

NORTH DAKOTA MEDICINE

THE UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Biennial Report

Student Writing and Art

Native Aging in Place

Mission Critical

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 **SCHOOL OF MEDICINE
& HEALTH SCIENCES**
UNIVERSITY OF NORTH DAKOTA 



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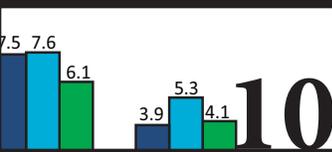
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**UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES**

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ON THE COVER Britta Stjern, a second-year medical student, from Roseville, Minn., is shown practicing a Melker cricothyrotomy during training the Simulation Center hosted for the School’s Emergency Medicine Interest Group for 48 first- and second-year medical students. They were trained on airway-management skills and cardiac-arrest team development.

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The State of the School



Recently I had the pleasure and honor of delivering the annual “State of the School” address to the Faculty Assembly of the UND School of Medicine and Health Sciences (see <https://goo.gl/GJWqoh>). This event is sponsored by the Faculty Academic Council, through which the faculty members at the School participate in the shared governance of its academic programs. My address contained a somewhat mixed message—namely, that while the School and its students, faculty, and staff continue to do amazing things to advance the educational, discovery, and service agenda of the School, the current concern about the slowdown in the state’s economic growth has cast a layer of uncertainty and uneasiness over our ongoing activities. While our discussions and testimony regarding our budget submission in front of the Legislature seemingly have gone well, we won’t really know where we stand from a state funding standpoint until May. And since funding from the people of North Dakota makes up about a third of our revenue, any significant reduction in state funding will have an effect on our ability to deliver on the commitments we made as part of the Healthcare Workforce Initiative.

Obviously, we can’t wait until May to begin planning our 2017–19 biennial budget, so we are in the process of preparing for contingencies. UND has offered several voluntary separation opportunities to faculty and staff across the University. Members of the School’s leadership team have been meeting with each of our departments and units to analyze their respective budgets and identify possible opportunities to reduce expenditures. By preparing now for the possibilities that we will know in April, we should be in good shape to move forward then.

And as we look forward, we can also look back with pride at the achievements of the faculty, staff, and students this past academic year. Some of the highlights that I touched on during my “State of the

School” address included the following:

- The largest amount of outside sponsored funding (devoted mainly to research and service, with some to teaching) in the history of the School. Our researchers and staff garnered nearly \$28 million, most of it from federal agencies (especially the National Institutes of Health [NIH]). We have been averaging about a 7 percent annual rate of growth in sponsored funding over the last several years at a time when many institutions are happy just to remain level. We also have the greatest number of coveted R01 awards from the NIH in our history, three Center of Biomedical Research Excellence (COBRE) awards, and a North Dakota IDeA (Institutional Development Award) Network of Biomedical Research Excellence award. Plus we have another COBRE grant submission under review currently.
- We also had a record year of philanthropy. We have used our beautiful new building to be a focus (and magnet) for giving. In exchange for a substantial donation, we offer naming rights to a part of the building (like a classroom or an atrium). Under the leadership of our former and current Development Officers Dave Miedema and Dave Gregory and Director of Alumni and Community Relations Jessica Sobolik, we’ve received donations for 38 named spaces in the new building. The total donor commitments for those spaces is \$8.44 million. An additional \$2.34 million came from the ND Challenge Fund for a total of \$10.78 million—the great majority of which (34 of the 38 named spaces) support student scholarships. Because of that, we’ve been able to drive down the cumulative debt burden of our students. Thus, while debt has gone up for most medical students in the United States, the debt of our students

has gone down. And for those of you who might be able to do more, we still have plenty of attractive naming opportunities available in the new building. Please contact Jessica (Jessica.sobolik@med.und.edu) or Dave Gregory (DaveG@UNDFoundation.org) if you'd like further details.

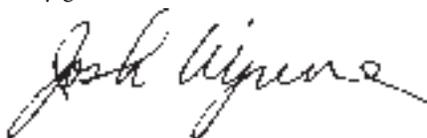
- Our educational programs continue to shine. UND SMHS graduates are highly prized by residencies (medical students) and employers (health sciences students). And all of our educational programs are fully accredited. Many of our programs garner special praise from the accrediting agencies, but one stands out—physical therapy completed its most recent accreditation review without having a single citation! That's remarkable and a credit to the people who make up the PT department.
- And the School's commitment to service to the people of North Dakota beyond healthcare workforce efforts is highly regarded and greatly appreciated across the state. From pipeline activities sponsored by our Center for Rural Health (CRH), intended to encourage young people to consider a career in healthcare, to the development of rural residencies to technical support provided to rural counties by the CRH to the Rural Surgery Support Program run by our Department of Surgery, the School touches every one of the 53 counties in the state. We are a community-based medical school (like 27 other U.S. medical schools that don't own or operate their own hospital), and we are proud to say that our community is all of North Dakota!

With this legacy and heritage of achievement, I'm convinced that the trajectory of the UND SMHS will continue to be onward and upward—budget challenges notwithstanding. That's not to make light of the budget issues—they are real and substantive. But I am convinced that the energy, dedication, and solid North Dakota values and ethic of our people will shine through—and we will continue to fulfill the high expectations

that the people of the state have for us. We are, after all, the only institution of higher learning in the state that has its purpose and reason for being specifically defined by the people through their Legislature—and we try to live up to those expectations each and every day. Our purpose, as defined in the North Dakota Century Code (NDCC), the codified laws of the state, is as follows:

“The primary purpose of the University of North Dakota School of Medicine and Health Sciences is to educate physicians and other health professionals for subsequent service in North Dakota and to enhance the quality of life of its people. Other purposes include the discovery of knowledge that benefits the people of this state and enhances the quality of their lives.” (NDCC 15-52-01)

I am proud of the hard work that the entire UND SMHS family devotes to these tasks and the outstanding results that are achieved. Thanks to all of them, the state of the School is outstanding—and likely to only get better in the future!



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

Johnson honored with AMTA's Advocate of Music Therapy Award



Eric Johnson

Associate Professor Eric L. Johnson, in the Department of Family and Community Medicine at the University of North Dakota School of Medicine and Health Sciences, was honored with the American Music Therapy Association's Advocate of Music Therapy Award at the association's annual conference in Sandusky, Ohio.

The award recognizes a person who is not a music therapist but who has contributed significantly to the MT profession. The AMTA works for the progressive development of the therapeutic use of music in rehabilitation, special education, and community settings.

At the conference, Johnson also presented "Teaching and Learning: Interprofessional Education and Music Therapy" with Dr. Andrew Knight of Colorado State University and Dr. Meganne Masko of Indiana University-Purdue University at Indianapolis.

Johnson is the director of the SMHS's Interprofessional Education Program through which he also teaches in the School's course on Interprofessional Healthcare, which includes students from nine health professions from across the University of North Dakota: medicine, nursing, occupational therapy, physical therapy, music therapy, communication sciences and disorders, social work, counseling psychology, and nutrition and dietetics. The course is run on a collaborative model that doesn't assign a "higher" value to any one profession or specialty over any other in learning team concepts.

The goal of interprofessional education is collaborative practice. Students learn every person on a healthcare team is a patient advocate, which significantly reduces errors in the healthcare system and leads to high-quality care and improved cost efficiency.

Johnson is the medical director for the SMHS's Physician Assistant Program and assistant medical director for the Altru Diabetes Center. He also is the president of the American Diabetes Association North Dakota Affiliate and the president of Tobacco Free North Dakota.

Johnson elected as vice chair for national physical therapy commission



Bev Johnson

Beverly Johnson, PT, DSc., GCS, CEEAA, was elected to be vice chair of the 10-member Physical Therapy Panel of the Commission on Accreditation in Physical Therapy Education (CAPTE) at its meeting in November. Johnson is assistant director of clinical education and an associate professor in the Department of Physical Therapy at the University of North Dakota School of Medicine and Health Sciences.

The Commission on Accreditation in Physical Therapy Education is an accrediting agency that is nationally recognized by the U.S. Department of Education and the Council for Higher Education Accreditation. CAPTE grants specialized accreditation status to qualified entry-level education programs for physical therapists and physical therapist assistants. The commission is a group of 31 individuals with varied backgrounds who are charged with determining whether a program meets the standards of quality in physical therapy education, developing the evaluative criteria for quality, and setting policy and procedure for the physical therapy accreditation process. Members of the commission must have served as on-site reviewers to be eligible for appointment. Johnson has been an on-site reviewer and team leader for many years before her appointment to the physical therapy panel of CAPTE.

As a commissioner, Johnson reviews physical therapy education programs to assure the programs meet quality education standards developed by the commission. "Dr. Johnson is recognized nationally as a leader in physical therapy clinical education," said David Relling, PT, PhD, associate professor of physical therapy and chair of the Department of Physical Therapy at the UND School of Medicine and Health Sciences. "Election as vice chair on the PT panel is a confirmation of Bev's effective leadership and comprehensive knowledge of physical therapy education." Johnson earned her Bachelor of Science in Physical Therapy, Master of Science in Sport and Exercise Science, and minor in Education from UND; she earned her Doctor of Science in Physical Therapy (Geriatrics) from Rocky Mountain University of Health Professions in Provo, Utah. She received certifications as a geriatric clinical specialist (GCS) through the American Board of Physical Therapy Specialties and as a certified exercise expert for the aging adult (CEEAA) through the Academy of Geriatric Physical Therapy, a component of the American Physical Therapy Association.

"Involvement with national leaders in the educational and physical therapy professions has been a rewarding and humbling experience," Johnson said. "I feel blessed to remain passionate about a profession I entered 40 years ago. It is an honor to give back to the profession and the department and also to represent the University at the national level."

NIH funds Milavetz's study of early formation of cancer-causing viruses



Barry Milavetz

The list is long. From the common cold and influenza to HIV and measles and from Zika to some cancers, all are caused by viruses—tiny packages of either DNA or RNA that wear a protein coat. They shouldn't be confused with bacteria. Viruses aren't technically "alive." They are parasites that need a host—that means you and me—to "live" in and reproduce. To do that, viruses are hijackers. They infect human cells

with a simple and sometimes deadly message: make more viruses.

A particular virus called simian virus 40 or SV40, a virus found in monkeys that can cause cancer in certain other animals and is closely related to a number of similar human viruses, is the focus of a \$139,000 National Institutes of Health grant to University of North Dakota Associate Vice President for Research and Economic Development Barry Milavetz so he can continue his research on SV40.

Milavetz is interested in how SV40 duplicates itself in an

infected cell. In particular, how the cell environment around the virus, or the cell's epigenetics, modifies SV40 to become a virus particle. The purpose of the NIH grant is to identify the mechanisms that cause the modifications in epigenetic structure during the formation of a virus particle.

"We are particularly interested in the epigenetic changes occurring during the very first stage of an infection," said Milavetz, "since this is the time that the infection is most easily treatable."

Milavetz, who is also a professor in the Department of Biomedical Sciences at the UND School of Medicine and Health Sciences, and Meera Ajeet Kumar, working as a technician, expect to identify all of the epigenetic changes occurring during the formation of an SV40 virus particle and determine the factors that are responsible for the changes and how the factors function.

"A number of drugs are in various stages of development that target factors involved in epigenetic regulation," Milavetz said.

Please read more at <https://goo.gl/Lo0PDs>.

NIH selects Geiger as chair of vital NIH neurological study section



Jonathan Geiger

The National Institutes of Health (NIH) has selected Chester Fritz Distinguished Professor Jonathan D. Geiger, PhD, in the Department of Biomedical Sciences at the University of North Dakota School of Medicine and Health Sciences, to serve as the chair of the NeuroAIDS and End-Organ Diseases (NAED) Study Section for the NIH's Center for Scientific Review (CSR).

Geiger will serve a two-year term

beginning July 1, 2017. At the UND SMHS, he is the principal investigator for the Center of Biomedical Research Excellence grant on Pathophysiological Signaling in Neurodegenerative Diseases, and multiple other NIH grants.

Geiger has served as a regular member of the NAED-grant-review study section since July 2013, and over that time, he has often served as the alternate chair. His workload for the NIH study section will increase accordingly.

"This is quite an honor for Dr. Geiger and for UND," said UND Vice President for Health Affairs and SMHS Dean Joshua Wynne, MD, MBA, MPH, "because he might be the only faculty member at UND to serve in such a capacity."

Please read more at <https://goo.gl/i733my>.

Occupational Therapy receives President's Award

The University of North Dakota's Pi Theta Epsilon (PTE) Kappa Chapter was the 2016 corecipient of the President's Award, which is a national award given by the American Occupational Therapy Foundation to a PTE chapter that organizes and implements an exceptional scholarly activity designed to

contribute to the advancement of the occupational therapy profession. The PTE Kappa Chapter and Beta Pi Chapters (University of Mary) were awarded based on their efforts with the North Dakota Occupational Therapy Student Conference.

In the photo, UND Kappa Chapter Pi Theta Epsilon President Sydney Larson is shown accepting the award from national PTE President Joe Brey at the annual PTE meeting in Dearborn, Michigan.

Please read more at <https://goo.gl/Ylxs3a>.



Sydney Larson and Joe Brey

ADA names Eric Johnson as 2017 Primary Care Advisory Group Vice Chair

The American Diabetes Association has named Associate Professor Eric L. Johnson, MD, in the Department of Family and Community Medicine at the University of North Dakota School of Medicine and Health Sciences, as the 2017 Primary Care Advisory Group vice chair. In this role, Johnson will lead the association's efforts to develop effective strategies to engage primary care providers; he will transition to chair in 2018.

There are more than 29 million Americans who have diabetes and an additional 86 million American adults with prediabetes. Primary care providers treat 90 percent of patients with diabetes; these healthcare professionals are a key priority to the association.

Johnson's work with the Primary Care Advisory Group has accelerated outreach to primary care providers through several initiatives, including the national Diabetes Is Primary program at the association's scientific sessions. This one-day program highlights recommendations that are essential for primary care providers. The program distributed more than 10,000 continuing education certificates through the online version of the meeting.

In addition, Johnson and colleagues develop the association's abridged version of the Standards of Medical Care in Diabetes. This important document packages the association's annual guidelines into a manageable article for busy primary care providers. Johnson has been instrumental on several additional articles to professional journals that feature key guidelines from the Standards.

Johnson will help to oversee these and other key initiatives in 2017, including the expansion of Diabetes Is Primary to other markets.

Johnson is the director of the SMHS's Interprofessional Education Program, the medical director for the SMHS's Physician Assistant Program, and assistant medical director for the Altru Diabetes Center. He also is the president of the American Diabetes Association North Dakota Affiliate and the president of Tobacco Free North Dakota.



Eric Johnson

UND scientists pursue treatment for the lingering effects of Lyme disease



Catherine Brissette

For most victims of Lyme disease, successful treatment occurs after a two- to four-week course of antibiotics. However, for up to 20 percent of patients, the fatigue, pain, and neurocognitive difficulties persist as Post-Treatment Lyme Disease Syndrome (PTLDS).

Lyme disease is caused by a spiral-shaped bacterium known as *Borrelia burgdorferi*, which is the cause of more than 90 percent of all tick-borne diseases affecting humans in the United States. Estimates from the Centers for Disease Control and Prevention (CDC) suggest that Lyme disease affects 300,000 people each year. Lyme disease is a debilitating and significant public health problem that can result in arthritis, heart problems, and neurological impairment and disability.

The total direct medical costs of Lyme disease and PTLDS are estimated at over \$700 million each year in the United States alone, thereby imposing a huge economic burden on healthcare. The mechanism behind PTLDS is unclear. Clinical trials suggest no long-lasting benefit of extended antibiotic treatment, and whether patients still harbor viable *Borrelia burgdorferi* (*Bb*) is unknown.

However, biomedical scientists at the University of North Dakota School of Medicine and Health Sciences are taking an innovative approach through the discipline known as epigenetics that may explain how PTLDS occurs and may lead to new treatments.

Epigenetics, meaning above the gene, is the study of how certain molecules in the cell environment surrounding the DNA that composes genes affect how those genes are expressed when the cell's machinery for reading DNA is either free to access the cell's DNA or inhibited. This can alter the sequences of DNA that are read, resulting in different gene expressions even though the underlying DNA sequence is unchanged.

This is analogous to a pianist who either has full access to the keys on a piano or who has to play with some of the keys taped down and not available to play each note of the melody, or in the case of cells, the bases of the genetic code. The result is a different melody or individual—even among twins—depending on the epigenetics of the individual.

Unlike the fixed genetic code, the epigenetics of individuals is subject to influences from the environment and can change over an individual's lifetime. These changes may even be passed to offspring. Even though epigenetic changes in an individual can be inherited, the changes in gene expression are reversible. UND's principal investigator is Catherine A. Brissette, PhD, an assistant professor in the Department of Biomedical Sciences at the UND School of Medicine and Health Sciences. She has received a \$108,000 grant from the Global Lyme Alliance, which funds research for Lyme and tick-borne disease research. She serves on the alliance's advisory board, which serves to peer review grants in a manner similar to the National Institutes of Health. Archana Dhasarathy, PhD, and John Watt, PhD, in the SMHS Department of Biomedical Sciences are collaborating with Brissette in the research.

Please read more at <https://goo.gl/RN6OsK>.

Department of Physician Assistant Studies presented new class with white coats

Thirty professionals began the clinical portion of their studies to earn the Master of Physician Assistant Studies degree at the University of North Dakota School of Medicine and Health Sciences.

The White Coat Ceremony was held on Friday, Jan. 13, in the Charles H. Fee, MD, Auditorium at the UND School of Medicine and Health Sciences. Dustin Hager, MPAS, PA-C, presented the keynote address, focusing on the role of the physician assistant in primary care. Hager, a UND PA alumnus of the Class of 2010, is a practicing primary care physician assistant for Heart of America Johnson Clinic in Rugby, N.Dak. Welcome remarks were given by SMHS Senior Associate Dean for Education Gwen W. Halaas, MD, MBA; and by UND Vice President for Research and Economic Development and Dean of the School of Graduate Studies Grant McGimpsey, PhD. Closing remarks were given by SMHS Associate Dean for Health Sciences Tom Mohr, PT, PhD.

“The presentation of the white coat is symbolic of the new profession the students are entering,” said Department Chair Jeanie McHugo, PhD, PA-C. The coats will be worn by students through the clinical phase of their training and denote their involvement with the physician assistant program at UND. The individuals in this class come from a wide variety of healthcare disciplines, which through class interaction will strengthen each student’s ability to return to his or her rural clinical site as a well-rounded primary care provider. The Class of 2018 is the first group of students who have been admitted under a new admissions structure. The PA program

has two methods of entry with separate criteria for admissions purposes. Entry Point 1 is designated for health professionals with at least three years of experience working as nurses, respiratory therapists, radiology technologists, paramedics, military healthcare providers, and related professions. Entry Point 2 is designated for applicants with science-based educational backgrounds and some healthcare experience working as a certified medical assistant, certified nurse assistant, physical therapist assistant, emergency medical technician, and others. Once admitted into the program, these students with various backgrounds further complement and add to the overall educational environment of the class.

Enrolled students come from throughout the United States, from Texas to Florida, but this particular class is very regional, with 67 percent of the students from the tristate area of North Dakota, South Dakota, and Minnesota. Students range in age from 22 to 49 years, with an average age of 31; the class includes 13 men and 17 women.

Students have completed their first two semesters of basic sciences and spend their first four weeks in Grand Forks before returning to their home communities, where most of their training will take place under the supervision of physician and physician assistant preceptors. Over the next 18 months, they will return to UND for several weeks at different junctures for education and training.

For more information and a complete list of students and their hometowns, please visit <https://goo.gl/RH7Jbj>.

Please see the photo of the Class of 2018 on page 35.

Jyotika Sharma to chair session with a talk from member of her group at annual meeting of American Association of Immunologists

Jyotika Sharma, associate professor in the Department of Biomedical Sciences at the University of North Dakota School of Medicine and Health Sciences, has been invited to chair a block symposium tentatively titled “Innate Immune Signaling” at the worldwide gathering of immunologists: Immunology 2017, the annual meeting of the American Association of Immunologists (AAI), in Washington D.C., May 12–16. The AAI is one of the oldest (founded in 1913) and most prestigious scientific societies of immunologists with 25 Nobel Laureates as past or present members. Sharma has been a member since 2005. The association has recognized the work done in her lab with several awards, including a fellowship to her graduate student Christopher Jondle for his studies on C-type lectin receptor MGL-1.

This is the second consecutive year that the AAI has invited her to chair one of the sessions at its annual meeting along with an oral presentation from one of her lab members. Atul Sharma (who is not related), PhD, a postdoctoral fellow in the laboratory of Dr. Sharma, has been selected to give an oral presentation at this meeting. He received his Master of Technology in Biotechnology from Rajiv Gandhi Technical

University in Bhopal, India. He earned his PhD in Molecular Medicine from Jawaharlal Nehru University in New Delhi, India, before joining Sharma’s lab as a postdoctoral fellow to work on the mechanism of Mincle-mediated neutrophil extracellular trap (NET) formation in pneumonia and COPD (chronic obstructive pulmonary disease), one of the many projects in her lab.



Jyotika Sharma and Atul Sharma

Please read more at <https://goo.gl/3P84K9>.

Fourth Biennial Report

Health Issues for the State of North Dakota 2017

By David Molmen, MPH, Chair; and Joshua Wynne, MD, MBA, MPH, Executive Secretary, UND School of Medicine and Health Sciences Advisory Council

North Dakota, like the rest of the country, is facing a major healthcare delivery challenge—how to meet a burgeoning need for healthcare services now and especially in the future with a supply of physicians and other providers that has not always kept pace with the growing demand. The problem is particularly acute in rural and western parts of North Dakota, where there has been a chronic shortage especially of primary care providers dating back for many decades and probably since the start of statehood. Part of the problem in North Dakota is an inadequate number of providers, but a larger portion of the problem is a maldistribution of providers who are disproportionately located in the larger urbanized areas of the state. Without direct intervention, the difficulty of providing adequate healthcare in North Dakota will worsen over the coming decades from the combination of aging of the population (including aging and eventual retirement of the healthcare workforce) along with localized population growth in the Oil Patch and the cities, both of which will increase the demand for healthcare services.

However, unlike most of the rest of the country, North Dakota is directly addressing its healthcare delivery challenges through its implementation of a well-vetted plan for healthcare workforce development and improved healthcare delivery. That plan, the Healthcare Workforce Initiative (HWI), was an outgrowth of both the *First* and *Second Biennial Reports on Health Issues for the State of North Dakota*. Phase I of the HWI, which began by increasing medical and health sciences class sizes along with increasing residency slots, has already been fully implemented. Phase II of the plan is being implemented at present. When fully implemented, the HWI should decrease North Dakota's healthcare delivery challenges through attainment of its four goals: reducing disease burden, retaining more healthcare provider graduates for care delivery within the state, training more healthcare providers, and improving the efficiency of the state's healthcare delivery system. To accommodate the substantial class size expansions associated with the HWI, a new University of North Dakota (UND) School of Medicine and Health Sciences (SMHS) facility has been completed on UND's Grand Forks campus, and is now up and running. It was completed on time and on budget.

In accordance with the expectations specified in the North Dakota Century Code (NDCC 15-52-04), the *Fourth Biennial Report on Health Issues for the State of North Dakota (Report)* updates the first three *Reports* with an assessment of the current state of health of North Dakotans and their healthcare delivery

system, along with an analysis of the steps that need to be taken to ensure that all North Dakotans have access to high-quality healthcare at an affordable cost—now and in the future.

The *Report* begins with an updated analysis of the population demographics in North Dakota, utilizing the most recently available data. Standardized definitions are used to define the state's population—*metropolitan* to denote areas with a core population of 50,000 or more; *micropolitan* (or large rural) to denote areas with core populations of 10,000 to 49,999; and *rural* to denote areas with less than 10,000. About half (49%) of North Dakota's current population reside in metropolitan areas, with a little more than a quarter (26%) located in rural areas. This represents a dramatic change, since only a few decades ago, more than half of the state's population was located in rural areas. North Dakota is one of the least densely populated states in the country, ranking 49th in population density. Also unlike the rest of the country, we have more males than females (51% versus 49%), and we are older on average; North Dakota is tied for fourth in the country in the

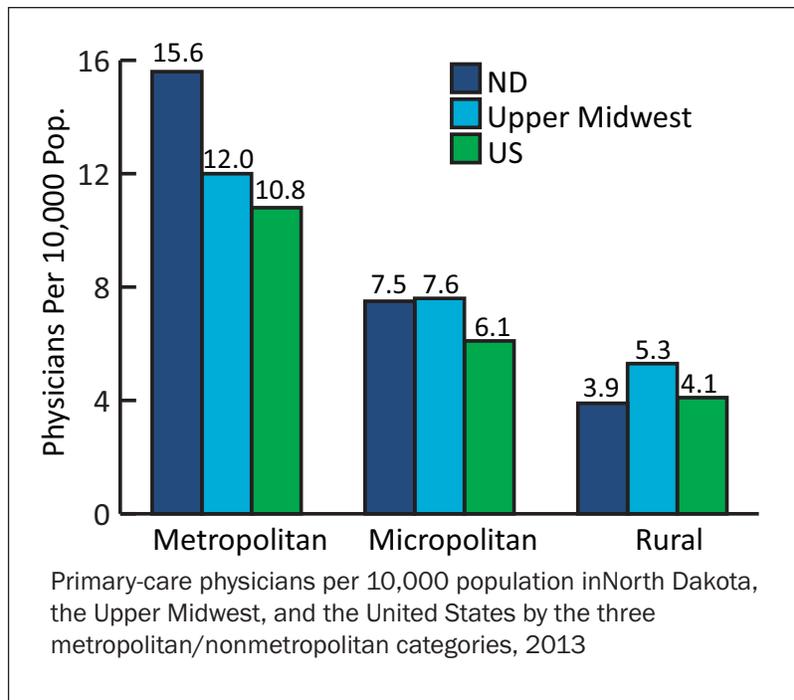
An overview of the just-released *Fourth Biennial Report: Health Issues for the State of North Dakota 2017* that has been prepared by the UND School of Medicine and Health Sciences and its Advisory Board. The full report is available online at <http://www.med.und.edu/biennial-report/index.cfm>

percentage of its state population that is 85 years of age or older. Because demand for healthcare increases proportionally with age, demand for healthcare services is especially pronounced in North Dakota. That demand will only increase as the state's citizens grow older. People in rural regions of North Dakota are generally older, poorer, and have less or no insurance coverage than people in non-rural areas, all of which are challenges to providing adequate healthcare. Rural regions continue to experience depopulation, except for significant population growth in those western regions associated with the recent oil boom; the cities continue to grow and prosper. Predictions for population growth in the future are controversial and are tempered by the knowledge that another “boom-and-bust” cycle that has been seen before has occurred again. But even conservative estimates predict a population of about 800,000 by 2040 (a nearly 20% increase compared with 2010), with a further reduction in the rural portion of the population by about one-third.

The *Report* next considers the health of North Dakotans, which in comparison with the rest of the United States is generally good. North Dakotans have a slightly lower problem with diabetes than the rest of the United States and are less likely to report fair or poor health. However, North Dakotans tend to have a higher risk of cancer and a mortality rate that exceeds the national average. Across North Dakota, behavioral risks tend to increase as population density decreases; thus rural areas have the worst behavioral risk, with an increased frequency of obesity, smoking, and drinking, especially in males.

The physician workforce is considered next in the *Report*, which finds that North Dakota has somewhat fewer physicians per 10,000 population than the United States as a whole or the Midwest comparison group, and although the gap had narrowed over the past three decades, it recently has widened. Our physicians are older and more likely to be male than elsewhere in the United States. About one-fourth of the physician workforce is made up of international medical graduates, a little higher than the rest of the country. The UND SMHS is an important source of physicians for the state, accounting for nearly half of the more than 1,000 physicians practicing in North Dakota who graduated from a U.S. medical school.

Of all the physicians in the state, about 44% received some or all of their medical training (medical school or residency or both) in-state. As is the rule for the rest of the United States, there is a striking gradient of patients per physician depending on geographic region; micropolitan areas (large rural) have about twice as many patients per physician as metropolitan areas, while rural areas have about five times as many. Predictions of an inadequate physician supply leading to further increases in the number of patients per provider, especially in rural areas, have helped buttress support for the HWI that is intended to address those concerns. Without the effects of the HWI, current estimates indicate a shortage of some 260 to 360 physicians by 2025, primarily the consequence of the heightened need for healthcare services as the Baby Boom



generation ages but also from retirements in the similarly aging physician workforce (one-third of the physicians in North Dakota are 55 years of age or older). Even more physicians will be needed if the population grows as recently predicted. If the population of North Dakota increases to 800,000 people, around 500 additional physicians will be needed.

The state's primary care physicians (family medicine, general internal medicine, and general pediatrics) are considered next in the *Report*. Compared with the rest of the country, North Dakota has more primary care physicians when normalized to the population size. Their density is significantly higher than either comparison group in metropolitan regions; it is only in rural areas that North Dakota significantly lags the Midwest comparison group (see figure). Primary care physicians in North Dakota are more likely to practice in rural areas compared with specialist physicians, but they still are more than twice as likely to be found in urban regions rather than rural areas after correcting for population. Residency training in North Dakota is an especially important conduit of primary care physicians, since nearly half (45%) of them have completed a residency within the state; more than half went to medical school at UND, completed

an in-state residency, or did both.

North Dakota has relatively fewer specialists than the Midwest or the rest of the United States in certain specialties, including obstetrics-gynecology. We have about the same relative number of psychiatrists as other Midwest states, although two-thirds of them work in the eastern part of the state, leaving the western parts of North Dakota with a shortage.

Similar trends are found with other nonphysician providers. While nurse practitioners (NPs) and physician assistants (PAs) are much more likely to be female than their physician counterparts, they, too, are distributed more in the metropolitan than rural areas in a proportion similar to primary care physicians. This is particularly true for NPs; PAs are the most evenly distributed across North Dakota of any healthcare provider group. Compared with U.S. figures, North Dakota has about 7% fewer NPs but 37% more PAs. North Dakota has significantly more licensed practical nurses (LPNs), registered nurses, and pharmacists than the national average, and they, too, are distributed particularly in the metropolitan areas. In the case of pharmacists, their relative scarcity in rural areas is balanced by pharmacy techs and by a robust telepharmacy program spearheaded by North Dakota State University. North Dakota has fewer dentists than the United States as a whole, but more physical therapists. When looking at the entire North Dakota healthcare provider workforce, there is a consistent finding of a relative shortage of providers especially in rural and micropolitan (large rural) areas compared with metropolitan regions, but with important variations across the state depending on the particular provider type.

The *Report* then analyzes the findings of two surveys conducted by UND's Center for Rural Health that collated the number of unfilled hospital-based nonphysician healthcare worker positions ("vacancies") across the state. The *North Dakota Hospital Workforce Study* looked at a wide spectrum of 25 different categories of healthcare workers (from nurses to lab technicians to dietitians to business personnel) and

found, perhaps somewhat surprisingly, that hospitals are reporting significant worker shortages in only three of the 25 categories (12%), and even in those areas, the vacancy rates are not much above national norms. The *North Dakota Nursing Facility Workforce Study* assessed the nonphysician healthcare workforce status of 24 employee categories in 81 rural and urban nursing facilities. The survey, performed in September 2016, found that vacancy rates were not excessively high for most employee categories, although rates tended to be higher in rural compared with urban institutions. The highest vacancy rates were found for PAs and NPs, followed by registered nurses, LPNs, and certified nurse assistants. However, there were significant regional differences across North Dakota in vacancy rates. Barriers to successful recruitment of needed employees included the rural location of facilities, a small pool of candidates, and salary limitations.

The *Report* next analyzes the healthcare delivery system in North Dakota, which consists of hospitals—36 smaller critical access hospitals (CAHs) with 25 or fewer acute-care beds, six larger general acute-care hospitals located in the four largest cities, three psychiatric hospitals, two long-term acute-care hospitals, two Indian Health Service hospitals, one Veterans Affairs (VA) hospital, and one rehabilitation hospital—and about 300 ambulatory care clinics. Although their financial performance has improved since the *Third Biennial Report*, they still struggle to make ends meet so that they can provide needed care in their communities. Outpatient care is augmented by 52 federally certified rural health clinics, eight community-based outpatient VA clinics, and five federally qualified health centers. There are 43 trauma centers across the state, with each of the "Big Six" hospitals home to a Level II trauma center. Most emergency medical service support in the state is ground-based and provides basic services; it is under duress because of its dependence on volunteers and a problematic funding stream. There has been an expansion across the state in the deployment and use of electronic health records, but financial

and other barriers to full implementation remain. Long-term care in the state is provided by 80 skilled-nursing, 68 basic-care, and 72 assisted-living facilities. There are 28 independent local public health units. There are 25 facilities or programs statewide that provide mental health services, but there are ongoing challenges to providing adequate services especially in the more rural regions of the state.

The statewide problem of unmet mental and behavioral health needs, especially related to the burgeoning opioid abuse issue, is highlighted in the current *Report*. One approach already implemented through the HWI is to bring the often rural patient to the provider (rather than the other way around) through the use of telepsychiatry. The UND Department of Psychiatry and Behavioral Science has implemented training in telepsychiatry for all of its residents so that they will be able to utilize this effective modality once they get out into clinical practice.

Another problem area for the state is oral health. The *Report* summarizes the results of an extensive study undertaken by UND's Center for Rural Health in 2014 of North Dakota's oral health needs and attendant policy implications. That study promulgated five policy recommendations for decision-makers to consider to address the substantial oral health needs of the state that are particularly pronounced in rural areas and in Indian Country.

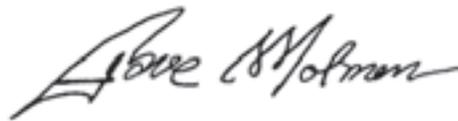
The *Report* then analyzes the quality of healthcare delivered in North Dakota and found in general that it is as good as or better than much of the United States, but there appears to have been a decline in several measures in the past few years, particularly in the delivery of certain acute-care services. North Dakota (along with other upper Midwest states) generally provides high-quality care at relatively lower cost than other states in the United States; North Dakota ranked 26th in the country in one recent assessment undertaken by the Commonwealth Fund (but down from 9th in 2009).

The *Report* concludes with a strong ongoing endorsement of the HWI and a recommendation to continue its funding by the 65th Legislative Assembly. One

component of the HWI—the RuralMed medical school scholarship program—is cited in particular for its positive results in rural physician recruitment. An important issue for consideration by the 65th Legislative Assembly is the effect of the state's current financial status on funding

Deliberations by the 65th Legislative Assembly are ongoing. Final decisions regarding funding for the HWI will be forthcoming in May 2017.

for the HWI. Because of the required budget allotment process during the 2015–2017 biennium that amounted effectively to more than a 10% budget reduction, 19 approved residency slots (post-MD degree training) could not be funded. The budget submitted by the UND SMHS for the 2017–2019 biennium, while conforming to the required 90% budget request model required by the governor, has been structured to permit full funding of the HWI (including the currently approved but unfunded 19 residency slots). Thus, it will be up to the 65th Legislative Assembly to weigh the merits of full funding of the HWI in relation to the other funding priorities in the state. The UND SMHS Advisory Council strongly supports full funding of the HWI if at all feasible. 🌱



David Molmen, MPH, Chair



Joshua Wynne, MD, MBA, MPH,
Executive Secretary, UND School of
Medicine and Health Sciences Advisory
Council.

An electronic version of the *Report* is available at
<http://www.med.und.edu/biennial-report/index.cfm>

Mission Critical

The UND School of Medicine and Health Sciences' strategy that aims to take research from "lab bench to bedside."

By Deb Pedraza and
Juan Pedraza

To accomplish that strategy, the School recently appointed Marc Basson, MD, PhD, MBA, FACS, to the post of senior associate dean for medicine and research; and Brij Singh, PhD, as assistant dean for research.

"I am so pleased that Drs. Basson and Singh have accepted these additional

“ We have just come off our most successful year ever from the standpoint of external funding.”

responsibilities,” said UND Vice President for Health Affairs and SMHS Dean Joshua Wynne, MD, MBA, MPH, in a release about the selection of Basson and Singh to their expanded portfolios.

“We have just come off our most successful year ever from the standpoint of external funding, and I expect the dynamic duo of Marc and Brij to help guide us to even greater heights of achievement,” Wynne said.

In a wide-ranging interview about the thinking behind the new strategy, Basson said the new strategy focusing on translational research involves more than just new efforts in the lab.

“I see this new focus as building bridges between researchers and clinicians to help us get more research results to patients,” said Basson, himself an administrator, teacher, and active researcher. “This is a national issue: we know that we already do excellent research here, but we need to close the gap between the researchers (the bench) and patients (the bedside). This is all about improving health outcomes.”

Basson points to the good science behind a promising drug therapy, for example.

“In order for that drug to affect health outcomes, the challenge is to get doctors to prescribe it,” Basson said.

“Thus we see the fundamental mission of the medical school is to do research that

improves the health of North Dakota.”

“North Dakota’s challenge is that we don’t have an army of clinicians in a university hospital that is connected to our med school, so there’s effectively a separation of scientists and clinicians,” he said. “Our researchers today do not have as much contact with doctors or patient samples as we would like; so the translational aspect of research is hampered.”

So, he adds, the “Bench to Bedside” conundrum is how to bridge that gap.

“It’s a fundamental challenge,” Basson said. “So much so that the National Institutes of Health [NIH] is funding initiatives nationally to bring the bench closer to the bedside.”

“We’re building bridges between clinicians and our good basic scientific enterprise, as well as bridges between clinicians and health research folk, such as those at our Center for Rural Health and our Master of Public Health Program in our Department of Population Health,” Basson said.

Part of the School’s new research strategy includes tapping into data accumulated by Sanford Health and the U.S. Department of Veterans Affairs.

“That’s also part of seeing more bridges built,” Basson said. “We want to encourage clinicians to collaborate with researchers; there’s a dividend for both sides. We must help them become more productive and help direct their work toward a translational bent.”

Basson says he knows firsthand what this big challenge adds up to—it’s definitely a balancing act that requires effective time management.

“Today,” he said during the interview, “is a typical day for me. I started out with rounds at the hospital; then I did some administrative work; I just came up from two hours in my lab; then after this interview, I’ll go back to the clinic. Yes, it’s a lot to juggle, but the ability to move

back and forth is very useful to me.”

Basson’s NIH funding focuses on regulation of intestinal epithelial differentiation, which has direct clinical relevance in relation to fasting, starvation, and short gut syndrome; indirectly, it’s related to bariatric surgery and weight loss surgery—trying to understand the biology of what happens.

“And I always ask myself ‘What am I going to do with the results once I’ve done the research,’ ” he said. “Pure science is fun. But what does one do with the findings once they’re known? Our Legislature expects findings to be beneficial to North Dakota citizens, and the NIH wants research to be clinically significant.”

In terms of the bridges he’s talking about, the advantage of the translational focus of research—partnerships with clinicians—is having someone to talk to about findings.

“I see this new focus as building bridges between researchers and clinicians to help us get more research results to patients.”

“So we’re actually talking about ‘bench to bedside’ and ‘bedside to bench’—it’s a two-way exchange,” Basson said. “We need to match expertise between clinicians and researcher.”

At the administrative level, the new research strategy is about clearly understanding what each member of the research team is up to and what resources each has—intellectual resources in particular—that can be used by others to reach a common goal.

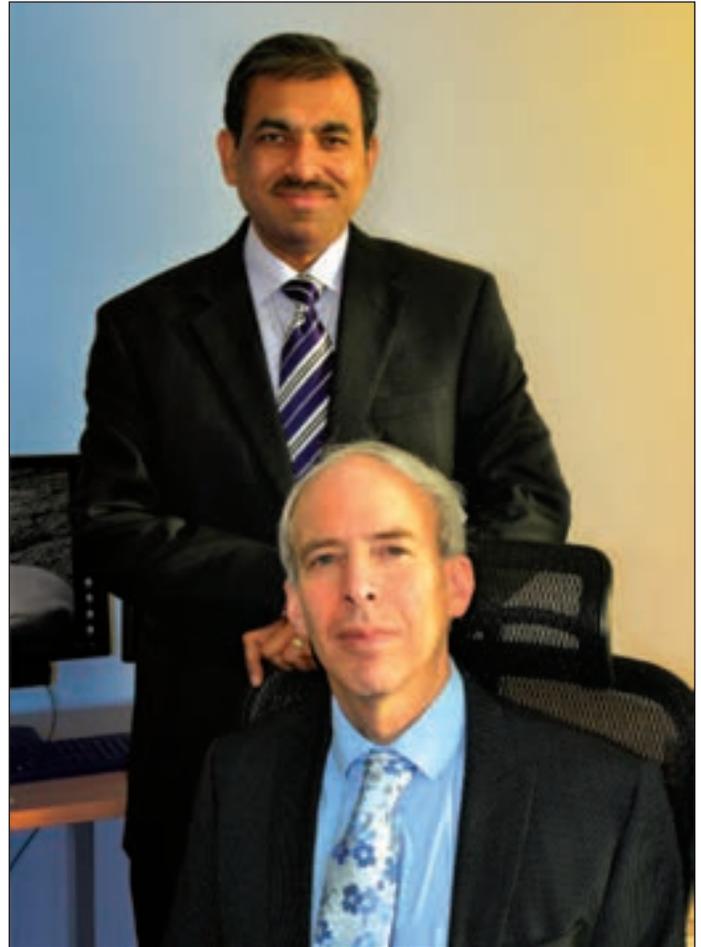
“We’re here to facilitate our researchers to do what they are trying to do, to advocate for clinical and translational research, and to break down barriers so everyone can do their work better,” Basson said.

Basson’s teammate in this effort is Brij Singh, a longtime biomedical scientist at the School who focuses on calcium metabolism—one of the vital minerals that help to keep us alive. His research interests also include cell proliferation, autophagy and cell death, neuronal physiology and neurodegeneration, epigenetics, and stem cells.

“My new role is to look after what all research portfolios are and to find ways to improve them,” Singh said. “We’ve been very successful in building research capabilities in biomedical sciences, especially in our focus areas—neurosciences, epigenetics and cancer biology, and host-pathogen interactions.”

But echoing Dr. Basson’s take, Singh said, “We’ve been lacking in translation to clinical and applied forms—actually, it’s a bottleneck for the whole nation.”

Singh says he himself welcomes the opportunity to work with a clinical team “so that we can make more discoveries that are useful to patients. We want to increase interaction between these groups—scientists and clinicians—to improve things for patients.”



Brij Singh, standing, Marc Basson, seated.

About Marc Basson

Basson is an educator, scientist, and surgeon who is recognized internationally for his research on the extracellular physical forces that affect intracellular signaling in cancer biology and the healing of the gastrointestinal tract of critically ill or injured patients. All of the clinical department chairs as well as the regional campus deans and the UND-sponsored residency programs report to Basson, who has been associate dean for medicine at the SMHS since August 2015.

About Brij Singh

Singh is an accomplished senior biomedical scientist who has been at the SMHS since 2003, where he has helped build an internationally recognized program studying molecular mechanisms of particular types of calcium channels in normal and pathological conditions. The well-known nature of his research has garnered Singh strong and consistent funding for his research, particularly continuous funding with the highest level of grants and awards from the National Institutes of Health. In May of 2016, Singh was selected by his peers to be a Chester Fritz Distinguished Professor, the highest honor the University can bestow upon its faculty. Singh reports to Basson.

Donning of the White Coat

By Erica Nelson



Dean Wynne with Erica Nelson of Fargo, North Dakota

“I was a daughter who just vowed **to live for her patients, to listen to them** because they are the most important part of a doctor's career.”

The day I had been waiting for, for what seemed like forever, has come and gone. But not gone in the sense that it has been forgotten; rather in the sense that now I can officially say I am a medical student.

When I thought about the White Coat Ceremony, I thought about what it would mean to me and how I would react to the Oath. However, having now recited the Hippocratic Oath and hearing the overwhelming applause from the audience, I could never have imagined how I would be feeling during those moments.

I was ecstatic, scared, overwhelmed, passionate, proud, grateful, and joyous—to name a few. But I probably felt a mix of a thousand emotions that I couldn't possibly put a name to.

As I turned around to face the audience to be introduced along with everyone else in my class, I caught my father's eye. He was sitting in the far back of the crowd, but I managed to lock eyes with him. Then tears instantly welled up in my eyes. I had dreamed of this moment for so long, and now it had finally come true. More importantly, I saw how proud my

dad was. I knew I wouldn't be standing there without the help of my parents, family, and friends. I knew I had made them proud; I had gone above and beyond their expectations. I was a daughter with high hopes and dreams, determined to follow my heart. I was a daughter who just vowed to live for her patients, to listen to them because they are the most important part of a doctor's career. I was a daughter who would now embark on a difficult journey but only because she had support around her.

The audience's applause, which my family was surely a part of, was like no other. It gave me courage, pride, and responsibility. It told me what my duty as a doctor would be. It told me that I cannot let my patients, my family, and my colleagues down or at least not without a fight.

As I reflect on what I will take away from this ceremony, I know I am in this no matter what—you can be sure of that. I am going to put my white coat to good use and abide by the Hippocratic Oath for as long as I live.

Is Finding A Balance Essential?

By Erica Nelson

I feel like it was just yesterday that I was sitting at home eager to start medical school. However, here I am seven, almost eight, weeks later feeling like a true medical student. I would like to say I stopped and "smelled the roses" along the way, but these past few weeks have gone by faster than I had anticipated.

While I knew I would learn a lot, nothing could have prepared me for the loads of information I now have stored in my brain. I can recite things related to anatomy, histology, biochemistry, fetal development, cellular biology, genetics, ethics, physiology and MORE! But what makes me feel like a medical student is not all the information I have managed to cram into my brain. No, it has more to do with my new appreciation for time.

Never have I been so grateful for the little bit of time I find to do laundry, clean my room—yeah it gets messy—shop for groceries, make a "fancy" meal, and even watch a single episode on Netflix.

Everyone is always telling me to find a balance between school and life. But, it is not always that easy. How do I fit in time to study, eat, exercise, relax, and converse with friends and family? Just a few simple, important things, yet so difficult to handle. I constantly find myself prioritizing study time over everything else and feeling like I should be studying when I am doing other things—that is when I know I need to balance.

But . . . no, I do not always balance to the best of my ability. I could always study more and never feel like I have studied enough. So, I must remind myself to take time for me! If I am not healthy, my brain is not either.

How do I balance? How can a medical student balance school and life?

- Sleep: You are not you when you do not sleep. I make sure I get seven hours of sleep a night.
- Exercise: I run 30 minutes almost

every day, no matter how much else I need to get done. It wakes me up, keeps me motivated, and clears my thoughts.

- Friends: Friends—I have friends you say. Yes, but do NOT take them for granted. You will not get through medical school without a couple of shoulders to lean on. Find friends who will let you vent about medical school and friends who will make you laugh! I would not have made it this far without my friends.
- Know when to quit: Be able to identify when you are studying ineffectively. There is no use pushing yourself, so take a break and come back when you are refreshed.
- Life: Do not push off doing laundry, buying groceries, making time for family and friends, and doing things you like to do. You cannot get by without doing stuff for yourself in order to remain physically and emotionally healthy.

Some days will be harder than others. Just remember that you need to re-prioritize when you find yourself losing balance. 

“But what makes me feel like a medical student is not all the information I have managed to cram into my brain. No, it has more to do with my new appreciation for time.”

Recruitment Evolution

Rural areas in North Dakota have unique challenges in the changing landscape of provider recruitment. In an industry of constant change, a few North Dakota facilities were asked to share how they are adapting and still finding providers.

By Stacy Kusler

Changes and Challenges

Randy Pederson has been the CEO of Tioga Medical Center for 12 years. In those



Michael Curtis, Assistant Administrator, Jessica Heggen, FNP, and Dan Kelly, CEO, of McKenzie County Health Systems

12 years, he said they've always had an opening for a family medicine physician. "We're always searching," he said. "You wake up thinking about how to get another doctor, and you go to bed thinking

to reach candidates," she said. But, additionally "organizations are continually thinking outside the box to find them."

Some facilities choose to seek help recruiting in the form of professional recruitment firms. Cavalier County Memorial Hospital in Langdon researched firms with a good track record of recruiting to North Dakota's rural communities. Through this method, they were able to successfully recruit Dr. Lynne Didrikson in November of 2016.

Didrikson is a Roseau, Minnesota, native and a UND Family Medicine Residency graduate (1982 to 1985). She had been working for a locum tenens company in Minnesota when she received an e-mail about the job in Langdon. She said the three main reasons she chose to take the job were that it was closer to her home in Roseau where her husband still farms, she felt needed in the community, and the salary offer was great.

"I have always loved rural; I've always worked in rural, and this area needed me," Didrikson said.

Michael Curtis and his colleagues at McKenzie County Healthcare Systems (MCHS) have found that a homegrown approach to provider recruitment works best. Curtis joined the hospital as an assistant administrator in Watford City in 2014.

"The thing I've noticed since being here is that our operating environment is very unique," he said. Curtis said the community of Watford City is hard to explain through traditional recruitment avenues such as professional recruitment firms, which haven't produced successful results for them in the past. Instead, they have focused their efforts on candidates who have had some kind of tangible link to the region such as a provider who has worked on a short-term or part-time basis.

about it." Pederson said the challenges to recruiting providers to Tioga, which are consistent for many rural North Dakota communities, include climate, a feeling of isolation or being without patient care support, and distance from family. Additionally, he says more providers need to have exposure to rural areas during training to ease fears of a rural practice lifestyle. "It's hardly ever about the money. There's always another reason that prevents them from signing with us."

Common recruitment challenges often start with a lack of supply, or rather, a lack of finding the supply. In the ever-changing landscape of candidate sourcing, healthcare facilities have a hard time keeping an eye on what has become a moving target. Jill Gilleshammer, physician recruiter for Sanford Health in Fargo, said that the increased use of technology has made it both easier and more difficult to find candidates.

"Social media offers expanded avenues

“It's hardly ever about the money.”

“It takes longer, but it’s better for us in the long run.”

This strategy proved successful with the recent recruitment of Jessica Heggen, FNP, in October of 2014. Heggen had previously worked at MCHS as an RN. She was offered a flexible schedule while she pursued her FNP. For Heggen, whose hometown is just 20 minutes from Watford City, having a supportive work environment waiting for her upon graduation was a relief.

“Having already worked there as an RN brought a sense of comfort to me as I was already familiar with the facility,” she said. “I had offers from two other rural facilities. However, I am glad that I made the decision I did, as I truly enjoy providing care to the Watford City community and surrounding area.”

Recruitment Starts with Retention in Mind

Wishing, hoping, and praying are often answers provided when administrators are asked how provider recruitment is going. While that worked for one facility (more on that later), a lot of hard work goes into not only recruiting a provider, but retaining them as well. In Watford City, the administrative team goes to great lengths to ensure existing providers are happy, listened to, and able to share opinions on practice improvement. This is one of the areas Heggen appreciates most so far at MCHS. While she is happy with her employment contract, she said one thing that goes above and beyond the contract is the ongoing attentiveness from the administrative team.

“Even today, after being here for two and a half years, they continue to inquire about what they can do to improve job satisfaction.” Curtis said that’s all part of the plan. “It takes a lot of time and energy to recruit, so it’s important that we focus on retaining our existing providers.”

As for hoping and praying (not to mention an award-winning hospital and leadership), that method came to fruition for Tioga Medical Center with the recruitment of Dr. Robert Rotering in the fall of 2016. Rotering, an Amidon, N.Dak., native, had a long and illustrious career in global medicine before he decided he was



At left, Dr. Lynne Didrikson in Langdon working with her nurse.

ready to come back home to his rural roots. Through his search of North Dakota facilities, Rotering was impressed by Tioga Medical Center’s receiving the National Rural Health Association’s Top 20 Hospitals award, as well as Pederson’s outstanding leadership history. Paired with a brand new clinic and a desirable patient population, it was a perfect match.

“With Dr. Rotering, it was never about the money. We offered a nice contract, but his motivation was more lifestyle and practice driven,” Pederson said. Although the stars aligned just right to get Dr. Rotering to Tioga, you can be certain Pederson and his team are working hard to make sure he calls Tioga home for years to come. 🌿

Aging in Place

New project will help Native elders stay in their homes and communities.

By Nikki Massman

“The tribe will own this idea, and it is built on their own identification of a need in their community.”



Paula Morin-Carter

On the last Monday of each month on the Spirit Lake Reservation near Devils Lake, North Dakota, the community hosts an Elders' Day Out. Elders and others come together to visit, eat, and play a little bingo, all in an effort to celebrate and enhance the quality of life for their treasured elders. The Native Aging in Place Project (NAPP) follows closely that same effort of enhancing the quality of life for the Spirit Lake elders through a mission of assisting them to “age in place.”

Aging in place refers to the idea that elders can stay in their homes and communities longer as they age. Often the option of moving to a long-term care (LTC) facility is not feasible because of many factors, including cost and distance to the facility from home. The need for healthcare workers, family members, and friends to train in caregiving for the elders still living at home becomes crucial.

The newly funded Native Aging in Place Project is helping to fill that need. By engaging community resources and the National Resource Center on Native American Aging's (NRCNAA) Native Elder Caregiver Curriculum, the NAPP has launched a pilot project on the Spirit Lake reservation to build local capacity to care for the community's elders while they remain in their homes. The Native Elder Caregiver Curriculum was developed through a collaboration with the Cankdeska Cikana Community College and input from elders and community members of the Spirit Lake Nation, and is a tool to assist family and community members in learning to care for their elders.

“You often hear that it takes a village to raise a child,” said Paula Morin-Carter, PhD, program director for the NAPP and NRCNAA. “It also takes a village to care

for elders. If you have an elder without anyone to care for him or her for instance, especially if they're isolated and possibly lonely, their quality of life will not be the same as an elder who has access to home care services and is surrounded by family and friends. In some rural communities such as reservations, there may not be a long-term care facility in that tribal community. The nearest facility may be too far away for elders' families to visit regularly. Many times a family member can take care of their elder, but that caregiver may just need some guidance and support. The NAPP project aims to give the caregivers and community health workers the opportunity for training and resources for support so caregivers can feel empowered as they take care of their elders. One of the goals of the NAPP is to build the community resources of training and support so that caregivers can feel confident in caring for their elders."

Along with the rest of the capacity building comes a crucial piece of support for caregivers and community health workers, and that is respite. Much of the elder care in Indian Country comes through unpaid caregiving by family members. Some of the caregivers do not have the resources even to allow them to take a day off, so it is imperative to build capacity for respite caregivers within the community. Training additional family and friends to be able to step in when needed is essential to the health and well-being of the elders and their caregivers.

"Respite care is the 'make or break' circumstance for successful caregiving at home. The more people we have trained, the less we have to worry about burning people out," Carter said. "In my own family, my sister was the nurse and cared for my mother around the clock. If my sister needed a break or a vacation, I would step in. But I needed training from my sister on everything from basic denture care to how to set up medications for the week. She taught me what signs and symptoms to watch for that indicated certain acute issues, and what to do about them if they occurred. Had I not had the support and training from my sister, I would not have been able to give her the break she needed in caring for our

mother."

Since the project began a few months ago, Spirit Lake tribal leaders have begun the basic building process of securing office space, hiring project staff, and looking toward the purchase of a van with a lift for the elders' transportation needs. The next level of building will include training the workforce needed, and some of that training will utilize the NRCNAA's Native Elder Caregiver Curriculum.

"I'm excited about the hiring of the personnel because it's capacity building for the reservation and will aid in the project's sustainability," said Morin-Carter. "It's jobs; it's the training of the elder care providers and healthcare professionals in elder care. The whole mission of NAPP is dear to our hearts. The tribe will own this idea, and it is built on their own identification of a need in their community. The elders' input has been critical in identifying what was needed. They're keen on what they need to age at home and what supports would contribute to their quality of life. Simply put, we want to allow or assist elders to age in place. Although at times it's necessary for some elders to be in a residential care facility, the majority of the elders want to age at home, because that's what's comfortable for them; that's what makes them happy. They want to have visitors, but as our communities age, it's important these visitors can also provide some basic care or recognize health issues that need attention. This initiative offers the opportunity for true tribal capacity building so that elders can live out their lives at home if they so choose."

As the program grows, Morin-Carter, along with Christine Burd, PhD, RN, with the UND College of Nursing and Professional Disciplines, who is an instrumental part of the NAPP, hope to implement the model on other reservations as well. This initial pilot project at Spirit Lake will develop a model, templates, and best practices in helping Native elders age in place.

The Native Aging in Place Project is located at the Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences. It is funded by Margaret A. Cargill Philanthropies.

“The elders' input has been critical in identifying what was needed.”

Sydney Larson, OT Student of the Year

By Deb Pedraza
and Juan Pedraza

“ I enjoy
the **patient**
contact.”



Sydney Larson is a smart, accomplished organizer—4.0 academic GPA, teaching assistant, with notable honors, and actively

engaged in a number of community activities.

And let's not bypass this one: she's a

member of the UND Pride of the North Athletic Bands, playing the bass drum.

Along the way, the Hazen, N.Dak., native made North Dakota Occupational Therapy Student of the Year.

This exceptional student is well liked, too, according to the mentors who recommended her for the Student of the Year award.

How does she do it?

Well, to hear Sydney tell her own story, it mostly started when she accidentally hit her head hard in a fall in high school—she doesn't know whether the fall followed a seizure or whether she passed out. But one consequence of that brain injury was the excellent care she received—and the impression she had of her healthcare practitioner.

"She was very involved with me as a patient," said Sydney, who enjoys teaching and working with students as well as being a student herself. "I would not have gotten through the year following that accident without my practitioner."

So impressed, in fact, that Sydney resolved to become a practitioner herself. Sydney looked at a number of healthcare fields before deciding on the UND SMHS occupational therapy program after spending a couple of years at Bismarck State College.

That wasn't an automatic choice for Sydney.

A methodical and thoughtful student, Sydney went to Career Services to take a closer look at her healthcare career options—after taking career tests, she learned for the first time about occupational therapy and decided that was the program for her. Sydney's OT program adviser helped her juggle courses so she could apply to the OT program.

Sydney also joined the Student Occupational Therapy Association and is president of Pi Theta Epsilon—a specialized honor society for OT students and alumni. With the band, besides playing her instruments, she has duties with the Music Department recording concerts or as a stagehand.

All her activities—academic, church, volunteer, and more—involve a social component.

"I don't have the time to do social

things on the side, so I choose useful activities that allow me to be with my friends. Even the things I do outside of school have social value—I firmly believe in work-life balance."

Why OT?

"I enjoy the patient contact, and I like to help people be involved in activities they love doing or want to be involved with to enjoy life," Sydney said. "As an occupational therapist, I help them to recover more than daily living skill—besides relearning, say, a fork and knife, I help them with many daily living tasks, with money management, education, work, play, sleep, and leisure."

She especially appreciates the outpatient setting because it allows her to build stronger relationships because in such settings she has more contact with her patients.

"Some patients, such as those with Down syndrome, may require lifelong OT," she said.

She's now in her second year of the master's degree OT program, expecting to collect her degree next year.

Her advice to students?

"Don't be so worried about your studies that you don't do anything outside the box," Sydney said. "You need to see more of the big picture of life. And be open to other options both inside and outside your profession. And you don't need to tie yourself down to one profession for the rest of your life."

Top practical hint: stay organized. Sydney uses a paper day planner.

"I've been using a planner since I was in high school," she said. "It helps me see the bigger picture. Everything gets written down."

“I firmly believe in work-life balance.”



Travels Beyond the Sheyenne National Grassland

By Donald Jurivich

A recent excursion to the North Dakota State Veterans Home revealed a lot to UND School of Medicine and Health Sciences' Department of Geriatrics Chair and Professor Dr. Donald Jurivich. He was invited to the Lisbon, N.Dak., facility to harness his long-term care expertise and potentially help staff solve some tricky problems. The following is Dr. Jurivich's recollection of his visit.

As a state-funded medical faculty member, I was absolutely delighted to accept the invitation from a state and federally supported facility for our aging veterans. I have over 30 years of service to the Veterans Administration, and while technically retired from the VA, I look forward to volunteer efforts with the Fargo VA and the North Dakota State Veterans Home to strengthen geriatric care across the state.

My mission at the North Dakota State Veterans Home was to address some difficult safety issues such as overuse of chemical restraints and falls. My early observations were that the staff at the ND Veterans Home are vibrant, dedicated, and hugely mindful of patient-centered care. In fact, the care is so patient-centered that one elderly veteran was seen boiling his daily shellfish for lunch with staff assistance. I chatted with the veteran and joked that being new to the state I did not know that the Sheyenne River next to the veterans' domiciliary sported shellfish. The comment was enough for the veteran to ask me to join him for lunch, which I kindly declined because I "forgot my lobster bib."

The ND State Veterans Home is relatively new, less than five years old. The hallways are enormous and connect multiple living pods or "home units" for the veterans. It bears a striking



Donald Jurivich and John Schreiner

resemblance to the Eden concept, which is an architectural design meant to deinstitutionalize the long-term setting and make living quarters more "homey." It was a good thing the hallways are as wide as they are because the electric scooters and chairs were whizzing by at breakneck speeds. When I asked why there were so many electric scooters in the facility, the Director of Nursing Wanda Cavett commented that it is a relatively new phenomenon. "In the old building, we had three stories and the fire code did not allow for electric carts in the upper floors," she said. "Now that the building is only one floor with great distances between the residents' rooms and the activities center, just about everyone wants electric transportation. In fact, we have so many electric scooters that sometimes the bingo room does not have enough parking slots."

I then asked whether the residents were getting enough exercise as a result of the trend toward electric scooters. "Funny

you should ask,” said Cavett. “Yes, over the past year we have seen a decline in residents’ endurance, and we have had an uptick in falls since moving to the new building. We also are issuing a lot of tickets for driving mishaps, so I can’t honestly say that I am a fan of the newly issued indoor vehicles.”

I suggested that perhaps the facility could limit the hours of indoor vehicle operation or “activate” driving privileges once the resident demonstrated 10,000 steps from the previous day. In geriatrics, the electric chair or scooter is the nemesis of the elderly. It causes deconditioning, increases fall risk, and overall causes more harm than good.

Another observation at the facility was the happy barks at each corner. Therapy dogs and pets were found at just about every unit. Many of the veterans walked the dogs around the facility with the canines serving as social ambassadors for veterans who meet other veterans who may not have enough memory to know all the people, but they sure recognize their dogs. According to one research study, walking with dogs creates more exercise benefit than walking with human companions.

After touring the domiciliary areas, I was directed to the Skilled Nursing Unit, where approximately 50 veterans receive care because of restricted abilities to perform daily activities of living. As a staff safety measure, each room is equipped with an electric lift to move veterans from bed to chair or washroom if necessary. To avoid unsupervised bathing, most of the SNU rooms had only toilets and washbasins. “Many of our veterans value their independence to a fault,” said Cavett. “They seem to sacrifice good judgement for independence and just refuse help, which often results in falls.”

“It’s part of the pioneer spirit I suppose,” I thought out loud, “where there is a lot of self-reliance and resiliency. The problem is when stubbornness leads to injury, and that is never a good result as you get older.”

The highpoint of my Veterans Home visit was when I was introduced to World War II veteran and the oldest resident, John Schreiner Jr. He is 98 years old and

just recently moved from the assisted living area to the skilled nursing unit because of increased needs for ADL (activities of daily living) support. He also is using his oxygen more frequently. When I was introduced, Mr. Schreiner immediately asked how the roads were given the first snowfall of the year. “Not too bad,” I said.

I asked him how he was doing.

“Pretty good,” said the near centenarian.

“How do you like my wood cutouts?”

“Amazing, how do you make these?” was my response.

“I make the pattern, drill holes in the negative space, and then take a long thin saw and cut ‘em out.”

“Wow, negative space, you’re a really good artist,” I said.

“Well, I have not been able to do them here since I moved,” Mr. Schreiner said.

I suggested that perhaps he could make the patterns and get a “young apprentice” to help him out.

“Something to think about,” he reflected.

When asked about what he does to live a long, good life, Mr. Schreiner’s visiting daughter chimed in that “He has a good attitude.”

During our exchange, I noted Mr. Schreiner’s attributes that are commonly shared by 100-year-olds: sense of purpose, live for today, don’t sweat the small stuff, and keep moving. Also typical of the Greatest Generation, Mr. Schreiner revealed that he was deployed by the Army to New Guinea, and rather than discuss his service, he reflected on the topography and weather of the Asian Pacific—quite a contrast to Lisbon, North Dakota, he pointed out.

Perhaps the most endearing part of my encounter was Mr. Schreiner’s response to my inquiry about coming back to visit him next month to which he said, “You betcha! But watch them roads.”

Somehow, my original mission to help with safety at the Veterans Home got flipped back at me. That’s what I love so much about WW II vets—it’s never about them; they’re always looking out for the other guy. 

“That’s what I love so much about WW II vets... they’re always looking out for the other guy.”

Gaining Perspective on North Dakota

Two MD alumni are returning to North Dakota after completing their residency programs out of state.

By Jessica Sobolik

This summer, two UND School of Medicine and Health Sciences alumni will be returning to North Dakota to practice medicine. They will join the more than 700 practicing physicians in the state who have received their education from UND.

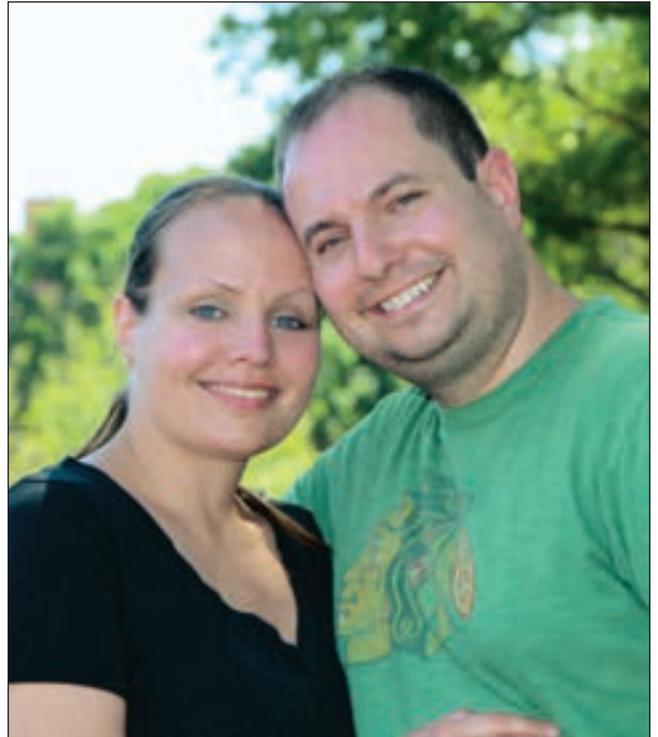
Craig Wolf, MD '13

Wolf chose to specialize in obstetrics and gynecology, which he said was ironic because going into medical school it was one of two specialties he did not want to specialize in. He was interested in surgery, but during his third-year rotation, he learned that surgery is actually a big part of OB-GYN care.

OB-GYN residency programs are only offered outside of North Dakota, so the Dickinson, N.Dak., native chose to complete his residency training at the University of Arizona Program Affiliated Hospitals in Tucson, Ariz., where he lives with his wife Destiny, a neonatal intensive care nurse at Northwest Medical Center in Tucson. "One of my mentors recommended that I look into pelvic surgical procedures," Craig said. "The University of Arizona was in the top 5 percent for vaginal hysterectomies."

Craig's return to North Dakota was initiated by Dickinson OB-GYN physician Thomas Arnold, a member of the UND SMHS Advisory Board. Arnold asked Craig's father Duane if Craig might be interested in returning to North Dakota to practice. "He was pretty sure we were interested," Destiny said. The couple soon visited the new hospital facility, CHI St. Alexius Health Dickinson (formally CHI St. Joseph's Health), and were impressed. The facility was designed during the most

recent oil boom, which designers figured would be followed by a bust period based on past history. So the building is designed to expand or contract as the number of patients ebbs and flows. "After coming to Arizona, we missed family and winter," Craig said. "We knew we at least wanted to



Destiny and Craig Wolf

come back to the Midwest because of family and the culture we were used to."

While the oil boom did in fact subside, the baby boom is continuing in Dickinson. "A lot of people moved in from all across the country because they couldn't pay the bills and needed money," Destiny said. "Many of them were honest, hardworking people. And the longer they stayed here, the more they saw the benefits. The people are friendly. The schools are excellent. There's a sense of inclusion. So a lot of young families stayed because they wanted to raise their families here."

Andrew Rodenburg, MD '13

Rodenburg chose to specialize in ophthalmology, which, like OB-GYN, means going outside of North Dakota for residency training. The Sterling, N.Dak., native is completing his residency training at the University of Oklahoma Health Sciences Center Program in Oklahoma City, Okla., where he lives with his wife Sarah, an occupational therapist specializing in low-vision rehabilitation.

Andrew enjoyed his rotation in ophthalmology during medical school and established a mentorship with Aaron Fortney, MD '99, an ophthalmologist at Dakota Eye Institute in Bismarck. Fortney had also gone through the residency program at the University of Oklahoma, and Andrew learned through the interview process that it was a great program. Not coincidentally, Andrew will soon join Fortney at the Dakota Eye Institute. Andrew's wife Sarah also grew up near Bismarck. "We both love North Dakota," Dr. Rodenburg said. "So it was an obvious choice for us."

For the Wolfs, Destiny admits that she and Craig had a moment when they wondered if they had made the right decision to come back to North Dakota—during a visit last winter. "We were traveling from Bismarck to Fargo, and we stopped at a gas station in Valley City," she said. "The cashier said it was too cold to charge us for our coffee. So that was our affirmation. It didn't matter how cold it was, we did the right thing."

"It's not a bad thing to leave the state," she added. "It gives you good perspective to bring back to the state."

HOST

While away for residency training, Drs. Rodenburg and Wolf and their spouses continued to support UND SMHS medical students through the HOST (Housing Our Students as they Travel) program. Fourth-year medical students will travel on average to 10 residency program interviews across the country—right before they graduate and have to start paying back their average of \$180,000 in student debt. To help ease the financial burden of interviews, the School created the HOST program modeled after similar programs at medical schools across



Sarah and Andrew Rodenburg

the country. "If we could lower the debt load for a student, show them around, give them a place to stay, share with them what it's like to move across the country and give them a positive experience, it's an easy way to give back," Destiny said. "We've been where they have yet to go, so we can offer some advice on that."

The Wolfs hosted Jared Sander of Fargo, N.Dak., in 2015. He ultimately chose to complete his OB-GYN residency at the University of Arizona College of Medicine in Phoenix; coincidentally, it is where Kate Peterson, MD '13, a classmate of Drs. Rodenburg and Wolf, is finishing her fourth year of OB-GYN residency. But Dr. Sander said he had a wonderful experience when he visited the Wolfs. "They provided a chance to learn more about the community outside of the residency program," Sander said. "I want to pay it forward when I have the chance to host in the future."

The Rodenburgs hosted Jamie Odden of West Fargo, N.Dak., in December 2016 when she interviewed with the ophthalmology residency program at the University of Oklahoma. She will find out which residency program she ultimately "matched" with on March 17. "I have been in their shoes recently and know how much a helping hand can mean," Dr. Rodenburg said. 🌿

'10s



Parker Martin, MPAS '15, is now at Saint Anthony Hospital in Oklahoma City, Okla., practicing cardiothoracic and vascular surgery. Martin is board-certified by the National Commission on Certification of Physician Assistants and completed a residency for PAs in cardiothoracic surgery.

Tara Mertz-Hack, MD '14, has been appointed to serve as the resident representative to the American Academy of Family Physicians Commission on Governmental Advocacy. Mertz-Hack is currently chief resident at the Family Medicine Residency of Idaho Magic Valley Rural Training Track in southcentral Idaho. She will be returning to North Dakota in the summer of 2017 when she will be joining Sanford Health in Oakes.

Reema Menezes, FM Res '13, is now at Family HealthCare Network's Visalia, Calif., Oak Health Center. Menezes received her medical education from Indira Gandhi Government Medical College in Nagpur, India, and completed her residency in family medicine at the University of North Dakota School of Medicine and Health Sciences in Minot, N.Dak. She is a member of the American Academy of Family Physicians and Greenville County Medical Society.

Jay MacGregor, Sur Res '12, has been hired as a general surgeon on the surgical team by the Fargo, N.Dak., Veterans Affairs Health Care System.

Nikki Welk, MPAS '12, is now at the Fargo, N.Dak., Center for Dermatology. Welk is certified by the National Commission on Certification of Physician Assistants. She specializes in medical, procedural, and cosmetic dermatology.

Cameron Charchenko, MD '11, has joined CHI St. Alexis Health Urology Clinic in Bismarck, N.Dak. He completed a general surgery internship, urology residency, and six-month minimally invasive urologic surgery fellowship at the Mayo Clinic in Rochester, Minn.



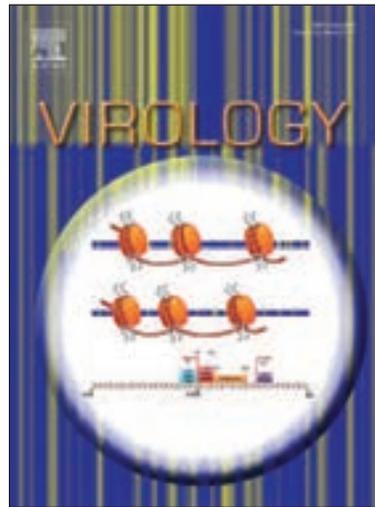
Daniel Dixon, MD '10, a native of Carson, N.Dak., has joined the Bone and Joint Center in Bismarck, N.Dak. Dixon specializes in the treatment of common and complex problems of the spine including traumatic injuries, degenerative conditions, adult and pediatric deformity, and complex revision spine surgery.

Emily Welle, MD '11, has joined the Behavioral Health Department at the Essentia Health St. Mary's-Detroit Lakes Clinic in Detroit Lakes, Minn. Welle provides behavioral health services for people ages 17 and older.



Matthew Hefty, MD '10, is the new general surgeon at West River Health Services in Hettinger, N.Dak. Hefty is a native of Bismarck, N.Dak., and completed his residency in general surgery at Grand Rapids Medical Education Partners in Grand Rapids, Mich.

'00s



Lata Balakrishnan, PhD, '07, is an Assistant Professor in Biology at the University of Indiana-Purdue University Indianapolis. She and Barry Milavetz, UND associate vice president for research and economic development, and professor in the Department of Biomedical Sciences, co-authored an article, titled "Nucleosome positioning in the regulatory region of SV40 chromatin

correlates with the activation and repression of early and late transcription during infection," which is featured on the March cover of *Virology* magazine. The center image shows the positioning of nucleosomes in wild-type SV40 virions (top panel) and in SV40 minichromosomes (middle panel). The bottom panel represents regulatory elements in the SV40 promoter. The image is overlaid on heat maps obtained from next-generation sequencing.

'80s

Linda Duppong, FNP '80, has retired from her position as the primary provider at the Glen Ullin Family Medical Clinic and at Jacobson Memorial Hospital Care Center in Elgin, N.Dak. In 2015, she was named the North Dakota Physician Assistant of the Year by the North Dakota Academy of Physician Assistants.

UND Scientists Publish Vade Mecum to Aid Study of Drug-Resistant Bacteria Threat

By Denis MacLeod

Their names are mysterious and complex; the diseases they cause are well known. Scientists call them *Yersinia pestis*, *Escherichia coli*, *Salmonella*, *Shigella*, and *Pseudomonas*. The diseases they cause range from the plague to pneumonia to virulent food-borne illnesses.

Most make the Top-18 list of biggest threats to the United States from drug-resistant bacteria compiled by the Centers for Disease Control and Prevention. According to the CDC, “at least 2 million people become infected with bacteria that are resistant to antibiotics and at least 23,000 people die each year as a direct result of these infections.”

The search to prevent infections from these bacteria received a boost from biomedical scientists at the University of North Dakota School of Medicine and Health Sciences. Associate Professor Matthew L. Nilles, PhD, and Assistant Professor Danielle L. Jessen Condry, PhD, in the Department of Biomedical Sciences, have published a handbook or vade mecum to aid researchers in studying pathogenic bacteria.

Nilles and Jessen Condry are the editors of *Type 3 Secretion Systems: Methods and Protocols*. The book discusses techniques to study a method some bacteria use to infect human cells. Nilles and Jessen Condry also contributed to several chapters in the book. The book draws on contributions from scientists across Europe and the United States.

Other contributors from the UND SMHS Department of Biomedical Sciences are Associate Professor David S. Bradley, PhD, and graduate students Travis D. Alvine and Peter L. Knopick. Former members of the Nilles lab also contributed chapters, including Patrick Osei-Owusu, PhD, Thomas A. Henderson, PhD, and Melody Toosky, PhD, who

provided the cover art for the book.

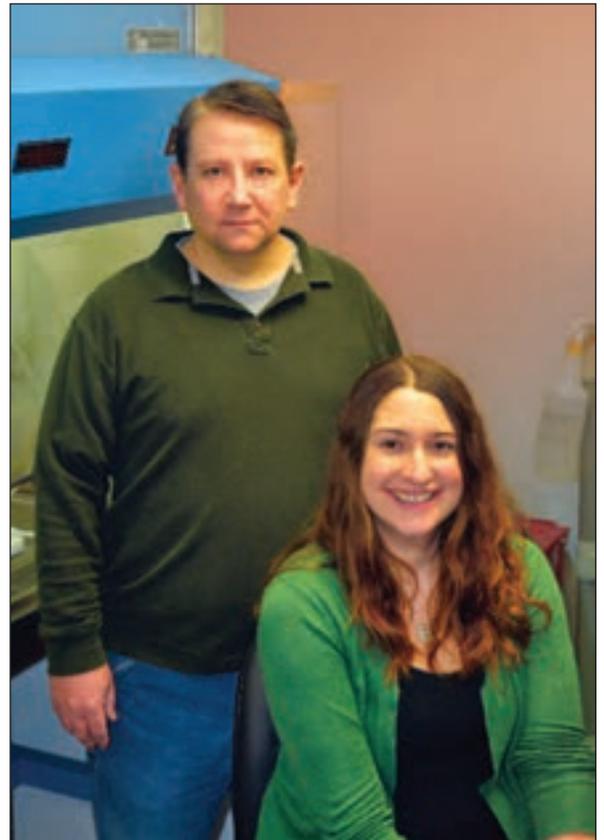
Certain bacteria use a unique burglar’s tool to break in and enter cells; it is known as a type 3 secretion (T3S) system. T3S systems are used by pathogenic bacteria to inject toxins directly into cells to change cell behavior.

In the book, Nilles and Jessen Condry say, “Type III secretion (T3S) systems are found in a large number of gram-negative bacteria, where they function to manipulate the biology of infected hosts.”

Gram-negative refers to a result from a laboratory technique used in the identification of bacteria. The family of gram-negative bacteria includes some of the most virulent and most drug-resistant threats to humans.

“We hope to provide other researchers with a starting toolbox to initiate or advance their work on T3S systems, potentially leading to a better understanding of the roles of T3S systems in bacterial-host interactions,” Nilles said.

A free preview of the book is available at the publisher’s website: <http://www.springer.com/us/book/9781493966479>.



Matthew Nilles and Danielle Jessen Condry



Anne Short Johnson, BS MT '55, age 82, died October 21, 2016, at the Good Samaritan Society in Larimore, N.Dak. Anne Whittemore Short was born on October 25, 1933, in Bismarck, N.Dak. Her parents were Edith Whittemore Short and Don Levingston Short, who lived on a ranch north of Medora, N.Dak. Her grandparents were Dr. Arthur Augustus Whittemore and Blanche Gurr Lynn Whittemore of Bismarck, and Hugh Connoran (Con) Short and Anne Otley Corkery Short, who also ranched north of Medora. Anne graduated from Beach High School in 1951 and from the University of North Dakota in 1955 with a major in medical technology. She married Ward Kendall Johnson on June 23, 1956. They lived in six states in addition to North Dakota before coming to Bismarck in 1972. Anne worked as a medical technologist at Deaconess Hospital in Grand Forks and the UND Medical School while Kendall was attending the University. After all her children were in school, she worked as a medical technologist in the Chemistry and the Special Chemistry departments for St. Alexius Medical Center in Bismarck for 18 years until her retirement. Anne was an active member of the Episcopal Church all her life. She was baptized at St. George's Episcopal Church in Bismarck. She worked many years in children's activities such as Girl Scouts, Cub Scouts, Rainbow Girls, and was a Sunday school teacher and Bible school teacher. She enjoyed watching her children's concerts and sporting events. Later she became a member of Chapter F of the PEO Sisterhood, where she served as Chapter F president and as North Dakota state president. She was a member of the Fortnightly Study Club, which she also served as president. She participated in many church activities, was president of the Episcopal Church Women, and served for many years as the United Thank Offering coordinator for St. George's and for the Diocese of North Dakota. Anne loved being a grandmother and loved being involved in her grandchildren's lives. She felt especially fortunate to be a part of her three Bismarck grandchildren's lives, and enjoyed going to their concerts and games for so many years. Anne was proud of all 14 of her grandchildren, was pleased when they came to visit in Bismarck, and planned visits most years to see them wherever they lived.

Dr. Curtis Juhala, BS Med '65, age 75, died November 24, 2016, at Baptist Health Care Center, Bismarck, N.Dak. Curtis Alfred Juhala was born July 19, 1941, in Bismarck, son of Alfred and Lucille (Josephson) Juhala. He grew up in Bismarck, graduating from Bismarck High School in 1959. Curt began studies at Bismarck Junior College, where, in 1960, he met the love of his life, Linda Swanson. Curt transferred to the University of North Dakota in 1961, with Linda following the year after. The two married in Bismarck at First Lutheran Church on June 6, 1963. Curt graduated from the University of North Dakota in 1963 with a Bachelor of Science in Medicine. He enlisted in the U.S. Navy and completed two years of studies at the UND School of Medicine before he and Linda moved to Dallas, Texas, where Curt finished his medical degree at the University of Texas Southwestern. He and Linda moved to Philadelphia, Pa., where Curt served at the U.S. Naval Hospital. Their daughter Amy was

born there. They moved to North Carolina, where Curt served as a Navy doctor at Marine Corps Air Station Cherry Point. Their daughter Traci was born there. After finishing eight years of active duty military service, Curt and Linda moved with their daughters to Jacksonville, Fla. Curt completed residencies in both general and plastic surgery in Jacksonville. The family moved to Louisville, Ky., where Curt completed a year as a Christine Kleinert Hand Fellow at the University of Louisville School of Medicine. The family then moved back to Jacksonville, where Curt entered practice as a plastic surgeon. In the summer of 1978, the family moved back to North Dakota, where Curt started his practice in Bismarck. He held medical staff appointments at both St. Alexius and Bismarck (later Medcenter One) hospitals. He served as both chief of surgery and chief of staff at St. Alexius Medical Center. In 1986, he joined the U.S. Army Reserve and attained the rank of colonel; he was called to active duty for Operation Desert Storm and served at Brooke Army Medical Center at Fort Sam Houston, Texas. In 1995, he left solo practice and joined MidDakota Clinic. He retired from practice in 2001 because of diabetic neuropathy. Curt lived for his vocation. He loved surgery, and he loved working with people; he served over 14,000 patients during his career. After his retirement from medicine, he had multiple part-time jobs. As a longtime admirer of Eske Solberg, a former television weatherman in Bismarck, he lived out one of his dreams when he worked a short stint at KFYY as the weekend weatherman in 2001. Then he accepted a position working in emergency preparedness with the State Health Department. After that, he worked for the Social Security Administration with other retired physicians as a claims reviewer. Curt also pursued an active avocation of singing. He sang in the Bismarck-Mandan Civic Chorus for nearly 30 years. He also sang as a soloist every fall at the Norsk Høstfest in Minot. Many festival attendees knew Curt as the singer of the Finnish national anthem; he was very proud of being 100 percent Finnish. Curt also sang in multiple church choirs over the years, and he was a soloist for many events and ceremonies. He even sang "One Hand, One Heart" from *West Side Story* to his wife, Linda, when they married. Curt also loved to travel. Over the years, he traveled throughout North America and to several countries in Europe and Asia. He was active as a clinical educator through the UND School of Medicine and Health Sciences. Curt received many awards: he was BSC Alumnus of the Year in 1982 and a 2010 inductee to the Bismarck High School Hall of Fame.

Dr. Bruce L. Kihlstrom, BS Med '70, died Monday, October 24, 2016, at his home. Dr. Kihlstrom was a graduate of the University of North Dakota and University of North Carolina at Chapel Hill School of Medicine, where he also completed his residency in neurosurgery. He had been in private practice at Durham Regional Hospital since 1978 and at the Durham VA Hospital since 2008.

Irving Clayton Ringdahl, BS Med '55, was born in McVille, N.Dak., on March 7, 1924. The oldest of Dorothy and Henry Ringdahl's 10 children, from an early age he was known to be

hardworking, kind, patient, humble, and a gifted learner. Growing up on his family's farm during the Great Depression, Irving always said he felt lucky because sleeping on a cot in the hall made him feel "as if I had a room all to myself." He farmed until he was 23 years old, when the loss of a bumper crop to an early fall hailstorm prompted him to leave the field and move to Minneapolis. Despite his tenth-grade education, he was allowed by the president of Augsburg College to take an entrance exam, and he began his classes in the fall of 1948. Irving met fellow Auggie Almina Nelson at an impromptu college tobogganing party in January 1950. They married on December 17, 1950, and the rest is history; four children were born in four years. Irving completed medical school in 1957, and Almina and Irving worked together as a nurse and doctor team for the next 10 years. Throughout his life, Irving demonstrated a unique gift for supporting, caring for, and inspiring others. He worked as a family practice doctor in rural Iowa for 10 years before returning to school at the age of 43 to complete his residency in child psychiatry. In 1972, Almina and Irving moved to Little Rock, Ark., where he founded the Child Psychiatry Residency Program and Inpatient Child Psychiatry Department at the University of Arkansas Medical Center. After retiring in 1989, Irving and Almina relocated to Colorado, where he continued to work as a locum tenens psychiatrist in several states until he was 80 years old. In 2012, the Division of Child and Adolescent Psychiatry in Little Rock created an award in his honor to recognize faculty members who demonstrated some of Irving's most outstanding qualities: a dedication to teaching, clinical excellence, and high ethical standards. The world is a better place because Irving Ringdahl was in it. He lived a full life, and he cared deeply for those around him. He loved all kinds of music, read voraciously, introduced North Dakota rhubarb to every place he lived, and possessed a special appreciation for ice cream and lutefisk. Irving was a dedicated Lutheran throughout his life, participating in ELCA congregations everywhere he lived. Faith Community Lutheran church and the Good Samaritan community were his most recent spiritual homes.

Dr. Robert N. Watson, BS Med '51, age 90, died peacefully on December 18, 2016, at Ecumen nursing home in Detroit Lakes, Minn. Robert Neil Watson was born May 17, 1926, in Hannah, N.Dak., to Virgil Sr. and Emma (McKay) Watson. He attended high schools in Devils Lake, Valley City, Grand Forks, and Bismarck, where he participated in sports and, above all, band music. Upon graduating from high school, he joined the army and was a veteran of WW II, serving 18 months in Italy before receiving his honorable discharge. He graduated from Bismarck Junior College in 1948 and the University of North Dakota Medical School in 1951. After his scholastic medical training at the University of Illinois Medical School in Chicago, he received his Medical Doctorate in 1953 and was a member of the Alpha Omega Alpha Honor Medical Society and the Sigma Xi Scientific Research Honor Society. He spent a year of internship in Duluth, Minn., and three years of internal medicine residency at Marquette University in Milwaukee. In 1957, he joined his

brother, Dr. Virgil Watson, Jr., and Dr. William Dodds in creating a medical practice in Detroit Lakes. He was the first internist in Becker County and continued practicing medicine for 30-plus years, where he also helped to establish several new programs at St. Mary's Hospital, including the creation of the Critical Care Unit. His lifelong avocation was music, where he played professionally on and off since 1941, including stints with a Bismarck radio station, the Bismarck Symphony, and also trumpet with territorial dance bands out of Bismarck. In the 1970s, he started a 16-piece dance band, which played various music from the 1930s and 1940s. In 1991, this band was named Doc and The Scrubs. Doc and The Scrubs started the traditional summer concert series "Tuesdays in the Park," which provided the foundation for the band's popularity that includes playing concerts to this day. He was a charter member of the Elks in Detroit Lakes, a member of the American Legion, VFW, and the United Methodist Church, where he held several offices. His hobbies included hunting, fishing, tennis, bridge, and bowling. He took great pleasure in meeting with friends during their 10:00 a.m. main street coffee group and Wednesday night dinner gatherings.

Bob Leonard Welo, BS Med '53, was born April 28, 1930, in Minot, N.Dak., to Ethlyn and Walter Welo. Bob grew up in Velva, N.Dak., with his twin sister Beverly, and they graduated as co-valedictorians from Velva High School in 1948. Bob earned a Bachelor of Arts with honors from the University of North Dakota in 1952 and was a member of Sigma Chi Fraternity. In 1953, Bob received a Bachelor of Science in Medicine from the University of North Dakota School of Medicine, and in 1955, Dr. Welo graduated as a Doctor of Medicine and Master of Surgery from McGill University. He went on to complete his internship at the San Francisco City and County Hospital in California. After serving two years as a medical officer in the United States Air Force in Colorado Springs, Colo., Dr. Welo completed his ophthalmology residency at Ohio State University Hospital in Columbus in 1962. He then entered practice with Doctors Tebbet and Fowler in Casper, Wyo. In 1993, after 31 years, he retired from his medical practice in Casper. Dr. Welo was an active member of the Natrona County Medical Society of Wyoming, the Wyoming State Medical Society, the American Medical Society, and the American Academy of Ophthalmology. Bob was the lone Eagle Scout in Velva, N.Dak., and spent a great deal of time outdoors, as waterfront director at a Boy Scout camp on Lake Metigoshe several summers in North Dakota, skiing, running, hiking, biking, and swimming. Affectionately known to his family as "Cowboy Bob," his passion for triathlons developed from years spent in his beloved Jackson Hole, Wyo. Bob enjoyed both spectator and participatory sports, competing in the Senior Olympics until the age of 80. In 1995, Bob was chosen as Wyoming Senior Athlete of the Year. He was a member of the Casper YMCA, Our Saviour's Lutheran Church, and USA Triathlon.



Naming Opportunities

As Dean Wynne mentioned in his column on pages 4–5, the SMHS has sold 38 named spaces in the new building for a total of \$8.44 million. An additional \$2.34 million from the North Dakota Challenge Fund brought the total dollars raised to \$10.78 million. A majority of these gifts supported student scholarships and in part helped bring medical student debt from the 75th percentile to the 33rd percentile nationwide.

There are still named spaces available throughout the building. If you would like to support our students in this way, please contact Dave Gregory or Jessica Sobolik (contact information on page 33).

\$100 million

UND School of Medicine and Health Sciences building

\$40 million

Health Sciences Education Building (adjacent)

\$15 million

Biomedical research facility (adjacent)

\$1 million–\$5 million

Endowed chair, dean of the School \$5 million
 Office of the Dean suite \$4 million
 Simulation suite \$3 million
 Endowed faculty chair \$2.5 million
 Health Sciences suite \$2 million
 Center for Rural Health suite \$1.25 million
 Endowed faculty professorship \$1 million
 Auditorium
 Grand staircase \$1 million
 Family and Community Medicine/Population Health suite \$1 million

\$500,000–\$975,000

Office of Education Resources/Physician Assistant suite \$975,000
 Administrative conference room \$950,000
 Information Resources suite
 Biomedical Sciences/Pathology/Research Affairs \$825,000
 Learning communities (8) \$750,000 (1 sold)
 Anatomy lab \$650,000
 Clinical Sciences suite \$625,000
 Library Resources \$625,000
 Research labs (3 of 6) \$600,000–\$775,000 (1 sold)
 Biomedical Sciences suites (3) \$575,000–875,000
 Medical Laboratory
 Research cores (2 of 7) \$525,000–\$675,000
 Large plinth lab \$500,000

\$200,000–\$475,000

Office of Administration and Finance suite \$475,000
 Event space \$475,000
 Café \$400,000
 Office of Education and Faculty Affairs suite \$400,000
 Indians into Medicine suite \$350,000
 Research labs (3 of 6) \$325,000–\$475,000
 Atriums (3) \$325,000–\$400,000 (1 sold)
 Multi-purpose therapy lab \$275,000
 Research core (1 of 7) \$275,000
 Communicating stairs \$250,000–\$400,000
 Lobby
 Classrooms (9 of 13) \$225,000–\$375,000
 Small plinth lab \$225,000
 Simulation skills lab \$225,000
 Faculty/staff lounges (2) \$225,000
 Learning communities: Student lounges with practice exam rooms (4) \$225,000
 Patios (2) \$200,000–\$400,000 (1 sold)

\$50,000–\$175,000

Office of Student Affairs and Admissions
 Main streets
 Anatomy dry lab
 Diagnostic Laboratory
 Collaboration zones (3) \$125,000–\$175,000 (1 sold)
 Classrooms (4 of 13) \$100,000 (2 sold)
 Office of Alumni and Community Relations
 Simulation debrief rooms
 Conference rooms (11 of 12) \$50,000–\$125,000 (6 sold)
 Research cores (4 of 7) \$50,000–\$100,000 (2 sold)
 Simulation rooms (6) \$50,000 (5 sold)
 Exam rooms (14) \$50,000 (1 sold)
 Small-group learning rooms (12) \$50,000 (1 sold)

For more information visit med.UND.edu/naming-opportunities

Thank you to our thoughtful donors who recently gave gifts or made pledges.

Robert, BS Med '62, and Kay Hedger of Oak Park, Ill., continue to support the Dr. Walter Wasdahl and Dr. Robert and Kay Hedger Endowment, which provides scholarships to medical students who demonstrate financial need. Dr. Hedger is assistant professor of clinical medicine at Associates in Nephrology in Chicago, and director of the Foundation for Nephrologic Science Inc. and National Medical Care Inc.

Dr. G. Franklin, BS Med '64, and Rosemary Welsh of Cincinnati, Ohio, continue to support the G. Franklin Welsh, MD, Endowment, which provides annual awards to medical students who demonstrate academic excellence through completion of a research project that focuses on anatomical sciences or the development of an innovative resource for teaching anatomy. Dr. Welsh, a native of Bismarck, N.Dak., is a retired Air Force colonel and plastic surgeon at Aesthetic Plastic Surgery Center in Cincinnati. He earned his medical degree from Harvard University in 1966.

Tom, BS PT '75, PhD '86, and Peggy M Mohr, BS PT '89, of Grandin, N.Dak., have established the Thomas and Peggy Mohr Physical Therapy Scholarship Endowment, which provides scholarships for physical therapy students. Tom served as chair of the UND School of Medicine and Health Sciences (SMHS) Department of Physical Therapy for 21 years before taking the position of associate dean for health sciences at the SMHS in 2014. He continues to teach physical therapy students as a professor. Peggy, also a professor in the Department of Physical Therapy, has been teaching in physical therapy for 24 years.

Janice, BS MT '68, and Clifford d'Autremont of Rancho Palos Verdes, Calif., continue to support the Janice and Clifford d'Autremont Scholarship Endowment, which provides scholarships to students majoring in medical laboratory science with preference given to students from Oakes, N.Dak., Janice's hometown.

Janice retired as the general manager and executive vice president of Long Beach Genetics in Rancho Dominguez, Calif., in 2001. The company is one of six in the United States that provides paternal testing results.

HOSTs

The UND School of Medicine and Health Sciences' HOST Program (Housing Our Students as they Travel) aims to utilize its vast alumni network to find complimentary lodging, transportation, meals, or general information for its fourth-year medical students during residency interviews. Modeled after HOST programs at other U.S. medical schools, the UND program was established in 2011. This year, these alumni graciously hosted our students:

- **Donna Seger, MD '77,** of Brentwood, Tenn.
- **Andrew Rodenburg, MD '13,** of Oklahoma City, Okla. (see Alumni Profile, page 27)

Hosts are invaluable resources for medical students. As one student commented, "They even took time to show me around the city." To sign up for the HOST program, visit www.med.UND.edu/community/host-program.cfm

For additional information on how to best structure your gift to benefit the University of North Dakota, please contact

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First-year medical students Natasha Garcia and Nicholas Hopkins show a kindergartner an “X-ray” of her stuffed elephant at the Teddy Bear Clinic at the SMHS. On November 3, kindergartners from three Grand Forks Schools attended the clinic, which was a team effort by first- and second-year medical students, students in occupational therapy and physical therapy, as well as UND students in nursing, and nutrition and dietetics. The Grand Forks Fire Department along with Sparky, the fire dog, also visited with the children.



Moonset over SMHS building on 12.15.2016. Photo by Wanda Weber.



The Department of Occupational Therapy partnered with the Anne Carlsen Center in Grand Forks to provide kids with autism or other sensory needs and their families a chance to visit with Santa in a low-key, safe environment on Saturday, December 17, 2016. This was the fourth year of the collaboration. Mark Romanick, a professor in the UND SMHS Department of Physical Therapy, and Jonathan Berger, a program coordinator with Anne Carlsen community-based services, played Santa for the kids. Participating from the Department of Occupational Therapy were Gail Bass, Bobbi Carlson, Department Chair Janet Jedlicka, and Sarah Nielsen as well as OT students Sydney Larson, Kelsey Hemberger, and Alison Host. Michelle Dudgeon, UND OT alumna MS OT '04, who worked at the Anne Carlsen Center, also participated.



Master of Physician Assistant Studies—Class of 2018 White Coat Ceremony

Front Row (from left): Cynthia Mills, Larissa Reck, Kayla Ashton, Christina Conneran, Jeanmarie Dahl, Kate Whelan, Ashley Schultz, Leslie Anderson, Breanna Privratsky, Kendra Apland, and Brittney Benson.

Row 2: Ashley Bjornerud and Kailey Potratz.

Row 3: Mitchell Volin, Darren Pledger, Jaime Trautner, Emily Stevenson, Katherine Packulak, Kayla Ternes, Emmanuel Hernandez, and Lawrence Lee.

Row 4: Jordan Buchholz, Steven Pietrusza, Jamie Johnson, William Kucera, Cord Landrum, Timothy Hovde, Kelsey Daley, Stephen Drewel, and Cody Baxter.



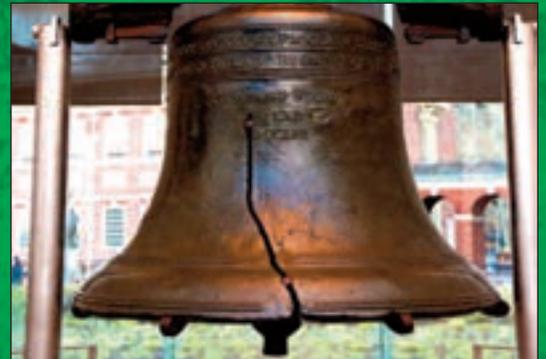
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Upcoming Alumni Receptions

Held in conjunction with
national conferences



Occupational Therapy

March 31, 2017 - Philadelphia
undalumni.org/ot2017



Physician Assistant/FNPs

May 17, 2017 - Las Vegas
undalumni.org/pa2017



Athletic Training

July 7, 2017 -
Minneapolis
More information
pending.