



NORTH DAKOTA MEDICINE

University of North Dakota School of Medicine & Health Sciences



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NORTH DAKOTA MEDICINE

University of North Dakota School of Medicine & Health Sciences

UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES

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ON THE COVER Biochemistry professors Paul Ray (left) and Robert Nordlie examine a piece of equipment at the former UND School of Medicine in 1968.

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ONE DECADE LATER



The 2019 academic year is off and running at *your* UND SMHS! As you probably know, we begin our academic calendar on July 1, and it runs until June 30. It also turns out—conveniently—that UND's fiscal year also runs from July 1 to June 30, as does that of the State North Dakota (where agencies like UND and the SMHS operate on a biennial budget since our Legislature only meets in odd-numbered years). There is a palpable sense of excitement around the School and at our regional campuses in Fargo, Bismarck, and Minot with the start of the new academic year and the arrival of incoming and advancing students.

So what are the School's priorities in the just-begun academic year (and my 10th as dean if my first year as interim dean is included)? Most important of all is to maintain and improve the high-quality education that we provide to the roughly 1,500 undergraduate and graduate students who trust us to prepare them for health careers. Second, we plan to continue implementing the Healthcare Workforce Initiative that is improving the delivery of health care in the state by reducing

disease burden, keeping more graduates within the state for practice after graduation, training more health care providers, and improving the efficiency of our health care delivery through the wider use of interprofessional teams. Finally, we will continue to expand our research programs that are focused on diseases of relevance to North Dakotans, like opioid addiction, obesity, neurodegenerative disorders such as Alzheimer's and Parkinson's, and cancer. A major focus of our efforts will be in the realm of clinical and translational research, where we will try to speed the delivery of discoveries in the laboratory to a patient's bedside.

To carry out our tripartite mission of education, service to the community, and discovery, here are the specific goals we've laid out for the current academic year:

1. Ensure adequate appropriated funding support for the School and our programs during the upcoming North Dakota Legislative Assembly—As you know, the state faces some economic challenges, and Governor Burgum has requested that agencies like the School submit a budget that is 10 percent lower than the current budget (along with a three percent contingency holdback). Laura Block, our associate dean for Administration and Finance/CFO/COO, has been working with Jed Shivers, UND's newly recruited vice president for Finance and Operations, and the North Dakota University System office to prepare our budget request for the upcoming legislative session. The Legislature has been extremely supportive of the SMHS in the past, and I am confident that it will do everything possible so that we can continue our various programs and projects.
2. Continue to work with UND, the Legislature, and our generous donors to mitigate student debt—Debt is one of our students' major stresses, and we've worked hard to keep debt as manageable as possible for our students. In fact, over the past few years we've been able to reduce the accumulated debt of our medical students, even as debt has gone up on average at most other medical schools in the United States. Since one of our most important goals as an institution is to get more providers into rural areas, limiting debt is a key element in achieving this goal. Another goal is to establish more endowed professorships and

named chairs to give us a competitive advantage in both attracting and retaining the high-quality faculty that are so key to our educational and research programs.

3. Expand our research efforts, focusing on diseases and issues that are important to North Dakotans—In this regard, I'm very pleased to indicate that shortly we will be expanding our efforts utilizing telemedicine and other so-called virtual care delivery methods so that we can—through collaborations with our affiliated health care systems—bring the clinic to patients (like rural patients) who have difficulty getting to providers. Thanks to a magnificent new donation from alumnus Dr. David Monson and his wife Lola, I'm pleased to announce the start of this initiative that will bring together faculty from UND (along with selected faculty at NDSU and elsewhere) to develop and study novel methods of virtual care delivery.

Quite an agenda to be sure; but thanks to our dedicated faculty and staff, the strong support of our donors, the fantastic direction we get from our SMHS Advisory Council, exceptional funding from the Legislature, the wonderful efforts of our volunteer clinical faculty across the state, the help and support we get from UND administration led by President Kennedy, and the gratifying relationships the School has with people across North Dakota, we are excited to welcome our newest crop of students this academic year. It promises to be a great one!



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



“THE KIND OF PEOPLE WE HAD”

The UND School of Medicine and Health Sciences celebrates 70 years of biomedical research.



Ed Carlson, PhD

To hear Ed Carlson tell it, a single anecdote summarizes what it means to be a member of what is today known as the Department of Biomedical Sciences at the UND School of Medicine and Health Sciences (SMHS).

“Two words: Ted Snook,” says Carlson, referring to the former chair of the Department of Anatomy & Cell

Biology who single-handedly developed a microscopic stain—the Snook Reticulum—still used in labs around the world. He did so on a budget of almost nothing using the spleens of striped gophers he had caught himself in North Dakota.

“When [Snook] became chair [in 1967] the administration gave him \$500 so he could do some research,” Carlson continued.

“And when he retired several years later he still had almost \$400 in the kitty. That’s the kind of people we had.”

According to Carlson, himself a former anatomy chair, it is this particularly North Dakotan sense of thrift and ingenuity—the do-it-yourself focus on the nuts and bolts of basic science work—that helped UND’s Department of Biomedical Sciences grow from a collection of disparate departments into the thriving interdisciplinary team it is today.

Bringing it all together

The interdisciplinary approach to biomedical research at UND was a long time coming, though. And the sailing wasn’t always smooth.

Around the time of its founding in 1905 the SMHS housed only a single laboratory science department—atomy. The School then added several laboratory sciences over the course of a century, including physiology in 1924, microbiology in 1948, biochemistry in 1951, and pharmacology in 1977. After evolving and combining with units such as molecular biology and immunology over the years, the departments made their marriage official in 2014 when they became the Department of Basic Sciences (changing again to “Biomedical Sciences” shortly thereafter).

In the recollection of former Biochemistry and Molecular Biology chair David Lambeth, this original arrangement, where

departments and disciplines were more isolated from each other, fostered a handful of “turf battles” wherein departments quite rationally competed for research dollars, teaching time, and administrative attention. Likewise, the departments’ methodological or philosophical distance from one another at times made it difficult for them to collaborate.

Combining the departments helped change that.

“While I was interim chair, Dean [H. David] Wilson asked me what I would think if we combined the departments into a single large department,” recalls Lambeth. “I probably gave him some evasive answer like ‘I’d have to think about that.’ I wondered if it would create a structure that would become unwieldy. On the other hand it was becoming clear that in the sciences interdisciplinary interactions were absolutely necessary. Everyone has moved toward the molecular level today. The disciplines are less distinctive now than they were in the past.”

Former Microbiology and Immunology chair Roger Melvold agrees.

“The nature of the sciences has changed,” adds Melvold, admitting that there had been much overlap in content between departments before the merger. “All the sciences began to rely on a more integrated set of techniques and philosophies. And I’m sure there have been over the years some snags and hiccups, but I think, overall, it seems to have worked out.”

Through all the changes, argue Carlson, Lambeth, and Melvold, one thing has remained consistent at UND: the science has been good and the researchers productive.

“I was blessed with a marvelous gift when I walked in the door—some of the very best researchers and teachers who worked for me when I was chair,” says Carlson, who also credits longtime SMHS electron microscopist Frank Low with helping get the School on the map. “I had no trouble making my department look good because my team did it for me.”

Expanding Research

Carlson has a point. Snook’s and Low’s major contributions to their respective fields notwithstanding, faculty and graduate students who have populated the various departments that

today constitute the biomedical sciences team at the SMHS have produced some outstanding and important scholarship—and continue to attract major research grants from state and federal agencies such as the National Institutes of Health, Centers for Disease Control and Prevention, Center for Medicare and Medicaid Services, and National Science Foundation.

And the number of such awards has grown considerably. A history of the Biochemistry and Molecular Biology Department—provided by Lambeth—shows that the department attracted “only” \$6 million in research awards and fellowships between 1951 and 1982. And as John Vennes and Patrick McGuire document in their SMHS history *North Dakota, Heal Thyself*, in 1999 the School of Medicine and Health Sciences had “less than \$300,000 in pending grants” from external agencies.

By comparison, the Department of Biomedical Sciences, as a unified team, won over \$20 million in research awards in 2017 alone.

Such awards have been used to produce important work on cancer, neurodegenerative diseases such as Alzheimer’s and Parkinson’s, aging, health disparities between populations, and a variety of infectious diseases. This is all in addition to the basic science work ongoing at the School every day that contributes to the world’s understanding of the human genome, neuroscience, and population health broadly.

The Future

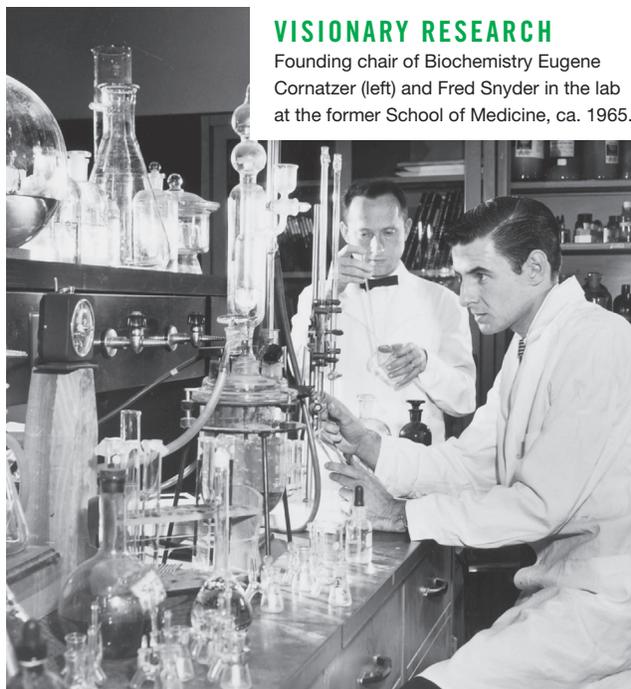
The result of all of this—70 years’ worth of combining departments, the School’s expanded focus on research, and the changing nature of both science and healthcare—is a department that today recruits and markets itself not on its strength in a particular discipline, but a series of research foci.

Managing the massive operation these days is Colin Combs, the Chester Fritz Distinguished Professor who became chair of Biomedical Sciences in 2015 and is now responsible for a department that claims more than 150 faculty, staff, graduate students, and postdoctoral researchers (or “postdocs”).

“We were always a pretty interactive group, even when we were ‘separate,’” says Combs from his third floor office in the SMHS. “Merging helped us bring together additional things besides research interests, like ideas on graduate and postdoc training. By combining we had to develop a cohesive mission that fit with all of our different interests.”

As an example, Combs cites the several seminar series that were combined into one.

“One thing we didn’t do as well before was attend each department’s seminars,” Combs explains. “Now that it’s all one departmental seminar series, we’re engaged with a



VISIONARY RESEARCH

Founding chair of Biochemistry Eugene Cornatzer (left) and Fred Snyder in the lab at the former School of Medicine, ca. 1965.

broader research vision. This helps us be quite a bit more interdisciplinary. It’s pretty common now to have collaborative publication and grant submissions from people who before would have been in different departments.”

Moving forward, Combs says the biomedical sciences team at the SMHS fully expects to continue growing and evolving, not only by continuing to publish in leading journals and attract major grant dollars, but by recruiting trainees of all levels.

“We’re hoping to expand our number of graduate students and improve our training top-to-bottom,” he says. “We’re submitting grants that, if awarded, would allow faculty to do more work with high school students, undergraduates, graduate students, and postdocs. We’ve been increasing our postdoc group steadily since we merged, and we’d like to continue to do that.”

In the end, then, Carlson—who says “I can’t imagine anyone doing it better” of Combs’s leadership of the unified department—argues that if UND’s biomedical sciences effort has not received the national recognition it deserves, it is because the team here has been too modest for too long.

“We never sought the spotlight, but we deserve it,” he concludes. “This isn’t just a run-of-the-mill place—this is a really important center. We wanted to just do good work in the lab, and we’ve done a lot of work that should make us all proud, stuff that is still in use today around the world. I’m very, very proud of that and proud to be part of the heritage of this institution.”

By Brian James Schill

SQUEEZING THE LYME

SMHS researchers spread the word about the prevention and possible treatment of Lyme disease.

“It’s heading west, and it’s heading north and south,” says Catherine Brissette, PhD, with not so much alarm as resignation in her voice. “With climate change, it’s exploding north into Canada, into Ontario and Manitoba. And it’s moving into places it wasn’t traditionally seen like Kentucky and Tennessee. This is a real issue.”

An associate professor in the UND Department of Biomedical Sciences since 2010, Brissette is referring to the Lyme disease spread by deer ticks in northern latitudes across the globe. The most common arthropod-borne disease affecting humans in the United States, with an estimated 300,000 cases per year, the disease bears the name of the location where it was first recognized in 1975: Lyme, Connecticut.

Having spent the better part of her career studying the corkscrew-shaped bacteria that cause Lyme, *Borrelia burgdorferi*, Brissette’s lab at the School of Medicine and Health Sciences is today in the middle of several research projects exploring not merely the spread of Lyme but also its pathology.

“There are lots of different manifestations of neurological Lyme disease and most of them are treated with antibiotics and things end up fine,” says Brissette from her office in UND’s Neuroscience Research Facility. “But there’s a portion of people who even after extensive treatment continue to have these symptoms that linger.”

As Brissette puts it, while most persons who acquire Lyme disease from a tick bite undergo successful antibiotic treatment, up to 20 percent of patients suffer from a chronic condition that has been designated Post-Treatment Lyme Disease Syndrome

(PTLDS). Symptoms of PTLDS are primarily neurological in nature and include, among other symptoms, chronic fatigue, pain, cognitive impairment, migraine headaches, balance issues, weakness, facial palsy, and vertigo.

“So we asked ‘why?’”

So Brissette and her team asked “Why?”—what was contributing to this syndrome so long after treatment? Although possible answers to that question abound, so far there has been little evidence to support any of them.

“The first theory is that the antibiotics simply didn’t work—and that the patient needed more. But the evidence here is weak,” Brissette continues, noting that several clinical trials exploring this question have not shown benefit for patients taking a longer course of antibiotic treatment.

However, two newer—and potentially more promising—solutions to the PTLDS puzzle have emerged that involve a complex mixture of immunology, neurology, and genetics.

The first involves the notion that the “debris” left behind by the dead bacteria following a course of antibiotics may either cross the blood-brain barrier or otherwise generate an inflammatory response from the person’s immune system, causing patients’ neurological symptoms.

“There’s some evidence for this both in animals and humans in terms of Lyme arthritis,” Brissette continues, using the knee joint as an example. “There’s not a lot of vasculature there. So, if you have dead bacteria hanging out in the knee that doesn’t get cleared by the immune system because there’s not a lot of cellular traffic coming through, it stays. And then you have

this stimulus where the immune system is going to keep trying to clear out these foreign bodies, but it can’t.”

Although researchers don’t yet have solid evidence that there’s any *Borrelia* debris in the brain specifically creating PTLDS symptoms, scientists in Brissette’s lab, including third-year SMHS medical student Jacob Greenmyer, did learn something interesting recently in this regard.

“Jacob showed that if you take some of the



“The longer you go without diagnosis, the more likely it is you’re going to have chronic issues.”

////// CATHERINE BRISSETTE
PhD

cells from the brain—like microglia, which are normally responsible for clearing debris and responding to injury and inflammation—and expose them to dead and living bacteria, they respond more strongly to busted up bacteria than to live bacteria,” explains Brissette. “That suggests to us that this bacterial debris could be driving this inflammatory response. This is why we also wondered if treating people with long-term antibiotics might in some cases be making things worse.”

The other promising idea is that researchers are wondering whether even after bacteria are cleared from the body the initial insult they triggered throws off the balance of the immune systems of some patients predisposed to inflammation—at the genetic level. Like a teeter-totter, the body’s various systems need balance; a certain amount of inflammation is necessary to kill pathogens and clear them away. But too much inflammation will damage the host tissue and could result in an alteration of the expression of certain genes in a person’s DNA.

“That balance is important and if that balance is skewed you could have long-term problems, even if there’s no longer any bacteria or debris there,” Brissette says. “It’s like you’ve flipped the switch but now it can’t get turned off. And one way that can happen is through epigenetic mechanisms where you have a modification to DNA where a gene that might normally get turned off stays on because of some change to the DNA structure.”

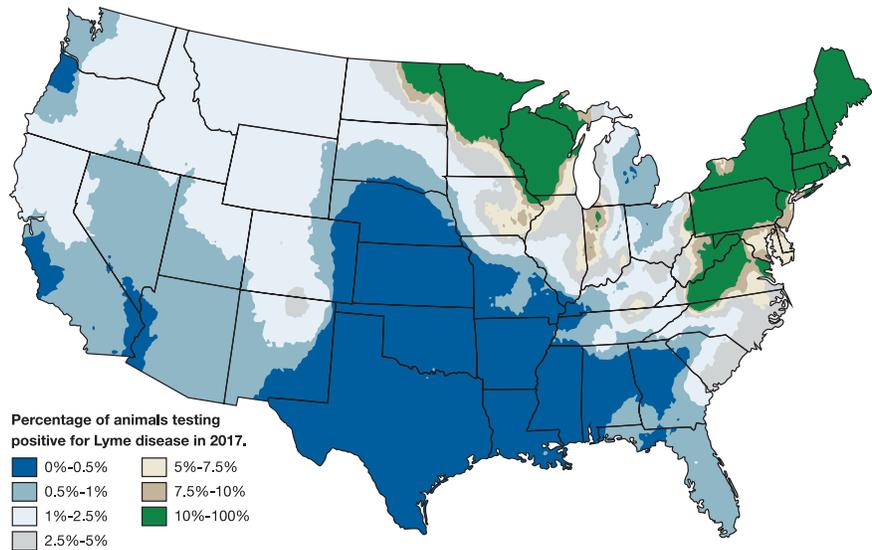
Earlier diagnosis and treatment

One of several researchers working on National Institutes of Health-funded Centers of Biomedical Research Excellence (CoBRE) projects at UND, Brissette is part of a group focused on studying host-pathogen interactions. This team is busy exploring how disease-causing microbes or viruses sustain themselves within host organisms on a molecular, cellular, organismal, or population level.

“And we’ve begun to work on relapsing fever, which is spread through the bites of soft-bodied ticks,” Brissette adds. “This is a condition where fever emerges suddenly, goes away after a few days, then comes back and the pattern repeats.”

But Lyme disease, which is much more common, is still her primary focus. After all, the total direct medical costs of Lyme disease and PTLDS are estimated to be over \$700 million each year in the United States alone. As such, Brissette notes that

Lyme Prevalence 2017



part of her mission has been getting better information into the hands of health providers to help them catch and treat the condition early.

“If you live in Minnesota and it’s August and you go to the clinic with this rash, the physician will say ‘looks like Lyme disease,’ and they’ll give you antibiotics and you’ll be likely fine,” concludes Brissette. “But if you drew that person’s blood and performed the diagnostic test for Lyme, it’d be negative. That’s because the tests are based on the antibody responses to bacteria, and that takes time to develop. When that rash occurs within a few days of a tick bite, your body hasn’t had enough time to develop antibodies against the bacteria.”

The solution, she says, is for researchers to find a way to detect Lyme earlier, in that window of time where the characteristic bulls-eye rash—which doesn’t appear for everyone affected by Lyme—may not be present and the current blood test won’t work.

“And that’s difficult because with some diseases you have a ton of bacteria in your body and it’s easy to detect them or their products—like strep throat,” Brissette says. “But there’s not something like that with Lyme. And most of the evidence suggests that if people are treated early, they’ll show no long term problems ninety percent of the time. But the longer you go without diagnosis, the more likely it is you’re going to have chronic issues.”

By Brian James Schill



AT THE TOP OF THE WORLD



At 80.16 degrees North, there was no escaping the cold or wind. The glacier had been in a complete whiteout for days, and the temperature hovered between 30 and 40 degrees below zero.

There was real risk of falling into a crevasse, a chasm caused by fractured ice.

Dr. Jon Solberg described the experience as “white darkness.”

He and six fellow explorers were on an expedition to drive across Greenland’s icecap, but they weren’t there yet.

“We had to decide whether to continue or go back,” Solberg said. “How long could we wait out the storm? There are no forecasts for that area because there is no reason to go there, and we had no way to know if the storm would last a day, a week or a month.”



This far north, there was no realistic hope of rescue, and they were concerned about food and fuel.

“We were on our own,” Solberg said. “It was a dark night, even though the sun didn’t go down.”

An adventurous spirit

Solberg has always loved challenge and adventure.

He grew up on a farm in Stanley, N.D., and after earning his Doctor of Medicine degree from the UND School of Medicine and Health Sciences in 2006, he joined the U.S. Army, trained as an emergency room physician, and deployed to Afghanistan to care for injured U.S. soldiers at a remote combat support hospital. He’s climbed Mount Rainier, practiced medicine in the jungles of Cameroon, is a certified rescue diver and instrument rated pilot, and is a Fellow in the Academy of Wilderness Medicine.

Now the medical director for the Emergency & Trauma Center at CHI St. Alexius in Bismarck, Solberg also writes articles on medical topics and travel in the *Overland Journal* (www.overlandjournal.com) in his spare time.

That led to something big last year when Greg Miller, former CEO of the Utah Jazz NBA team and owner of the Land Cruiser Heritage Museum read Solberg’s articles and recruited him as the expedition’s medical officer.

“Greg is an exceptional leader, visionary and explorer,” Solberg said. “This was a once-in-a-lifetime chance to cross Greenland. Most places have been thoroughly explored,



but Greenland's long axis has never been crossed by motor vehicle. There are no roads, no gas stations, no hospitals, no spare parts."

White darkness

Traversing glaciers in Greenland is not for the faint-hearted. The few maps of the island still have large unexplored areas.

"This had never been done before, and likely will never be done again," Solberg said. "It was a logistical challenge and an endurance test. It was white darkness. We were in complete whiteouts. We drove off-road following GPS coordinates, and worried we would run into each other when visibility was poor."

Progress was at times slow on the 3,500 mile, month-long round trip. The specially modified trucks were equipped with winches, 44 inch-tall tires, and glacier bars to catch them if they tumbled into a crevasse. The trucks were modified to burn jet fuel, which doesn't freeze at extremely low temperatures.

Solberg's job was to keep the team healthy and to collect and analyze snow and ice samples. Along with Jasdeep Gill, a UND Family Medicine Resident, he plans to publish a scientific paper later this year.

"Any accident can be catastrophic," he said. "If there was any mishap, mechanical or medical, we were on our own." Even the basics of keeping clean were a challenge. Solberg tested for carbon monoxide exposure, monitored for frostbite, and kept the team healthy. Aside from one person who ended up with moderately frostbitten fingers, they had more mechanical than medical problems. Each truck carried a medical kit, and Solberg was prepared to treat fractures, allergic reactions, heart attacks, blood clots, and other emergencies.

As a farm boy from Stanley, he could help with mechanical problems too.

"We had a lot of them," he said. "We broke five wheel studs, a truck axle, coil spring and U-joint, cracked a truck's frame, broke hitches on trailers, had a flat tire, and completely wore through two military-grade pintle hitches that pulled the fuel sleds. On the farm you can pull over and fix it. But it was a huge ordeal here."

"The mechanics were very busy, and suffered in the cold and wind through each repair. We never shut off the trucks," Solberg recalled.

Frozen hot food

Though they had planned to camp along the way, the conditions were too extreme.

"By the time we got outside, set up camp and cooked food, it took several hours to warm up sleeping bags, and we realized that camping wasn't feasible," he said. "We tried to cook meals

in the tent, but with seven men breathing inside, it got so foggy we couldn't see each other, and the hot food froze to the plates. We ate a lot of Snicker bars and HoHos, and we still lost weight. We resorted to sleeping in the vehicles and driving around the clock in shifts."

They spent a few memorable hours exploring DYE-2, an abandoned radar station on the ice cap and a relic of the Cold War, which was abandoned in 1988.

"There was a frozen ham on the table, bread being mixed in the kitchen, prescriptions written in the infirmary," Solberg said. "It's unbelievable. The furniture is still in place."

After weeks of battling the elements and seeing nothing but snow, they had reached 81.29 degrees north, the most northern portion of the Greenland ice sheet, where they camped on exposed tundra that tapered off to the frozen Arctic Ocean. It is the most northern dirt ever reached by vehicle on the planet.

"It is a fact that no one has ever driven here before," Solberg said. "Every time we stepped out of the vehicle, there was a high degree of probability that no human ever stepped here before."

On the return journey, they stopped at the National Science Foundation's Summit Camp (10,551 ft), where the expedition proved quite a spectacle to the isolated environmental scientists. The exit off the western edge of the glacier proved quite challenging, as one of rear tires broke through into a crevasse. Everyone roped up with climbing harnesses and wore crampons, and after winching the vehicle free, they discovered the truck's frame had snapped during the accident. Luckily, they'd brought two generators and a welder.

"The ice there on the western edge was the bluest you've ever seen," Solberg said, adding that the mechanic installed hundreds of screws into the tires for grip so they could continue the trek.

As they inched off the glacier and made their way into Kangerlussuaq, they received a hero's welcome. Among the locals waiting for them was an old man wearing "the largest down coat and pants I've ever seen," Solberg said. "He had a toothless grin and was smoking a pipe. He told us our expedition gives his people hope that they too will be able to someday visit relatives and shop in neighboring villages by driving specialized vehicles across the glacier, instead of relying on expensive helicopters and boats. He told us we had the keys to the entire village, but really we just wanted hot pizza and cold beer."

by Jan Orvik

CROWDSOURCING PHYSICIAN RECRUITMENT

Community recruiters help Grafton, N.D., recruit and retain more health providers.

Grafton, North Dakota, is a town of about 4,200 people located 40 miles northwest of North Dakota's third largest city, Grand Forks. It's a farming community with the basic amenities of a small town: a movie theater, grocery store, a couple of banks, gas stations, and a funeral home. It's also home to Unity Medical Center (UMC), which is a 14-bed critical access hospital with an attached clinic. UMC has recently evolved into a rural healthcare beacon for provider recruiting. During the past 12 months, UMC has recruited two physicians, a physician assistant, and a nurse practitioner, all by using its number-one resource—the community members.

Jared Marquardt, MD, was in the middle of his family medicine residency program in Bismarck, N.D., when he decided he needed to get serious about finding a practice location. As a North Dakota native, he was a highly sought-after candidate locally. Additionally, with family ties to the state for both Jared and his wife, and a desire to work in a rural setting, he checked all the boxes as a recruitable and retainable physician for the state. When Alan O'Neil, CEO of UMC, heard Dr. Marquardt was looking for a rural job opportunity, he didn't waste a moment contacting him...and contacting him again...and again.

"He was persistent, that's for sure," Marquardt said.

O'Neil made multiple trips to Bismarck to meet with Marquardt. On one occasion, O'Neil brought along Jo Petersen, the current UMC board president.

"We left for home after dinner, and the entire four-hour drive was spent talking about how we could get him to come to Grafton," Petersen said.

That's when the idea of a community letter-writing campaign was born.

O'Neil and Petersen know that Grafton's community members are their biggest and best resource. If they could communicate to Dr. Marquardt that the community wanted him and his family in Grafton, the thinking was, that might be the missing piece to the recruitment puzzle.

So the UMC Board of Directors discussed the idea of a letter-writing campaign at its next meeting, and a plan was made.



JARED MARQUARDT, MD

School of Medicine and Health
Sciences graduate (2014)

Community members, including board members, grocery store owners, school superintendents, pastors, the county judge, and even the mayor, wrote letters to Marquardt and his wife encouraging them to choose Grafton as their home.

"In my letter to Jared and his wife, I just communicated that I was once in their shoes," Petersen smiled. "I was once a new member of the community, and I'm still here over 30 years later. What kept me here was the sense of community. What better way to show them that the whole community wanted them to be here, not just the medical center?"

"I still have all the letters," Marquardt confessed. "It was surprising. The personal touch definitely stood out to us."

Marquardt and his wife visited Grafton a few times before deciding to take the job, and experienced the welcoming community members in person. "I wasn't just told about the community members and leaders. I was actually able to meet them and talk with them on multiple occasions, which was different from other places I had visited," said Marquardt.

O'Neil was pleased that it was so easy to encourage people to write the letters to Dr. Marquardt and his wife. He knew it would be a challenge to get them to commit and that encouraging Dr. Marquardt's wife, Annie, was just as important as recruiting the doctor himself.

UMC had been coached on paying close attention to spousal recruitment through its participation in a project supported by the North Dakota Center for Rural Health called the Community Apgar Project (CAP). The project, which helps communities identify areas of strength and opportunity as it relates to family physician recruiting, identified spousal satisfaction as one of the most challenging factors in recruiting and retaining physicians.

"We really paid attention to what Annie was looking for," said O'Neil. "I think that's why the letters worked so well. They were addressed to both of them which helped them gain a sense of what kind of community they were considering."

Marquardt said that even though the letters stopped, the community support still remains. He signed on with UMC in April 2016, and he officially started seeing patients in July 2017.

"To this day, I am still surprised by the appreciation from the community members," Marquardt said. "I still hear almost every day 'Thank you for being here. We want you here. We want you to be happy and to stay.' It's humbling to hear that."

Another family physician who recently signed on full time with UMC credited the welcoming and appreciative community members as a big factor in his decision as well. Dr. Matthew Viscito owned and managed his own practice in Grand Forks, but had been working at UMC two days a month for a little more than a year. His patients at UMC repeatedly asked him if and when he would see patients in Grafton full time. The decision to let go of his own practice was made easier knowing he would be able to serve a community like Grafton.

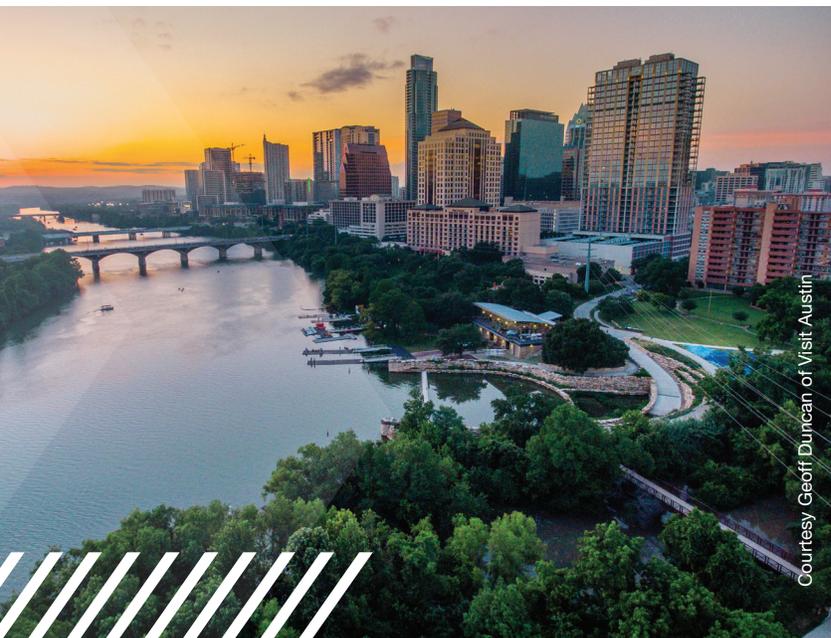
"Knowing I could come to a place that needed and wanted my services was a good feeling," Viscito said.

Dr. Viscito, who is now the medical director for UMC, sees many dividends for UMC and noted the healthy snowball effect that can come from it. The annual UMC Foundation Auction, for example, is the hospital's annual fundraiser. This year, the event raised more money than ever.

"The community sees growth at the clinic and hospital, which helps the community," Viscito said. "A community can really get behind growth, which was seen at the auction this year. We're part of a community and we need their support. Their support, in turn, makes it easier to recruit."

As for what's on the horizon, UMC is working to add at least one more physician to the practice and will again rely on their strongest asset, the community, as part of the recruitment effort. They may even be looking for a larger venue for next year's foundation auction.

By Stacy Kusler



Courtesy Geoff Duncan of Visit Austin

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PEER SUPPORT NALOXONE TRAINING

Rebecca Quinn, of UND's Center for Rural Health, leads a Peer Support Specialist Training Program session in Grand Forks.

SAVING LIVES

North Dakota's Peer Support Specialist naloxone training program makes an impact.

When Jean Dukarski accepted a box of naloxone nasal spray offered during one of the sessions of North Dakota's Peer Support Specialist (PSS) training program, she didn't expect she'd be using it to save a life so soon.

"I am so grateful that when they did the demonstration at the training that they offered [a box of nasal spray] to me as well," Dukarski said. "It not only saved one person's life, it changed the mindset all of my employees and may save others in the future."

Naloxone is the generic name for the medication used to block the effects of opioids. Marketed as under the brand name Narcan, it is increasingly being distributed to emergency responders and other health care providers around North Dakota and can combat opioid overdose within minutes of administration.

Dukarski was actually one of the trainers from the Appalachian Consulting Group assisting North Dakota with developing its PSS training program. The program is a Behavioral Health Workforce Development Project. The Center for Rural Health at the University of North Dakota School of Medicine and Health Sciences was contracted by the North Dakota Department of Human Services to develop peer support and a Behavioral Health Workforce plan.

Since January 2018, eleven people have been trained as PSS trainers. Through August, the state already had sponsored four PSS trainings across North Dakota. A total of 112 people, most of whom came from rural areas, have earned PSS certification.

After completing the training program and earning certification, peer support specialists can use their experiences of recovery from addiction and/or mental illness to help others going through the recovery process. That can involve sharing personal experiences to engage peers in their recovery and advocating for them when the need arises; facilitating peer support groups; helping those in recovery navigate community resources, such as employment assistance, housing, and education; and working with the individuals' care teams to develop plans to help them meet their personal goals and avoid relapse.

Julie Flaten of Park River, N.D., participated in the training program in Grand Forks. As a young mother struggling with addiction, she didn't have peer support in her journey through recovery.

"I know what it feels like to be put down," she said.

Flaten wants to be an advocate and support for others, so they don't feel as alone as she once did. She said it also helps her on her own journey to realize just how far she's come.

Toward the end of the PSS training, naloxone is distributed to those who want it. After the training session, Dukarski took a box and brought it back to her "day job," where she serves as the program director for a peer-run agency in Michigan, N.D.

"That is where the incident took place," she said. "We had been discussing getting it for our agency, but many of the employees were concerned about it and felt it wasn't something we needed. I gave it to my employee that I felt would be most willing and confident about having it and using it. We did the online training and talked about how we don't want to think we'll need it, but this way we have it on hand.

"On May 21, an individual who attends our center passed out and was barely breathing. The person began to turn blue. My employee went to her office and grabbed the Narcan. She administered both doses before the person started breathing again. When EMS arrived, they said that there was no doubt that the person would not have survived without it."

The incident changed the minds of those who had doubted it necessary to keep the naloxone around.

"The sense of relief experienced by all of my staff cannot be overstated," Dukarski said. "Having what we needed on hand, which actually saved this person's life, has had a lasting impact as well. The same employees that were so afraid of having it on hand and in denial of the possibility of needing it, now each have the nasal spray in their desk drawer. Seeing it save a life has pushed away all of those other concerns.

"I still hope that we never need it again, but it is good to know if the situation arises, we have what we need."

The peer support specialists going through training also appreciate that they are learning skills they need to help others. They know how tough recovery is—they've lived it. They hope the challenges they've faced and skills they've learned will help make the journey for others easier.

"I want to be able to help other people," said Debra Camperud of Grand Forks. "This isn't the end. There's always tomorrow."

For her part, Dukarski said North Dakota's PSS Training Program is definitely on the right track.

"North Dakota is doing an amazing job of rolling out its Peer Specialist Training Program," Dukarski said. "Beyond just the naloxone piece, this program will save lives."

By Brenda Haugen



LEARNING TO SERVE OTHERS

The week-long training program gives providers the tools they need to help others on the road to recovery.

WAKING UP DREAMLAND

Master of Public Health Program graduate Michael Dulitz, Opiate Response Project Coordinator for the Grand Forks Public Health Department, talks opioid response in the Red River Valley.



Thanks for your time, Michael. You graduated from the SMHS Master of Public Health Program's Health Management and Policy track in May 2017. I know you do naloxone training from seeing you in action at the Grand Forks Public Library, but give us a sense of the work you've been doing more broadly since graduating.

I'm 100 percent dedicated to addressing the opioid crisis in the Grand Forks area, which took four lives in 2017 and one already this year. This is a new position for Grand Forks Public Health as of November 2017. The work is funded by the state through a federal program connected to the 21st Century Cures Act [enacted in Dec. 2016]. We're one of five communities and three American Indian tribes in North Dakota that received the grant. I'm doing a lot of critical thinking about what would fit for the community.

Thinking and organizing, I imagine...

In Grand Forks we've been focusing on building infrastructure for prevention and treatment in so far as we've seen a steady increase of overdoses since about 2013, so it's time to broaden our work. The prevention side is what gets all the press; that's what you'd see me out in the community doing—the naloxone training. But, a majority of my work is building evidence-based treatment infrastructure in the community, eliminating barriers, and promoting wellness. We're working on building this treatment continuum and supporting persons in the region to get access to these services too. Our mantra is “empowering the individual, protecting the community, enabling recovery.”

Are you finding that the training you received in UND's MPH Program has served you well in this position so far?

I've used something from every class I took in the MPH program for this job. The most beneficial part of the program is that it gave me that cross section of public health training—the whole spectrum—and I'm now able to speak to businesspeople in their language, health care administrators in their language, treatment providers, community members, politicians. I was a sociology major as an undergraduate at Augustana [Sioux Falls, S.D.] before going on to paramedic school. So, I knew I had skills for this sort of position, and I've been putting them all to good use, especially those I developed at UND.

I assume this work is at least a little less intense than being a paramedic. Is that part of what attracted you to public health as a profession?

I was interested in being part of the solution at a higher level. You work in the clinical world—or as a paramedic—it's easy to see the problems for individuals on the ground. And it's easy to get jaded by the problems at that level. So, I was looking to think about these problems differently, from the standpoint of policy and other structures. In Grand Forks, we take an active role in supporting health policies in the community and when necessary, providing services where there are gaps, for example our social detox. It's beyond what the average person thinks about when they think “public health,” and I like that.

There are likely many obstacles making your work more difficult than it should be. Where do those obstacles tend to be located—is it the level of policy and bureaucracy, or elsewhere?

There are two main challenges. The first is regulatory. The federal government has instituted a number of regulations on addiction treatment programs to prevent things like diversion [selling, sharing, or using medication for something other than the intended use], but some of those had the unintended consequence of stigmatizing addiction treatment. Why? Your

average medical provider cannot prescribe most of these medications that are part of medication assisted treatment [MAT] programs. We've had physicians interested in becoming prescribers of MAT, but they need extra training. Then, they need to convince the members of their medical group that they should get trained as well—that it's good for the group. Then, for those providers, having to deal with the institutional stigma that comes with addiction is hard in so far as you go to your manager and say "we should do this" only to run into even more hurdles. And that's the *other* hump we need to get over—the stigma of what a use disorder is and getting people to come together to be part of the solution has been a huge challenge for me. So, while addressing the stigma in the community about what substance use disorder is and who the persons affected by it are has been tough, the regulatory hurdle is the biggest obstacle toward taking action to address the issue.

What sort of feedback have you received from community when you try to broach that issue of stigma?

To be honest, the community perceptions have changed a lot over the past few years. We've been chipping away at changing the conversation regarding how we perceive addiction. We've been trying to get the idea into the community that there are solutions to this through town halls and other community events. Fortunately, I've been met with many open doors in the community. My job has been relatively easy in that regard—people seem to *want* to be part of the solution on this. Even for those not on the frontlines, the willingness to reexamine their beliefs and change the way one talks about addiction helps to reduce stigma in the community.

Have you read the Sam Quinones book on all of this—*Dreamland*?

I haven't had a chance to read it yet, but I come across his work all the time.

He covers it all, from prescription opioids and "big pharma" to heroin to the challenges of treatment.

There are a lot of barriers to getting treatment in this region still. When I started there were no medication-assisted treatment providers in town, which is one of the more important components of evidence-based recovery, and few peer recovery resources. We had counseling providers, but finding those providers who accept all types of insurance can be a challenge. So, we've been working on building that three-legged stool of evidence-based recovery—the legs being peer support, medication, and counseling programs. One of the evolving ideas about opioid use disorder treatment is that it can happen on an outpatient basis. It used to be that the

model was you'd send someone away to an in-patient facility for 28 days so they could go through this detox process before sending them home without having the support to deal with the triggers in the community that brought them to the facility in the first place.

On that note, North Dakota recently joined a class action lawsuit that includes several states suing Purdue Pharma, the maker of OxyContin, for the company's alleged role in contributing to the national opioid crisis.

The opioid epidemic has placed an incredible burden on governments, healthcare systems, families, businesses, and non-profits across the country. With the tactics used by pharmaceutical companies to increase opioid prescribing, the question of liability is important to answer, not just to offset the costs of this epidemic, but to ensure that organizations are held accountable for their actions as a way to prevent future epidemics.

And you recently returned from a national conference on opioids, right? What was the mood like there—the morale—among all these folks from around the country focused on this problem?

I think people feel like we're sort of stuck in the trenches right now, but there is hope. We keep chipping away at the problem and we're getting there. There's more public knowledge of the problem and that helps to drive policy. And that policy drives interventions and resources, allowing us to focus on this. We don't want to hang our hat on naloxone as the sole solution to the crisis but, it does help people stay alive until they can get into treatment. We're seeing more resources being devoted to this problem in states across the country and we're seeing many creative solutions tailored to the community's needs. I had a chance to hear from one community in the region, Little Falls, Minn., which has successfully built a full care continuum for opioid use disorder. They started with a program to reduce opioid prescribing among their medical group and have evolved into a full MAT program as their community's need dictated the solutions. They have been great about sharing their experiences with other communities and we hope to bring representatives from that community to Grand Forks in the future.

Interview conducted and edited by Brian James Schill





FLOCK TOGETHER

Graduates of UND's occupational therapy program in Casper, Wyoming.

BIRDS OF A FEATHER

The UND Department of Occupational Therapy partnership with Wyoming's Casper College celebrates 25 years.

On the surface it does seem a bit odd, admits Janet Jedlicka: a distance partnership between UND and Casper College in Casper, Wyoming, for the training of occupational therapists.

On closer inspection, though, the union makes perfect sense. After all, both states are predominantly rural, are experiencing an ongoing shortage of healthcare providers of all sorts, and rank in the bottom five states for population density in the U.S.

So maybe not so odd.

"This relationship is another legacy of the Cliffords," said Jedlicka, professor and chair of occupational therapy at the UND School of Medicine and Health Sciences. "Without Tom this partnership wouldn't exist."

Jedlicka was referring not to former UND President Tom Clifford, but his son Tom Clifford Jr., and spoke of the long distance relationship maintained by two schools located in overwhelmingly rural states, which this fall celebrates its 25th anniversary.

"Tom at that time was the chair of the Life Sciences Division at Casper College, and had been for many years," added Breann Lamborn, site administrator of the Occupational Therapy Department's Wyoming location. "That's how UND was

contacted. Tom had been advising and guiding his students to North Dakota, which of course was his alma mater, for OT."

One program, two sites

According to Jedlicka and Lamborn, in the early-1990s, former OT chair at UND Sue McIntyre was consulting with Casper College, which happened to employ the younger Clifford. One conversation led to another and what began as a proposal by former Casper College President Leroy Strausner for an occupational therapy assistant (OTA) program (which Casper College maintains today) morphed into a partnership for a full occupational therapy program to be offered through UND but in Casper.

Here's how it works: The SMHS Department of Occupational Therapy—accredited continuously since 1956—established its distance site in 1993. But it remains a single program with a single faculty. It currently offers a master of occupational therapy (MOT) entry-level degree but will offer an occupational therapy doctorate (OTD) starting fall 2019 for students at both locations. While the bulk of the program's faculty are based in North Dakota, four live in Casper. The two sites divide their students in approximately a three-to-one ratio where 54 of the total 180 OT program students are trained in Casper.

When North Dakota's Healthcare Workforce Initiative was implemented a few years ago, the program expanded by 18 students.

"Faculty travel in both directions throughout the year," continued Lamborn, noting also how the travel helps demonstrate to students that despite the distance UND's Occupational Therapy Department is one program with one faculty unit. "Janet and her team come down here early in the year and then our Casper faculty travel to the main campus annually for meetings and training. All faculty teach and advise students at both sites on campus in a variety of ways. Students at times visit the other campus and attend classes when doing clinicals or traveling. We work hard to meet both the educational and personal needs of the students by providing options and flexibility."

Good all around

Both Jedlicka and Lamborn say that what makes the partnership work is the fact that both institutions—and their home states—benefit greatly. The partnership has enhanced the resources available to UND's OT program in terms of faculty expertise and the diversity of the student body. At the same time as it has helped the two states meet the health care needs of their residents. The Wyoming students pay tuition and fees to UND, and on occasion end up moving to North Dakota more permanently to practice after graduating.

"We're serving both states," said Jedlicka. "This allows us to bring in more students to the program and not have to hire additional faculty here in Grand Forks. So, costs are spread out among more students at the same time as we generate revenue for the School."

Casper College benefits also as the partnership provides Wyoming with the state's only master level OT program. Nearly 300 occupational therapists have graduated from the Wyoming site, helping to reduce the shortage of OTs in the state.

"Without UND there would be no option for master's or doctoral level OT education in the state of Wyoming. We don't have enough providers in the state, and this program helps address that shortage," explained Lamborn. "OT is a desirable degree. I fielded 800 inquiries that first year about admission into the program."

But don't take the faculty's word for it.

"The program was an amazing fit for me," exclaimed 2012 program grad Theresa Robinett, MOT, a Wyoming native who started her career in a skilled nursing facility in Casper and later began teaching in the OTA program at Casper College—all while ranching with her husband and son. "In all reality, I'm not sure if I would have been able to become an OT had it

not been for this program. It allowed me to earn a top notch education, follow my dream of being an OT, and allowed me to balance work with my family and ranching."

Or, as 2016 grad Stephanie Rehovsky put it, "The program allows students to communicate and collaborate with colleagues in a different part of the country."

A Park River, N.D., native, Rehovsky completed her degree while in Casper before moving back to North Dakota.

"I appreciated that the program offered me the opportunity to remain a UND student for my graduate degree while studying in a different state," she said. "My experience in Casper was one I'll never forget."

Time to celebrate

Taking only a moment to celebrate its successes, the OT team recognized 25 years of improving healthcare in rural states with an anniversary gathering at the Wyoming Occupational Therapy Association conference in Casper in September. On hand were not only UND's OT faculty from both campuses but many of its alumni—who often serve as clinical instructors for today's students.

"We have benefitted from alumni support especially in Wyoming because a significant number of our supervisors at clinical sites are graduates of our program, either here or in Grand Forks," noted Lamborn. "Our alumni continue to give back to us through their willingness to be clinical supervisors for students. They see it as their responsibility to train and bring forward the next generation of grads—and we can't thank them enough for that."

Not content to stand on its laurels, then, the program is looking to the future, finalizing plans to begin offering the OTD degree next year at the same time as it expands its training in telerehab services, identifies clinical sites at which students might conduct fieldwork, and looks for other innovative ways to serve rural citizens especially in both states.

"We're committed to keeping our program as short—but comprehensive—as possible," Jedlicka concluded, explaining how some of UND's competitors have moved to making a four-year bachelor's degree a pre-requisite to applying to their programs. "I see us, instead, as opening up more opportunities for students by being flexible with our curriculum and our early entry option. That way students get a comparable degree to what some of the private schools offer, but at a much more affordable price."

By Brian James Schill

LIVING THE OATH ON A NATIONAL STAGE

Second-year medical student delivers Coaches' Oath at nationally televised Special Olympics opening ceremony.



HIGH FIVE!

Michael Storandt (right) rallies his team in Washington state. Photo by Kaia Watkins.

Through his work with Special Olympics North Dakota, Michael Storandt would say that he isn't volunteering. He's doing something he loves.

Since coaching a youth basketball team as a junior in high school, the Moorhead, Minn., native and second-year medical student at the School of Medicine and Health Sciences has spent the past seven years working with the Special Olympics organization and its athletes. At UND, he's been a trailblazer in developing competition for the collegiate age group.

This month, at his first trip to the USA Games, Storandt was bestowed the honor of reciting the Coaches' Oath during the Opening Ceremony.

"I feel unbelievably fortunate to be able to coach Special Olympics," Storandt said after being introduced by NBA Hall of Famer Gary Payton. "When I first got involved, I had no idea how big of an impact it would have on my life."

Storandt shared the stage with athletic dignitaries and pop culture fixtures alike. The ceremony was broadcast live on ABC, and the University of Washington's Husky Stadium in Seattle, Wash., was full of spectators and more than 4,000 athletes.

"It was amazing, and kind of nerve-wracking," he said about briefly leading the ceremony. "There's 20-30,000 people staring back at you, but it was a cool opportunity.

"It's great because it represents what we're doing in North Dakota. We're often overlooked because we're a smaller state,

but our programs are phenomenal. We have great athletes and volunteers. People who run the North Dakota program have given so many years to building the community around athletes, so it's great for North Dakota to get that recognition."

Despite all of this experience and growth through his passion, Storandt knows people who were far more deserving to deliver the Coaches' Oath.

"I was thrilled to find out I got to go to the Games, but being told about delivering the oath was something else," he remarked. "It's humbling. I've met people who have done this for 30 years who deserve the spotlight. There are so many who have given so much energy to this program and the athletes."

'Incredible coach'

Kathy Meagher, President/CEO of Special Olympics North Dakota, met Storandt when he was still an undergraduate student at UND, majoring in biology and honors. Now that he's pursuing a medical degree from the School of Medicine & Health Sciences, she's amazed how he finds the time to volunteer.

"Michael is an incredible volunteer coach," she said. "His youth leadership is remarkable and it's cool to see. Despite his hectic schedule, he's developed a college club and is leading our flag football team at the national level."

Meagher also indicated it's something that runs in the family, as the Storandts show up at state competitions to volunteer on a regular basis.

"When I started, my sister said it was something to try," Storandt said. "I realized how much I enjoyed it. You fall in love with the athletes and the people you work with. In Grand Forks, the Special Olympics community is tight knit and once you get to know them, you see them everywhere."

He says that once he found that, and put the effort in, there was no way he could live without it.

"It's that important to me," he added.

Medical student and researcher

Now well into his second year of medical school, Storandt says the SMHS has exceeded his expectations. Long nights studying and challenging case studies aside, he says he's getting more excited for his clinical rotations, which begin next year, and honing in on a specialization.

“At this point, I am very interested in hematology-oncology,” Storandt admitted. “My ultimate goal as a physician is to have the ability to interact with patients on a daily basis. With oncology, I’ll be able to work with patients dealing with a very difficult experience, and have the opportunity to help them cope with their situation, aiming to treat the total person, including not only their physical ailments, but additionally the emotions, concerns, and questions that accompany them.”

Storandt also recently finished up another summer of research in the laboratory with SMHS Assistant Professor of Biomedical Sciences Jamie Foster. In Foster’s lab, Storandt has been studying dopamine and its transporter protein DAT.

“Specifically, this summer I looked at the role of palmitoylation [the attachment of fatty acids to amino acids and other proteins] on the trafficking of DAT,” he explained. “This research is beneficial for my career in medicine for multiple reasons. It provides an understanding of how research is conducted in basic sciences and where the knowledge we have regarding cellular function comes from. Additionally, it teaches you how to address questions and problems, establishing a systematic method that answers the questions, while considering other variables that may contribute to an outcome. This type of thinking is essential when determining a patient’s diagnosis and the outcomes stemming from treatment.”

Unified effort

Away from the lab, Storandt coaches a Unified Flag Football team. In Special Olympics, “unified” refers to the team structure. Athletes, those with intellectual disabilities, share the field with partners, people of the same age group who don’t have intellectual disabilities.

On the flag football team, all four of the partners are UND students or recent graduates from the University. Storandt illustrated how unified sports such as flag football create a more inclusive environment.

“Having a Special Olympics college club brings college-aged people from the community, who have intellectual disabilities, to interact with college students,” he said. “Athletes go through an experience that integrates them into the local campus community.”

Developing such connections have been crucial to Storandt’s education, as there’s only so much to learn in the classroom.

“Instructors can’t force you to find these experiences,” he said. “There’s so much to learn at that age when you’re developing and finding something you’re passionate about. You learn how to interact, how to work with others – it teaches life lessons outside of class. And you’ll miss it if you don’t go out and seek it.”

When Storandt arrived on the scene, UND’s chapter of Special Olympics College Club was a fledgling program and the only SO College Club in North Dakota. Three years later, it has a presence on almost every North Dakota campus. He coaches flag football and youth basketball, but also plays as a partner in volleyball and soccer.

Meaningful experience

Storandt says that everything surrounding the 2018 USA Games made the week one of the greatest of his life.

“We’re all friends, out to do our best and play hard,” he said. “We had an absolute blast. We went to the Space Needle, went to Pike Place Market, found a place to watch the fireworks on the Fourth of July. We made it a full experience.”

The flag football team went 0-6 during their national run, but Storandt said their style drew attention and praise.

“Despite losing, we played phenomenally,” he said. “The top football officials and coaches said we did it the right way. In some cases, teams brought in partners that took away from the athletes. On our team, we had everybody working together and playing a role. We’re proud to have done it ‘the right way.’”

When asked how his work with athletes relates to his path through medical school, Storandt pointed to the awareness it creates.

“One of the biggest things you learn as a physician is that you need to understand all components that contribute to a patient’s health,” he explained. “You need to understand the needs of those with intellectual disabilities. There are barriers to their health and well-being, and Special Olympics is eye-opening. People sometimes don’t care enough to take the time to get others what they need. That’s why it’s important for physicians to take that time.”

Though he has a lot of time to change his mind about his career, it’s almost certain Storandt’s work with Special Olympics will continue. He encourages anybody and everybody to come to a practice.

“Make the effort to meet our athletes and get to know them – you’ll come back,” he said. “It’s the easiest thing to get involved in, and once you’re there, you’ll stay. It’s just that meaningful of an experience.”

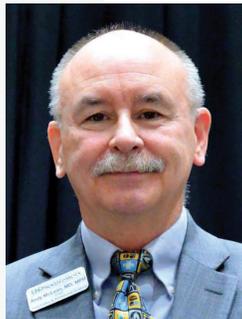
By Connor Murphy

Brian James Schill contributed to this article.

CARING FOR THE CAREGIVERS



Michelle Montgomery, PhD



Andrew McLean, MD

The good news: Medicine is a rewarding career in many ways. The bad news: there are occupational hazards.

According to Mayo Professor Liselotte Dyrbye, MD, MHPE, and others, students entering medical school typically have better mental health than their peers. Along the line, however, this changes. Despite comparable rigor to other graduate level education, medical students (and physicians) develop risks for higher levels of burnout and behavioral health concerns, including anxiety, depression, suicidality, and substance abuse.

There are varying aspects of psychological distress within medical school and beyond. One of the skills needed to be a physician is empathic engagement. However, such necessary “caring” comes with its own potential burden. Some studies have pointed to a decline in medical student empathy beginning in clinical training years. Recent studies utilizing more sophisticated tools have found empathy among medical students actually increases.

Christina Maslach has described three dimensions of burnout: emotional exhaustion, depersonalization/cynicism, and inefficacy/lack of personal achievement. Earlier this decade, Tait Shanafelt and others determined that more than half of U.S. physicians experience professional burnout.

Resilience has typically been thought of as the ability to adapt well in the face of challenges. Some individuals appear to naturally be more resilient than others, but resilience can be taught. And, attitudinally, it can be utilized in a proactive, rather than reactive, way.

Numerous medical schools have been focusing on specific strategies to enhance health, such as wellness committees,

Maintaining wellness can be a challenge for medical students and physicians, whose work demands constant empathetic engagement with patients.

changes in curricula, and so on. Our current UND School of Medicine and Health Sciences building was planned in such a way as to enhance social/interdisciplinary interaction. We also developed a dedicated position (Wellness Advocate), formed a Wellness Committee, and are reviewing changes in curricula that will do a better job of taking student wellness into consideration.

What are individual protective factors that can reduce burnout and other problems?

There are several simple things you can be mindful of that could help you remain engaged and empathetic, but not excessively stressed:

Remember your three Rs: Relationships, Routines, and Rest—

- Social connectedness and stable personal relationships are paramount. And, remember that your “supports” need support. There are groups available for students’ spouses/significant others.
- Setting a schedule, whether for study, exercise, or meal time, is also key. If you found an exercise regimen that has worked, try to maintain some semblance of that. Many students take advantage of the UND Wellness Center (already covered in your student fees!). Others do yoga—\$5 fees at local studios are popular with many students. Also, there are intramural sports teams year-round.
- Mindfulness exercises have been found to reduce stress and increase overall well-being. The elective course “Mind-Body Medicine” introduces students to such concepts.
- Take advantage of the opportunities afforded by the School during particularly stressful times (exam weeks!) such as morning meditations, therapy dog visits, and other activities as you find them helpful.
- Sleep hygiene, sleep hygiene, sleep hygiene.

Attitudinally/cognitively, the following are important to both students and physicians—

- Acknowledge the potential for stress and burnout. Knowledge is power.
- Being heard: feel that you have a voice.
- Understanding locus of control: what is within your control and what is unlikely to change in the near future?

- One of the more important aspects of facing challenges is perspective. It is important to remember the acknowledgement of choice. “I continue to choose to study/work here.” “Meeting this challenge is part of my goal.” The concept of “work-life balance” might be helpful for some. For others, it is not either-or. Work/school is a fluid part of life, part of “the mix.” What is the current recipe and how/when do I change it?

Resilience does not preclude people from experiencing more significant behavioral health issues. When an individual requires professional treatment, there needs to be an environment that allows for such acknowledgement, as well as access to care. This means reduction in stigma. The sooner students/physicians (or those around them) can recognize their difficulties and address them, the better the outcome. One unique step our University Counseling Center has taken is to develop a mobile app for medical students who may not have in-person access to counseling, such as those on rural rotations. We have also worked with the North Dakota Professional Health Program to expand its scope, accepting medical and physician assistant students.

In closing, personal responsibility for lifestyle management is important. We are responsible for our own self-care. But how institutions of higher learning, our own included, are designed is just as important. Such places must continue their commitment to maximize healthy learning environments.

*By Michelle Montgomery, PhD, and
Andrew McLean, MD*

Montgomery is Wellness Advocate for the School, and McLean is chair of the SMHS Department of Psychiatry and Behavioral Science.



HANDS-ON KIND OF GUY

1975 PT grad Larry Mullins gives back to the school that helped make him one of the best trained therapists among his colleagues out east.



Larry Mullins is a hands-on kind of guy.

“After graduating in 1975 from the Physical Therapy program at the UND School of Medicine and Health Sciences I had the aptitude and desire to excel in manual medicine,” Mullins told *North Dakota Medicine* over the phone from Ohio. “So after a short period as an inpatient therapist

in Dayton I moved to private practice and outpatient settings for the last 25 years of my career. Continuing education was a major part of my life in my quest to better understand how to treat my patients more efficaciously.”

According to Mullins, it seemed he was given difficult cases, especially early on, because he consistently had more experience and training than most of his colleagues—a fact he attributes to his time at UND.

“I loved the School and people there, but not so much the weather,” he said. “[Physical Therapy] was a great program that proved itself many times over for me.”

Born into an Air Force family, Mullins graduated from high school while in Guam and ended up at Grand Forks Air Force Base when his family was deployed there in 1969. Using an Air Force Officer’s Club scholarship to attend UND that same year, Mullins was, initially, interested in majoring in pre-medicine. After taking time to think about his future and researching different medical fields, he found Physical Therapy a good fit. Utilizing school loans and working as an orderly during college he graduated Summa Cum Laude with a BSPT degree in 1975—the first in his family to graduate from a four-year college at the time.

Noting a concern with the rising cost of higher education, Mullins argued that were it not for the affordable-by-comparison nature of UND, he would not have been able to attend college.

“I doubt I’d be a PT today because I wouldn’t have been able to afford college even then,” he explained, making reference to a physical therapy program in Ohio where the annual tuition is over \$40,000. “If I’d gone anywhere but UND, I’d not be where I am today.”

For their part, UND physical therapy students—who earn a doctor of physical therapy degree, or DPT, after five to six years of combined undergraduate and graduate schooling—at times leave UND with \$80,000 of debt.

This is why Mullins recently gave a major gift, to be managed by his trust, to the UND School of Medicine and Health Sciences for physical therapy student scholarships. And like his career, Larry plans to be hands-on with his gift, which will be part bequest and part scholarship fund.

“I will work closely with the PT program on developing the [scholarship] criteria,” Mullins said. “I’d like to help students with their debt a bit.”

Treating a patient was like a mystery, Mullins added, discussing the challenge of evaluating symptoms, history, and dysfunction before developing an effective treatment. He’s proud of having dedicated his career to improving the field of physical therapy.

“When I graduated there wasn’t much evidence-based research on the efficacy of PT evaluation and treatment techniques. Today research is a major component of being a PT, and I’m happy to have contributed to that a bit.”

Future donors interested in leaving their own legacy or contributing to existing endowments are encouraged to visit the UND Alumni Association and Foundation online at UNDalumni.org/smhs.

By Brian James Schill

THANK YOU TO OUR THOUGHTFUL DONORS

who recently gave gifts or made pledges.

Dr. Rodney Rohrich, BSMed '77, and Diane Gibby of Dallas, Texas, established the Rod J. Rohrich, MD, Family Professor Lectureship Endowment, which supports guest lecturers with North Dakota roots who come to campus to share their experiences with UND medical students. They also continue to support the Rod J. Rohrich Foundation Scholarship Endowment, which provides scholarships to medical students with preference given to students from rural North Dakota who are interested in primary care.

Dr. David, BSMed '61, and Lola Monson of River Forest, Ill., established the Dr. David and Lola Rognlie Monson Scholarship Endowment, which provides scholarships to medical students at the UND School of Medicine & Health Sciences, and the Dr. David and Lola Rognlie Monson Endowment to study virtual health care delivery, including telemedicine.

Dr. Robert, BSMed '71, and Patricia Grossman of Bismarck, N.D., established the Dr. Melvin Sander Jacobson MD & Geneva Jacobson RN Endowment in memory of Patricia's parents. The endowment will provide scholarships for medical students who are from North Dakota with preference given to students interested in practicing rural medicine. Dr. Grossman practiced family medicine at West River Clinic in Hettinger, N.D., before retirement, and Dr. Jacobson practiced family medicine in Elgin, N.D., for nearly 50 years.

Dr. Jon, MD '89, and Laura Raymond, MD '89, of Grand Forks, N.D., established the Dr. Olen Kraus Memorial Scholarship Endowment, named after their "go-to" pre-med advisor, who was associate dean of students for the UND College of Arts & Sciences and a physics professor. The endowment provides scholarships for medical students. Jon practices emergency medicine at Altru Health System, where Laura is a pathologist.

Joan Thom of Rancho Mirage, Calif., established the Dr. Robert C. Thom Medical Scholarship Endowment in memory of her husband who practiced at Tri State Clinic in Bowman, N.D. The endowment will provide scholarships for medical students with preference given to students from North Dakota.

Norma Peltier of Fargo, N.D., continues to support the Joe and Norma Peltier Medical School Endowment, which provides scholarships for medical students with preference given to students who practice in rural North Dakota. Norma's late husband Joe was a state legislator, serving in the House of Representatives 1979-1985. He was also a member of the State Board of Higher Education 1993-2000, serving as vice president 1997-1998. Joe and Norma's daughter Suzette earned her medical degree from UND in 1985.

Brian Schill, '00, '05

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■ '60s

James Brosseau, MD '66, is retiring from Altru Health System in Grand Forks after nearly 50 years of practicing medicine. "Leaving my life's work is about the hardest thing I've ever had to do," he told the Grand Forks Herald. Dr. Brosseau graduated from the SMHS when it was a two-year medical school before going on to graduate from the University of Minnesota in 1968. From there, he went through a one-year internship at a county hospital in New Mexico. Then he was drafted to fulfill a four-year assignment serving at medical centers for American Indians in North Dakota and South Dakota. He finished a three-year internal medicine residency at Marshfield, Wis., before coming back to Grand Forks in 1978. Congratulations, Dr. Brosseau!

■ '80s

Kent Hoerauf, MD '81, has been named the National Rural Health Association's Rural Health Practitioner of the Year. A board certified internal and geriatric medicine physician at West River Health Services in Hettinger, N.D., Hoerauf has made important contributions to more than 20,000 rural residents in roughly as many square miles for the last three decades. He was instrumental in creating the first designated Alzheimer's unit in southwest North Dakota, as well as West River's level IV trauma system. He travels more than 720 miles each month to reach the rural communities he serves. Hoerauf also serves as clinical professor of internal medicine for the UND School of Medicine & Health Sciences. Congratulations, Dr. Hoerauf!

Doug Hushka, MD '88, has been named a Trustee of the North Dakota State University Foundation and Alumni Association. His term of service began July 1, 2018. Dr. Hushka is a Sanford Health physician of emergency medicine whose community involvement includes serving on the Sanford Health Board of Trustees, the Fargo Catholic Schools Network School Board, and the Shanley Athletic Club. Dr. Hushka and his wife, Renelda, live in Fargo.

■ '90s

The North Dakota Academy of Physician Assistants has named **Tammy Clemetson, PA '99**, of First Care Health Center in Park River, N.D., the Outstanding Physician Assistant of the Year. Clemetson first joined First Care in 1986 as an RN before returning to school in 1997. In his nomination letter, Clemetson's preceptor Dr. Joel Johnson wrote that, "Tammy is extremely committed to the care of all patients... Tammy is a strong asset to First Care Health Center and I'm honored to work alongside her in Park River." Congratulations, Tammy!

■ '00s

Ryan Clauson, MD '08, has joined Mid-Dakota Clinic Gateway Mall in Bismarck, N.D. Dr. Clauson completed his residency at the UND Center for Family Medicine in Bismarck and is board certified by the American Board of Family Medicine.

Jonathan Haug, MD '01, has accepted the role of Medical Director of Surgical Services at Altru Health System in Grand Forks. Dr. Haug has been an anesthesiologist at Altru for the past 13 years and also serves as the chair of Anesthesiology. Additionally, he is a clinical assistant professor of surgery at the UND School of Medicine and Health Sciences.

Irminne Van Dyken, MD '08, has joined the Kaiser Permanente Wailuku Medical Office in Maui, Hawaii. She is certified by the American Board of Surgery and is a fellow of the American College of Surgeons.

■ '10s

Kiesha Bullock, MD '18, has joined the Prevea Health Family Medicine Residency Program in Eau Claire, Wis.

Adam McGauvran, MD '12, has joined the Altru Health System radiology team. He is board certified and specializes in musculoskeletal radiology. He will practice in Grand Forks, N.D.

Eric Schommer, MD '13, has joined the Sanford Health urology team in Fargo, N.D. A Munich, N.D., native, Schommer is back in North Dakota following a five-year residency in urology at the Mayo Clinic in Jacksonville, Fla.



James Brosseau, MD



Kiesha Bullock, MD



Ryan Clauson, MD



Kent Hoerauf, MD



Irminne Van Dyken, MD



MD WHITE COAT

The M.D. Class of 2022 received their white coats in a ceremony on August 10.



PT ENTRANCE INTO THE PROFESSION

The Physical Therapy Class of 2020 celebrated their entrance into the profession on July 13.

INMED says farewell to another class of Summer Institute students



Donald Warne, MD, MPH

The Indians into Medicine (INMED) Program at the UND School of Medicine and Health Sciences (SMHS) recently wrapped up its annual INMED Summer Institute. The six-week institute offers summer academic enrichment sessions for dozens of American Indian students at the junior high, high school, and medical preparatory levels. This year's program hosted 42 students

representing 14 tribes from eight different states. The summer program is designed to bolster participants' math and science skills, introduce health career requirements, and help develop potential for success in health science careers. In addition, the program introduces students to life on a college campus. Students are housed in UND residence halls, eat in UND dining centers, and attend courses held in University classrooms. Activities this year included a visit to the Indian Health Service clinic in Belcourt, N.D., stops at various UND departments, as well as the SMHS Simulation Center, and a trip to Sully's Hill State Park near Devils Lake, N.D.

"For me personally, the Summer Institute was very inspiring. These young people take six weeks out of their summer vacations to spend time with us and to build their skillsets in the sciences in an effort to succeed better in higher education," noted INMED Program Director Donald Warne, MD, MPH. "I feel a strong sense of responsibility to those who have entrusted us to provide a positive experience for these students. And, I feel hopeful for the future in knowing that these young, intelligent Native people are pursuing careers in the health professions."

The institute culminated with a banquet on July 19, at which awards were given, including the "most improved" and overall outstanding student awards. Dr. Warne spoke about the role that INMED plays in educating American Indian students.

See a photo of the 2018 INMED Summer Institute class on page 34.

Doctor of Medicine Class of 2022 begins studies at UND School of Medicine & Health Sciences with White Coat Ceremony

Seventy-seven first-year medical students, members of the Doctor of Medicine (MD) Class of 2022, began their journey recently to become physicians at the University of North Dakota School of Medicine and Health Sciences. Medical students' first week was dedicated to orientation, including an introduction to UND's nationally recognized, four-year, patient-centered curriculum where biomedical and clinical sciences are taught in the context of an interdisciplinary educational setting. Special emphasis is placed on students' new roles and expectations of them as health professionals.

Orientation concluded with the White Coat Ceremony on Friday, August 10 in the Alerus Center Ballroom in Grand Forks where students received their first white coats, the physician's traditional garment, which have been donated by the North Dakota Medical Association. Students also recited the Oath of Hippocrates, a vow physicians have been taking for more than 2,000 years to uphold basic ethical principles of the medical profession. Each student received a lapel pin, donated by the Arnold P. Gold Foundation, engraved with the phrase "Humanism in Medicine."

Susan Zelewski, MD, assistant dean of the UND SMHS Northeast Campus in Grand Forks and a pediatrician with Altru Health System, gave the ceremony's Dr. David and Lola Rognlie Monson Lecture, which she entitled "More than just pockets." The 38 women and 39 men, ranging in age from 21 to 37 years, come to medical school with experience in an array of fields and academic degrees. Many students already hold advanced degrees, including master's degrees in biomedical sciences, music, public health, nursing, and anatomical & translational sciences. Four students already hold doctoral degrees.

See a photo of the MD Class of 2022 at their White Coat Ceremony on page 27.

UND Medical Laboratory Science students receive scholarships for 2018-2019

The Department of Medical Laboratory Science (MLS) at the UND School of Medicine and Health Sciences has awarded scholarships to several medical laboratory science students. Funds for the scholarships are given from various private sources, endowments, and scholarship funds.

Scholarship winners for the 2018-2019 academic year include:

- Carley Rortvedt, West Fargo, N.D., received the Jean Holland Saumur Hematology Award for achieving the highest grade in hematology in the fall semester of 2017.
- Alex Decker, Grand Forks, N.D., received the Ralph and Hazel Rohde Medical Technology Scholarship Award, which is given each year to UND senior medical laboratory science students who have shown academic excellence.
- Alexa Gathman, Devils Lake, N.D., received the Miltza Luper Scholarship Award, which is given each year to a UND MLS student who demonstrated outstanding accomplishments in biochemistry and molecular biology.
- Courtney Knudson, Larimore, N.D., received the Dr. Cyril J. Dillenburg Memorial Medical Scholarship, which is given annually to a full-time senior MLS student at Altru Hospital in Grand Forks.
- Courtney Knudson, Larimore, N.D., received the Janice Schuh-Horysh MLS Scholarship Award. This award goes to a senior MLS student, with preference given to students from Nelson County, North Dakota.
- Mika Bordak, Grand Forks, N.D., and Buffalo, Minn., received the Eileen Simonson Nelson Pathology Award. This award goes to the MLS student who receives the highest grade in the MLS 101 course in the fall semester.
- Kirsten Schumacher, Fargo, N.D., received the Janice and Clifford d'Autremont MLS Scholarship award.
- Peyton Mattson, Forest Lake, Minn., and Brandon Morehart, Hillsboro, N.D., each received the Marcia and Gary Anderson MLS Scholarship Award.
- Teresa McCowan, Grand Forks, N.D., and Dezi Hultin, Bismarck, N.D., received the Duane and Judy Lee Scholarship Award.
- Alexa Gathman, Devils Lake, N.D., and Lillie Meduna, Dickinson, N.D., received the Mary Coleman Scholarship Award.
- Emily Christoferson, Grand Forks, N.D., received the Eleanor Ratcliffe Scholarship award.

Doctor of Physical Therapy Class of 2020 begins clinical studies at SMHS

In July, 53 physical therapy students, members of the Doctor of Physical Therapy (DPT) Class of 2020, started the clinical studies portion of their journey to become doctors of physical therapy at the University of North Dakota School of Medicine and Health Sciences (SMHS). The students received their white coats at the Entrance Into Professional Service Ceremony on July 12, at the Alerus Center in Grand Forks. The students, 33 women and 20 men, range in age from 21 to 42 years, with the average age of 23. Many are from North Dakota, and most completed their pre-PT coursework at UND.

The ceremony's keynote speaker was Dr. Philip Johnson, owner of Orthopedic & Sports Medicine Specialists of Fargo, N.D. Dr. Johnson received his bachelor of science in physical therapy and doctor of medicine degrees from the University of North Dakota. He went on to complete a residency in orthopedic surgery at Kalamazoo Center for Medical Studies in Michigan and a fellowship in sports medicine at the University of Western Ontario in London, Ontario. Dr. Johnson is a member of multiple national and state medical societies and is currently the team physician for Team USA Hockey.

"The ceremony emphasized to the students the professionalism required in the clinic and within the physical therapy profession," said David Relling, PT, PhD, associate professor and chair of the SMHS Department of Physical Therapy.

After completing their first year of the professional component of the physical therapy curriculum, the students have to pass an intense, comprehensive examination of their knowledge before they begin their clinical studies. The first three years of the curriculum are considered pre-physical therapy (pre-professional).

The professional component of the DPT degree requires three academic years (one classroom year and two in the clinic) and two summer sessions following completion of the 90-credit pre-physical therapy entrance requirement. Clinical experiences are a crucial component of the UND physical therapy curriculum and take place at more than 300 clinical sites across the nation, the majority of which lie outside the Greater Grand Forks area. These experiences meld academic information with hands-on clinical experience. Students participate in direct delivery of physical therapy services in a variety of settings under the direction and supervision of one or more clinical instructors.



Dave Relling, PT, PhD

See a photo of the PT Class of 2020 at their Entrance into the Profession Ceremony on page 27.

Multiple SMHS faculty receive research awards

Several faculty at the UND School of Medicine and Health Sciences have been awarded research grants recently totaling nearly half a million dollars to be devoted to a variety of research projects at the School, including:

- Drs. Sharon and Richard Wilsnack, faculty in the SMHS Department of Psychiatry and Behavioral Science, were awarded a \$118,000 award from the Public Health Institute for their proposal entitled “Alcohol’s Harm to Others.”
- UND Chester Fritz Distinguished Professor Sharon Wilsnack, PhD, and Richard Wilsnack, PhD, are the leaders of the Gender and Alcohol’s Harm to Others (GENAHTO) program, an international project featuring multiple Principal Investigators using surveys to analyze characteristics of persons whose drinking *causes* harm to other people.
- Chester Fritz Distinguished Professor Colin Combs, PhD, professor in the Department of Biomedical Sciences, recently received the second-year installment on a two-year grant from Ohio State University entitled “Mechanisms of exposure-induced tissue functional and pathological changes in a mouse model of Alzheimer’s disease.” The installment represents the second half of a \$141,000 award combs was given last year to continue his career-long focus on the pathology of Alzheimer’s disease.
- Combs’s colleague Catherine Brissette, PhD, associate professor in UND’s Department of Biomedical Sciences, has been given a \$63,700 award from the University of Kentucky for a project entitled “Pathogenesis of *Borrelia Mayonii* Infection.” The grant will allow Brissette to continue

and expand her laboratory’s research into the diagnosis and treatment of the tick-borne illness Lyme disease.

- In the world of medical school education, SMHS Associate Dean for Teaching and Learning, Rick Van Eck, PhD, teamed up with Simulation Center Director and Associate Professor of Medicine Jon Allen, MD, and Associate Professor of Family and Community Medicine Eric Johnson, MD, to win an American Medical Association Innovation grant worth \$30,000. The grant will be used to develop a faculty toolkit for adding telemedicine to existing medical simulations at the School.
- Alexei Tulin, PhD, professor in the Department of Biomedical Sciences, received a two-year cancer research award worth \$100,000 from the Mary Kay Foundation for a project entitled “New class of Non-NAD-like PARP-1 inhibitors: an effective strategy targeting drug-resistant breast cancer.”
- Finally, Lynette Dickson, associate director of UND’s Center for Rural Health, has won a \$112,000 award from the North Dakota Department of Health in her effort to support the North Dakota Office of Primary Care.

On average, the UND School of Medicine and Health Sciences conducts over \$20 million in research activity annually; most research grants are funded by the National Institutes of Health, Centers for Disease Control and Prevention, National Science Foundation, and U.S. Department of Health and Human Services, among other organizations. Research specialties at the SMHS include epigenetics, neuroscience, infectious disease, and population health disparities.

Nechaev receives first installment of multiyear grant from National Science Foundation

Sergei Nechaev, PhD, assistant professor in the Department of Biomedical Sciences at UND’s School of Medicine and Health Sciences (SMHS), has received the first installment on a five-year award worth \$1.25 million for a project entitled “CAREER: Organization of Global Transcriptomes by Stepwise control of POL II activity at gene promoters.” The grant was awarded by the National Science Foundation. According to Nechaev, despite decades of cutting-edge research, the question of how the activity of genes is organized into specific patterns, called transcriptomes, that give rise to all possible cell types in the organism remains unanswered.

“This issue is important not only for health researchers,” Nechaev said, “but any scientist exploring the fundamental questions about how simpler components—whether genes, neurons, or human-designed switches—can drive highly complex processes that include cell differentiation, brain organization, and possibly artificial intelligence.”

According to Nechaev, the new grant focuses on how the human genome can “encode” stable patterns of gene

expression by exploring a poorly understood process called “Pol II pausing.” The goal of the project supported by the grant is to determine how proteins involved in the control of Pol II pausing regulate transcription of genes genome-wide. By the end of the grant, the laboratory hopes to understand better how genes organize into networks. Expanding the grant’s impact is the fact that high school, undergraduate, and graduate students will have the opportunity to engage in cutting edge research at the SMHS that combines molecular biology, bioinformatics, and mathematical modeling.

Nechaev conducts research in a field known as epigenetics. Researchers studying epigenetics explore the mechanisms that regulate gene expression and the activation and deactivation of specific genes. Understanding better how the human body can turn genes on and off during growth, aging, and in response to its environment has important implications for the diagnosis and treatment of cancer, neurodegenerative diseases such as Alzheimer’s or Parkinson’s, and diabetes.

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

Eleven medical students from the Doctor of Medicine Class of 2019 at the University of North Dakota School of Medicine and Health Sciences (SMHS) have been inducted into the Gold Humanism Honor Society (GHHS).

Limited to fifteen percent of the senior class, the Class of 2019 inductees were selected through a process that included peer nomination and subsequent confirmation by the School's Gold Humanism Honor Society Oversight Committee. Students considered for chapter membership are in good academic standing and are recognized for their outstanding humanistic behaviors.

Honorees from the Class of 2019, and their hometowns, are the following:

- David Anderson, Walcott, N.D.
- Kate Berg, Hazen, N.D.
- Theodore Betting, Bismarck, N.D.
- Christine Hanish, Fargo, N.D.
- Sean Henley, Casper, Wyo.
- Janet Julson, Galchutt, N.D.
- Mitchell Messner, Hutchinson, Minn.
- C. Leigh Moyer, Cheney, Wash.
- Jacy O'Keefe, Bismarck, N.D.
- Quinn Rufsvold, Fort Ransom, N.D.
- Britta Stjern, Roseville, Minn.

Peter L. White, MD, clinical professor of Internal Medicine at the SMHS and critical care specialist at CHI St. Alexius Health in Bismarck, N.D., was also inducted into the Gold Humanism Honor Society as the faculty recipient of the Leonard Tow Humanism in Medicine Award.

Committed to fostering a culture of professionalism and humanism, the School's Gold Humanism Honor Society chapter provides a formal mechanism to highlight and recognize, as a group, those students who exhibit high levels of humanistic qualities in their day-to-day lives. These qualities include integrity; sound moral reasoning; compassion and empathy toward patients; effective communication skills; the ability to engender trust and confidence among patients, staff, and colleagues; and a deep commitment to humanitarian services.

The Gold Humanism Honor Society is funded by a grant from the Arnold P. Gold Foundation.

See a photograph of this year's award winners on page 35.

Ranum named Emerging Rural Leader



Joshua C. Ranum, MD

Joshua C. Ranum, MD, of West River Health Services in Hettinger, N.D., received the Emerging Rural Leader award at the 2018 Dakota Conference on Rural and Public Health June 14 in Grand Forks. The award recognizes a new professional who has demonstrated tremendous promise for and commitment to improving the health of rural North Dakota residents.

"Dr. Ranum understands the need for dedicated providers to serve rural communities," said Mitch Schultz, pharmacy manager at West River Regional Medical Center. "His choice to return to rural North Dakota following completion of his internal medicine residency speaks volumes about his dedication to serving rural communities."

Ranum has been an internal medicine specialist at West River Health Services since 2012. He is from the Hettinger area and understands the challenges that face rural health providers and patients. That is why he actively promotes, educates, and mentors young medical students who come to Hettinger for internal medicine clerkships, noted the video submitted for Ranum's nomination. Ranum is also a clinical assistant professor of Internal Medicine at the University of North Dakota School of Medicine and Health Sciences, where he serves as a preceptor and mentor to the next generation of rural physicians. The Dakota Conference is a joint effort by the North Dakota Rural Health Association, the North Dakota Public Health Association, Altru Health System of Grand Forks, the UND College of Nursing and Professional Disciplines, and the UND Center for Rural Health.

Duane Lowell Allison, BSOT '88, of Brookings, S.D., passed away June 26, 2018, at the age of 69. Duane was born March 27, 1949, in Volga, S.D., the son of Lynn and Lila (Thompson) Allison. Duane graduated from Brookings High School in 1967. He attended the North Dakota State College of Science in Wahpeton, N.D., before transferring to Northern State College, Aberdeen, S.D. He graduated with a BA in Education. He worked for several years in lumber sales in Colorado and South Dakota, but later pursued a degree in occupational therapy and graduated from the University of North Dakota. He worked as an occupational therapist for many years at the Veterans Hospital in Sioux Falls, S.D. Duane retired in 2013 from the VA Hospital. Duane enjoyed hunting, fishing, and bluegrass music. He traveled extensively. Many of his travels were related to his interest in history. He was a member of First Lutheran Church. Duane was a member of the Gideon Society. He led Bible studies in prisons. Duane was an active member and a past president of the Sons of Norway. He is survived by his sisters Marilyn Gisi (Andrew) and Sheryl Allison of Topeka, Kan., and brother Gary Allison (Terri) of Quinn, S.D. He is survived by four nephews, two nieces, and five great nieces and nephews. He was preceded in death by his parents, nephew Drew, and niece Sarah.

Gregory Scott Carroll, MD '90, passed away Monday, July 9, 2018, in Kansas City, Kansas, at his home. He was 55. Greg was born May 22, 1963, in Hettinger, N.D., to Donald and Irene (Molbert) Carroll. Greg served in the military as a helicopter pilot. He attended the University of North Dakota at Grand Forks where he graduated Summa Cum Laude and was ranked first in a class of 55. He was a member of the President's List for four years. He specialized in ophthalmic oncology, orbital disease, and ocular plastic surgery. He continued his education at Tulane University in New Orleans, Lou. He practiced in Memphis, Tenn., as assistant professor of ophthalmology at the University of Tennessee. He spent several years in the medical field. Greg spent his final years in Kansas City, Kan. Greg was preceded in death by his father, Donald, grandparents, and a nephew. He is survived by his mother and step-father, Irene and Gene Jacobson of Hettinger, N.D.; his son Ryan Carroll (Jessica) of Fort Campbell, Tenn.; daughter Amanda Carroll of Fargo, N.D.; two grandsons; brothers Tim Carroll (Karen) of Alabama and Keith Carroll of Washington; sister Donita Messner (Brian) of Paola, Kan.; several nieces and nephews; longtime friend Debbie Graves; and a host of friends.

Lorie Mae Connor, BSOT '77, of Glendive, Mont., passed away on Tuesday, May 1, 2018, at her home in Glendive. She was 63. On a perfect fall day in 1954, Robert and Nora Hilliard welcomed their fourth child into the world: Lorie Mae. Nora would often remark to her Belle Prairie friends that Lorie had perfect Norwegian baby looks—much to the playful groans and eye rolls of her siblings. Lorie was well educated and earned her degree in occupational therapy at UND. This took her to Wyoming where she met her future husband Duane Connor. From there she took a position as an OT for the Eastern Oregon State Mental Hospital in Pendleton, Ore. It was during this time that Lorie received her most favorite title: mother. The bond that Lorie shared with her son Jorell was strong. Her fierce pride in the man he grew up to be was evident every time she spoke of him. She appreciated and adored her daughter-in-law Justin, and did not shy away from the mother-in-law title. Just when she thought her heart could not get any fuller she was presented with a new title: Nana. Lorie loved to share photos and updates of her precious Reveille, and looked forward to her milestones. Lorie was an amazing aunt. She loved nothing more than to support her nieces and nephews in their various life pursuits. In recent years, she appreciated her new title of Binky bestowed on her by her knock-knock joke partner in crime great-nephew. Lorie was preceded in death by her parents, Robert and Nora. Surviving her is her son Jorell (Justin) Connor; granddaughter Reveille; siblings: Steve (Nadine) Hilliard, Leta (Joe) Yuricic, Herb Hilliard, and Carol Hilliard; nieces and nephews: Shane (Trish) Hilliard, Stacey (Jesse) Grantham, Rob Yuricic, Sara Hilliard, Cali (Christian) Baker; great nieces and nephews: Wynston and Lexy Ryder, Syd and Syd Hilliard, Ashlyn, Casey, Jerzie Grantham, and Gerald and Foster Baker; and many cousins and friends.

Gordon Nichols Heller, BS Med '67, formerly of Fargo N.D., passed away on Monday May 7, 2018, in Kremmling, Colo. He was 74. Gordy was born in Fargo to Gordon Heller and Jane (Nichols) Heller on September 25, 1943. He graduated from Fargo Central High School in 1961. He completed the 2-Year medical program at UND, and finished his medical degree from the University of Minnesota in 1971. He received further training at Henry Ford Hospital in Detroit, Mich., and at the University of Florida-Gainesville Gordy was very accomplished professionally and was one of the first in the U.S. to be certified by the American Board of Emergency Medicine. He was licensed in several states and worked at Butterworth Hospital in Grand Rapids, Mich., as well as in the Muskegon and Ludington, Mich., Emergency Departments. He married Pattie Louise Seymour in Whitehall, Mich., on June 24, 1978. Their son, Gordon Stuart, was born in 1981. Gordy enjoyed numerous hobbies outside of work, most notably farming,

horses, hunting, reading, and real estate development. He had many adventures, including traveling to the Caribbean to practice medicine in the winter and to Russia to hunt for bear. He was even airlifted out of the Alaskan wilderness after a severe snowmobiling accident. His body showed the wear and tear of his adventurous spirit. Gordy was a much loved father, father-in-law, brother, and grandpa. He is survived by his son Gordon Stuart (Dawna) Heller of Kremmling, Colo.; stepdaughter Stephanie (Shawn) Scholl of Kremmling, Colo.; brother, Robert (Diane) Heller of Woodbury, Minn.; brother, William (Janet) Heller of San Martin, Calif.; sister, Betsy (Mark) Jackson of Fargo, N.D.; grandchildren, Sawyer and Maizie Heller and Tabor and Tyler Scholl. He was preceded in death by his wife and parents.

Lawrence David Jones, BS Med '62, passed away Sunday, June 24, 2018, at his home in Prescott Valley, Ariz. He was 90. He was born March 3, 1928, in Cloquet, Minn., to Ellsworth David Jones and Opal I. Proctor. He was raised in Minnesota and graduated from Cloquet High School in 1946. He attended Pharmacy School at the University of Utah, Medical School at the University of North Dakota, and graduated from the University of Minnesota Medical School in 1965 as a Doctor of Medicine. He first opened his first medical practice in Harlowton in 1965, later moved to southern California in 1969 to practice medicine, and moved into administrative medicine, where he would spend the remainder of his career, retiring from First Colony Life Insurance in the 1990s. He was preceded in death by his parents and two sisters, Ila T. Jones and Barbra M. Jones Smith. He is survived by his wife of 21 years, Mary M. Montgomery Jones; one sister, Tharen T. Jones Robson (George) of Lodi, Wis.; three sons, Ellsworth D. Jones II (Cheryle) of Dewey, Ariz., Donald L. Jones of Stanford, Conn., and Christopher L. Jones of Aiken, S.C.; three daughters, Greta L. Jones May (Joe) of Talbot, Tenn., Laura E. Jones Stalling of Lynchburg, Va., and Sharon E. Jones Hatcher (Brian) of Charlotte, N.C.; six grandsons; four granddaughters; and four great-granddaughters, one great-grandson, and many nieces and nephews.

Douglas Adolph Norris, BAC '54. It is with deep sadness that we announce the passing of Doug. He passed away, at the age of 88, at the Riverview Health Centre on August 21, 2017, after battling cancer for over two years. Doug was predeceased by his wife Jean (Westin) and parents, Jean (Drobb) and Adolph. He will be deeply missed by his children, Cathy (Paul), David (Lizz), and Jeffrey (Corinne); grandchildren, Christina, Dawn, Erik, Lisa, Anthony, and Carly; and great-grandchildren, Matteo, Madison, Gianpaolo, Cristiano, and Ayla. Doug was born on October 13, 1928, in Winnipeg. He met his spouse Jean while

going to school at the University of North Dakota; they were married on May 29, 1954, in Grand Forks. Doug graduated with a Masters in Science in bacteriology (microbiology) and was recruited by the Gray Nuns to open the microbiology lab at St. Boniface Hospital in Winnipeg. He was director there until he retired and found many unusual bacteria that needed to be treated to save the lives of many patients. He also owned and was the microbiologist at Provencher Medical Lab with several partners who had unique specialties for the lab. Doug and Jean travelled to Sweden, Germany, Florida, and many places in Canada and the USA to visit family and friends. Doug logged countless hours of driving to these destinations. Doug is dancing with Jean once again in heaven, his life partner since 1954.

Karen J. Nedberg-Ryan, BSPT '75, died Friday, June 29, 2018, in Grand Forks at the age of 61.

Richard Allen Zaruba, PhD, DPT '07, passed away from a stroke on Sunday, May 20, 2018. Rich was born on December 5, 1967, in Cheyenne, Wyo. Before graduating from Natrona County High School in Casper, Wyo., Rich attended basic training and joined the Army Special Forces. In 1994, Rich married Patricia Moulton in Casper. They soon moved to Grand Forks, N.D., to attend the University of North Dakota. Rich went on to obtain a doctorate in anatomy and cell biology with a focus on neuroscience and then went back to school to obtain a doctorate in physical therapy. During this time Rich also served in several military reserve units and his daughter Angela was born. After graduation, Rich started his physical therapy career in Northwood, N.D., and then soon moved to the Minot Air Force Base where he served as the physical therapy clinic director. After five years, Rich obtained a position with the new University of Jamestown Physical Therapy Doctorate program in Fargo, N.D., and the family moved to West Fargo. Rich served in this role for almost five years. He loved using his neuroscience and physical therapy background to provide the best treatment to his patients and to give his physical therapy students the broadest knowledge possible as they start their careers. He was very passionate about learning and attended hundreds of continuing education hours each year, earned dozens of post-graduate certificates, and lived for the field of physical therapy. He was also a loving parent and husband, enjoying time with the family and helping to shape his daughter Angela's future. He is survived by his wife Patricia Moulton and daughter Angela Zaruba; his sister Robin and step-sisters Tammy, Kathy (Boden), and Shelly; and nephews and nieces Zachary, Tom (Cindy), and Jennifer.



INMED SUMMER INSTITUTE

Students who took part in the Indians Into Medicine Summer Institute.



DAY IN THE LIFE

High schoolers learn more about health professions at the School of Medicine and Health Sciences' "A Day in the Life" event.





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CANCELLED: UND MEDICAL LAB SCIENCE ALUMNI & FRIENDS RECEPTION

October 4, 2018

Earle Brown Heritage Center, Minneapolis, MN

Courtesy Geoff Duncan of Visit Austin



UNIVERSITIES OF NORTH AND SOUTH DAKOTA RECEPTION

November 3, 2018 - Austin, TX

med.UND.edu/events/aamc-2018

2018 HOLIDAY PARTIES

December 4, 2018 - Humpback Sally's Smith, and Curran Room, Bismarck, ND

December 6, 2018 - Gorecki Alumni Center, Gransberg Room, Grand Forks, ND

December 11, 2018 - Avalon West, Sheyenne Ballroom, Fargo, ND

December 13, 2018 - Grand Hotel, Kevske Room, Minot, ND

med.UND.edu/events/holiday

ADOPT-A-MED-STUDENT LUNCHEON

October 23, 2018 - UND School of Medicine and Health Sciences, Grand Forks

RSVP by October 5 at 701.777.4305 or at kristen.peterson@UND.edu