratory therapists.”

Commencement 2011



The University of North Dakota School of Medicine and Health Sciences Medical Doctor Class of 2011.

Row 1, seated left to right: Assistant Dean Thomas Hill, Assistant Dean Patrick Carr, Assistant Dean Kenneth Ruit, Assistant Dean Jon Allen, Associate Dean Charles Christianson, Senior Associate Dean Gwen Halaas, Dean Joshua Wynne, Associate Dean Randy Eken, Associate Dean Nicholas Neumann, Associate Dean Julie Blehm, Assistant Dean William Newman, Associate Dean Judy DeMers, Assistant Dean Martin Rothberg, and Assistant Dean Steffen Christensen.

Row 2, left to right: Jessica Smith, Siegfried Feierabend, Shanna Landgren, Kevin Zimmermann, Elizabeth Rau, Kristin Streifel, Jean Gustafson, Melinda Picard, Brian Sauer, Ashley Hagen, Alexis Hokenstad, and Emily Welle.

Row 3, left to right: Fallon Hoverson, Ashley Lundin, Samantha Schulz, Michael Bagan, Eric Eriscon, Brian Midboe, Shan Flatt, Kathryn Gores, Morgan Skalsky, Tyler Brolin, Jason Van Valkenburg, Aaron Stinton, Kyle Marthaller, Erik Hokenstad, and Carolyn Haus.

Row 4, left to right: Christian Buhr, David Brown, Christopher Pribula, Jared Mahylis, Cory Edwards, Ryan Siewert, Tamara Jacobson, Taylor Mertz, Tyson Bolinske, Michael Greenwood, Christopher Reisenauer, Brock Norrie, Matthew Gerde, and Cindy Sondag.

Row 5, left to right: Cameron Charchenko, Andrew Burgard, Jacob Fish, Derrick Eichele, Daniel Morgan, Casey Schmitz, Jeffrey Ottmar, Zachary Ernst, Christopher Henderson, Evan Kemp, Nicholas Turman, Christopher Mees, Andrew Miller, and Brennan Forward.



The Doctor of Physical Therapy Class of 2011 shares some fun at their hooding ceremony.



Erin Wessman, DPT '11, waits in anticipation of her hooding by, from left, her grandfather UND Physical Therapy Department creator and chair (1967-1993) Henry C. "Bud" Wessman, Dr. Mark Romanick, and Erin's mother Carol.



Dr. Kristin Streifel and Tamara Jacobson proudly display their MD diplomas.



Earl Pomeroy, JD '79 and DLitt '11, was the keynote speaker for the Doctor of Medicine 2011 Commencement Ceremony.



Dr. Evan Kemp, MD '11, celebrates with family.



Oil Futures

Seated, left to right: Thad Rosenberger, PhD; Heidi Gienger, laboratory technician; Carole Haselton, research specialist; and Eric Murphy, PhD. Standing, left to right: Brock Thuen, laboratory technician; students, Stephen Brose, Dhaval Bhatt, and Drew Seeger; Kaylee Borgerson, laboratory technician; and Svetlana Golovko, research specialist.

The SMHS lipid group proves to be a sound investment.

By Juan Pedraza

Lipid biochemistry is about as complex as it gets—essential for life, but a real bummer if it goes awry.

It's what keeps Eric Murphy, PhD, and his colleagues—Mikhail Golovko, PhD, and Thad Rosenberger, PhD—digging deep into brain chemistry. They're the School of Medicine and Health Sciences' lipid group in the Department of Physiology, Pharmacology, and Therapeutics (PPT).

These "three musketeers" of lipid biochemistry are on a biochemical quest to help science understand how lipids do their thing in the brain. And that means finding effective therapies or even cures for Alzheimer's, Parkinson's, and other neurodegenerative diseases.

"In my lab, for example, we're focusing on fatty acid metabolism in the brain and how proteins influence that process," Murphy noted. "Golovko's

research focuses on downstream metabolites of arachidonic acid. Rosenberger studies the role of lipid metabolism in brain inflammation. All of these things come together for a great deal of synergism."

"We're the only team in the U.S. with three lipid biochemists focused on this kind of research at the interface of lipid metabolism and biochemistry," Murphy said.

The UND lipid group collaborates with PPT scientists Colin Combs, PhD, a renowned brain inflammation expert, and Othman Ghribi, PhD, who's researching the interplay of cholesterol and neurodegenerative disease.

Lipid chemistry is a bewildering process that—when it's ticking along like it's supposed to—keeps us awake, helps us sleep, and keeps us on track emotionally.

When that chemistry goes awry—even if it's just one of the thousands of lipid compounds in the body—you can get a stroke or develop Alzheimer's or Parkinson's, among other diseases.

Lipids are a key part of the body's metabolic pathways, the basic traffic patterns of all the chemical reactions in the body—actually within each of the 50 trillion or more cells in the body.

"Lipids are important because they serve as an energy source, as well as storage for energy in the form of fat cells," said Murphy, whose research interests include lipid metabolism, brain fatty acid metabolism, heart fatty acid metabolism, Alzheimer's disease, Parkinson's disease, and several other interrelated areas.

"How does the brain maintain the unique lipid environment that is essential for normal brain function?" Murphy said. "This question is the central biological question addressed in my laboratory."

Murphy is also looking closely at a protein called alpha-synuclein.

"It can aggregate, or collect, to form insoluble fibrils (threadlike fibers or filaments that are constituents of cells or larger structures), which may have a role in problems associated with Parkinson's and dementia," Murphy said.

Why is alpha-synuclein important?

"We're asking what is the normal function of alpha-synuclein in the brain and what is its role in inflammation associated with the progression of Parkinson's," Murphy said. "Understanding what alpha-synuclein does will help us understand what happens when things go wrong with it."

Another key compound in the lipid group's sights is arachidonic acid, which we usually get from meat, eggs, and dairy products. It's an essential fatty acid in the omega-6 family.

"We've published extensively about alpha-synuclein, and we see that it's really deeply involved in arachidonic acid metabolism," he said. "Arachidonic acid goes to form prostaglandins, which are important mediators involved in inflammatory response in the brain or elsewhere."

"That's why you take aspirin; it inhibits the enzyme—another protein, of course—that takes arachidonic acid in the first step to biosynthesis of prostaglandins."

Where's the beef?

Among the experiments that Murphy's group has worked on is getting more omega-3 fatty acids into beef using a combination of grazing and flax finishing.

This research focuses on enhancing the omega-3 content of your basic steak and is done in collaboration with Dr. Scott Kronberg at the USDA's Agricultural Research Service Northern Great Plains Laboratory in Mandan and with colleagues at The Ohio State University.

"We showed that in cattle, we really alter gene expression of proteins involved in lipid metabolism when finishing them on flax," Murphy said. "The differences are just huge, and ultimately our findings in cattle we can apply to humans. This is the great thing of working in more of an applied or translational research area as well as in the basic biomedical sciences. It gives me so much more perspective on attacking problems."

"What's so great about lipid research is that we're at the very center of many kinds of science," Murphy said. "We are in a new age of lipid biochemistry and it is great to be on the frontlines here at the University of North Dakota," says Murphy.

Murphy and his colleague Rosenberger recently published *Lipid-mediated Signaling: Methods in Signal Transduction*. The book already is considered a major work in the lipid chemistry field, and is dedicated to Dr. Lloyd Horrocks, their mentor at The Ohio State University.

Additionally, since 2006, Murphy has been the editor-in-chief of *Lipids*, a leading peer-reviewed journal of lipid chemistry published monthly by the American Oil Chemists' Society.

“
We are in a **new age**
of **lipid biochemistry** and it
is great to be on
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University of North Dakota.
”

RAC

Rural Assistance Center

RAC is the nation's resource for rural health and human services information.

By Kristine Henke



Aubrey Madler, information specialist
for the Rural Assistance Center

For Marilyn Leeds, executive director of Lake Okeechobee Rural Health Network Inc. in South Bay, Fla., when searching for funding, her first stop is always Grand Forks, N.D.

Luckily for Leeds, she doesn't have to leave the sunshine of Florida and physically travel over 2,000 miles north to retrieve the important information she needs to help support her Rural Health Network. Instead, she uses the Rural Assistance Center (RAC), an online information portal housed at the Center for Rural Health (CRH) at the University of North Dakota School of Medicine and Health Sciences in Grand Forks.

To Leeds, "RAC is an invaluable resource. I tell people all of the time, if you don't have it, you're missing out!"

So why use a resource all the way in North Dakota when you're in sunny Florida? Because, there really is no resource quite like the Rural Assistance Center. Initiated in 2002 through a partnership between the Center for Rural Health and the Rural Policy Research Institute (RUPRI) and funded by the Office of Rural Health Policy (ORHP), a federal agency in the Health Resources and Services Administration, RAC fills an important void for information on rural health and human services. Through the leadership of Director Kristine Sande, RAC makes information related to rural health and human services available through their comprehensive website, in addition to having information specialists who can provide direct assistance over the phone or via e-mail.

What makes RAC more powerful than an online search engine or other research source are the information specialists and their pool of edited, reliable resources. RAC’s librarians continually update the many resources, topic pages, funding opportunities, and other information on the RAC site. By searching out material and deciding “what makes the cut,” people can trust information from RAC to be a reliable, easy-to-use resource. This way, rather than having to spend countless hours looking online themselves, especially when these hours can be nonexistent in rural settings, they have it all at their fingertips.

In rural communities, there is a higher need for health and human services. Rural communities face countless obstacles in these areas. According to the National Rural Health Association, a few disparities facing rural communities include the following:

- Only about ten percent of physicians practice in rural America, despite the fact that nearly one-fourth of American’s live in these areas.
- Rural residents are less likely to have employer-provided health care coverage or prescription drug coverage, and the rural poor are less likely to be covered by Medicaid benefits than their urban counterparts.
- On average, per capita income is \$7,417 lower than in urban areas, and rural Americans are more likely to live below the poverty level. The disparity in incomes is even greater for minorities living in rural areas, and nearly twenty-four percent of rural children live in poverty.

From these few statistics, you can see how rural areas are at a disadvantage for funding and other resources. This is where RAC steps in, in a very powerful way. Take Leeds’s story for example. Within the network she works in, there are five rural communities. Some of these communities are in urban counties, which can be near impossible to find funding for. With RAC, Leeds can use tools like “Am I Rural?” and find other

information pertinent to her area to help make the case for funding she may need.

In 2002, when RAC was first started, Kristine Sande was tasked with creating the RAC site. She started with six people working on the project at the Center for Rural Health. Fast forward to 2011, and RAC has over one million visits annually, around one thousand requests for customized assistance annually, and has fourteen people who contribute to the project with eight full-time staff members, in addition to staff from RUPRI who are a part of the project.

With the success RAC has seen in the last nine years, Sande and her team are optimistic the service they are providing will continue to grow and benefit people like Leeds, who so depend on the resources RAC provides. “People in rural organizations have to wear many hats—they often do not have the access to specialized resources that could assist them in searching for information and available services, on top of which, with their multiple responsibilities, time is always at a premium,” Sande said. “Because of that, opportunities might be lost, both for the providers, but also the communities they serve. So our quest has always been to level the playing field, so to speak, for rural providers across the country in finding and competing for funding opportunities, staying abreast of current regulations and events, and accessing current information.

From the beginning, RAC has always been a collaborative project. Thanks to the great working relationships Sande and the Center for Rural Health have with RUPRI and the Office of Rural Health Policy, we can all be sure RAC will be around for many more years to support and guide rural people, like Leeds in Florida, who look to RAC for assistance their communities need. For Sande and the entire RAC staff, that’s what it has always been about. “We hope that RAC’s services save our users time, keep them informed, help them make good decisions, and ensure that they don’t miss out on important opportunities,” Sande said. The rural people, Leeds included, certainly agree.

RAC resources at a glance

These numbers represent the number of various resources the RAC website houses and keeps up to date.

Funding opportunities.....	665
Documents	5,680
Tools.....	2,246
Success Stories.....	410
Organizations	2,859

www.raconline.org



Primary Care, Integrative Medicine and the Future of American Health Care



By Debra Bell, MD

Integrative medicine focuses on the whole person, addressing all factors that affect health. It is a holistic approach that takes body, mind, and spirit into account. Practitioners integrate conventional medicine with natural therapies. While conventional medicine largely focuses on symptoms and treatment of disease, integrative medicine is oriented toward healing. It recognizes that each patient has unique needs, and the patient and practitioner partner to seek health and healing.

The general public has been utilizing complementary and alternative medicine (CAM) therapies for many years. Many who are using CAM today do so without discussing it with their personal physicians. Integrative medicine allows patients to see a doctor who can combine both approaches to medicine.

As medical science and technology have advanced at a rapid pace, the health care delivery system has floundered. Many providers and patients agree that our health care system is in need of change. Currently, a heavy reliance on technology and specialty care leads to their overuse and contributes to rising health care costs. Primary care integrative medicine focuses on health, wellness, and prevention, and respects the wisdoms of both modern technology and natural therapies. It utilizes the evidenced-based information concerning the impact of nutrition and stress on health. Primary care integrative medicine is thorough and cost effective.

Currently, most integrative medicine physicians practice in a consultation setting. They are not involved in ongoing conventional medical care, but rather evaluate patients from an integrative medicine approach and make treatment and

health and healing suggestions. Unlike conventional consultations, these are often just given directly to the patient rather than to the patient's primary physician, causing an even greater disruption in continuity of care. On the other hand, primary care integrative medicine allows the natural therapies to become a part of "regular" health care.

For example, a primary care integrative medicine practitioner would not only provide necessary medication to patients with cholesterol problems, heart disease, or hypertension but also provide dietary and exercise counseling as well as suggestions regarding vitamins, supplements, and stress reduction techniques. Those who do not yet have a disease but are at risk would be counseled and given personalized suggestions for prevention. Non-pharmacologic treatments for certain chronic problems, such as fibromyalgia, arthritis, and chronic headaches, can be offered. Medical schools are beginning to recognize that there is a growing expectation and need for physicians to have a better fundamental understanding of these facts, and medical schools are beginning to include some information about integrative medicine in the curriculum.

Although primary care integrative medicine is still somewhat new, the UND School of Medicine and Health Sciences has at least two members of the faculty who practice it (Dr. Neena Thomas-Eapen, Minot Family Medicine Center, and Dr. Debra Bell, RiverView Health Family Practice and Integrative Medicine Center in Crookston, Minn.). We not only do direct teaching for medical students and residents but also act as role models and examples of a way to practice primary care that is on the cutting edge of American health care.

Obstetrician-Gynecologist Workforce: The Challenges Ahead



By Dennis J. Lutz, MD, Chair and Professor of the Department of Obstetrics and Gynecology

Steffen Christensen, MD, vice chair of Obstetrics and Gynecology; 2011 graduates Erik Hokenstad, Alexis Hilfer Hokenstad, Morgan Skalsky, Tamara Jacobson, and Kristin Streifel; Dennis Lutz, MD, chair of Obstetrics and Gynecology; and SMHS Dean Joshua Wynne.

The UND School of Medicine and Health Sciences' Department of Obstetrics and Gynecology was created in 1974 as required for expansion to a four-year doctor of medicine degree program. Having just completed 25 years as the longest-serving clinical department chair in the history of the medical school, it is tempting to reflect on past accomplishments and the truly amazing progress achieved as a statewide, community-based rural institution. While proud of the past, educators focus on the present and constantly plan for the future. Nothing looms larger for medicine than maintaining a world-class workforce and financing health care. Politicians and economists struggle to solve the fiscal crisis as U.S. medical costs approach 20% of GNP. Medical schools and allied health programs will likewise be maximally challenged to train an adequate workforce for the future.

The specialty of obstetrics and gynecology is uniquely pivotal as the national health care debate rages for a surprising number of reasons.

1. There has been no net increase in Ob-Gyns trained since 1980, but during this time, the female population of the United States has grown by 26% and is expected to increase another 36% by 2050.
2. Unlike men, women regularly access the health care system from puberty to death, and most visit only an Ob-Gyn or see an Ob-Gyn in combination with another provider. The demand for access is already staggering and will increase.
3. Women make the majority of health care decisions in the United States—for themselves, their partners, their children, and, increasingly, for their aging parents. Women drive the health care system and in doing so frequently consult their Ob-Gyn.
4. Obstetrics and gynecology is a unique specialty, combining both reproductive medicine and surgery for girls and women of all ages. In fact, Ob-Gyns represent the largest group of active physicians outside the three traditional primary care fields—internal medicine, family medicine, and pediatrics. Unlike the Association of American Medical Colleges, many authorities now consider Ob-Gyns as primary care because they provide frontline health care for so many patients.

5. Over the past three decades, obstetrics and gynecology has evolved from a male dominated specialty to gender equality, which is similar to medical school enrollment. With 80% of current obstetrics and gynecology residents now women, the gender pendulum will continue to swing upward. Although this gender reversal in medicine has been much debated, for patients, the most important physician qualities remain unchanged: competence, compassion, and availability.
6. Generational changes will definitely affect the aging obstetrics and gynecology workforce. Everywhere in America older physicians complain that “new doctors don't work as hard as we did,” but professional satisfaction has declined. Observational bias notwithstanding, lifestyle and work–family balance priorities have changed for everyone. Staffing will require significantly more providers to cover the 168-hour work week and 8,736-hour work year still needed to provide acute medical services.

The future is clear: a critical shortage of Ob-Gyns is anticipated and the United States is already in catch-up mode. What is the SMHS doing to prevent this crisis? Despite no obstetrics and gynecology residency program in North Dakota (or in S.D., Mont., Wyo., and Idaho), the Department of Obstetrics and Gynecology has very successfully focused its efforts and resources on medical students. We provide a well structured clerkship, excellent electives, superb clinical faculty mentoring, and amazing role models. The School of Medicine and Health Sciences now has 11%–12% of each graduating class selecting a residency and career in obstetrics and gynecology—double the national average. Following residency, 32% of graduates have returned to practice obstetrics and gynecology in North Dakota, and that number exceeds 50% if adjoining states, particularly western Minnesota, are included.

As the School of Medicine and Health Sciences plans to expand its class size and postgraduate residency positions to meet projected physician shortages, creating innovative medical staffing models for rural America remains a primary focus. The Department of Obstetrics and Gynecology is seriously exploring the feasibility of establishing a residency program to guarantee a continued supply of elite women's health care physicians and services for North Dakota.



Sherine Talaat

By Sara Rantanen

Sherine Talaat found her way to UND's School of Medicine and Health Sciences from almost the other side of the globe. Talaat was born and raised in Alexandria, Egypt. Her parents both hold MD/PhD degrees and teach at the University of Alexandria. Her father is a retired head and neck surgeon, and her mother is a professor of family health. "They always encouraged me and my siblings to do our best and were a great role model and support for us," said Talaat. She can remember, when she was younger, accompanying her father on some visits to his patients, and this may have sparked her interest in the medical field.

When Talaat finished the ninth grade, she and her family decided that she would be prepared for medical school sooner if taught from home. In Egypt, before the children start high school, they choose between two different career tracks: literature or science. The track the students select will be the main concentration of their studies. So Talaat spent one year being homeschooled by tutors in the sciences and then took the trip to Cypress with her family to take the college-entry qualifying exam. She did well on the exam and was able to begin medical school at the young age of 15. After the required six years of instruction, Talaat graduated with the

highest honors and was ranked in the top five percent of her class. Her hard work and dedication throughout her schooling were reflected in her grades and guaranteed her a faculty position, a very prestigious standing, at the University of Alexandria.

Though it seemed her future was all laid out for her, an interesting twist was thrown in during her last year of medical school. It was then that she met her future husband, Hesham El-Rewini, dean of the School of Engineering and Mines at UND, while he was in Egypt visiting family. The two married soon after Talaat finished her final year's exams, but because she had a potential job offer with the University of Alexandria and his job was in the United States, they needed to make a tough decision on where to live. Having and raising her own family was a dream that Talaat held very dear to her heart, so she chose to put her medical career on hold and move to the United States with her husband. El-Rewini and Talaat have three children, daughter Zeinab, 14, son Bassel, 12, and daughter Yasmine, 9. Talaat greatly enjoyed the time she was able to spend with her children as they were growing up, and her husband fully supported her decision to stay at home. "My husband and children are my greatest support system, and together we all form an accommodating team," Talaat said.

"When my youngest started school full time," Talaat recalls, "I decided to prepare for resuming my medical career by taking the United States Medical Licensing Exam." Her husband was again incredibly supportive, "I really could not have been at the stage I am right now without his help and support," she said. After about a year and a half, Talaat passed both Step 1 and 2 of the three exams and was ready to enter the medical field. In 2008, the family moved to North Dakota for El-Rewini's new job at UND's School of Engineering and Mines. Talaat decided that, after so many years away from the field, she wanted to refresh her clinical education and thought UND's School of Medicine and Health Sciences would be the perfect place. While preparing for her interview for

medical school, Talaat says a book titled *The Lost Art of Healing* by Nobel Laureate Bernard Lown, MD, inspired her interest in pursuing the MD/PhD path, a decision she says she hasn't regretted. She recalls that in some sections of the book, Dr. Lown illustrated his combination of both treatment of his patients and research, and how he found being able to concentrate on both very rewarding. Talaat was able to identify with this because she had seen how important it was to her father to be able to interact and treat his patients personally. She applied to and was accepted into the medical program and then applied for advanced standing. Since she had already completed medical school in Egypt, Talaat was given credit for the first two years of medical school. She is now at the end of her second year in the PhD track and is looking forward to starting the third year of medical school in the fall of 2012.

Though Talaat says she has not yet decided on "the right 'formula'" for herself in balancing both patient care and research, she is not worried and knows that the decision will probably come to her by trial and error until she finds her niche. She does know, however, that she is "...passionate about both fields and thoroughly excited about the prospect of being a physician/scientist."

Talaat was enthusiastic about sharing her story because she wanted to encourage anyone else who might be in a similar situation, thinking about returning to school, to go ahead and reach for their goals. To those considering it, Talaat said, "Do what feels right for you and trust your intuition. Anyone can come back to studying or practicing what they like if they are determined to." To this she added, "It is my hope that by sharing my story this will encourage other individuals to pursue their dreams. Talent does not go away, and the possibilities are endless."

Talent does not go away,
and the **possibilities**
are **endless.**

Proud to be from **UND**

John and Karen Gray show their thanks
by giving back to the University in a number of ways.

By Jessica Sobolik



Karen (Schmidt) Gray, '82, knew her husband had been working too many hours at his internal medicine residency when one day at the newlyweds' apartment, John fell asleep with a cup of coffee in his hand, spilling the much-needed caffeinated beverage all over himself.

"Residency was a huge time commitment, and I think that's the part I remember most," said John Gray, MD '87. "It was common to work 36-hour shifts. Now there are restrictions on hours worked. When my class went through, there wasn't any of that."

John's hard work has paid off, however. After completing his residency at Hennepin County Medical Center in 1991, he joined Kidney Specialists of Minnesota, which today operates four clinics and 30 dialysis centers in the Minneapolis area. The number of physicians has doubled since John began working there, and he has served as president of the group the past five years. He has also been named a Top Doctor in the *Minneapolis St. Paul Magazine* the past six years, an honor bestowed after polling doctors, nurses, and other health care professionals in the area.

John credits UND for much of his success. "I always wanted to go to medical school," he said. "I didn't think I had it in me. I didn't think I was smart enough. That's why I have such a strong feeling of indebtedness, because the university gave me an opportunity that I don't know I would've gotten elsewhere."

John and Karen have since decided to give back to the University of North Dakota in a number of ways. John has dedicated his time as a member of the University's National Campaign Steering Committee. He and Karen have also created a scholarship to support SMHS medical students. "I know how much an education costs and how much a scholarship helps," John said. The couple supports UND athletics through the Fighting Sioux Club. Plus, they gave a generous gift to help build the Gorecki Alumni Center, for which ground was broken in May and which will be completed in the fall of 2012.

Located west of the Chester Fritz Auditorium on the Grand Forks campus, the new 30,000-square-foot, \$12 million alumni center will house offices, meeting rooms, and a community room on three levels. Currently, the UND Alumni Association and UND Foundation are housed in two separate buildings: the J. Lloyd Stone House and the Strinden Center. Both groups will move into the new facility, which will be more accessible for visiting alumni. "I think it's important for alums to go back and have a place to call home," John said. Karen added, "I think UND needed a bigger, more modern facility to accommodate its growing alumni base. It'll be a definite asset and a nice place to connect."

Furthermore, the facility will have a LEED (Leadership in Energy and Environmental Design) Platinum rating. It'll be the first building in North Dakota and the first alumni center in the nation to have a platinum rating.



Renderings of the Gorecki Alumni Center created by JLG



**We worked hard
and took advantage
of opportunities
provided by UND.**

Although John and Karen now reside in Minneapolis, they still hold great affinity for North Dakota, the state they were both raised in. "The other day, I saw a girl wearing a UND T-shirt, and I just felt this sense of pride and was so excited for her," Karen said. "I have a soft spot in my heart for UND, and I'm sure I always will."

To this day, John appreciates the education he received at UND, and the School of Medicine and Health Sciences. "That's why we feel so strongly about giving back to the University," he said. "It has provided us with the life we have now, and people need to think of UND more in that way. We worked hard and took advantage of opportunities provided by UND. So we're grateful for that. It's given us an unbelievable return."

'00s

Jean Pearce, MD '09, was named pediatric chief resident for the 2012–13 academic year at the University of California Davis Children's Hospital in Sacramento, Calif.



Jane Ostlie, MD '08, is the recipient of the 2011 William Buckingham North Dakota Resident of the Year. Ostlie is scheduled to begin her practice as a family physician Sept. 29 at Sanford Clinic and Sanford Medical Center in Mayville. Ostlie has been active in programs including Tar Wars, tobacco-free education in elementary schools, and Mission Physician, which aims to attract junior and senior high students into family medicine. The award is presented by the North Dakota Academy of Family Physicians.



Heather England, PT '07, has received the Healthcare Provider of the Year award from the Metro Area Mayors Committee on People with Disabilities. The award recognizes individuals, organizations and structures that empower people with disabilities. England is a physical therapist with ProRehab Physical and Occupational Therapy in Fargo. In

2011 she became part owner at ProRehab along with Lynden Kurtz and Tom Baumgartner.

Josh Deere, MD '06, was recently elected to the board of directors for the North Dakota Academy of Family Physicians.

Lisa Jamsa, MD '06, was recently elected to the board of directors for the North Dakota Academy of Family Physicians.

Kevin Karls, MD '04, with Mid Dakota Clinic in Bismarck, has passed the gastroenterology board certification exam with the American Board of Internal Medicine. He is also board certified in internal medicine.

Jacinta Klindworth, FP Res '03, was recently elected chair of the board of directors for the North Dakota Academy of Family Physicians.

'00s



Kristin Luckenbill, PhD Biochem '03, recently joined Medcenter One in Bismarck. Luckenbill completed a fellowship with Hennepin County Medical Center in Minneapolis and is board eligible. She most recently was with HealthPartners in central Minnesota. Luckenbill assists medical and technical staff in blood- and chemistry-related matters.



Michael Luckenbill, MD '02, recently joined Medcenter One in Bismarck. As a hospitalist, Luckenbill delivers care in many diverse specialties, such as pulmonology, oncology, hematology, infectious diseases, cardiology, and critical care, and has five years of hospitalist experience. He is certified by the American Board of Internal Medicine.



Jason Moe, MD '98, FP Res '01, joined Mid Dakota TODAY Clinic in Bismarck on March 1. He previously practiced in urgent care with Sanford Health Systems in Fargo. He is board certified by the American Board of Family Medicine.

Matthew Sanford, MD '01, will start a yearlong fellowship in July in the Women's Imaging Program at the Warren Alpert Medical School of Brown University. He completed his residency in diagnostic radiology at the University of Wisconsin–Madison, where he stayed on as a fellow in musculoskeletal radiology, after which, Sanford spent four years in private practice in the Twin Cities with St. Paul Radiology.

Jennifer Tull, PT '00, was given the Benedictine Health System's Exceptional Therapist award for the second quarter of 2011. The award was created to recognize the extraordinary efforts and contributions from therapists throughout the Benedictine Health System. Tull has worked at the Villa St. Vincent hospital in Crookston since 2009 and became a lymphedema certified therapist in 2010.

'90s



Kimberly Krohn, MD '96, was recently elected vice-president of the North Dakota Academy of Family Physicians Foundation. She is also program director at the UND Center for Family Medicine in Minot and associate professor in the Department of Family and Community Medicine.

Wade Talley, MD '95, was recently elected president of the North Dakota Academy of Family Physicians.



Monica Mayer, MD '95, has been appointed to serve on a national advisory committee on infant mortality. Mayer, an enrolled member of the Three Affiliated Tribes, received word of her appointment in a letter from Kathleen Sebelius, U.S. Department of Health and Human Services secretary. Mayer will serve a three-year term ending in January

2014 on the Infant Mortality Committee of the Health Resources and Services Administration, which is part of the U.S. Department of Health and Human Services.

Hayley Svedjan, MD '94, was recently elected vice-president of the North Dakota Academy of Family Physicians

Dave Billings, MD '92, recently received the Friend of Family Medicine Award from the North Dakota Academy of Family Physicians.

Charles Breen, MD '90, was recently elected secretary/treasurer for the North Dakota Academy of Family Physicians Foundation.

Got news?

We want to hear it!

Please send your news items for the next issue of *North Dakota Medicine* to Kristen Peterson:
kristen.peterson@med.und.edu
 or call 701.777.4305.

'80s

Ellen Halverson, MD '87, crossed the finish line in the Iditarod sled race on March 2 in Nome, Alaska. Her finishing time was 13 days, 19 hours, 45 minutes and 49 seconds at a final position of 47.

Jane Grorud, MD '87, has joined the Mercy Medical Center of Williston. Grorud is the new pediatrician and will be working with inpatients and outpatients, seeing children in the clinic and working with newborns. Previously, Grorud worked at the Quain and Ramstad Clinic in Bismarck.

Andy McLean, MD '87, received the 2011 American Psychiatric Association Bruno Lima Award for outstanding contributions to disaster psychiatry.

David Blehm, MD '81, has joined Blue Cross Blue Shield of North Dakota as a medical director in the company's Medical Management Division. He has 27 years of experience as a pediatrician, spending the past 12 years at Sanford Health Systems in Fargo. As medical director, he will provide expertise in childhood and adolescent health care practices.

George Hilts, III, MD '80, Trans Res '81, has been included in the Best Doctors in America 2011–12 database. The database contains the names and professional profiles of about 47,000 doctors selected through a peer-review survey. Hilts has been practicing in North Dakota since 1985. He specializes in cataract surgery and intraocular lens implants.

Benedict Roller, MD '80, was recently named to a two-year term on the St. Alexius Medical Center board of directors in Bismarck. He is also the president of the medical staff and chair of the emergency medicine department.

'70s

Charles Nyhus, MD '79, was recently elected to the board of directors for the North Dakota Academy of Family Physicians.

'60s



Roger Schauer, BS '69, was recently elected president of the North Dakota Academy of Family Physicians Foundation. He is also associate professor in the Department of Family and Community Medicine at the UND School of Medicine and Health Sciences.



John W. Vennes, MS Science '52, HON '96, age 86, of Grand Forks, passed away on May 10, 2011, at his winter home in Sun City, Ariz.

John was born in 1924 in Grenora, N.D., to Albert and Gina Vennes. He spent his formative years in Zahl and Williston, N.D. After serving in the Navy during World War II, he moved to Grand Forks to attend the University of North Dakota, where he fell in love and married Agnes Glinski, his wife of 61 years who preceded him in death. He received advanced degrees in microbiology from UND and the University of Michigan. He devoted his entire career to medical education at the UND School of Medicine and Health Sciences. He served in numerous roles, including professor, department chair, interim and associate dean, and professor emeritus. His tireless work for North Dakota medical education was driven by his passion for education, as well as his love for North Dakota.

In lieu of flowers, the family prefers that memorials be sent to the UND Foundation at 3100 University Ave, Grand Forks, ND 58202-8157 with directions that it be added to the John and Agnes Vennes Microbiology and Immunology Research Award Endowment.

Dr. Jerrold Corbett, BS Med '54, passed away after a long illness April 17, 2011, in Jackson, Calif., at the age of 86. He was born Aug. 20, 1924, to John and Edna (Brant) Corbett in Minot, N.D. Jerrold served in the U.S. Navy during World War II and the Korean War. He studied medicine at the University of North Dakota School of Medicine and Loma Linda University in Loma Linda, Calif. Jerrold married Joan Bray on May 23, 1955, in Grand Forks. He finished his medical degree in 1957 and interned at the White Memorial Hospital in Los Angeles and then enjoyed a 54-year career as a family medical doctor.

He practiced medicine at Sutter-Amador clinics in Pioneer and Plymouth, Calif. He was also on staff at Sutter-Amador Hospital in Jackson, Calif. His career included chief-of-staff at the Roseville Hospital; director of Humboldt State University Student Health Center, and on staff at St. Joseph Hospital in Eureka, Calif. He served as weekend ER physician at the Hoopa Indian Reservation in Hoopa, Calif. He spent nine years traveling all over the Pacific and south Atlantic on clipper ships as ship doctor.

Jerrold was a member of the American Medical Association, California Medical Association, The Placer-Nevada Medical Association, Sacramento County Medical Society, and Humboldt-Del Norte Medical Society.

Jean Dean Holland, 87, passed away April 10, 2011, at Woodside Village in Grand Forks, N.D. She was born October 29, 1923, in Omaha, Neb., to E. L. and Ellen (Dean) Holland. Jean graduated from the University of Nebraska at Omaha in 1946 and then went on to receive a Master of Science in Medical Laboratory Science from Wayne State University in Detroit. After a year at Charity Hospital in New Orleans, she came to Grand Forks in 1949 to help establish and chair the Medical Technology Bachelor of Science Program in the Pathology Department at UND. Later on, she helped develop a Master of Science in Laboratory Medicine before retiring in 1985 from UND with the rank of Associate Professor Emerita. In 1975, Jean received the Charles D. DeBruyn Kops Faculty Award for Outstanding Teaching and Service.

She married William (Bill) Saumur on October 27, 1951.

Jean served as president and held other offices in the North Dakota Society for Medical Technologists. In 2001, she received the Golden Service award from the American Society of Clinical Laboratory Science. An endowment, which she established upon retirement, is designated for UND students majoring in clinical laboratory science. In 2009–10, she received the Silver Apple Award from the North Dakota Retired Teachers Association.

Memorials are preferred to the North Dakota Museum of Art, Holy Family Catholic Church, or the Jean Holland Saumur Hematology Scholarship Endowment through the University Foundation.

Dr. William "Bill" Nelson, 86, passed away April 2, 2011, at the Valley Elder Care Center in Grand Forks, N.D. He was born Oct. 1, 1924, in Amery, Wis., the son of Clarence and Dortha Nelson. He attended Macalester College in St. Paul, Minn., and the University of Dubuque, Iowa, and then was accepted to the University of Minnesota Medical School in 1944. Following his graduation from medical school in 1947, he interned at the Minneapolis General Hospital and then served for a year as a naval physician at U.S. Naval Hospitals on the East Coast. In 1950, he returned to Rochester, Minn., to start a fellowship in internal medicine. He was called back into the Navy in 1952 during the Korean War and spent two years in California as a naval physician before returning to the Mayo Clinic to complete his fellowship.

Bill met his wife Ruth Anne Lapinske in 1948 while interning at the Minneapolis General Hospital, and they were married three years later in 1951. After Bill completed his Navy service and internal medicine fellowship, he and Ruth settled in Grand Forks, where they raised five children and Bill practiced at the Grand Forks Clinic in the Department of Internal Medicine. Bill acted as chief-of-staff and president of the executive board of St. Michael's Hospital in 1967. He was an active member of the American College of Internal Medicine and an assistant professor at the University of North Dakota Medical School.

Dr. Lowell E. Boyum, BS Med '44, 90, of Mandan died March 21, 2011, at Maple View Care Community in Bismarck, N.D. Lowell was born Feb. 28, 1921, in Harvey. He was one of three sons born to Manda (Martenson) and Dr. Peter Arndt Boyum. After graduating from the University of North Dakota, he received his doctorate in medicine from Baylor University of Medicine in Houston, Texas, and took his internship in Minneapolis. Lowell began his medical career in the Army stationed in New Mexico. After an honorable discharge, he began his medical practice in Harvey in partnership with his father, Dr. P. A. Boyum. Lowell was once married to Rebecca Pond, and they had four children: G. Peter, Thomas, Ruth Ann, and William. In 1952, Lowell established the Harvey Medical Center, along with Drs. C. J. Beck and A. F. Hammargren. He served as chief-of-staff of St. Aloisius Hospital. He was the "baby doctor," attending the delivery of around 4,600 babies during his career. In 1978, Lowell transferred his medical practice to the Mid-State Clinic Building. Later, he returned to Lincoln Avenue, this time as an eye doctor.

Lowell retired in 1986 after 37 years in medical practice. During his career, he served as president of State Family Physicians Academy of North Dakota, president of the State Obstetrics and Gynecology Society, and board member of the North Dakota Cancer Society. After he retired from his medical practice, he married Muriel Melby Schwartz on Dec. 30, 1986, at First Lutheran Church of Mandan.

Dr. Henry P. Staub, BS Med '45, pediatrician, died in Minneapolis on March 8, 2011, at age 91, surrounded by his loving family. Henry was born in 1919 in Berlin, Germany, to Ludwig and Erna (Zitzke) Staub. He left in March 1941 to escape persecution. He arrived by ship in San Francisco on April 10, 1941, and traveled to New York City. He supported himself for six months before getting a scholarship to Augsburg College in Minneapolis.

After graduating from Augsburg in 1943, Henry joined the Army and started medical school at the University of North Dakota. He became a U.S. citizen in 1944. Henry earned his Medical Doctor Degree from the University of Illinois in 1947, did his internship and residency in Minneapolis, started pediatric practice in northeast Minneapolis in 1950, and joined the Army Medical Corps shortly afterward. While stationed in Missouri, before going overseas, he met and married Bebe Westhues.

The family returned to Minneapolis in 1952, and Henry resumed practice. In 1967, he joined the University of Minnesota Department of Pediatrics, where he helped found Pilot City Health Center and served as its acting medical director. In 1970, he joined the Department of Pediatrics faculty at the State University of New York in Buffalo and became director of pediatrics at Meyer Memorial Hospital. He joined the Marshall University Department of Pediatrics in Huntington, W.Va., in 1979. Henry and Bebe returned to Minneapolis in 1983, and Henry again worked in private practice and later started an independent clinic, the Staub Pediatric Group. In 1991, he was appointed clinical professor of pediatrics at the University of Minnesota. He retired in 2001; he had been a practicing pediatrician for 50 years.

Henry was awarded many honors, including the Gold-Headed Cane award by the University of Minnesota Department of Pediatrics (1996). Henry was a community activist in pediatrics, promoting the health and welfare of children and their families. He touched countless lives through his practice, through training medical students and residents, and through his wide smile and listening ears.

John Risk Frost, BS Med '49, 85, formerly of Midland, Mich., passed away at his home in Sun City West, Ariz., on Jan. 31, 2011, after a courageous struggle with Parkinson's disease. He was born April 30, 1925, to Charles and Grace (Risk) Frost in Lisbon, N.D. John studied chemistry at North Dakota State University where he met the love of his life, Esther Fugl. He joined the U.S. Navy in 1944 as an Apprentice Seaman in the V-12 unit and studied medicine at the University of Washington in Seattle. After World War II ended, John married Esther on Aug. 15, 1948. He studied medicine at the University of North Dakota in Grand Forks before returning for his postgraduate degree in chemistry at NDSU. In 1953, they moved to Midland, when John was hired by The Dow Chemical Co. to work in the Saran Polymers lab. John retired from Dow in 1982 as a senior research engineer, with 10 patents to his credit, including Rovana fabric, processes for making plastic films less clingy, and a method for adhering closure strips to plastic bags.

Medical Students **Reach Out** to Help

By Sara Rantanen




Julia Baltz takes a Mission resident's blood pressure reading while Ali Bastian and Dr. Charles Christianson wait for the results.

The student chapter of Physicians for Human Rights decided to dedicate its energy on one international project as well as one local project. For their international involvement, they sponsored a vitamin drive for the Santa Anna Clinic in Chimbote, Peru, which is also a fourth-year elective site for medical students.

For their local project, Physicians for Human Rights decided to give free health screenings at the Northlands Rescue Mission in downtown Grand Forks. This effort was led by Megan Thorvilson and Kendra Lystad, who are both second-year (soon to be third-year) med students, under the advisement of Dr. Charles Christianson. Additional volunteers that dedicated their time were physicians Eric Johnson, Roger Schauer, and Jeff Lystad; second-year med students Megan Thorvilson, Kendra Lystad, Kristen Fiest, and Ali Bastian; first-year med students Michael Jundt, Julia Baltz, Ira Perszyk, and Tara Nelson (who will be next year's Physicians for Human Rights president).

...we wanted to do our small part
to make **health care**
a little **more accessible**...

On two Saturday mornings, February 5 and April 30 of this year, the team gave free health screenings at the Mission that concentrated on blood pressure readings, blood glucose levels, and smoking cessation. Each morning, they met with about 25 residents. Assisting them in their great success was the executive director of Northlands Rescue Mission, Dave Sena, and two of the Mission's volunteer coordinators, Deb Stinar and Paula Gilbertson. The team was also equipped by both the Altru Diabetes Center and Abbott Diabetes Care, who donated all of the supplies necessary for diabetes screening.

"We recognized the barrier many people face in receiving necessary health care, and we wanted to do our small part to make health care a little more accessible for the residents at the Mission," said Thorvilson, "We were received very warmly by both the staff and residents at the Mission, and we're hopeful for the direction this clinic will take in the future." Physicians for Human Rights is looking to expand their services as well as recruit more physicians and students to volunteer and continue to increase overall awareness about healthful living. 



Above: Kendra Lystad checks a resident's blood pressure.
Below: Megan Thorvilson listens to a Mission resident.





Hiring Santa Claus

By Aaron Ortiz

Recruiting a Health Workforce for Rural North Dakota

"Aaron, we would like to hire a male family nurse practitioner for our rural clinic in North Dakota. A large portion of our patient population is adult male farmers who just won't come and see our female nurse practitioners," Roger said. "What do you think the chances are of us finding a male family nurse practitioner who has experience and wouldn't mind a moderate call schedule?"

I take in what Roger is asking me, lean back in my chair, gaze at the cracked ceiling tiles of my office, and hope I can provide an answer as I start thinking about the number of nurse practitioners Roger wants to consider for his predicament.

My answer for him is, to put it lightly, not good. According to the American Academy of Nurse Practitioners' 2009–2010 survey, 96 percent of all nurse practitioners are female. So, we are starting with 4 percent of all nurse practitioners currently practicing in the United States. Assuming equal distribution across the spectrum and

knowing only 48 percent of all nurse practitioners are family nurse practitioners; we can theoretically halve our whopping four percent again.

So, with our 2 percent of the total number of nurse practitioners currently practicing, I look at how many nurse practitioners are practicing in rural communities. That number, 17.8 percent, turns our once two percent to 0.3 percent—the number of nurse practitioners likely to practice in his community. Finally, we can assume eight percent of nurse practitioners are looking to switch jobs in 2011, and I realize Roger and I are looking for a provider that composes 0.02 percent of the total practicing population of nurse practitioners.

"Well, Roger, I just don't think we want to go down this road today," I say as I begin collecting information on his practice opportunity. I certainly don't want to ruin Roger's hopes, but I think we have a better chance of finding and hiring Santa Claus for him.

As the workforce specialist for the Center for Rural Health (CRH) at the University of North Dakota School of Medicine and Health Sciences, conversations similar to this one with Roger are an everyday reality for me. The CRH focuses on three areas to help support health workforce recruitment and retention in North Dakota. One of those areas focuses on assisting communities in recruiting health care professionals. Because many of the communities we work with have needs for primary care providers, our program concentrates mainly on family practice, internal medicine, nurse practitioner, physician assistant, and various other specialties as they come up.

The first steps I take after receiving a phone call like Roger's is to get an overview of the opportunity. Next we talk about where the facility can promote and advertise their opportunity, and finally, I will inform health professionals training in our state and others of the new opportunity we're now assisting with.

The Center for Rural Health works with rural communities in many capacities to help support them and

their local health care needs. The Center has a longstanding reputation of strengthening local capacity in the health care arena and developing community-based health care alternatives for rural North Dakota. The Center serves as North Dakota's State Office of Rural Health that is dedicated to improving access to and enhancing the quality of health care for its rural citizens. Core functions of the state office include coordinating resources and activities, providing technical assistance, and strengthening the ability of rural communities to recruit and retain health care providers.


In this case, Roger, a CEO of a rural critical access hospital is connecting with the Center for technical assistance regarding recruitment of a new provider for their rural health clinic. In addition to being able to provide Roger with the services listed above, we also inform him about what state and federal loan repayment opportunities his facility is eligible to receive. We also help develop a recruitment team or committee within the hospital. A rural hospital or clinic administrator has a lot on their plate, add to it the full-time job of recruiting physicians and it can be overwhelming. A recruitment team within a hospital or clinic can help distribute the heavy load of physician recruitment. The National Rural Recruitment and Retention Network (3RNet) provides a manual on how to develop a recruitment and retention committee in a rural community, and the Center for Rural Health can assist in those initial meetings to develop the committees.

The Center also takes an active role in the direct recruitment of health care providers. In 2010, drawing on the best practices of other state offices of rural health around the nation, the Center integrated Practices Sites, a database for tracking providers, into its recruitment strategy, alongside (3RNet), which is a not-for-profit organization that helps health professionals find jobs in rural and underserved areas throughout the country. 3RNet has one organizational member in each state that helps coordinate the job posting and outreach activities in

their state. On its website, rural and underserved communities can post new vacancies for health professionals and health professionals can search the website for jobs in the states they're interested in. In addition to the job posting activities, when a new candidate registers on 3RNet, their contact information is sent to the organizational member to contact and connect with rural or underserved communities. During 2010, 5,418 job opportunities were posted nationwide on the 3RNet website, 23,597 applications were received from providers, and 1,256 professionals were placed across all positions by 3RNet Members. Ninety percent of the communities where providers were placed were in underserved areas.

In addition to utilizing 3RNet to generate leads, the Center staff also utilizes online job boards to advertise for open positions and attend local, regional, and national conferences for physician recruitment. Through these conferences, the Center is able to generate lists of providers seeking employment and stay in continued conversation with health care professionals who will be finishing up their training programs in years to come.

Resources like conferences and 3RNet are vital to helping support rural facilities and CEOs like Roger. Although not all situations are quite as complicated as Roger's, finding rural providers has its challenges. Through the support of the State Office of Rural Health and other resources, the Center for Rural Health will continue to help rural communities in North Dakota find the talented health professionals they need. It can be a challenge, but for folks like Roger who are looking to hire someone, the Center is happy to be able to provide support however we can.

If you would like assistance in recruiting a health care professional to your community, or if you are looking for opportunities to work in North Dakota, please contact Aaron Ortiz at the Center for Rural Health at 701-777-6788 or aaron.ortiz@med.und.edu. You can also see what opportunities are available by visiting the North Dakota page on the 3RNet website. 

FOCUS on Providers

is a listing of communities
in North Dakota with
current openings
for all specialties.
<http://bit.ly/jZvrBm>



Dis 'n' DAT



By Juan Pedraza

As any addiction counselor can tell you, there's a major downside to a host of chemicals like alcohol, cocaine, tobacco, and meth: some folks get hooked. Dr. Roxanne Vaughan is trying to figure out why. For starters, she says, it's all about the dopamine transporter or DAT.

The dopamine transporter is the traffic cop of our pleasure-reward system. DAT is a messenger that triggers certain neurons to release or reabsorb dopamine.

When it doesn't work, we get hooked on cocaine, chocolate, whatever. DAT's misbehavior may also trigger attention deficit hyperactivity disorder (ADHD), Parkinson's disease, depression, and schizophrenia, to name a few.

Vaughan, Chester Fritz Distinguished Professor in the Department of Biochemistry and Molecular Biology at the University of North Dakota School of Medicine and Health Sciences, is looking for answers.

She's already logged a couple of very important discoveries that'll someday help scientists design drugs to combat addiction and neurodegenerative diseases such as Parkinson's.

"We work on DAT and dopamine,"

said Vaughan, who spent several years at the National Institute on Drug Abuse (NIDA), a branch of the National Institutes of Health (NIH), a major research funding agency.

Dopamine—along with its chemical cousins serotonin and norepinephrine—is what makes us hanker for fun. Unfortunately, for some folks hankering becomes addiction. Dopamine also regulates movement and emotions.

"DAT's like a little vacuum cleaner: it takes dopamine back into the cell and gets rid of it," Vaughan said. "Some people with low dopamine levels, which is linked to Parkinson's, may be at greater risk for addiction. It's also the cocaine receptor."

"Cocaine makes you happy because of its action on DAT and its ability to increase dopamine," Vaughan said.

Getting to dopamine biochemistry

After completing her post-doc at Johns Hopkins in an unrelated area, Vaughan went to NIDA.

"I didn't know anything about drug abuse or DAT," she said. "But they were looking for a person with my biochemical skills, so I got the job. Ever

since, I've been working with DAT and addiction chemistry. I started on the ground floor (of research) with DAT."

At that time, DAT was known, but understood largely from an addiction standpoint.

"As a biochemist, I was interested in molecules," Vaughan said.

That biochemical approach took her to phosphorylation, a vital process in each and every one of our cells. Scientifically explained, phosphorylation adds a phosphate group to a protein or other organic molecule. Phosphate contains phosphorous, the stuff that fires up matches.

"Phosphorylation activates or deactivates many protein enzymes," Vaughan said. "Phosphorylation on DAT turned out to be a very fruitful line of research for us. We brought something new to the table in terms of understanding how the dopamine transporter works."

"When I first started working at

NIDA, I asked my advisor whether DAT was regulated, and he said 'no,' and that was the prevailing view 20 years ago," Vaughan said. "I just started doing some experiments with different activators, and I found that there were actually multiple kinase pathways that can regulate DAT activity."

That was an important scientific discovery—and it set Vaughan on the road to a long-term career in the science of neurotransmitters.

Of course, there are still some vital questions.

"Science knows that some people get hooked almost immediately when they try cocaine, for example, or they're more susceptible to ADHD or depression," Vaughan said. "Other people use drugs recreationally and don't get hooked—that's a mystery. If we knew why that happens, maybe we could more effectively help people overcome addiction."

Phosphorylation on DAT turned out to be a very fruitful line of research for us.

The proteomic connection

"Speaking of proteomics—I have a DAT project with Dr. Keith Henry, a faculty member in the UND SMHS Department of Physiology, Pharmacology, and Therapeutics, that is related to how cocaine and other dopamine inhibitors bind to the dopamine transporter," Vaughan said.

"This could be related to developing novel therapeutic reagents for DAT," she said. "My part of the project is to use biochemical approaches to crosslink cocaine molecules to DAT, because no one really understands how cocaine binds to DAT or how it inhibits activity."

Vaughan's lab team does all this crosslinking with cocaine analogs.

"Then Henry feeds Vaughan's data into his computer model so that we can determine exactly how the cocaine molecule fits into the dopamine transporter," Vaughan said. "In fact, those kinds of things could be developed for proteomic use. Dr. Henry really takes what we do biochemically to a completely new level."

Lipid connection

"We do a lipid thing, too," Vaughan said.

"I talked earlier about phosphorylation, a process in which enzymes take a phosphate molecule and put it on a protein then take it off," she said. "You can do that multiple times and regulate the activity of the protein."

"One of the really exciting things that we've found in

the past couple of years is that there's also a lipid molecule that's attached to DAT, that's called palmitoylation," Vaughan said, repeating her consistent use of "we" as a collaborative gesture to the other members on her team.

Vaughan's discovery of the palmitoylation of DAT surprised a lot of scientists. Vaughan and her colleagues published this groundbreaking discovery in *The Journal of Biological Chemistry* earlier this year.

"We have beautiful evidence for this, and we were the first to discover this for DAT and for this whole category of transport proteins," Vaughan said. "We have identified a modification on DAT that no one knew about before and think this could be a long-term signal for how much DAT is in people's brains."

The lipid that attaches to DAT is put on by enzymes. It's kind of like kinase, an enzyme that puts on phosphorylation.

"These could become points of therapeutic modulation—where a pharmacological compound, a drug, could be introduced to control, modify, or mitigate a particular malfunction," Vaughan said.

Vaughan and her research team at UND will continue to unravel more secrets of the dopamine transporter and its effect on the human brain and stimulants like cocaine.

"I look at the numbers, I see patterns, I visualize a lot," Vaughan said. "You get used to thinking about what the numbers mean."

Tinguely selected to national editorial board of CLIPP



Stephen J. Tinguely, MD, associate professor and chair of the Department of Pediatrics at the SMHS, has been selected to join the national editorial board for the Computer-assisted Learning in Pediatrics Program (CLIPP). A part of MedU, CLIPP is a collaborative online medical education community that delivers high-quality education programs to medical students.

Continuously updated by national editorial boards, MedU creates curricular flexibility and frees faculty to turn their attention to individual student learning needs. Additionally, MedU offers educators and students the rare ability to improve educational approaches by connecting them with one another at a national and international level. Virtual patient cases have been widely accepted by medical educators, with use in more than 140 medical schools around the world. More than 1,400,000 MedU virtual patient case sessions have been completed since 2004.

As an associate editor, Tinguely assumes editorial oversight of pediatric cases and acts as the primary pedagogical expert, ensuring that the cases conform to the guidelines set forth by Med-U. He will also participate on the board in setting the direction for ongoing work. Current priority areas include the teaching of clinical reasoning skills and development of student evaluation tools; other areas of significant discussion have included teaching groups outside of the core clerkship (e.g., acting interns) and faculty development resources.

Mike Dell and Sherilyn Smith, co-editors-in-chief with CLIPP, cited “Tinguely’s interest in faculty development” as a prime factor in his selection to the board. In addition, Tinguely and the eight-member editorial board ensure CLIPP cases remain aligned with the Council on Medical Student Education in Pediatrics curriculum and current advances in pediatric medicine. He will serve a renewable, two-year term.

Blehm is governor of ND American College of Physicians

Julie A. Blehm, MD, FACP, is the new governor of the North Dakota Chapter of the American College of Physicians. She is associate dean of the Southeast Campus in Fargo and associate professor of medicine at the University of North Dakota School of Medicine and Health Sciences. Blehm will serve as the ACP’s representative for the ND Chapter, where she is the liaison between physician members of the state chapter and the national leadership of the ACP.

The American College of Physicians is a national organization of internists—physicians who specialize in the prevention, detection, and treatment of

illnesses in adults. ACP is the largest medical-specialty organization and second-largest physician group in the United States.

Blehm received her Medical Doctorate from the University of North Dakota School of Medicine in 1981. She completed her internal medicine residency at Iowa Methodist Medical Center in Des Moines. Blehm is board certified in internal medicine and geriatric medicine.



Occupational Therapy: Living Life to Its Fullest

By Janet Jedlicka, PhD, OTR/L
and Breann Lamborn, MPA



Student Occupational Therapy students participated in the Walk to End Alzheimer's in Grand Forks

The 2010–2011 academic year has been a busy one for the Occupational Therapy Department. Our students, faculty, staff, and alumni have been active in promoting both UND and the profession of occupational therapy in a wide variety of venues and activities across the country.

In April 2011, Occupational Therapy faculty presented seven poster and workshop sessions at the American Occupational Therapy Association (AOTA) Annual Conference. LaVonne Fox, PhD; Debra Hanson, PhD; Janet Jedlicka, PhD; and Anne Haskins, PhD presented a session on “Learning to Work Effectively with Other Cultures.” Jedlicka also copresented the session titled “Changing Practice Settings: Becoming an OT/OTA Educator.” Deb Hanson, PhD, participated in the conference highlight forum for academic field coordinators, and also presented a poster session with Sonia Zimmerman, PhD, and Jan Stube, PhD, titled “Strategies to Facilitate Success for Occupational Therapy Online Education.” Gail Bass, PhD, presented, along with MOT students Allison Hendrickson, OT '10, and Kayla Korynta, OT '10, a session titled “Life Skills: An After-School Program for Children with Down Syndrome.” Finally, Haskins copresented with Matthew Cappetta, OT '10, and Roberta Carson, OT '10, a session titled “An Exploratory Study Examining Interprofessional Collaboration between Occupational Therapy and Physical Therapy Practitioners and Students.” “An International Service Learning Guide for Occupational Therapy Students and Clinicians” was presented by Emily Kringle, OT '10, Alicia Bohrer, OT '10, and Haskins.

Matthew Cappetta was selected to the Emerging Leaders Development Program for AOTA. This program promotes leadership within the profession by pairing new graduates with mentor practitioners. Cappetta was one of 15 applicants selected nationally for this honor. OT alumni Emily Kringle

(OT 2010) was elected national vice president of Pi Theta Epsilon (PTE) in April 2010 and will hold the office until April 2012. PTE is the honor society for occupational therapy students and alumni. It recognizes and encourages superior scholarship among students enrolled in professional entry-level programs at accredited educational programs across the United States.

Carla Wilhite, assistant professor of occupational therapy at the Casper, Wyo., site, was selected by the Wyoming Occupational Therapy Association (WyOTA) as state association president for a

two-year term beginning in the fall of 2011. Breann Lamborn, assistant professor of occupational therapy and professional coordinator of the Casper site, was selected for a Wyoming Community Advocate Award at the fall 2010 WyOTA State Conference. This award is given for dedication to the promotion of occupational therapy with an emphasis on the role of professional involvement. The Wyoming OT program currently has a 100% student membership in the state association.

In February, the OT Department hosted the “Make a Splash with Aquatic Therapy” conference, presented by speaker Jason Kjar, OTR/L MOT, BSOT '99, AT '96, tMOT '06. The conference was well attended with over 75 participants. In April, the Casper site hosted its annual conference, “A High Definition Look at Vision Rehabilitation and Kinesiotaping,” to approximately 50 regional clinicians. The kinesiotaping session was presented by Jeff McMenemy, OT '91), owner of Teton Therapy in Riverton, Wyo.

This year also has been very busy for the Student Occupational Therapy Association chapters in Grand Forks and Casper. The Casper SOTA ran a weekly assistive technology demonstration lab for community members in conjunction with the Wyoming Assistive Technology Resources from the University of Wyoming Institute for Disabilities. They also participated with Meals on Wheels delivery throughout the year, the Multiple Sclerosis Walkathon, and sent student members to the AOTA Student Conclave in November and the AOTA Annual Conference in April.

The Grand Forks SOTA saw over 90 members donate service or raise funds for organizations, including the Alzheimer's Association, Amyotrophic Lateral Sclerosis Association, and Northlands Rescue Mission. The association also supported student attendance for the AOTA Annual Conference in April.

Leaving Your Legacy

By Dave Miedema

The School of Medicine and Health Sciences has benefitted immensely over the years, thanks to thoughtful estate planning done by alumni and friends who chose to support our mission with a meaningful bequest in their will or trust. We hope that you, too, will consider this simple and tangible gift method to make a lasting impact at the SMHS, helping us and the entire University move from great to exceptional!

How? We recommend you first consult with your professional advisor to ensure your bequest intent will be properly structured within your will or trust. Your testamentary gift may involve a specific dollar amount, percentage of your estate, specific asset, or residue of your estate. Such a bequest may benefit an SMHS department or project of your choice, or a charitable income arrangement for the benefit of surviving loved ones. Here is an example of a specific dollar-amount bequest:


"I give, devise and bequeath to the University of North Dakota Foundation, 3100 University Avenue, Stop 8157, Grand Forks, North Dakota 58202-8157, a nonprofit charitable corporation under the laws of the State of North Dakota (TIN 45-0348296) the sum of \$___ to benefit the School of Medicine and Health Sciences by ... (e. g., establishing a named endowment, benefitting a specific department or project within the SMHS, adding to the Medical School Dean's Scholarship Endowment, or funding a charitable income arrangement).

For additional information on how to best structure your bequest gift to benefit the School of Medicine and Health Sciences, please contact:



Dave Miedema, Director of Development
School of Medicine and Health Sciences
UND Foundation
davem@undfoundation.org
(701) 777-4933
(800) 543-8764

Another bequest option that is generally advisable, and oftentimes very tax efficient, is to contribute to the UND Foundation assets that will pass *outside* of your will or trust, and which require a specific beneficiary designation. For example, the value of an IRA account is included as part of your estate. If given to children after your death, an IRA faces potentially hefty taxes and the children will likely receive a much smaller net amount. But, if contributed by beneficiary designation to the UND Foundation for the benefit of the SMHS, the *full value* of the IRA will pass tax-free to fund programs or projects of your choice.

Always feel welcome to contact us for additional general bequest information, for other recommended bequest language or to discuss how you would want your gift to specifically benefit the SMHS. We also encourage you to notify us of estate plans you may have already made to benefit the SMHS, both to document your intent and to ensure that your bequest will be used as you have indicated. 

UNIVERSITY OF NORTH DAKOTA
FOUNDATION

Charitable BEQUEST

What is a bequest?

A bequest is a gift made by including language in your will or trust. You can specify a gift to be made to family, friends or charities. A bequest is perhaps the easiest and most tangible way to make a lasting impact at the University of North Dakota and other charities you support. It may be an effective way to make a gift and at the same time lessen the burden of taxes on your family and estate.

How do I make a bequest?

With the help of an advisor, you can make multiple bequests to various individuals and/or organizations. You can specify a bequest in a few ways:

- Gift of a specific dollar amount or percentage of your estate.
- Gift of a specific asset (e.g. real estate).
- Gift of the residue of your estate.

What are the best assets to give through a bequest?

The best assets for giving will depend on your individual situation. Some donors prefer to give through a



For her outstanding support of students during their first two years of medical education, Judy Heit was honored with the Portrait Award at the Medical Student Sophomore Awards; Ali Bastian presented the award to Judy.



The SMHS was a sponsor of the 61st Annual ND State Science and Engineering Fair held on April 7–8 at UND, where over 160 competitors vied for a chance to compete at the international fair in Los Angeles. For more information, please visit <http://ndssef.com/>

Science Day 2011 at the SMHS in Grand Forks was a huge success thanks to the members of the School's American Medical Student Association chapter, who conducted the event for 148 active, eager-to-learn fifth- and sixth-grade students from around the region.

AMSA students pictured are Nicholas Adams, Benjamin Axtmen, Mandie Baker, Allison Bastian, Brittany Berg, Bethany Beyer Gourneau, Ryan Bogner, Christine Brentrup, Nathan Carpenter, Benjamin Ehrichs, Scott Erpelding, Heather Hagen, Christina Harmon, Richard Herold, Elizabeth Hoff, Shannon Holsen, Eric Jacobson, Ashok Jethwa, Krishan Jethwa, Laura Johnson, Michael Jundt, Virginia Keavney, Laura Knutson, Natalie Lichter, William Longhurst, Erin Maetzold, Tara Mertz, Tara Nelson, Shannon Nord, Kate Peterson, Rachel Peterson, Stephanie Porter, Kristina Rauser, Andrew Rodenberg, Justin Rosenau, Jerdan Ruff, Heather Sandness, Michael Schwalbe, Paul Selid, Amit Sharma, Amanda Skiftun, Caleb Skipper, Brittany Snustad, Emily Stromquist, Matt Uriell, Jeff Wiisanen, Craig Wolf, and Zane Young.

Not pictured: Joel Beachey, Kevin Bradley, Kourtney Dropps, Jenny Gero, Shannon Hagan, Jim Hegvitz, Lindsey Henderson, Brooke Johnson, Ty Larson, Laura Luick, Jared Marquardt, Tarik Nurkic, Kirsten Schneider, Katie Schouweiler, and Sommer Wild.



Senior Associate Dean Gwen W. Halaas watched Stig Slørdahl, dean of the Faculty of Medicine at the Norwegian University of Science and Technology, Trondheim, Norway; and Arnfinn Sundsfjord, dean of the Faculty of Health Sciences at the University of Tromsø, Norway; as they signed memorandums of understanding between their universities and the SMHS to cooperate in academic research and exchange programs.





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\$5,000	Updated AV computer equipment in the health sciences departments
\$10,000	Slide stainer for Clinical Lab Science students
\$25,000	An endowment that awards \$1,000 student scholarships annually

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