

NORTH DAKOTA MEDICINE

THE UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Westward Homemaking

“Friendly Fire”

**Seven Generations Center
of Excellence**

Bariatric Surgery and AUD

**UND Selected As One of Seven
National Rural Health
Research Centers**

Robin Tracy





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Core Values for Change



One of the essential adaptations that institutions, especially educational ones like the School of Medicine and Health Sciences, have to implement if they wish to remain relevant is to change with the times while remaining true to their core values and mission. The School, I believe, is an excellent example of an organization that is adapting well to a changing environment while remaining true to its core mission of producing superb health care providers for North Dakota and the region, especially primary care providers who practice in rural areas. In fact, as the School grows and evolves, it is doing an even better job of fulfilling its mission and demonstrating its core values. Take for example one area that has attracted considerable discussion and debate in the past—the retention of trainees educated by and through the School for practice in North Dakota. While the School can and will do even better in this regard in the

future, the most recent data from our graduating residency cohort this past June show how well we are doing—we had an all-time high of over 70 percent of the residency graduates choosing to remain within the state to practice (excluding those in the transitional residency program that is designed for those students planning a specialty track like radiology that is not offered in North Dakota). One of the graduates has moved to Williston to practice general surgery, and four other graduates are settling in Hettinger (see our lead story “Westward Homemaking”).

So while our goals and mission haven't changed, there are many new and exciting developments at the School that deserve some attention. Perhaps most innovative is the Master of Public Health program that we've instituted in conjunction with North Dakota State University. This program—a first in the region and maybe in the United States—brings together the best of the two research universities in the state to offer an optimal educational program to students, and does so at reduced cost. The inaugural class started this semester, with an expected graduation date in two years.

We also welcomed our largest medical school class ever this semester, thanks to the Legislature's approval and funding of eight more seats for the Class of 2016. Along with increased retention of graduates, expansion of class size will be critical as North Dakota implements its plan for health care workforce development to meet the current and especially future shortage of providers that will result from the aging of the baby boomers—to say nothing of the unexpected population growth that is anticipated related to the oil boom. We plan to go back to the Legislature this winter to request full implementation and funding of the Health Care Workforce Initiative (HWI), which has been endorsed by UND and the State Board of Higher Education. The HWI calls for additional growth in medical and health sciences student class sizes, and an

increase in state-funded residencies. Currently, North Dakota has approved nine residency slots per year; all of the added residency slots are focused on rural care, especially primary care.

The research enterprise of the School is growing as well. Grants and contracts—usually emanating from federal coffers—account for a quarter of the School's roughly \$80 million-plus annual budget. In the first quarter alone of the 2012–2013 academic year, the School's faculty and staff garnered nearly \$20 million in new grants! To be sure, many of these grants will be spread over a number of years, but this degree of grant funding is remarkable in an extremely competitive national environment, where a grant usually has to score in the top 5–10 percent of all grants to achieve funding. And many of our funded projects have particular relevance to North Dakota and its citizens; from neurodegenerative diseases like Alzheimer's to studying elder abuse in Native communities, the projects typically study diseases and problems that have particular relevance locally.

So on multiple fronts, the School is moving forward as it adapts and innovates in a changing world, while at the same time remaining true to its heritage, culture, goals, and mission. I am extremely proud of the faculty members, staff, and students of the School of Medicine and Health Sciences who make all of this possible.



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

“The School, I believe, is an excellent example of an **organization that is adapting well to a changing environment** while remaining true to its core mission...”

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

Nine senior medical students from the Medical Doctor Class of 2013 at the School of Medicine and Health Sciences were inducted into the Gold Humanism Honor Society in June. Keynote speaker at the ceremony was John Hagan, MD, vice chair, clerkship director, and clinical associate professor for the Department of Internal Medicine on the Southwest (Bismarck, N.Dak.) campus. Hagan is staff physician for North Dakota's Department of Corrections and Rehabilitation. He provided an enlightening talk titled "What I Learned in Jail!"

In 2009, the UND chapter joined 72 other medical school chapters across the country in recognizing senior medical students who demonstrate exemplary humanism and professionalism throughout their medical education. Creation of the chapter was made possible by a grant from the Arnold P. Gold Foundation.

The Class of 2013 inductees were selected through a process that included peer nomination and subsequent confirmation by the school's Gold Humanism Honor Society Oversight Committee. Each student's clinical performance and record of community service was considered.



Honorees from the Class of 2013, and their hometowns, are (Back row from left): Eric Andrew Schommer, Munich, N.Dak.; Richard Joshua Herold, Merrifield, Minn.; Kristen Kay Fiest, Mandan, N.Dak.; Sarah Joy Chalmers, East Grand Forks, Minn.; Emma Marie Bjore, Valley, City, N.Dak.; and Allison Brooke Bastian, Highland Village, Texas. (Front row): Adrienne Rose Racek, Fargo, N.Dak.; Chelsea Renae Traverse, Munich, N.Dak.; and Marissa Leigh Brown, Scranton, N.Dak.

Gray recognized by Native Research Network

Jacque Gray, PhD, research associate professor in the Center for Rural Health at the School of Medicine and Health Sciences, received the Excellence in Training Award from the Native Research Network. In bestowing the award at its 2012 National Conference, the NRN cited Gray's demonstrated excellence in developing programs to recruit, retain, and train Native American investigators to engage in Native health research. Gray joins an august group of Native American researchers who have received the award.

The NRN was established in 1997 to provide an informal, proactive network of American Indian, Alaska Native, Native Hawaiian, and Canadian Aboriginal persons who promote and advocate for high quality research that is collaborative, supportive, builds capacity, and promotes an environment for research that operates on the principles of integrity, respect, trust, ethics, cooperation, and open communication in multidisciplinary fields.

"As the visionary founder and current leader of the Native Health Research Team, Dr. Gray was relentless in bringing her

vision to fruition after 30 years of working with tribes throughout Indian Country," said Wendy Peters, PhD, in her nominating letter. Peters is a clinical assistant professor at the UND SMHS and a member of the Native Health Research Team.

Gray mentors over 20 Native students in their research in Indian Country by leading the Native Health Research Team at the Center for Rural Health. Their work has garnered research awards from the American Psychological Association. For the past five years, the North Dakota IDEA (Institutional Development Award) Network of Biomedical Research Excellence (INBRE) program has supported the Native Health Research Team and the mentoring Gray has done with students. ND INBRE is supported through the National Institute of General Medical Sciences at the National Institutes of Health.

Gray is nationally recognized for her work in investigating mood disorders, preventing suicide, and promoting ethical research among Native American populations. She is of Choctaw and Cherokee descent.

UND School of Medicine and Health Sciences awarded \$1.65 million grant to serve as state's cancer sentinel

The University of North Dakota School of Medicine and Health Sciences, in collaboration with the North Dakota Department of Health, was awarded a five-year, \$1.65 million grant from the Centers for Disease Control and Prevention (CDC) to operate the North Dakota Statewide Cancer Registry. UND experts in the Department of Pathology and the Center for Rural Health (CRH) will supervise the registry, which will serve to provide a cancer early warning system for the state.

In the 1990s, realizing the need to better track cancers and chronic diseases, the Centers for Disease Control and Prevention set up a system where all states report cancer statistics—the type, stage, and treatment—to the CDC to be used for public health studies, research, and to establish evidence for the effectiveness of treatments; for example, does PSA screening help reduce prostate cancer deaths? To aid participation in the CDC system, the North Dakota Legislature requires all hospitals, laboratories, physicians, and other health care providers to report all newly diagnosed or treated cancer patients to the North Dakota Statewide Cancer Registry. Information in the registry is highly secured, and patients are never identified.

The purpose of the North Dakota registry, established in 1997, is to monitor cancer trends, promote research, increase survival, guide policy planning, and respond to cancer concerns from patients or the public. But the wealth of data compiled in the registry would lie useless until analyzed and translated into usable information for health care facilities, patients, and the public. In February of this year, the Department of Health reached out to the School and asked if it could form a collaboration to run the registry. The health department knew the School's Department of Pathology already maintained an invaluable tissue bank used in researching environmental influences on specific cancers and that the school's CRH had strong ties with North Dakota's hospitals as well as expertise in analyzing cancer statistics.

"UND will collect and organize the data so it can be used for public health monitoring as well as research studies," said Mary Ann Sens, MD, PhD, professor and chair of the Department of Pathology, who will serve as the program director. "Additional goals of the registry are to establish that cancer treatment in North Dakota is equitable, prompt and meets national standards."

Operating the program are Lucy Zheng, MD, and Xudong Zhou, MD, both from the Department of Pathology; and Kyle Muus, PhD, from the Center for Rural Health. They will specifically investigate cancer clusters, which are the incidences of specific cancers within a group of people, a geographic area or a period in numbers much greater than expected by chance alone.

NIH awards \$5.1 million to UND to continue biomedical research excellence

The National Institutes of Health awarded \$5.1 million to the Center of Biomedical Research Excellence (COBRE) at the School of Medicine and Health Sciences. This five-year grant marks the second time this grant was renewed on its first attempt and brings to 15 the total number of years NIH will have supported UND's world-class neuroscientists through this funding mechanism. The NIH is the nation's medical research center and is the largest source of funding for medical research in the world.

In 2002, the UND COBRE for Neurodegenerative Disorder Research was originally funded for \$10.4 million, and in 2007, UND's COBRE funding was renewed for an additional five years at \$10.1 million.

"By 2017, through this center grant alone, NIH grants will have provided investigators at UND with over \$25 million to continue their very important work," said Jonathan D. Geiger, PhD, principal investigator of the COBRE. Geiger is Chester Fritz Distinguished Professor and chair of the Department of Pharmacology, Physiology, and Therapeutics; and interim chair of the Department of Anatomy and Cell Biology at the School of Medicine and Health Sciences.

UND's researchers use powerful tools to probe deep into the microscopic and submicroscopic realm to answer questions about neurodegenerative diseases that loom large in health care, diseases such as Alzheimer's and Parkinson's disease, neurological complications associated with HIV-1 infection, multiple sclerosis, and seizure disorders. Causes of these diseases are complex, so the COBRE's cadre of investigators are drawn from all the medical research disciplines at the SMHS. Translating their discoveries into treatments—"from lab bench to bedside"—is a crucial part of their work.

During the first five years of the COBRE grant (COBRE-I), new faculty members were hired, scientific investigations were supported, and major pieces of equipment were purchased. During the second five years of the COBRE grant (COBRE-II), additional faculty members were hired, new scientific investigations were supported, and the group was expanded. And, with supplemental support from the dean of the School of Medicine and Health Sciences, UND's vice president for Research and Economic Development, and various academic departments at the School of Medicine and Health Sciences, additional state-of-the-art equipment was purchased for the two highly successful core facilities initiated through this center grant:

- The Mass Spectrometry Center and
- The Edward C. Carlson Imaging and Image Analysis Core Facility

Read more at <http://bit.ly/OEOwhB>.

UND summer undergraduate students present biomedical research

The School of Medicine and Health Sciences held the 2012 Summer Undergraduate Biology Research poster session on Thursday, August 9, in the Vennes Atrium of the School. For 10 weeks this past summer, students from UND, as well as rural and tribal colleges, conducted research and participated in a number of related educational opportunities. Students participated shoulder-to-shoulder with their mentor scientists from the Departments of Anatomy and Cell Biology; Biochemistry and Molecular Biology; Biology; Microbiology and Immunology; Pathology; Pharmacology, Physiology, and Therapeutics; and the Center for Rural Health.

Funding for the students came from a variety of organizations, including the National Institutes of Health and the National Science Foundation, and the Office of the Dean at the UND School of Medicine and Health Sciences.

The students conducted biomedical research with scientists whose work has implications in treating Alzheimer's disease, autism, breast cancer, depression, diabetes, drug addiction, environmental cancer risks, epilepsy, heart disease, Parkinson's disease, schizophrenia, and skin cancer. One of the goals of the summer research program is to provide students with the opportunity to work side-by-side with an established research scientist. An additional goal is to recruit students from rural and tribal colleges for future participation in UND undergraduate and graduate programs. The summer research program is designed ultimately to bolster the workforce pipeline of biomedical research scientists and health care professionals.

Students receive specific laboratory training. In weekly professional development sessions, the undergraduates learn how to responsibly conduct research, what is required in



Summer Undergraduate Biology Research poster session

graduate and medical school application processes, and scientific writing. At the end of the summer, the students present their work at the research poster session.

In addition to the University of North Dakota, this year's participants were from Turtle Mountain Community College, N.Dak.; Arizona Western Community College; Boise State University, Idaho; St. Olaf College, Minn.; University of Minnesota-Twin Cities; St. John's University, Minn.; Carleton College, Minn.; Montana Tech at the University of Montana; University of Great Falls, Mont.; Grove City College, Pa.; Pacific Lutheran University, Wash.; Spokane Falls Community College, Wash.; and the University of Wisconsin-La Crosse.

NIA pegs UND researchers to pursue possible HIV-Alzheimer's connection

The National Institute on Aging seeks to spur the research of two scientists at the University of North Dakota School of Medicine and Health Sciences. Xuesong Chen, PhD, and Jonathan D. Geiger, PhD, colleagues in the Department of Pharmacology, Physiology and Therapeutics, piqued the interest of NIA officials, who awarded the duo a \$350,000, R21 grant.

The NIA, one of the 27 institutes that compose the National Institutes of Health, supports research on the nature of aging and supports the health and well-being of older adults. One of the means at the NIA's disposal to meet its ends are R21 grants it provides to investigators to pursue what the NIA deems "exploratory and developmental research projects" that carry considerable risk of failure but may also lead to breakthroughs into the causes of diseases and their treatment.

Human immunodeficiency virus (HIV-1) is the most common type of the virus discovered in 1984 that causes the majority of HIV infections worldwide. HIV destroys specialized blood cells that help the body fend off diseases. Acquired immunodeficiency syndrome or AIDS is the end stage of the HIV infection to which people with HIV progressed to rapidly

before the discovery and development in the 1990s of powerful combinations of medications that were found to slow the progress of the disease.

"The good news is that we have very effective combined antiretroviral therapeutic drugs, and people living with HIV-1/AIDS are living much longer," Geiger said.

He is a Chester Fritz Distinguished Professor and chair of the Department of Pharmacology, Physiology and Therapeutics; and interim chair of the Department of Anatomy and Cell Biology at the School of Medicine and Health Sciences.

"The bad news is that these drugs may be causing people living with HIV-1/AIDS to age faster, which leads to a very high prevalence rate among these individuals of HIV-1 associated neurocognitive disorder (HAND), and they appear to have an increased incidence of Alzheimer's disease-like pathology," he said.

Chen and Geiger will explore what they believe are the common underlying mechanisms in the pathogenesis of HAND and Alzheimer's disease, which they anticipate may provide novel insights into possible treatments for this neurological disorder.

HRSA boosts UND Physician Assistant Program's service to underserved North Dakota

The Health Resources and Services Administration awarded almost \$1 million to the Physician Assistant Program in the Department of Family and Community Medicine at the School of Medicine and Health Sciences. The purpose of the five-year, \$999,416 grant is to fund curriculum development, learning enhancement, and faculty development in training physician assistants who provide primary care for rural communities in North Dakota.

"We are delighted to be awarded a grant project that so closely aligns with the PA Program's mission and goals," said Jeanie McHugo, PhD, PA-C, program director for the Physician Assistant Program. "The UND PA Program seeks to improve North Dakotans' access to health care by helping to alleviate shortages of primary care providers in rural areas."

The federal government has designated 94 percent of North

Dakota counties as either health professional shortage areas or medically underserved areas, indicating that patients must travel significant distances to reach health care services in rural areas and this reduces their access to care.

The PA Program's goals for the grant are to help UND PA faculty develop curriculum that will enrich and expand the knowledge and skills of their graduates to deliver high quality primary care in rural and underserved areas of the state. In turn, the grant will fund professional development of current and new faculty to enhance their ability to educate highly skilled PAs to deliver first-level care to underserved North Dakotans.

Through distance-learning technology, PA faculty will work with students in their physician partners' clinics across North Dakota to improve quality, access, and availability of care for patients. Read more at <http://bit.ly/QHmhkc>.

UND awarded \$4.98 million for SIM-ND

The Leona M. and Harry B. Helmsley Charitable Trust awarded the ND STAR (North Dakota Simulation, Teaching and Research) Center for Healthcare Education at the School of Medicine and Health Sciences a \$4.98 million grant to bring mobile simulation education to rural North Dakota. The new program, called SIM-ND (Simulation in Motion-North Dakota), will provide education and training in medical-trauma events to help providers in the state deliver high-quality health care in the safest way possible.

"Our investment in the simulation program in North Dakota, we feel, will change lives," said Walter Panzirer, trustee of the Leona M. and Harry B. Helmsley Charitable Trust. He cited the great distances rural volunteer emergency personnel have to travel to receive their training. Because of this, volunteers are forced to choose between work, the farm, or family life in order to get the training necessary to maintain their skills, and you start to see a decline in the number of volunteers, which hampers the EMS system.

"With this program, we hope it will encourage more people to stay in emergency medical service and more people to go into EMS," he said. Another benefit would be the uniformity of the training. "If everyone is taught the same thing, the outcomes will be better." The Helmsley Charitable Trust invested in a similar system in South Dakota. "We have had inquiries from other countries that are interested in what we are doing in America's heartland. It is interesting to see that we have the world's attention in what we are doing in South Dakota and now in North Dakota."

Four large trucks with custom-made classrooms will be stationed in Grand Forks, Fargo, Bismarck, and Minot. A three-person crew from each of the state's six major hospital systems (Altru Health System, Essentia Health, Sanford Health in Fargo and Bismarck, St. Alexius Medical Center and Trinity Health) will be teaching in each mobile simulation unit. ND STAR will train the educators, manage the operation of all four mobile



Terry Dwelle, Walter Panzirer, Jon Allen, and UND President Robert Kelley

simulation units, schedule all programming for the units, and provide ongoing monitoring, evaluation and development. The North Dakota Department of Health will provide oversight of the entire project.

"Emergency health-care personnel are a critical part of our health-care system," said State Health Officer Terry Dwelle, MD. "And it's important they receive the training and experience needed to maintain and enhance their skills."

During the first year, the grant will cover 100 percent of the costs of the trucks, simulators, equipment and a major portion of salaries. During the subsequent two years, the grant will cover a portion of the ongoing expenses with the six major hospital systems in the state each contributing to cover the remainder.

"This program is so exciting because it will take training using cutting-edge technology right into our communities, particularly in western North Dakota, where rapid growth from the oil boom has affected the population," Dwelle said. "The Helmsley Charitable Trust focuses on rural areas like North Dakota. Helmsley's investment in SIM-ND will allow us to take training right to the health care workers in the state who need it."

Read more at <http://bit.ly/Rez2BX>.

UND scientists receive \$1.4 million from NIH to study obesity–Alzheimer’s link

Obesity, particularly in midlife, is an increased risk factor for developing Alzheimer’s disease. Although the exact cause is unknown, two UND scientists’ effort to identify the underlying mechanisms involved has been awarded \$1.4 million from the National Institutes of Health. Colin K. Combs, Ph.D., associate professor, and Mikhail Y. Golovko, Ph.D., assistant professor, in the Department of Pharmacology, Physiology and Therapeutics at the University of North Dakota School of Medicine and Health Sciences, will try to determine whether the relationship between Alzheimer’s disease and obesity is not simply correlated but instead a shared pathophysiology.

“Alzheimer’s disease is estimated to affect over 5 million Americans,” Combs said. “Obesity, which is at an epidemic level, also represents a tremendous health concern in the United States. So any strategy to ameliorate either or both conditions is extremely attractive therapeutically.”

Combs and Golovko’s targets of interest are molecules of APP (amyloid precursor protein), proteins that are responsible for the flow of materials into and out of not only adipose (fat)

cells but brain cells as well. APP is a freight-handling molecule that serves to transport substances through the cell membrane. Combs and Golovko have been able to demonstrate that a high-fat diet in mice stimulates an increase in APP, and higher levels of APP in the brain correlate with increased evidence of cell damage and inflammation, both of which are consistent to some degree with what is observed during Alzheimer’s disease.

“In this study, we will use a variety of genetically modified mice models to specifically determine how APP regulates not only the changes that occur in the brain but also in adipose tissue and the immune system during obesity and Alzheimer’s disease,” Combs said. “With this broad approach we hope to identify a common target for intervening in both disease processes.”

Combs and Golovko’s grant brings to \$6.85 million that the NIH has awarded to biomedical researchers in UND’s School of Medicine and Health Sciences Department of Pharmacology, Physiology and Therapeutics this past summer.

Read more at <http://bit.ly/SmLgY8>.

Doctor of Medicine Class of 2016 begins studies at the UND School of Medicine and Health Sciences

Seventy first-year medical students, members of the Doctor of Medicine Class of 2016, began their journey in August to become physicians at the University of North Dakota School of Medicine and Health Sciences.

The students, 43 men and 27 women, range in age from 20 to 37 years, with the average age of 23. Eighty percent of the students are from North Dakota.

They came to medical school with work experience in an array of fields and academic degrees in agricultural systems management, athletic training, biology, cell biology, chemistry, computer science, economics, English, exercise science, general studies, health policy, physiology, interdisciplinary science, microbiology, music, nursing, psychology, respiratory therapy, theology, and zoology. Some of the students already hold advanced degrees, including master’s degrees in computer science, international

infectious disease management, medical sciences, nutritional and reproductive physiology, physiology and biophysics, and post-professional athletic training.

“This is an exciting time for the students and their families, as well as for the faculty and staff of the medical school,” said Joycelyn Dorscher, MD, associate dean for Student Affairs and Admissions. She delivered the keynote address for the ceremony titled “What I Know (I Think).”

“This day provides the opportunity to welcome these young people who are just beginning on the road to becoming well-trained and respected medical colleagues,” she said.

Medical students’ first week is dedicated to orientation, including introduction to UND’s nationally recognized, four-year, patient-centered curriculum, where basic and clinical sciences are taught in the context of patient cases. Special emphasis is placed on the students’ new roles and expectations of them as health care professionals.

Orientation concluded with the White Coat Ceremony on August 10, in the Memorial Union Ballroom on the UND campus. Students received their first white coats, physicians’ traditional garment, which were donated by the North Dakota Medical Association, and they recited the Oath of Hippocrates. Each student received a lapel pin engraved with “Humanism in Medicine,” which was donated by the Arnold P. Gold Foundation. “The White Coat Ceremony really cements the core values of service and professionalism for students,” Dorscher said.

Read more at <http://bit.ly/RfmSnQ>.



Joycelyn Dorscher

SMHS announces new Northeast Campus Dean



Susan Zelewski, M.D., has been named assistant dean for the Northeast (Grand Forks) Campus at the University of North Dakota School of Medicine and Health Sciences. Zelewski is the chair of the Department of Pediatrics for Altru Health System and campus coordinator of the pediatrics clerkship for the UND School of Medicine and Health Sciences, where she garnered

Pediatric Teacher of the Year for the Northeast Campus in 2006 and 2011.

Zelewski will succeed Dr. Jon Allen, who has been Northeast Campus dean since 2004. Allen is leaving this position to devote more time to his growing responsibilities in simulation in health professions education. He heads the ND STAR (North Dakota Simulation, Teaching and Research) Center for Healthcare Education medical simulation training facility in Grand Forks.

“Dr. Zelewski is highly regarded by the medical students on the Northeast (Grand Forks) campus. Her student evaluations have been stellar, and I am confident that she will do an outstanding job” said Joshua Wynne, M.D., M.B.A., M.P.H., UND vice president for health affairs and dean of the UND School of Medicine and Health Sciences.

Zelewski, a native of Austin, Texas, earned her Doctor of

Medicine from Baylor College of Medicine in 2001 and completed a pediatrics residency at the Baylor College of Medicine Affiliated Hospitals in 2004.

She joined the staff of Altru Health System in August of 2004 and was chosen as department chair in 2010. Altru Health System honored her with its Organizational Excellence Award. She is board-certified by the American Board of Pediatrics, and she is a Fellow of the American Academy of Pediatrics and participates in the academy’s research projects.

As a leader or co-leader for Calvary Lutheran Church’s Mission Honduras since 2007, she has planned, organized, and raised funds for projects to help the village of El Triunfo, Honduras, including funding a year-round lunch program that feeds 100 to 150 children a day. On a visit in El Triunfo, she provided medical care, helped construct a Bible school, and taught first aid and nutrition classes. She volunteers at St. Joseph’s Social Care and Thrift Store. And since 2006, she has served as camp physician for Altru Hospice’s Camp Good Mourning, which is for children who have lost any family member. She is also a member of the camp’s board of directors.

Zelewski is involved in a number of children’s health initiatives. Since 2005, she has coordinated the Reach Out and Read Program for Altru’s pediatrics department and has been a member of the Grand Forks Head Start Health Advisory Committee. She is the pediatrician for the Pediatric Developmental Assessment Clinic in Belcourt, N.Dak., and the pediatric representative for Safe Kids Grand Forks. From 2004 to 2012, she was one of the physicians for the Manvel Migrant School.

New home for Southwest Campus and Bismarck Center for Family Medicine

The University of North Dakota Center for Family Medicine in Bismarck is a \$5.4 million state-funded project. The 61,880-square-foot, four-story structure is home to the School of Medicine and Health Sciences’ Southwest campus, including the family medicine residency program, and the administrative offices for Sanford Bismarck Medical Center and St. Alexius Medical Center. Construction began in November 2010. The new building provides office and clinic space for approximately 50 faculty and staff, including 16 resident-physicians. The facility features 20 exam rooms, four procedure rooms, X-ray and laboratory suites, a pharmacy, and business and administrative offices. The new location offers improved parking and easier access for clinic patients. Open to the public, the Center will serve as a clinic where resident physicians are educated and trained under the supervision of experienced, board-certified family doctors and staff in a three-year residency program. Upon successful completion of the program, graduates are eligible for board certification in family medicine. Residency training in family medicine has been provided in Bismarck by the SMHS for 34 years. More than 154 doctors have graduated from the Center for Family



The newly opened Center for Family Medicine in Bismarck

Medicine in Bismarck; 83 are practicing in North Dakota. The School also offers family medicine training in Minot.

Westward Homemaking

The School's graduates go west to provide primary care in North Dakota

By Juan Miguel Pedraza

“The hiring of four recent UND grads at a rural health facility in western North Dakota is a key practical step...”

Meet Rebecca Ranum, blonde, brown eyes, key citizen of Hettinger.

This rural western North Dakota town of about 1,300 counts Rebecca and her peers among its VIPs.

Rebecca is 24 months old; within 36 months she'll be attending school.

She heralds a renaissance that makes folks like Jim Long, CEO of the local hospital, ecstatic about the region's future. Chalk it all up to a focused workforce development effort among many partners in the state, including the University of North Dakota School of Medicine and Health Sciences.

Rebecca's parents, Joshua and Carrie, are both physicians who were hired—along with two other recent UND SMHS graduates—by West River Health Services.

WRHS operates a hospital and clinic in Hettinger and several satellite clinics visited regularly by some of its 12 staff doctors and other professionals, such as nurse practitioners and physician assistants.

The Ranums, employed under an ambitious medical workforce development program, are a new breed of rural docs who came to town because they loved it at first sight—or, in Josh's case—a good long second viewing.

With all the talk about health workforce shortages, it's great to witness firsthand what's going on in this rural western North Dakota community. Some of that positive workforce energy can be traced back to the SMHS.

“What we did through the SMHS Advisory Council was look at workforce for North Dakota in a more systematic and analytical way,” said Joshua Wynne, MD, MBA, MPH, UND vice president for Health Affairs and dean of the SMHS.

“Back in 2011, the School's Advisory Council did its *First Biennial Report* on the health of North Dakotans and health care delivery in the state. We also looked at the

demographic changes that are occurring here; then we developed a plan for the future.”

This report was a comprehensive look at health care needs and related workforce needs for North Dakota.

“It concluded that we have had several workforce issues: a lack of primary care providers in rural areas and a maldistribution of providers, toward urban and from rural areas,” said Wynne, a practicing cardiologist.

“There's nothing really new there—we've known about this for some time,” Wynne said. “The big change is the aging of the population—North Dakota has one of the relatively older populations in the country. Age is a wonderful surrogate for the country's health care needs—it costs roughly 10 times as much to care for a senior than for a one-year-old. As the population ages, therefore, especially in places like North Dakota, we're going to need more providers.”

Getting those providers means strategizing about where to start the conversation. SMHS-based Center for Rural Health Director Gary Hart, a medical geographer, says it starts with young people.

“We have a whole series of programs for K–12 and undergraduate students where we give them rural experiences, and that's unique to schools like ours,” said Hart, who spent 20 years as director of the Center for Rural Health at the University of Washington.

“The overall trend in medicine is toward specialization, but at UND we're stars at encouraging and producing family physicians,” Hart said. “Of the 125 or so medical schools in this country, a very small percentage do much with family medicine; 50 of those schools have produced fewer than five family docs, total, in the last decade. Here we have a network of state offices and agencies and a medical

school with a mandate to help prepare the rural workforce.”

The hiring of four recent UND grads at a rural health facility in western North Dakota is a key practical step in that direction. It’s part of the long-term plan produced by the SMHS Advisory Council last year.

Three key strategies

Wynne points out three key strategies for future health care planning that involves workforce development:

1. Reduce disease burden.

“The fewer people who are ill, the less health care that is needed. Our new Master of Public Health (MPH) degree—which we are jointly doing with North Dakota State University—welcomed its first class this fall. The mission of public health is to look at population, not individual, health. And we need to better address that, especially behavioral health aspects, such as smoking and obesity. That’s part of our approach to reducing the disease burden.”

2. Retain more of our graduates, particularly primary care providers.

“The predictors say that the primary care providers who practice here and stay in the state come from rural areas; people from rural areas are more likely to go back. A second important part of that is exposure to primary care; we have three dozen pipeline activities to get people from rural areas interested in primary care, and these activities are from K–12 through college, medical school, and residency.”

Removing barriers to rural practice is a key strategy.

“We want to remove barriers,” Wynne said. “Debt is a potential barrier. The average medical school graduate has \$163,000 in debt; a married couple who are both physicians thus potentially has debt that’s north of \$300,000. Because primary care specialties are less well compensated, debt is definitely a barrier. So the State of North Dakota, through appropriated dollars, will assume all tuition expenses for all four years of medical school at UND if a student agrees to practice family medicine in a rural area. There are eight annual slots at the SMHS in that program; they get filled quickly.”



Josh, Rebecca and Carrie Ranum with Jim Long

3. Train more students.

“We’re clearly going to need more providers,” Wynne said. “The State has supported the Healthcare Workforce Initiative. It focuses on ensuring an adequate supply of physicians, nurses, and other medical personnel to serve our region over the long term.”

Additionally, Wynne noted, the Legislature approved eight additional spots in the medical student class and 15 additional health sciences students (such as occupational therapy), and nine additional residency slots in the state, starting right now.

“We welcomed those students this fall,” he said. “In January, we’ll ask the Legislature

“It all opened my eyes to what you can do as a physician in a rural community.”

to add eight more medical class spots, 15 more health sciences students, and eight more residencies.”

Wynne sees a positive note in the recent hiring of four UND SMHS grads by West River Health Services.

“We are working aggressively with the western part of the state, and our major focus is education, partnering with communities,” Wynne said.

“Hettinger is a good example,” Wynne said. “It’s possible for our grads today to settle successfully in the western part of the state. It’s one of the successful approaches to rural health care, and anyone interested in this should visit Hettinger because it has, in a sense, all of the advantages of rural western North Dakota. It also has the advantage of a first-class health-care delivery system. The hospital–clinic system there is a vital part of that community. It’s an important employer in Hettinger, a model that actually works.”

For one of those newly hired physicians, the decision to locate in Hettinger was a natural consequence of background and education—both vital elements in encouraging doctors to engage in rural practice.

“I grew up in Scranton, N.Dak., about 30 miles southwest of Hettinger. Growing up, I interacted with the hospital and clinics in Hettinger and Bowman,” said Joshua Ranum, little Rebecca’s father, and a specialist in internal medicine who finished his UND medical education last year.

The quality of the health facility that hired him and his wife Carrie, a pediatrician, also helped to seal the deal.

“Some people are amazed at what we have out here, but at this health facility, we have available about 90 percent of what we need to treat patients directly,” Josh Ranum said. “So that was a huge attraction to come back. I got more experience here; I really cemented

the idea that this is where I wanted to come back to after completing medical school.”

For his wife Carrie, the benefits of rural practice are many.

“I grew up in a suburb of the Twin Cities, went to the University of Minnesota for undergrad and to the University of North Dakota for medical school,” said Carrie, who just had the couple’s second child. “I did the ROME program in Devils Lake. That really opened my eyes to rural medicine and what it has to offer. I enjoyed working with families in a small community. Also marrying Josh helped. It all opened my eyes to what you can do as a physician in a rural community.”

So there’s a clear relationship in this case between workforce development in theory and what actually makes it work in practice.

“We believe firmly that rural people deserve the same high quality medical care as do their urban counterparts,” said West River Health Services CEO Jim Long. “As a result of this commitment, it is one of the most progressive and complete rural health care systems available in a three-state area, perhaps in the nation.”

Long noted that workforce development is ongoing.

“In rural settings like ours, we are always recruiting: it never stops,” said Long, who started at West River 30 years ago and has been CEO for 22 years. “We recently hired four physicians—including Josh and Carrie Ranum—all graduates in the last year from the University of North Dakota School of Medicine and Health Sciences. We were thrilled that they accepted our offer to come here.”

Long says that ongoing commitment starts with kids before they get to college.

“We look at workforce development as encouraging students from the time of high school into the medical professions,” Long said. “We give them the opportunity at many levels to witness and participate in rural health care and see the benefits of rural practice.”

Long’s organization even bought an apartment building just so they could house college students who go to Hettinger to get that rural health care experience.

In part, that connection follows a long-term strategy of partnership between



Ethan Andress, DVM, president of the Hettinger Chamber of Commerce.



Part of the AHEC mission is the training, continuing education, and recruitment of new health care professionals to rural North Dakota.

“In the western region as a whole, we’re short on doctors, nurses, and health care volunteers such as EMTs,” Schauer said. “We want to make the rest of the state and nation aware of

communities such as Hettinger and the UND School of Medicine and Health Sciences.

Wynne said the School is a facilitator in the statewide discussion about rural health care.

For Denise Andress, RN, a Hettinger native and director of the Hettinger-based western North Dakota region Area Health Education Center (AHEC), that discussion has important rural connections.

“Our key focus areas are all directly related to workforce development,” said Andress, whose husband Ethan, a local veterinarian, is president of the local Chamber of Commerce. “Among many other projects, we work with K–16 students who are considering health care careers, and we assist with setting up clinical rotations in rural areas for students in health profession programs.”

The chair of her board of directors says these workforce development initiatives are essential to the wellbeing of farm communities such as Hettinger.

“As an animal scientist and director of the Hettinger REC, I am involved with agricultural producers on a daily basis,” said Christopher Schauer, director of the North Dakota State University Hettinger Research Extension Center. “The availability of adequate health care and health care professionals to serve the largest industry in western North Dakota—agriculture—is of utmost importance to our industry, especially as we look at recruiting and keeping young families in agricultural operations.”

the good jobs available out here and what a great place to live that it is.”

Knowing the community is part of understanding its workforce needs.

“I understand the issues because I grew up here, and I am raising a family in southwest North Dakota,” Schauer said. “While I am involved with agriculture, my family was historically involved with health care and exposed me to the importance of our rural communities having adequate health care. Christopher’s father is Roger Schauer, MD, who served at the hospital and clinic in Hettinger for many years and now leads UND’s Rural Opportunities in Medicine (ROME) program.”

Without quality health services it becomes very difficult to recruit new employees and keep young families such as the Ranums, the backbone of rural communities.

This ongoing rural health care workforce discussion addresses concerns not just about today but about the future.

“The good news is we’re addressing them through solutions that are being developed by North Dakotans for North Dakotans,” Wynne said. “We’re not relying on the federal government or federal plans to address the problems; we’re doing it locally. We see local challenges, and we’re developing local solutions.”

For Rebecca Ranum and her classmates in places like Hettinger, that bodes very well.

For more information about

Area Health Education Centers (AHEC):
www.ndahec.org/

Rural Opportunities in Medicine (ROME):
www.med.und.edu/familymedicine/rome

Health care employment in North Dakota:
<https://www.3rnet.org/locations/?state=NorthDakota>

“Friendly Fire”

Scientist and her students study how the body signals to self-destruct through sepsis

By Denis MacLeod

Desperate, about to be overrun by the enemy, a U.S. army lieutenant screams into his radio that his platoon is in imminent danger of being defeated. With those words, every available aircraft is directed to the unit's position to provide close air support, a hail of bombs so near it results in “friendly fire” deaths.

In a way, the human body undergoes the equivalent of a friendly fire incident when it succumbs to sepsis, a life-threatening medical condition that results from a systemic inflammatory response by the body to fend off a severe infection or to recover from a traumatic injury.

“Sepsis is a medical condition where your immune system gets overactivated,” said Jyotika Sharma, PhD, a microbial immunologist and assistant professor in the Department of Microbiology and Immunology. “It can be triggered by an infection or some sort of injury or trauma, like a burn.”

In a last-ditch attempt to save the body, the patient's immune system reacts to the body's signal of impending peril with a defense that goes horribly wrong—it doesn't distinguish between molecular friend and foe. The onslaught of sepsis is frighteningly fast; it can progress from simple sepsis to severe sepsis to septic shock sometimes within hours. Blood vessels are particularly affected by the hyperinflammation that accompanies sepsis. Extensive blood clotting occurs in vessels as a result of the ongoing inflammation, which disrupts blood flow and thus oxygen supply to the organs. Patients suffer a fever or hypothermia, a rapid heart rate, rapid respiration, and multiple organ failure because vital tissues lack perfusion with oxygen as a result of low blood pressure.

“The mortality rate is very, very high: 20 to 50 percent of people admitted to an ICU with sepsis are at risk of dying,” she said. “Half of the ICU resources in this country are spent on these patients. The annual expenditure is around \$17 billion.”

In just the last two decades, medical researchers' thinking about the cause for sepsis has evolved. “After 25 years of research, we are back to basically square one because initially we thought sepsis was a result of pathogen infection, and pathogen-driven factors were responsible for causing sepsis,” she said. “But now we know the host response plays a major role.”

The discovery of *alarmins* shifted scientists' thinking about how sepsis develops. Alarmins, which are essentially *self*-molecules, are bits of our cellular selves, proteins that present no harm to the body as long as they are safely clothed within the membranes of cells. However, during an infection or injury, these cells burst open and release self-molecules into the extracellular

medium outside of the cells where they are not supposed to be. The body's immune system sees the release of these self-molecules as a danger; the self-molecules or alarmins sound the alarm to mobilize the immune system.

In 2009, Sharma contributed to medicine's changing view of the cause for sepsis. Her research focus is on *Francisella tularensis*, a bacterium, usually transmitted to humans through insect bites, that causes tularemia, a disease with symptoms similar to plague and characterized by acute septicemia. Sharma's

work showed that tularemia's lethality came not only from infection by the bacterium but also from the exacerbation of the ensuing sepsis because of the body's heightened immune response. Initially, her research wasn't accepted by other scientists,

but she fought and won to get her work published, and today her work, which was partially funded by the American Heart Association, is appreciated as a crucial piece in our recent understanding of sepsis.

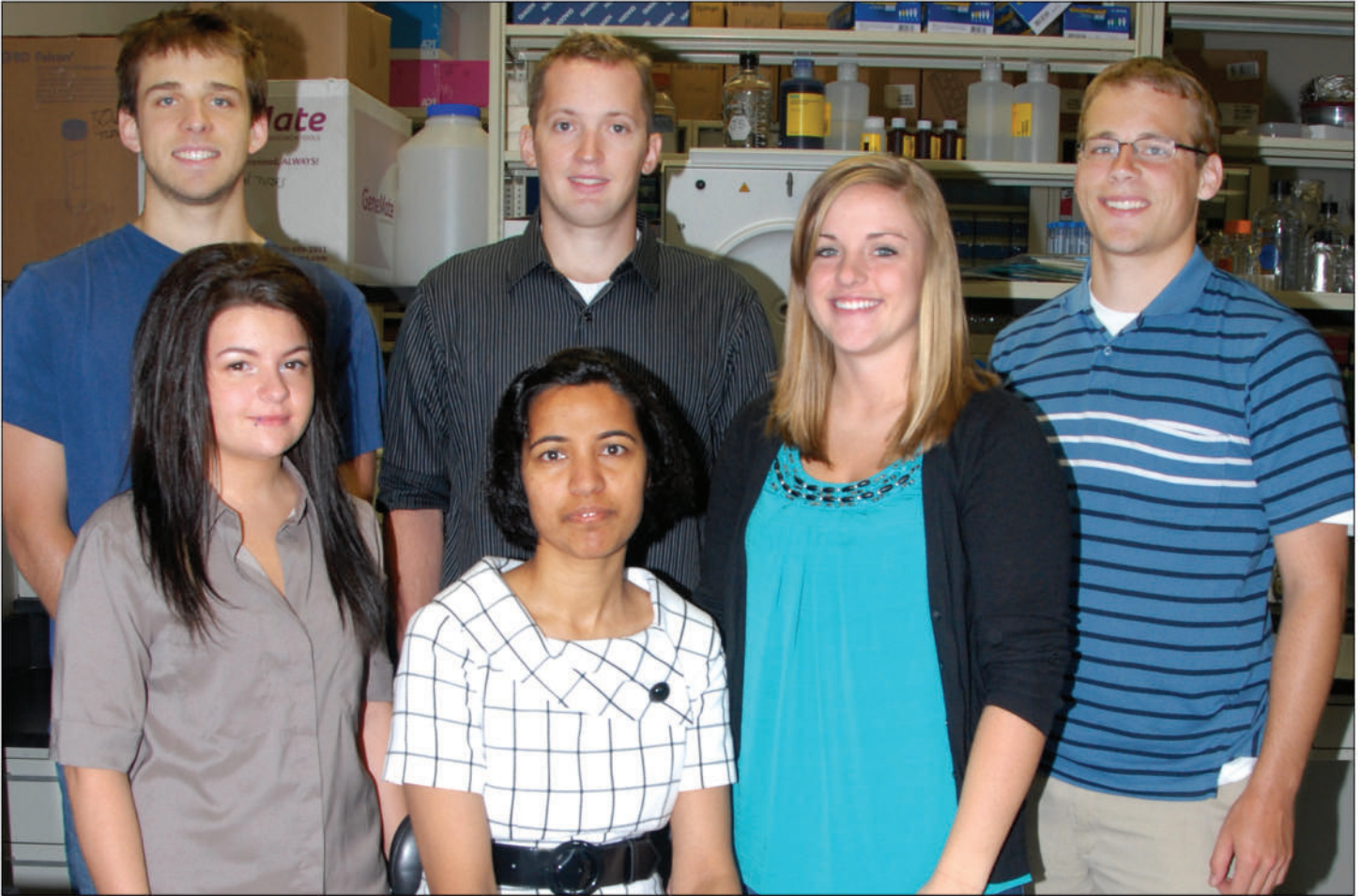
In July of this year, the National Institutes of Health acknowledged Sharma's research by awarding her a two-year, R21 grant. The NIH provides R21 grants to investigators to pursue what the NIH deems “exploratory and developmental research projects” that carry considerable risk of failure but may also lead to breakthroughs into the causes of diseases and their treatment. The NIH antes up to pursue these unconventional lines of research because, even though the risk is great, the potential yield of answers or treatments to pernicious, debilitating diseases is worth the wager.

“The idea behind the R21 grant that I believe the NIH liked is that we are trying to understand the role of certain alarmins we believe are playing a role in exacerbating sepsis,” Sharma said. “This R21 grant focuses on only one family of alarmins, but my lab is trying to identify other novel alarmins as well to see if they play a role.”

“In terms of the therapeutic angle of this whole project, once we have identified the role of certain alarmins, we can target them to block sepsis development. We need to find out what the alarmins do and how they do it and then come up with ways to target them.”

Sharma's research may have received a serendipitous nudge down a novel pathway from a departmental colleague. Neuroimmunologist Bibhuti Mishra, PhD, studies a family of parasites called helminths, including *Taenia solium* (the pork tapeworm). In certain severe conditions, the infection starts in the stomach, but the cysts or the eggs of the parasite travel to the

Sepsis is a medical condition where your immune system gets overactivated...it can be triggered by an infection or some sort of injury or trauma, like a burn.



Shown are undergraduate and graduate students who work in Dr. Sharma's laboratory (hometowns in parentheses). In front from left: Brandilyn Binstock (Mandan, N.Dak.), Jyotika Sharma, and Lisa Poole (Wheaton, Minn.). In back: Brandon Boff (Mandan, N.Dak.), Anthony Steichen (Hitterdal, Minn.), and Jonathan Peterson (Grand Forks).

brain, where they can reside for years without your noticing them, having gained a Trojan horse-like acceptance within the citadel of your mind. When symptoms do appear, they can range from headaches and dizziness to neurocysticercosis (Mishra's area of interest), which can lead to epilepsy, seizures, and brain lesions.

"*Taenia solium* is able to modulate the immune response in such a way that the immune system is not able to detect it," Sharma said. "The immune system does not mount a response because the parasite is suppressing it."

Mishra thinks the parasite produces and secretes certain molecules that have the ability to suppress the body's immune response. Sharma's lab is exploring taking these parasitic molecules and treating sepsis with them. Since hyperinflammation is the root cause of sepsis and these

parasitic molecules have the ability of suppressing inflammation, it seems to be a logical (and tempting) approach to put them together. But the treatment will not be a silver bullet.

"I don't think for sepsis it is going to be a single molecule or alarmin we can block because it is such a complex disease or immune disorder," Sharma said. "It is going to take a combinatorial therapy." 🌱

The Stanford University School of Medicine has developed a new medical computer game, called Septris, for teaching doctors how to recognize and treat sepsis. It is available at <http://cme.stanford.edu/septris>. Physicians can earn continuing medical education credits by taking a post-game test.

Seven Generations Center of Excellence:

By Kristine Morin

The Great Law of the Iroquois Confederacy states, “In our every deliberation, we must consider the impact of our decisions on the next seven generations.” These words of wisdom inspired the naming of the Center for Rural Health’s (CRH) recently funded Center of Excellence in Native Behavioral Health. For Jacqueline Gray, PhD, and those who worked to put this grant together, the new Seven Generations Center of Excellence in Native Behavioral Health (SGCOE) provides a culturally appropriate namesake and reinforces the importance of “growing our own” health professionals for the future of Indian Country. The SGCOE five-year grant for \$3.5 million from the federal Bureau of Health Professions will support Native



Jacque Gray

Americans are some ways the Seven Generations Center will support students through the pipeline and back to where they want to be: serving their people. North Dakota has one of the highest high school graduation rates in the nation for white students (82 percent). In contrast, American Indian students have one of the lowest graduation rates, at 39 percent. According to research, at the undergraduate level, the American Indian dropout rate for 18- to 24-year-olds is sixteen times that of their white counterparts. The SGCOE will work to address the academic, social, and personal needs of students by drawing on the skills and expertise of campus experts.

The spirit of the Seven Generations Center originated from Gray’s passion for changing the future of Indian Country by supporting, mentoring, and inspiring students to become mental health professionals. Before having a multimillion dollar grant focused directly on students, Gray supported students for several years by piecing together funding, where she was able to find it, and providing mentoring that, for Gray, is a task of many meanings. As she puts it, “For many, I’m mom—not just advisor or faculty member. Sometimes I’m the one that has the difficult talks with students.”

Some Native American students,



The spirit of the Seven Generations Center originated from Dr. Gray’s passion for **changing the future of Indian Country** by supporting, mentoring, and inspiring students to become mental health professionals.



students at UND through the academic “pipeline” so they can return to a Native community to provide mental health care.

The SGCOE will develop Native health professionals in many ways. Seven Generations’ long-term goal is to bolster the matriculation of a cohort of American Indian health professionals in medicine, behavioral health, and nutrition and dietetics to support the health care needs not only of the American Indian community but also the nation. “It will build the workforce pipeline by filling the gaps and plugging the leaks so, essentially, more students flow through it,” Gray said.

The SGCOE will forge a strong partnership between the School of Medicine and Health Sciences, the Office of American Indian Student Services, and programs in behavioral health and nutrition at UND. Recruiting and retaining students interested in the health sciences, providing internship positions, and offering training and specialized assistance in research with Native

Building **This** Generation for Future Generations

similar to students from rural areas, are the first collegians from their families and come to the academic world with little to no understanding of the structural impediments that can accompany academic programs. “It’s not the training and research, it’s getting through the bureaucratic things like organizing a committee or obtaining the needed signatures for forms,” Gray said. “It’s more of a stumbling block for Native and rural students who don’t have family members who know how it goes. They or sometimes their families don’t understand—especially family responsibilities. They are pulled between their school and social responsibilities, and it can be a real struggle at times. They just need to know how you make it through.”

Gray provides a support network by being the voice telling them to stick with it, make it through, and succeed. The essential feature of the SGCOE is to provide the needed support and encouragement for Native American students to complete high school, enter college, matriculate with baccalaureate degrees, and enter into health professional programs and careers. The dedication that has been put into this effort by Gray and others has already shown what success Indian Country can hope to glean from this effort. In 2011, Gray mentored 12 students: six PhD, two master’s level, and four undergraduates. She notes that at least four were falling through the cracks and were running out of time to graduate. With support and a bit of guidance from Gray and others, they were able to graduate. “There were lots of dinners and talks with students,” she said. 🌱



Members of the Native Health Research Team are
First row, left to right: Paula Carter, Emmy Scott, and Stephanie Parisien.
Second row: Whitefishwoman, Pearl Walker, and Janie Schroeder.
Third row: Jacob Davis, Colleen Kagan, and Patty Stensland.
Fourth row: Twyla Baker-Demaray, Robert “BJ” Rainbow, and Damian Webster.

Bariatric Surgery and AUD

By Juan Miguel Pedraza

Chester Fritz Distinguished Professors study a potentially serious consequence of weight loss surgery.

James E. Mitchell, MD, a principal in the UND-affiliated Neuropsychiatric Research Institute, is the coauthor of a seminal study recently published in the *Journal of the American Medical Association (JAMA)*. The study was funded by the National Institutes of Health.

Mitchell, Chester Fritz Distinguished Professor and chair of the Department of Clinical Neuroscience at the UND School of Medicine and Health Sciences and NRI president and scientific director, has focused most of his career on eating disorders, obesity, and bariatric surgery.

He and NRI colleague Stephen Wonderlich, also a Chester Fritz Distinguished Professor of Neuroscience, have developed a worldwide following for their work on the many aspects of various eating disorders, including bulimia and anorexia nervosa.

The bariatric surgery long-range study results were published in the June issue of *JAMA*. The widely quoted research focused on the propensity of some bariatric surgery patients to develop alcohol abuse problems. This pioneering study of bariatric surgery patients answers some long-standing questions related to alcohol usage.

Mitchell also is the author of the book, *Bariatric Surgery: A Guide for Mental Health Professionals*.

“Anecdotal reports suggest bariatric surgery may increase the risk of alcohol use disorder (AUD), or alcoholism,” Mitchell and his coauthors write in the *JAMA* article. However, before this research, no one had undertaken a systematic investigation of this problem. The objective of the research, according to the authors, was “to determine the prevalence of preoperative and postoperative AUD and independent predictors of postoperative AUD.” The study involved close to 2,500 participants at 10 U.S. hospitals.

Mitchell, who supervised the study, and his colleagues concluded that for the people who participated in this research

project, the prevalence of AUD was greater in the second postoperative year than the year before surgery or in the first postoperative year and was associated with male sex and younger age. Specifically, this research was the first to draw a clear-cut and provable link between Roux-en-Y gastric bypass surgery and symptoms of AUD; these results suggest that clinicians may have to change how they screen patients before such surgery and how to care for patients postoperatively.

Not everyone who has bariatric surgery is susceptible to AUD. The study found that being male, younger, smoking, pre-surgery regular alcohol consumption, a history of AUD, and pre-surgery recreational drug use are all related to an increased likelihood of AUD after bariatric surgery.

The researchers noted that although the percentage increase in prevalence of AUD from 7.6 percent before surgery to 9.6 percent at the two-year postoperative assessment seems small, that 2 percentage point increase potentially represents more than 2,000 additional people with AUD in the United States each year, with accompanying personal, financial, and societal costs.

DSM-5

Mitchell and Wonderlich continue their part of the work toward completion of the latest edition of a clinical manual—the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders (DSM)*. The DSM is used to help define and diagnose psychiatric disorders. The two were chosen by their peers to be part of the working group that wrote the eating disorders part of the manual.

“This was both an honor and a huge responsibility,” said Wonderlich, a psychologist who has developed a global reputation as an expert in eating disorders.

Mitchell and Wonderlich have developed new diagnostic tools and



Chester Fritz Distinguished Professors Stephen Wonderlich and James Mitchell.

“ Anecdotal reports suggest bariatric surgery may **increase the risk of alcohol use disorder (AUD),** or alcoholism.”

innovative treatments for people with disorders such as anorexia nervosa. Their place on the *DSM-5* editorial committee underscores the value of their experience and research not only to the mental health community but also to the many medical students and residents that they teach.

Mitchell explains that the *DSM* is an American handbook for mental health professionals that lists different categories of mental disorders and the criteria for diagnosing them. It is used worldwide by clinicians and researchers as well as insurance companies, pharmaceutical companies, and policy makers.

Leaders from the American Psychiatric Association, the United Nations World Health Organization, and the World Psychiatric Association determined the previous edition of the *DSM* needed to be revised and that additional information needed to be included. Thirteen work groups have been set up to revise the *DSM*. The revised *DSM* will reflect the diagnostic categories of psychiatric disorders described in previous editions of the

manual, but also it will reflect new scientific understanding.

The *DSM-5* took several years to produce, noted Wonderlich and Mitchell, who hold teaching and research appointments at the SMHS and are mentors, as well, to psychiatric residents in the residency program at the School's Fargo campus.

In a real sense, this was a labor of love for Mitchell, Wonderlich, and their colleagues on the *DSM-5* committee. As part of the APA's concerted effort to avoid conflicts of interest and ensure transparency with the development of *DSM-5*, the organization set up strict guidelines for participants in the review process. The No. 1 criterion is that they all serve without pay (with the exception of the *DSM-5* Task Force chair). There are other tight financial guidelines, including limits on how much cash or other payments each committee member can get from pharmaceutical and other health care-related companies.

DSM-5 is due for publication in May 2013.

Summer at INMED

By Eugene DeLorme, JD,
INMED Director

Graduation at the University of North Dakota and the School of Medicine and Health Sciences is a time to acknowledge accomplishment and success. It's a time to take pride in the medical graduates who will be leaving our campus and going on to new challenges in their various residency programs. Summertime is also a time to reflect, reorganize, and plan for the return of the students in the fall.

arrive on the University of North Dakota campus for six weeks of academic enrichment and personal growth. The INMED Summer Institute (SI) program and staff annually welcome 90 participants, Grades 7–12, to spend their days building knowledge and skills in coursework intended to increase their potential for success in college. SI participants also learn about health careers, how to live healthful lifestyles, and gain an awareness of life on the UND campus.

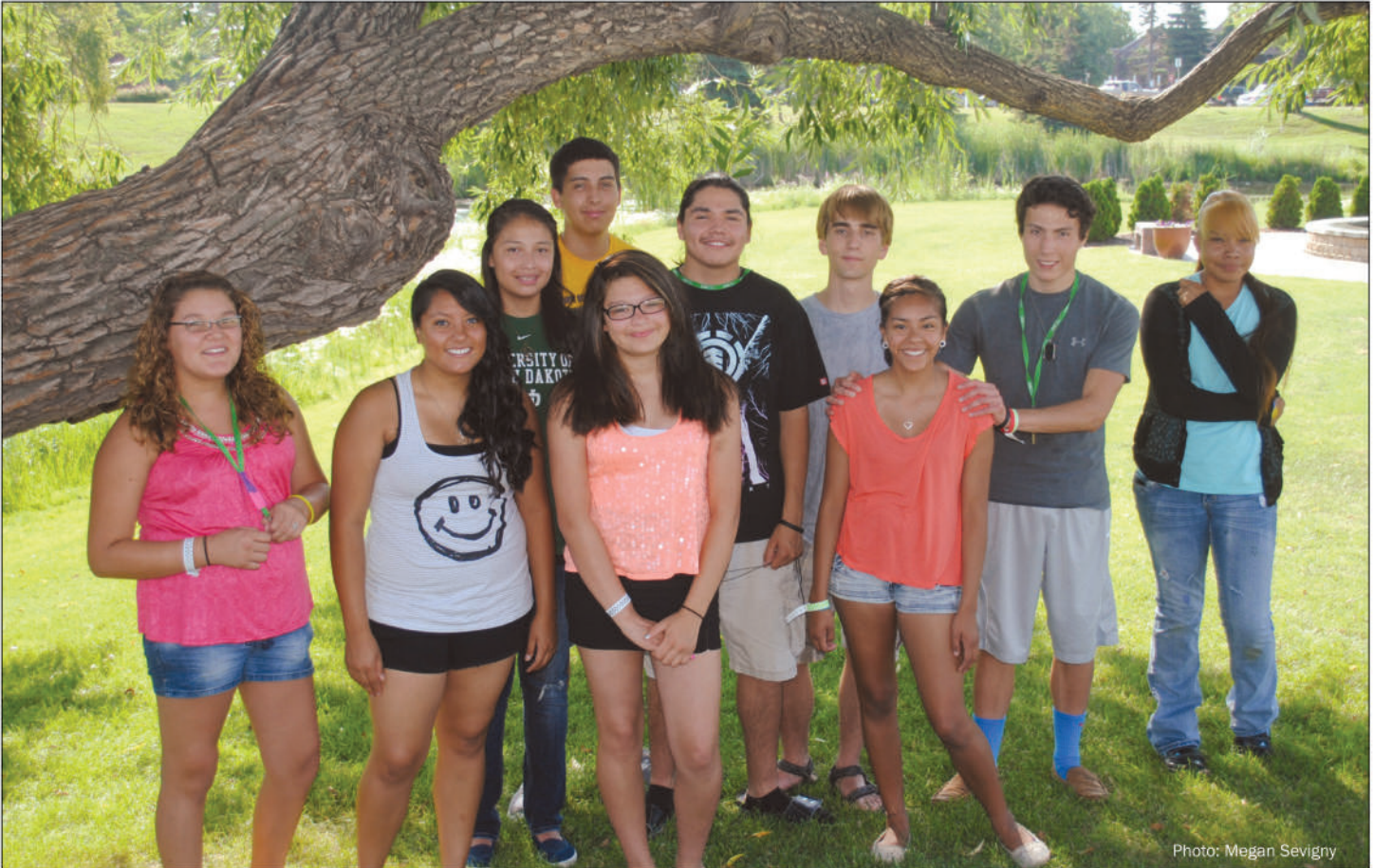
“Graduation is truly remarkable, especially when one is afforded the privilege to watch that former seventh-grade Summer Institute student walk across the stage...”

Summertime at the Indians into Medicine Program (INMED) is a period of increased activity and enthusiasm as a new group of American Indian students from reservations across 48 states and Alaska

The UND School of Medicine and Health Sciences has a long history of service and commitment to our nation's tribal communities and people through the Indians into Medicine Program. Established in 1973, INMED addresses three major problem areas: too few health professionals, a shortage of American Indian health professionals, and the substandard levels of wellness and health care in American Indian communities. INMED accepts tribally enrolled American



Eugene DeLorme introduces the INMED Tribal Advisory Board to the INMED Summer Program participants.



Students from the Rosebud Sioux Tribe (left to right) Bailee Boyd, Justice Red Hawk, Darien Quick Bear, Skyler Bordeaux, Anika Whiting, Harvey Herman III, Sol Eagle Road, Liliana Tamayo, Roberto Iron Shell, and Masté Gray Grass attended the INMED Summer Institute Program.

Indian students from across the country, but primarily focuses on the five-state area of North Dakota, South Dakota, Montana, and Wyoming.

In addition to the Summer Institute, INMED provides six-week programs for college-level students. The Pathway Program provides graduates of tribally controlled community colleges the opportunity to successfully transition into the University of North Dakota to complete their four-year undergraduate degree in nursing, health sciences, or premedical curriculum. Our medical preparatory program brings together upcoming medical school applicants to study for the medical school admission's exam. In our fourth summer program, recently admitted medical students have the opportunity to review their competencies in biochemistry and

physiology, two primary areas of academic content necessary for the successful completion of block one of the medical school curriculum.

Graduation is truly remarkable, especially when one is afforded the privilege to watch that former seventh-grade Summer Institute student walk across the stage of the Chester Fritz Auditorium. It is very rewarding to hear their name called and watch as the Doctor of Medicine degree is conferred upon them. To date, 196 of these young people have graduated from the University of North Dakota School of Medicine and Health Sciences through the INMED program. They continue to serve their tribes and people often in less-than-desirable conditions. For many, it began with one summer at UND.

Please see related story on next page. 🌿

Delbert Lamb: “I’m used to being busy...”



By Juan Miguel Pedraza

From wannabe astronaut to storm chaser to student physician—that trip took Delbert Lamb about 10 years, starting at age 12.

That’s when he started coming to the University of North Dakota Indians Into Medicine (INMED) Summer Institute—basically an intense six-week academic summer program for seventh- through twelfth-graders interested in becoming physicians and other clinical practitioners.

“It is a very intense academic enrichment session,” said Eugene Delorme, longtime director of the INMED program.

Lamb, who grew up on a ranch near Timber Lake, S.Dak.—a community on the Cheyenne River Indian Reservation—started medical school this year at UND.

It was a long path from science, math, and space interests to the white coat of a medical student: six years in INMED’s summer programs as participant and two years as a counselor in those programs during his undergrad years.

“In the seventh grade, my mom and

dad wanted me to experience something besides Timber Lake, so they sent me to the INMED Summer Institute,” said Lamb, an affable young man who loves to golf. “In the six summer institutes I attended, I took many different science- and health-related courses, plus communications.”

He excelled and was asked back—six years in a row, and then for two more years as a counselor mentoring kids just like himself.

“I was always kind of a science kid—I was into anything related to space, and I also wanted to be a tornado chaser—but I had never really narrowed it down to medicine,” Lamb said. “My interest in medicine evolved as a result of the exposure I got in the INMED Summer Institutes, such as field trips to hospitals, conversations with the physicians who came to talk with us. Some of our instructors were medical students, so they also gave a little insight into medicine.”

The interest in medicine was nurtured by INMED recruiters who visited Lamb’s

high school in Timber Lake. Family connections also helped.

"I have had a couple of cousins in the INMED program, and my parents encouraged me to go," said Lamb, whose dad is a rancher and whose mother is a school cook.

He dug into the application process for the INMED Summer Institute program, producing an unorthodox 12-page autobiography and several letters of recommendation as part of his entry packet.

"I got in, and I quickly learned as a 12-year-old about life in a dorm on a college campus," said Lamb, noting that his home town has 400 people. "It was a big change, and it was real busy, but it kept me away from the cows—I'm not into cows."

A typical day starts with breakfast before classes start at 8:30 a.m. Then it's three classes before a one-hour lunch, and three classes after. A two-hour break precedes supper and a two-hour period of activity.

"It's all about combining learning with physical activity," Lamb said.

This summer, Lamb was a student extern, part of an Indian Health Service program at the hospital in Eagle Butte, S.Dak.

"They give us the feel for each department—I've kind of gravitated toward pediatrics and the emergency room," said Lamb, who did shift work there this summer, including overnights in the ER.

Among other enjoyable aspects, Lamb says he feels at home here.

"After six years as a student in the INMED Summer Institutes, it's a family because you spend 24/7 for six weeks with other students—you get to know some of them better than your friends back home," Lamb said. That feeling is reinforced among his INMED peers.

"INMED provides emotional, academic, and financial support," he said. "They too are kind of like a family—you study together, learn with each other, and it's all a good fit with the UND School of Medicine and Health Sciences' patient-centered learning philosophy. INMED also helped us to learn how to study, so we feel better prepared once we get to medical school."

"I have the study techniques down, but this isn't high school anymore," Lamb said. "No doubt, it's a little intimidating the first year of med school—but I've been in INMED's med prep program this summer, learning biochemistry and other sciences all over; it's all online, individualized classes. You go at your own pace. I'm very glad they offered that."

The information might overwhelm the unprepared.

"It's so much information that you really have to stay on top of it," Lamb said. "It's all about time management, because, they tell us, we're getting the equivalent of 27 credit hours per block, and there are four blocks per year in medical school."

Lamb is used to being busy.

"Yeah, I was in almost everything in high school: football, basketball, golf, and many other activities such as plays, reading club, the National Honor Society, the science olympiad and science fair," he said. "You have to stay busy in a small town; otherwise, it gets boring, and it also kept me away from the cattle."

But Lamb says today, being so busy 12 months out of the year paid off for him.

"People say you don't have much free time, but it's a lot of fun," Lamb said.

About INMED Summer Institute

The INMED Summer Institute program is a six-week academic enrichment session for students in Grades 7 through 12. SI provides students an opportunity to enhance their potential for success in a health career through daily classes in biology, chemistry, communications and study skills, health with basic first aid, math, and physics.

Summer Institute participants are given the opportunity to experience life on a college campus, listen to successful American Indian health professionals, learn more about various health careers, participate in educational field trips, attend a powwow, and meet other American Indian students from across the United States.

For more information about INMED's Summer Institute, please go to <http://und.edu/news/2011/07/inmed-summer-institute.cfm>

“My interest in medicine evolved as a result of the exposure I got in the INMED Summer Institutes...”

What Can Science Do For You?

By Jessica Sobolik



Rhonda Schafer-McLean (right) has learned many practical lessons from participating in science fairs—how to set and meet goals, become a better communicator, be entrepreneurial—and has passed her love of science on to her daughter Riley (left).

Rhonda Schafer-McLean, PhD '03 and MD '05, was seven years old when a neighbor boy in her hometown of Wilton, N.Dak., fell into a cistern, and her father Ben was called to help as a member of the volunteer ambulance service. It was one of the first indications of what she would be when she grew up. "I was with my dad when he got the call, and I remember waiting in his truck and thinking, 'Who could help?' she recalled. "A doctor could."

It wasn't the last time she would ask that question. A few years later when she

was brainstorming topics for an upcoming high school science fair, she spotted a poster about the AIDS epidemic. This time she looked to herself for the answer, asking, "How can I help?"

The introspective question resulted in a project titled, "The Production and Challenge of an Anti-Idiotypic Vaccine for *Brucella abortus*." Her efforts led to a protein clone of the original dangerous bacteria that she safely injected back into animals to provide protective immunity. Early work on the project was performed

with help from a local veterinarian and family friend. She was later given the opportunity to conduct vaccine biochemistry experiments at North Dakota State University in Fargo before she graduated from high school. She drove the 200 miles each way on the weekends, slept in the lab, and then returned in time for school on Monday. "It was an incredible amount of faith my conservative parents had in me," she said.

Schafer-McLean was familiar with the science fair circuit, having participated in fairs since she was in seventh grade. Her dad, in addition to being a member of the ambulance service, was also the sole science teacher at Wilton High School in her small rural town of 700 located 25 miles north of Bismarck. She advanced to the International Science Fairs in Houston, Texas; San Juan, Puerto Rico; Knoxville, Tenn.; and Pittsburgh, Pa., from 1986 to 1989. Ultimately, she won first place in the Medicine and Health category and was then chosen as the top project in the entire world. From there, her science fair success began opening doors for her.

Brandeis University in Massachusetts offered her a full undergraduate scholarship, where she earned degrees in biochemistry and secondary education. She then fulfilled her dream of becoming a doctor by returning to North Dakota for medical school, completing a PhD in Anatomy concurrently. She is now an obstetrician/gynecologist at the Mid Dakota Clinic Center for Women in Bismarck.

Sharing a Love of Science

Rhonda's science fair experience even led her to her future husband Jamie, who had earned a trip to the International Science Fair in Tulsa, Okla. Rhonda had been asked to be a judge at the event as a freshman in college. While sparks didn't fly initially, they met years later through mutual friends at a UND football game and reconnected.

Jamie's experiment was on computerized irrigation systems, a topic he selected after initially wanting to automate his cattle-watering chores. His high school science teacher was Don Larson, who worked for the Information Resources

department of the UND School of Medicine and Health Sciences for 20 years after he retired from teaching at Midway High School in northeastern North Dakota. For the project, they used one of the first Apple computers and floppy disks.

His experiment soon resulted in an important life lesson. "After the science fair, I got a call from somebody in Europe interested in watering grape vines," he said. "I was 17 at the time and not thinking about patents. I was just having fun. It was during my first college business classes that I realized, 'I should've done something with that.'"

Next Generation

These lessons and a love of science have been passed on to the McLeans' daughter Riley, 13, who participated in the North Dakota State Science and Engineering Fair in March. Her five-part experiment, titled "Eggs!," demonstrated different ways to separate parts of an egg. Using eggs purchased at the grocery store, she separated them by hand, by using a centrifuge, precipitating yolk proteins, and using electrophoresis. Judges deemed it Best Project in Food and Nutrition Sciences.

It was not her first experience at a science fair. She wants to be a veterinarian, so her project last year focused on mice and nutrition. "I don't know how many mice she had on diet and exercise programs," Jamie said. "It was interesting to her, and she likes doing the research."

Riley is already planning her next project and appreciates the support her parents have given her. "My mom had a really open mind last year when I started science fair projects (i.e., mice)," she said. "I like the fact that you get to learn a bunch of stuff and then tell someone else something they didn't already know."

Rhonda and Jamie point out that science fairs gave them more than research or scientific experience. It taught them how to set and meet goals, become better communicators, and be entrepreneurial. It also gave them a common interest to share with their daughter.

What can science do for you? For the McLean family, it has done a lot.

*I remember...thinking,
'Who could help?'
A doctor could...*

'00s

Mihir Raval, IM Res '12, has joined the hospitalist services team at Essentia Health in Fargo.

Khalin Dendy, MD '09, is now at Sanford Health in Bismarck as an internal medicine doctor.



Andrew Gasparini, MD '09, has joined Altru Health System's family medicine team. He is a member of the American Academy of Family Physicians and is board-certified in family medicine.



Jake Hager, MD '09, has joined the internal medicine department at Essentia Health South University Clinic in Fargo.



Sara Mees, MD '09, is now with Altru Health System in Grand Forks in family medicine.



Megan Strand, MD '08, has joined Mid Dakota Clinic Gateway Dermatology in Bismarck. Strand specializes in dermatology.

Bhanu Odedra-Mistry, IM Res '04, has joined Internal Medicine Associates Healthcare in Fargo.

Kara Eickman, MD '04, is now at Sanford Health in Fargo specializing in neurology.



Christina Tello-Skjerseth, MD '07, is now with Sanford Bismarck Medical Center (formerly Medcenter One). As a radiologist, Tello-Skjerseth interprets ultrasounds, mammograms, CT scans, MRIs and X-rays to diagnose and treat injuries and diseases. She is board-certified through the American Board of Radiology.



Marissa Wisdom, MD '05, recently became board-certified through the American Board of Obstetrics and Gynecology. She was also recently nominated to the Alpha Omega Alpha Honor Medical Society. She is currently an Ob/Gyn at the Mid Dakota Clinic Center for Women in Bismarck.



Keith Swanson, MD '01, successfully completed the American Board of Vascular Medicine examination and the Registered Physician Vascular Interpretation examination. He also recently completed a yearlong fellowship in vascular medicine at the Cleveland Clinic. He has a special interest in vascular conditions, thrombosis, and vascular ultrasound.

He is a member of the American Board of Internal Medicine, a Fellow of the American College of Physicians, and practices internal medicine at Altru Hospital.

'90s

Jill Baldwin, PA '98, recently joined the team of geriatric services specialists at Lake Region Healthcare in Fergus Falls, Minn. Baldwin will provide care at area nursing homes. She is a member of the American Academy of Physician Assistants and the North Dakota Academy of Physician Assistants.

Kate Larson, PA '95, was recently recognized by the North Dakota Academy of Physician Assistants Board as the 2012 North Dakota Physician Assistant of the Year. Larson is a certified physician assistant at Garrison Family Clinic and has served with the NDAPA for several years. The North Dakota Physician Assistant of the Year award is given to physician assistants who work or reside in North Dakota and provide excellent care and service not only to their patients but also to the community and to the profession.



Laura Andreson, DO, MT '95, recently joined the Obstetrics and Gynecology department at Altru Health System.

We want to hear your news!

Please send your news items to Kristen Peterson:
kristen.peterson@med.und.edu or call 701.777.4305.

UND Selected as One of Seven National Rural Health Research Centers

The Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences has been designated as one of seven national rural health research centers by the federal Office of Rural Health Policy. UND was awarded a four-year, \$2.64 million grant to operate the Rural Health Reform Policy Research Center (RHRPRC). The purpose of the research center is to conduct at least 16 policy-relevant research studies and policy analyses that are relevant specifically to rural health, especially how health care reform as it currently is mandated or changes will influence rural health care access and delivery.

A shared mission

“The Center for Rural Health and the UND School of Medicine and Health Sciences support a well-rounded, three-part mission,” said Gary Hart, PhD, director of the Center for Rural Health, who will be the principal investigator and director of the new RHRPRC. “First, the CRH provides service within North Dakota to help promote and facilitate the delivery of care to rural residents to improve their health. Second, the Center educates health care professionals and encourages North Dakota youth to train to be health care providers and practice in North Dakota. And third, CRH experts perform policy-relevant research and policy analyses that provide the needed information for federal policymakers to make informed decisions related to providing access to quality, efficient, and cost-effective health care for rural communities. Disseminating accurate information about rural health care is a priority for the CRH.”

The new Center for Rural Health RHRPRC will work in close collaboration with the Walsh Center for Rural Health Analysis, Bethesda, Md. Alana Knudson, PhD, of the Walsh Center will be the deputy director of the RHRPRC.



Gary Hart

Federal policies and rural health

“The RHRPRC will serve to analyze the favorable as well as the unfavorable effects of federal policies on rural health care and provide that information to federal policymakers,” Hart said.

The federal Office of Rural Health Policy of the Health Resources and Services Administration promotes better health care service in rural America by coordinating activities related to rural health care within the U.S. Department of Health and Human Services. The ORHP works with federal, state, and local governments as well as with private-sector associations, foundations, health care providers, and community leaders to seek solutions to rural health care problems.

The purpose of the research center is to conduct at least sixteen policy-relevant research studies and policy analyses that are **relevant specifically to rural health...**

Doctor of Medicine Class of 2016

White Coat Ceremony Portrait

Scott Allen
North Mankato, Minn.

Emerlee Andersen
Jamestown, N.Dak.

Aaron Baune
Fargo, N.Dak.

Aaron Bettenhausen
Bismarck, N.Dak.

Annie Braseth
Missoula, Mont.

Taylor Braunberger
Dickinson, N.Dak.

Natalie Brehmer
Fargo, N.Dak.

Emily Bromley
Fargo, N.Dak.

Nathan Brunken
Delano, Minn.

Braden Burckhard
Burlington, N.Dak.

Ashley Carver
Fargo, N.Dak.

Charles Crellin
Billings, Mont.

Laura Cronquist
Gilby, N.Dak.

Anna Cymbaluk
Crookston, Minn.

Betsy Dickson
Gilby, N.Dak.

Eric Dowling
Moorhead, Minn.

Hannah Dupea
Bigfork, Mont.

Samantha Dusek
Grafton, N.Dak.

Layne Egan
Valley City, N.Dak.

John Emmel
Fargo, N.Dak.

Rachel Fearing
Williston, N.Dak.

Tanner Ferderer
Dickinson, N.Dak.

Brandon Flores
Stockton, Calif.

John Fox
Bismarck, N.Dak.

Robert Gokey
Minot, N.Dak.

Joshua Greene
Devils Lake, N.Dak.

Dane Hammer
Minot, N.Dak.

Tatia Hardy
Rolla, N.Dak.

Michael Harsche
Bismarck, N.Dak.

Jerrod Heermans
Argyle, Texas

Michaela Heller
Fargo, N.Dak.

Josalynne Hoff
Bowdon, N.Dak.

Kristopher Holaday
West Fargo, N.Dak.

Lucas Holkup
Wahpeton, N.Dak.

Andrew Hughes
Bismarck, N.Dak.

Josh Huhndorf
Nikiski, Alaska

Natalie Krier
Herrick, S.Dak.

Delbert Lamb
Timber Lake, S.Dak.

David Larson
Austin, Minn.

Elliot Lawrence
Park Rapids, Minn.

Brett Lee
Walhalla, N.Dak.

Tyler Looyen
Jamestown, N.Dak.

Jeffrey Maddock
Bismarck, N.Dak.

Shayna Mann
Dickinson, N.Dak.

Sondra McGregor
Fargo, N.Dak.

Amanda McMahon
Ortonville, Minn.

Vamshi Mugu
Grand Forks, N.Dak.

Jamie Odden
West Fargo, N.Dak.

Dakota Orvedal
Grafton, N.Dak.

Ravi Panjini
Fargo, N.Dak.

John Riedinger
Bismarck, N.Dak.



Pictured with the MD Class of 2016 in the front row are Joycelyn Dorscher, associate dean for Student Affairs and Admissions; Dean Joshua Wynne; and Steven Strinden, vice president of the North Dakota Medical Association.

Ian Roche
Grand Forks, N.Dak.

John Roller
Bismarck, N.Dak.

Mark Rostad
Kindred, N.Dak.

Nicole Samson
Devils Lake, N.Dak.

Jared Sander
Fargo, N.Dak.

Erin Schlenker
Grand Forks, N.Dak.

Justin Shipman
Watford City, N.Dak.

Deanna Shoup
Pierre, S.Dak.

Aaron Smith
Grand Forks, N.Dak.

Robert Steininger
Eagen, Minn.

Emma Swanson
Fargo, N.Dak.

Erica Tauck
Roseau, Minn.

Jacob Torrison
St. Louis Park, Minn.

Michael Traynor, Jr.
Fargo, N.Dak.

John Tronnes
Bagley, Minn.

Arna Two Hawk
Eagle Butte, S.Dak.

Michael Walery
Bismarck, N.Dak.

Meghan Watne
Jamestown, N.Dak.

Roza Yunusova
Fargo, N.Dak.

View the White Coat
Ceremony video at
<http://bit.ly/OJ2E53>



Robin Tracy

Athletic trainer at school, national champion in the pool.

By Emily Aasand

“ I knew I wanted to do something with sports and yet I wanted that medical aspect... athletic training was the perfect combination of both of those things.”

UND athletic trainer and physical therapist Robin Tracy keeps student-athletes on top of their game in the hope they might one day win it all. What's not well known about Tracy is that this 40-something dynamo is, herself, a national champion.

She was among eight members of the Grand Forks Masters Swimming team who competed in the United States Masters Swimming (USMS) Summer Nationals in Omaha, Neb., July 5–8. Not only was Tracy the national champion in her age group, she won her title in the same pool used the week before for the U.S. Olympic Trials.

"The pool had state-of-the-art blocks and timing systems," Tracy said. "It was built to be a very fast pool, and we could tell."

Throughout the meet, there were media interviews, and the event announcers kept the crowd informed of world and national record swims.

"I wouldn't say I get nervous for my events," Tracy said. "It's more like I'm excited and hyped up for the swim. During my 50-meter breaststroke, I was surprised I couldn't see any other swimmers, and after touching the wall, I looked at the scoreboard and saw the '1' by my name. I was very happy and relieved—winning that race was my goal."

Tracy began swimming at age six and hasn't stopped since. After graduating from high school in Alexandria, Minn., Tracy went to Minnesota State University, Mankato to swim and pursue an athletic training degree.

Tracy's love for sports helped spark her interest in athletic training.

"I knew I wanted to do something with sports, and yet I wanted that medical aspect," she said. "Athletic training was the perfect combination of both of those things."

Tracy later pursued a physical therapy degree so she could get more experience on the rehabilitation side of sports medicine.

"Going through college, I've always wanted to mesh working with athletes and teaching, so when I called UND to ask

about their athletic training job, they said not only did it require some teaching but they were looking for someone with a physical therapy background as well."

It was exactly what Tracy was looking for.

Tracy works as an assistant professor in the UND Sports Medicine Department as well as a physical therapist and athletic trainer at the UND Center for Sports Medicine. She sees patients with sports-related or orthopedic injuries during the day and also does rehab for athletes who have had surgery.

"I work with athletes from every sport, everyone from basketball and swimming to softball and soccer," she said. "The teams' athletic trainers might be out of town with the team, so we work with those athletes who stay back."

She also sees patients from the community.

"Our office is open to the public," Tracy said. "Most people think we work with just athletes, but we see all kinds of patients in the office."

Having swum most of her life, Tracy was quick to join the Grand Forks Masters Swimming team after taking her job at UND. The team holds practices five days a week from 6 a.m. to 7 a.m. in the Hyslop Sports Center pool.

This year, the Grand Forks Masters Swimming team has had the privilege to be coached by Shaun Seaburg, who used to swim for UND.

"Having him as a coach has really benefited us. He's done such a great job," Tracy said. "He's been very good with helping the swimmers with stroke techniques, and he writes good workouts for us."

Grand Forks Masters Swimming was founded in 1987. It is a USMS-affiliated team comprising swimmers ages 18 and older.

"Anyone who wants to become a better swimmer, whether it's for fitness, triathlons, or if they want to do competitive swimming, it's a good program," Tracy said.

Grand Forks Masters Swimming



currently has more than 40 members, including UND faculty members and students.

USMS is a national organization that provides organized workouts, competitions,

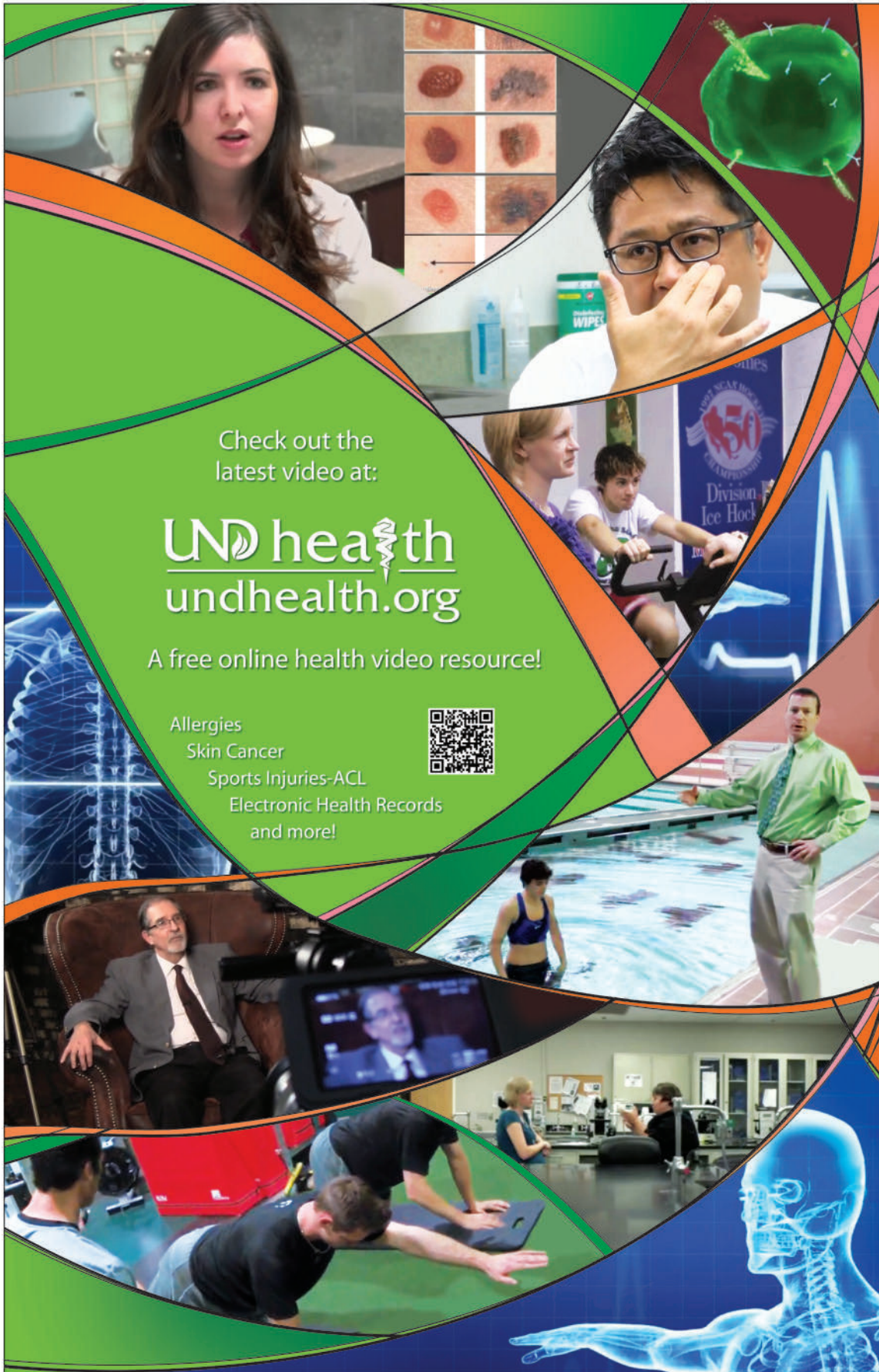
clinics, and workshops for adults. All USMS programs are designed to help swimmers train for specific goals, and offer active support for a healthful lifestyle.



Dr. John R. Holten, BS MD '53, 84, Moorhead, Minn., died on Thursday, July 12, 2012, at Sanford Health, Fargo, N.Dak. John R. Holten was born March 12, 1928, in Grand Forks, N.Dak, to Melvin and Myrtle (Paulson) Holten. He was educated in the Grand Forks school system and received his Bachelor of Science Medicine from UND and the MD degree from Temple University, Philadelphia, Pa., in 1955. He interned at St. Luke's Hospital, Duluth, Minn., and practiced for a year in Cloquet, Minn. He married Karel Johnson in Wyndmere, N.Dak., on April 21, 1957. They moved to Moorhead in 1958, where he joined Drs. V. J. Carlson and E. W. Humphrey. Upon Dr. Humphrey's retirement, Drs. Carlson and Holten joined Drs. H. G. Rice and V. D. Thysell and built a medical arts building on 7th Avenue No., across from St. Ansgar's, where they practiced until St. Ansgar's expanded and clinic space was added to the hospital. When St. Ansgar's was sold to Clay County, the physicians relocated to the other locations. When the Fargo Clinic acquired the practices of several members of the old St. Ansgar's group, they erected a facility in south Moorhead, currently operated as Sanford. Dr. Holten was twice president of the medical staff of St. Ansgar's, past president of the Clay Becker Medical Society, a member and former vice president of the Minnesota State Medical Association, the American Medical Association, and a charter member of the American Board of Family Practice. He served on the ethics committee of St. Ansgar's for 10 years and the ethics committee of the state medical association for four years. He was medical director of Eventide Lutheran Home for eight years. Dr. Holten served as coroner and then medical examiner of Clay County for 15 years and served on the Health Service staff, Minnesota State University Moorhead, for 30 years. He and his office staff opened the first migrant medical clinic two nights a week each summer for two years before the State of Minnesota took over the operation. After his retirement, he was a volunteer physician at the Homeless Medical Clinic in Fargo. Dr. Holten enjoyed community involvement. He was a former commissioner of the Moorhead Public Service and a member of the former American Bank Board. He was on the organizing committees for public kindergarten for the Moorhead Public School District, the first accredited community preschool program at Trinity Lutheran Church, and the Clay County Public Health Nursing Service. He was chair of Concordia College's C-400 Club in 1972, which erected the Knutson Center. He was a member of Trinity Lutheran Church since 1958, twice a member of its council, a member and past president of Moorhead Rotary, and a Paul Harris Fellow. After his retirement from MeritCare in 1990, the Holtens spent the winters in Arizona and summers in Moorhead and Lake Lizzie. He is survived by his wife Karel; his children, John M. (Sandra) Holten, Plymouth, Minn.; Karin K. (Mike) Gardner, Littleton, Colo.; Paul F. (Anne) Holten, Golden Valley, Minn.; Erik B. (Jill) Holten, Fargo, N.Dak.; and Andrea E. (Jack) Rowley, Lakewood, Colo.; one brother, David (Bonnie) Holten, Albuquerque, N.Mex.; 12 grandchildren; and his brother-in-law, George Johnson, Jr., West Fargo, N.Dak. He was preceded in death by his parents.

Dr. Ernest Thorsgard, BS MD '54, 88, of Thief River Falls, Minn., died on Thursday, June 7, 2012, at Sanford Hospital in Fargo. Ernest Oliver was born on September 6, 1923, to Knut Engebretson and Anna Katherine (Flisrand) Thorsgard on a farm near Northwood, N.Dak. He was the oldest of six children. He was baptized and confirmed at the Ebenezer Lutheran Church in Northwood. He grew up in Northwood and attended Augsburg College in the Twin Cities. During WW II, he was sent home to work on the farm in southwest Grand Forks County. It was during that time he got to know Ina May Sundquist, the love of his life and superintendent of nurses at the local hospital. They were married on June 26, 1953, in Aneta, N.Dak. With rekindled enthusiasm, Thorsgard resumed his education at the University of North Dakota. At Vanderbilt University Medical School in Nashville, Tenn., he earned his MD, graduating in 1957. Dr. Thorsgard completed his internship at Hennepin County General Hospital in Minneapolis, Minn. Ernest dedicated a year of his life to serve as a medical missionary to New Guinea. The remainder of his family medicine practice was conducted in Thief River Falls. He has delivered hundreds of babies and helped many people and families in their time of need. He served as Pennington County coroner for many years. Dr. Ernest Thorsgard retired from practice on June 17, 1988, after thirty years in medicine. Dr. Thorsgard's enthusiasms in this life were for Christ's great commission and for his family. Ernest was fond of animals and raised and trained Tennessee Walkers at his farm north of Thief River Falls. Ernest, Ernie, Dad, Doc, Grandpa, Lefty, enjoyed poetry and always had an appropriate verse to recite. He was a member of Zion Lutheran Church and enjoyed the Friday morning men's breakfast. He also belonged to the Kiwanis, Golden Pioneers, and Sons of Norway. He is survived by his wife Ina, Thief River Falls; three children, Dr. Knute (Nancy) Thorsgard, Detroit Lakes, Minn.; Dr. Eric (Gerri) Thorsgard, Bemidji, Minn.; and Kyja (Daniel Wold) Thorsgard, Denver, Colo.; nine grandchildren, Dr. Marit (Kevin) Thorsgard Spaeth, Minneapolis, Minn.; Kai (Harmony Shore) Thorsgard, Missoula, Mont.; Greta (Mox Gunderson) Thorsgard, St. Paul, Minn.; Annelise Thorsgard, Minneapolis, Minn.; Torin Thorsgard, Denver, Colo.; Tragg Thorsgard, Haakan Thorsgard, Brekt Thorsgard, Aksel Thorsgard all at home in Bemidji, Minn.; two great grandchildren, Annika Spaeth and Leif Thorsgard; one brother Lloyd (Judy) Thorsgard, Northwood, N.Dak.; three sisters: Mildred Strand, Remer, Minn., Kathryn (Wendell) Erickson, Hills, Minn., and Ruth (Rev. Don) Homme, Vergas, Minn.; and many nieces and nephews and other relatives. He was preceded in death by his parents and one brother Kenneth Thorsgard.

Dr. William Arvil Ray, MD '92, passed away April 15, 2012, in Manteca, Calif., at the age of 56. He worked with the California Department of Corrections and was a resident of Ripon, Calif. He is survived by his wife, Aimee Nagtalen.



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Gifts of Qualified Retirement Savings Accounts

By Dave Miedema

A type of asset that is often overlooked when individuals consider how to structure a major gift to the University of North Dakota Foundation to benefit the School of Medicine and Health Sciences is the qualified retirement savings account, like a 401(k), 403(b) or IRA.

These retirement savings accounts are termed “qualified,” meaning they provide certain tax advantages during the owner’s working years. For example, contributions an employee makes to a 401(k) are made pre-tax, saving the employee both the federal and state income taxes that would otherwise be withheld on the contribution amount. Additionally, the account grows tax-deferred during the employee’s career, and only after distributions begin (generally at retirement) is there any income tax payable. So, no taxes withheld on all contributions going into the account and no taxes on growth within the account equals a great tax-deferral formula to more quickly accrue a handsome nest egg for the golden years.

But what about giving away the balance of a retirement savings account to children, or grandchildren, or the UND Foundation as part of the owner’s estate plan? Because retirement savings accounts often compose a significant percentage of an individual’s estate, this is a very common question. Since the IRS is committed to collect taxes on income that was untaxed going into a retirement savings account, or which accumulated tax-free before the taxpayer retired, when individuals other than a surviving spouse are named the beneficiary, they will receive only the “net” after all taxes have been paid on accrued income. This strategy often erodes the account substantially, and the outcome accurately suggests that a qualified retirement savings account is actually a bad asset to leave to non-spousal family members. But, if a charity such as the UND Foundation is named the beneficiary, no taxes are withheld, and every dollar remaining in the account at death is transferred for the benefit of the School of Medicine and Health Sciences, making retirement savings

accounts very good assets to give to charity. And depending on the account type, it may also be possible to fund a charitable income arrangement for the benefit of a surviving spouse, child, or other relative or friend with the account balance.

Owners of qualified retirement savings accounts need to consult with their professional advisors to structure the most tax-wise plan utilizing their retirement savings account balances. I also welcome the opportunity to visit with you and to discuss this potentially powerful, tax-wise giving option that could benefit your School of Medicine and Health Sciences.



For additional information on how to best structure your bequest or 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

UNIVERSITY OF NORTH DAKOTA
FOUNDATION

Thank you! To our thoughtful donors for their recent gifts and pledges

Dr. Mark, '78, and Becky Odland of Edina, Minn., have established the Dr. Mark and Becky Odland Endowment, which will provide one or more scholarships to students earning a medical degree at the UND School of Medicine and Health Sciences. The endowment was created in honor of Drs. John Smith and Richard Johnson, who provided scholarship support for Dr. Odland while he attended medical school. Mark, originally from Minot, N.Dak., works at the Hennepin County Medical Center Department of Surgery, where he completed his residency training.

Dr. Ted and Carolyn Fogarty of Bismarck, N.Dak., have established the Dr. Edward and Carolyn Fogarty Endowment, which will support research activities within the UND School of Medicine and Health Sciences for students who are pursuing interests in clinical imaging or imaging technologies that may impact clinical medicine or the teaching of medicine. Dr. Fogarty, who completed a transitional residency at UND, serves as chair of the SMHS Department of Radiology while working as a radiologist at Sanford Bismarck Medical Center (formerly Medcenter One).

The family of Lucille Fostvedt has established the Lucille M. Radke Fostvedt MD Memorial Endowment, which will provide scholarships to first- or second-year medical students with first preference given to women. Fostvedt, a Bentley, N.Dak., native, earned her BS Med degree from UND in 1938. She passed away in January 2011.

Dr. Nadim and Rola Kanafani Koleilat of Bismarck, N.Dak., have established the Dr. Nadim and Rola Kanafani Koleilat Endowment, which will provide an annual award to a medical student who has demonstrated the most humanistic character, who conducts herself or himself with high integrity, and who will relate to patients with sincere expressions of compassion and respect. The award will be presented at the annual School of Medicine and Health Sciences Spring Commencement Awards ceremony. Dr. Koleilat is an associate professor of surgery for the UND School of Medicine and Health Sciences.

Dr. Robert and Charlene Kyle of Rochester, Minn., have pledged support for the Medical Laboratory Science program, which will obtain for the School a microscope equipped with a digital camera for digitization of slides. These slides can be viewed in a renovated MLS classroom that provides separate LED viewing screens at each workstation or e-mailed to the program's distance education students across the nation. It will standardize testing, and eliminate the traditional teaching model in which faculty and students huddle around one microscope and take turns viewing a slide. The MLS classroom will be dedicated to the Kyles on Oct. 11 in conjunction with Homecoming festivities. For more information, visit www.med.und.edu/homecoming2012.





Occupational therapy students turned out in great numbers to march the SMHS banner in the Potato Bowl Parade in September. UND defeated the Portland State Vikings in the football game later that afternoon.



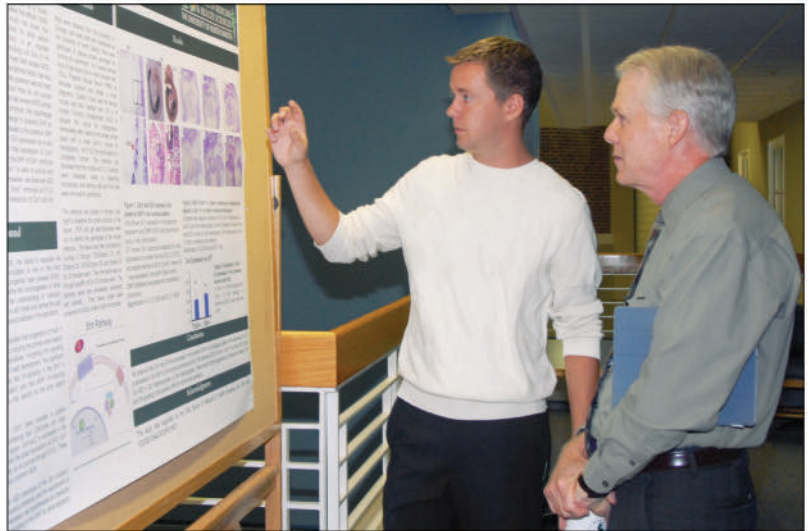
Friday Afternoon Gatherings for the exchange of research, scholarly, or creative ideas. Above from left, Seema Somji, Jane Dunlevy, and Mary Ann Sens. Below from left, Anushika Gajayanaka Pathirage, Madhur Shetty, Ann Karunarathne, and Keith Henry.





Forty-five students attended the Scrubs Academy this past July.

(At right) Tom Hill, PhD, listens to student Dane Rasmussen describe his poster titled "Interaction of Sonic Hedgehog Pathway and Osrl in Atrial Septation" during the Summer Research Poster Session in July.



More than 100 participants took part in the "Joggin' with Josh" 5k or 10k Run/Walk on a beautiful sunny day in September. Dr. Wynne said his time was "wind-aided."



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