

NORTH DAKOTA MEDICINE

University of North Dakota School of Medicine & Health Sciences



Summer 2018
VOLUME 43, NUMBER 2



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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 Fourth-year medical student Kathryn Johnson shares her Match Day results from Bismarck via smartphone with her twin sister Adria, who opened her match letter in Fargo. Photo by Will Kincaid.

NORTH DAKOTA MEDICINE (ISSN 0888-1456; USPS 077-680) is published four times a year (March, June, September, December) by the University of North Dakota School of Medicine and Health Sciences, Room W103, 1301 N. Columbia Road Stop 9037, Grand Forks, ND 58202-9037. Periodical postage paid at Grand Forks, ND.

Printed at Forum Communications Printing, Fargo, ND.

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ND Medicine Address Correction
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NORTH DAKOTA MEDICINE is available online at www.med.UND.edu/nd-medicine

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A TIME OF TRANSITIONS



As the current academic year winds down, we say “good luck” to our graduating seniors and “hello” to the arriving freshman medical, health sciences, and graduate students, some of whom have already begun populating our eight different degree programs on campus. Our new graduates will be going out into North Dakota and the world to practice their art, which for most of them will be in the area of direct patient care. Our graduating medical students will be spending the next three or more years in residency training where they will learn the specifics of their selected specialty area. And most of our other health sciences students will be starting their own practices, usually in a hospital or clinic setting.

We are seeing a variety of transitions of staff and faculty members as well. The founding director of our nascent master of public health program, Dr. Ray Goldsteen, along with his colleague and wife Dr. Karen Goldsteen, will retire at the end of June. We have an active search underway for Ray's successor, and we wish Ray and Karen all the best in the future. Under their leadership and guidance, our MPH program went from a

simple idea to a vibrant reality in short order. After getting off the ground officially in 2012 and graduating its first class of five students in 2014, the program just last month graduated ten MPH professionals between its two tracks—Population Health Analytics and Health Management and Policy. That is a one-hundred percent rate of growth in only a few years!

And long-time administrative officer Lori Sannes recently retired as well after decades of dedicated service in the Office of the Dean.

Along with these retirements, we've also been delighted with some new recruits to the UND family. I chaired UND's search for the next Vice President of Finance and Operations after Alice Brekke indicated her intent to step down after many years at UND. The search committee presented three outstanding candidates to the UND community and President Kennedy, and the President selected Jed Shivers as our next VPFO. Jed also will function as UND's chief financial officer (CFO) and chief operating officer (COO) for non-academic functions. Jed comes to us from Albert Einstein College of Medicine where he was highly regarded. Welcome aboard, Jed!

In a similar vein, the School was pleased to welcome Laura Block as our own CFO and COO for non-academic operations. Many of you know Laura from the UND Alumni Association and Foundation, where she handled the financial operations as CFO. I am positively delighted to have Laura on board, especially in this time of budgetary challenges at the state level. As you may know, state appropriations make up about a third of our operating budget, meaning any change in funding at the state level has an impact on us. So, good to have you on board too, Laura!

At the faculty level, I am thrilled to welcome Don Warne, MD, MPH, to our School of Medicine and Health Sciences family. Dr. Warne is our first Associate Dean for Diversity, Equity, and Inclusion and the new Director of the Indians into Medicine (INMED) Program that was established in 1973 and is designed to help produce more American Indian health professionals dedicated to practicing in underserved and rural areas, including but not limited to reservations.

Dr. Warne comes to us from North Dakota State University

where he was chair of the Department of Public Health in the NDSU College of Health Professions. The INMED Director post was long held by Eugene Delorme, JD, who retired last year.

Don is an enrolled member of the Oglala Lakota Tribe in Pine Ridge, S.D. He received his Doctor of Medicine degree from the Stanford University School of Medicine in 1995 and his Master of Public Health degree from Harvard University in 2002.

Among other duties, in his new role Dr. Warne will support the needs of American Indian healthcare students on the University of North Dakota campus; help provide reservation communities with culturally competent healthcare providers; maintain strong relationships between the UND SMHS and tribal communities in North Dakota and the surrounding region; and contribute to the School's scholarly, service, and teaching missions.

Dr. Warne also will oversee the School's initiatives to promote diversity, health equity, and inclusion. He will be developing additional approaches to help recruit a diverse and well-qualified student and faculty workforce to promote the School's diversity mission, which is focused on rural and American Indian populations.

This time of year always is bittersweet. We say goodbye—at least for a while—to graduating students and also to retiring faculty and staff. Even so, as the “telehealth” theme of this issue suggests, the world of medicine is getting smaller each day as not only physicians but physician assistants, physical and occupational therapists, public health professionals, and researchers of all stripes do more and more of their patient care at a distance. Such advances in distance medicine are and will be especially important in a rural state like ours where telehealth holds real potential to help our state address its patient care and healthcare workforce needs. Read on to learn how.



Joshua Wynne, MD, MBA, MPH

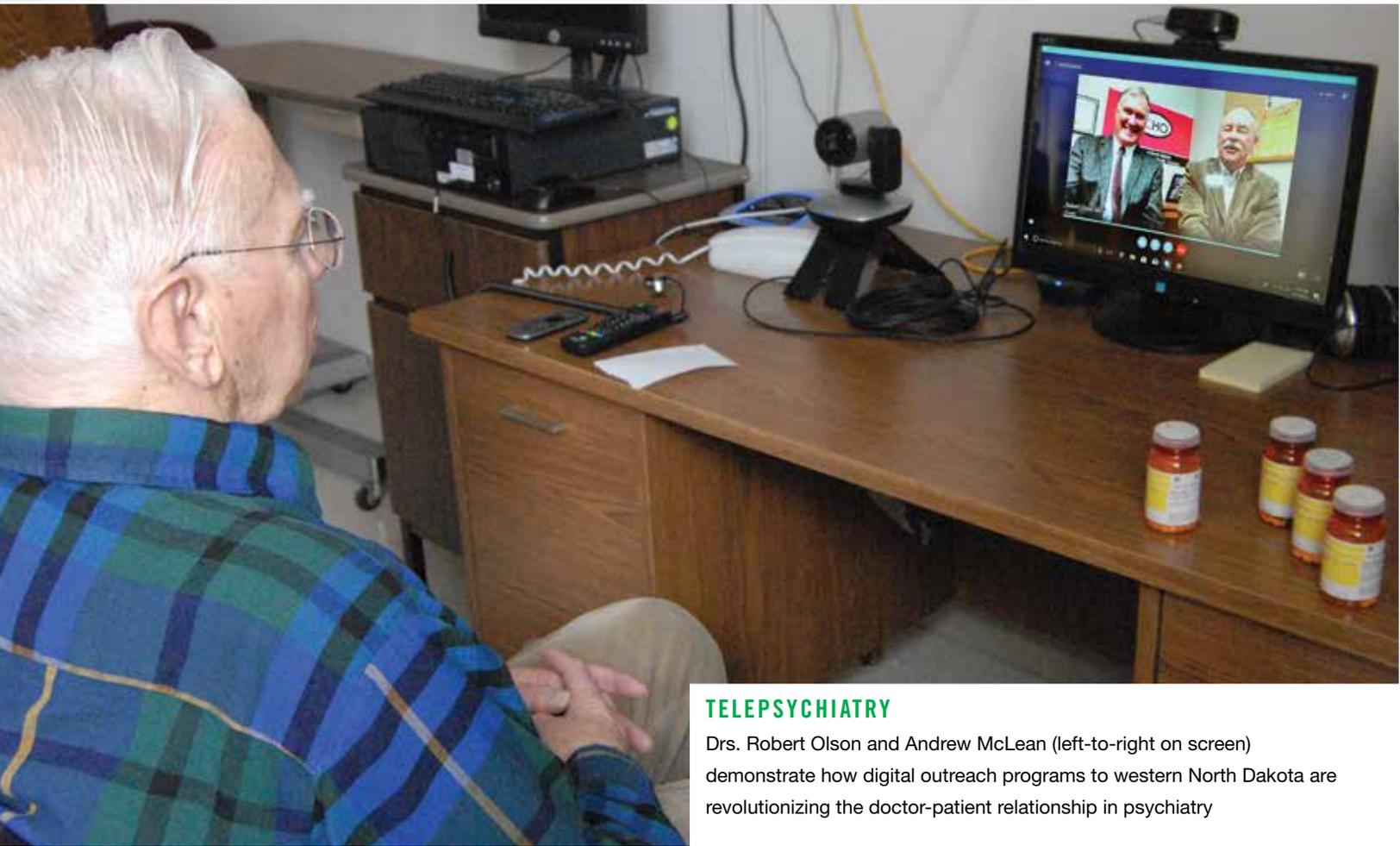
UND Vice President for Health Affairs and Dean





THE TELE-COUCH

New medical residents and technology expand psychiatry services to underserved rural areas



TELEPSYCHIATRY

Drs. Robert Olson and Andrew McLean (left-to-right on screen) demonstrate how digital outreach programs to western North Dakota are revolutionizing the doctor-patient relationship in psychiatry

Robert Olson is connected to western North Dakota. “We are determined to reach rural areas,” said Olson, a Williston native and geriatric psychiatrist who directs the residency training program in psychiatry at the UND School of Medicine and Health Sciences (SMHS). “Psychiatrists are in short supply in many areas, quadruply so in rural areas.” That’s one of the reasons the Williston native and his fellow North Dakotan Andrew McLean are using technology to expand psychiatric services in the western part of the state. Psychiatrists are desperately needed to help combat addiction

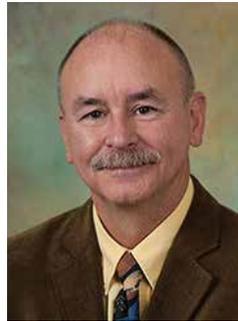
and psychiatric problems, especially in the oil patch and western North Dakota, they said. After the North Dakota legislature recently expanded the number of residency slots at the School of Medicine and Health Sciences through the Healthcare Workforce Initiative, the psychiatry residency program, which Olson directs, rose from four to six residents per year. At the same time, the SMHS began training those residents—who are stationed primarily in Fargo—to use “telepsychiatry” to reach rural areas and better serve the state.

“We are determined to reach rural areas. Psychiatrists are in short supply in many areas, quadruply so in rural areas.”



ROBERT OLSON
MD

“With high definition video, we’re able to zoom in and out, see tremors and check for medication side effects. Most patients enjoy telemedicine.”



ANDREW MCLEAN
MD

The wave of the future

“This is about serving the state,” said McLean, who serves as clinical professor and chair of the Department of Psychiatry and Behavioral Science at the SMHS and is a psychiatrist who practices telemedicine. “Telepsychiatry training allows us to educate residents in this type of practice and to serve patients who have limited access to psychiatric services.”

“Telepsychiatry is clearly the wave of the future,” said Olson.

Many towns in rural North Dakota have no psychiatric services on site, Olson added. “We are training residents to be comfortable with technology and to reach out to rural areas easily.”

Furthermore, telepsychiatry also exposes psychiatry residents to other parts of the state and may increase their interest in practicing there after finishing residency, McLean said.

That’s important, said both physicians, because all of North Dakota benefits from better access to mental health treatment.

By combining rural outreach with telemedicine, the psychiatry residents also visit the communities and work with patients and medical providers once a month in person, then continue caring for patients using telemedicine every week. Patients travel less, and providers can still provide care, even in bad weather.

Over the past two years, third- and fourth-year psychiatry residents have served Dickinson, Williston, Minot, Devils Lake, Jamestown, and Bismarck, mostly by “seeing” people at human service centers, where their patients often have serious mental illness and addiction.

“Our patients often are people who struggle with access to care, and may have lower income or less [health] insurance,” said McLean. “We are focused on helping them.”

Almost like being there

“Telemedicine is as effective as face-to-face,” said Olson. “It’s almost like you’re there, especially in psychiatry. You can make eye contact and see movement and facial expressions. Studies have shown its effectiveness.”

“For most scenarios, telemedicine is almost as good as being there,” added McLean. “With high definition video, we’re able to zoom in and out, see tremors and check for medication side effects. Most patients enjoy telemedicine.”

And, McLean continued, at one of the human service centers they have been able to prescribe medicine that’s underused but effective, and which needs to be monitored closely.

“We were able to start the meds in person and provide follow-up with telemedicine,” McLean said, noting that technology can help psychiatrists use time more effectively while improving the lives of patients.

Olson said they receive good feedback from clinics and human service centers, along with patients and residents.

“The residents love it,” said Olson. “We had some apprehension that residents would not want to travel to the human service centers, but they have very much enjoyed it. One has taken his kids with him when he stays in a hotel. They start out with no idea of what Minot and Dickinson are like and come back with great stories about the towns.”

By Jan Orvik

/// THERAPIA EX MACHINA

The SMHS Departments of Physical and Occupational Therapy explore how telehealth is changing the teaching and practice of rehabilitation



REDEFINING RANGE OF MOTION

Cindy Janssen, PhD, OTR/L, and second-year PT student Mitchell Karbo practice telerehab in Grand Forks with a “patient” in Wyoming

Sitting in a classroom on the fourth floor of the UND School of Medicine and Health Sciences, third-year occupational therapy (OT) student Erika Moderow found herself suddenly thinking very differently about the future of her profession.

“I think telerehab has great potential to reach clients who would otherwise not follow-up with services or would receive less care than they need for any number of reasons,” said Moderow after listening to guest lecturer and occupational therapist Marsha Waind describe recent developments in “telerehab” in a class typically facilitated by UND associate professor of occupational therapy Anne Haskins. “My mind started thinking about different services that OTs could offer this way. It would allow OTs to touch base with their clients more regularly and potentially even hold group sessions with multiple people.”

The discussion was like turning on a lightbulb, Moderow said.

Occupational telehealth

To hear both Haskins and Waind tell it, now that many private

insurers have started covering not only medicine at a distance, but other telehealth services such as occupational or physical therapy, the only obstacle stopping providers from offering more distance therapy to patients is coordination within the health system.

“For therapists, this is a great opportunity,” added Waind, who cites many instances where an OT or her assistant could converse with a patient on a camera and provide the same therapeutic advice and evaluation as if the patient were in the clinic.

“If I can connect with mom over a tablet to see what’s going on at home during mealtime for a child with feeding issues, that’s a far better session than to have them come into my office,” Waind reasoned. “If I was a parent in Rolette, it’d be hard to take my child who has autism—plus two other kids—to appointments in Grand Forks to see the pediatric therapist. Because even if they get here, that appointment is just not as good or ‘natural’ as it could have been at home.”



“If I can connect with mom over a tablet to see what’s going on at home during mealtime for a child with feeding issues, that’s a far better session than to have them come into my office.”

MARSHA WAIND
MOT, OTR/L

This is why, added Haskins, the SMHS Department of Occupational Therapy is working to embed telehealth discussions and even practice into its curriculum now.

“We’re trying to prep students to do this and help them understand how easy this could be—providing that one-to-one intervention with clients virtually,” Haskins explained, noting that her team already helps students cultivate their “webside” manner. “The unique thing about our program is our distance campus in Casper, Wyoming, which means that by the time they graduate all our students have had three years of videoconferencing. They get a feel for what it’s like to be on the other end of the camera. So we get them thinking about rate of speech, how you move for a camera, how to dial back your body language, and so on.”

The PT Compact

From his office down the hall from Haskins, Dave Relling couldn’t agree more. As chair of the SMHS Department of Physical Therapy, Relling has considered how telehealth will affect the professional world his students will soon enter—and how his team should be teaching them as a result.

“There is a need for more physical therapists, especially in rural areas,” said Relling, noting that current regulatory practices limit PTs from practicing across borders. This reduced portability of licensure can result in limited access for persons needing care who live in low population regions close to state lines. “We’ve had interest in the topic of ‘compacts’ from our third-year students who will be graduating this year. They want to know more about the physical therapy compact and they want to know how to move forward on where to get their license.”

Saving these fresh physical therapists from having to acquire licenses from multiple states, said Relling, is something called the Physical Therapy Licensure Compact (PTLC), which allows therapists in member states more freedom to offer physical therapy services across borders by increasing the mobility of providers to work in multiple states. The compact was developed by the Federation of State Boards of Physical

Therapy (FSBPT) in collaboration with the American Physical Therapy Association (APTA).

Working with state legislators across the country on implementing the compact, the FSBPT, APTA, and local physical therapy providers have convinced state lawmakers in nearly half of the American states so far, including North Dakota and Montana, to introduce—if not pass—legislation allowing for such inter-state practice.

“In the past, a North Dakota therapist doing outreach to rural Montana would need a separate Montana license,” Relling explained. “With the compact, however, a professional living here will get a state PT license as their home state. The PT will then obtain a ‘privilege to practice’ approval via the compact to begin seeing patients in Montana, increasing access to care while reducing regulatory steps to practice across state lines.”

A little of that human touch

Although the compact is in its early stages it is likely to increase therapists’ ability to provide telehealth services such as home-based cardiac rehab, exercises for certain types of joint replacement, or consults with physical therapy assistants (PTAs) at a distance.

The benefits of telerehab notwithstanding, Relling admitted that helping both therapists and patients acclimate to the idea of a physical therapy that lacks a physical presence could be a challenge.

“Interacting with patients in another location will be very different from a physical encounter, where you have a hands-on interaction,” he said. “But things are moving forward and the technology is changing. We need to prepare our graduates to effectively utilize telehealth when appropriate.”

Haskins agreed, noting that telerehab cannot simply replace human contact for many patients. “But it can accentuate what we do,” she concluded. “For our clients with mental health issues, for example, to be able to just call and videoconference with someone as a checkpoint, and to be able to reach out to rural communities, this could be fantastic.”

STIRRING THINGS UP

CRH Founder is a mover and shaker in rural health care



LIKE COOKS IN THE KITCHEN

Center for Rural Health Founder Kevin Fickenscher, MD (right), gets an update on the Center from CRH Deputy Director Brad Gibbens

Kevin Fickenscher, MD, likes to stir things up. But he wears a small whisk on his lapel to remind himself of the fine line between stirring too much and stirring too little. An avid cook, Fickenscher realizes that if you stir too much, you make a mess. But if you stir too little, you won't bring the ingredients together. The whisk analogy fits almost any area in life.

"You have to stir just right," said Fickenscher, who returned to the SMHS in March 2018 to be Dean's Hour speaker, where he spoke to students and faculty about embracing telehealth. "It's been my symbol for 25 years."

Originally from Bismarck, Fickenscher was the founding director of what became the Center for Rural Health (CRH) at the University of North Dakota School of Medicine and Health Sciences (SMHS). He now lives in Maine and serves as the founder and president/CEO of CREO Strategic Solutions, LLC, a consultancy offering advice to healthcare providers with a focus on technology applications, telehealth services, informatics, and leadership development.

Fickenscher's roots at UND run deep. He first came to the University as a student in 1970. He knew he wanted to be

a doctor, but he initially went into psychology because his advisor told him he should think about what would happen if he didn't get into medical school.

"I had a number of detractors who didn't think I would quite make it, including my high school biology teacher, who was the first person I called when I got accepted (to medical school)," Fickenscher recalled with a smile.

As an undergraduate, Fickenscher quickly became deeply involved in many activities. "I was always sort of a community activist type," he said.

When a measles outbreak struck campus, Fickenscher organized students for a measles immunization program. That led to the creation of CHIP—Council for Health Interdisciplinary Participation. At the time, UND nursing, medical school, and social work students were all very isolated, with little communication among the various disciplines. Through CHIP, health sciences students began collaborating on projects.

During medical school, Fickenscher took a year off when he was elected president of the American Medical Student Association. During his presidency, he lived in Chicago and

even had the opportunity to testify before Congress. He later advocated for renewal of the National Health Service Corps and for changes in the medical education curriculum to be more inclusive of clinical experiences as well as basic sciences.

In addition, he visited all the major pharmaceutical companies. Students at the time were having strong philosophical differences with pharmaceutical industry, which was using prisoners for drug tests, Fickenscher explained.

“We really felt that was inappropriate,” he said.

After graduating from medical school at UND in 1978, Fickenscher was accepted into the Residency Program in Social Medicine (RPSM) in New York City as a family practice graduate. It was an eye-opening experience.

“It taught us about the social dimensions of disease as well as the clinical and physical dimensions,” he said.

As part of his first week as a resident, the RPSM had Fickenscher apply for food stamps, which he described as a “hellacious experience.”

“I learned a lot about what my patients had to go through,” he said. “And that was the intent of the program.”

When Fickenscher had an opportunity to be chief resident, though, then-UND Medical School Dean Tom Johnson came to see him in New York. Johnson asked Fickenscher to come home. Johnson had secured funding for a program in rural health and needed someone to run it. He wanted that someone to be Fickenscher.

“To me it seemed like the ultimate social medicine project because I was going to be coming back home, and I was given this very broad charge of ‘solve rural health problems,’” Fickenscher said.

When the Rural Health Program started in 1980, it had a \$73,000 budget and Fickenscher was the only employee. On his first day, Fickenscher went to the Dean’s Office in what is now Columbia Hall at UND and asked Johnson where he should go. Johnson told him he thought there was some empty space on the second floor. So Fickenscher went to the second floor and picked an office. He quickly returned to the Dean’s Office because he didn’t even have a desk. Johnson said he thought there was some surplus furniture and equipment in the basement.

“So I got an old [IBM] Selectric typewriter and started the Rural Health Program,” Fickenscher said.

From the very start, Fickenscher didn’t want what was to become the CRH to be a traditional academic research program.

“I wanted us to help the people of North Dakota,” he said. “So we were going to help make health care better. That was my overriding philosophy.”

He didn’t know exactly what that meant, so he visited physicians in rural North Dakota. He also reached out to legislators across the state. He asked all of them what they wanted his office to do.

“The clear message was if you sit in Grand Forks, you’re not going to help us. So don’t sit in Grand Forks,” Fickenscher said.

So Fickenscher went to work travelling the state regularly. The CRH worked with rural hospitals to help them find ways to continue developing and sustaining health care services for area residents. It also looked at workforce issues and became involved in a successful, albeit unusual, physician recruitment program.

“We had some slightly different approaches,” Fickenscher said with a chuckle. “For example, our recruiters had a contest for a couple of docs to see if they could get them married off locally so that after we recruited them we could keep them. So we did things like that. It was a lot of fun.”

Because of the work going on in North Dakota, several of the surrounding states reached out to the program, giving the CRH a more regional focus. When Fickenscher moved on from the CRH after nine years with the program, it included 15 staff members, a \$1.8 million budget, and a number of projects. Through the years, the CRH has continued to grow, and Fickenscher has been pleased to see the Center’s mission continue.

“I’m really proud of what the Center has become,” Fickenscher said. “It’s very exciting to come back and see what folks have accomplished and are accomplishing. It’s very satisfying to see that. And the core philosophy around making health care better still exists.”

He’s also excited to see what the future holds in rural health and believes rural America is going to be at the forefront of using virtual technologies in health care.

“I really believe that all of health care is being challenged in some really profound ways with new technologies that are evolving, that are replacing the entire tradition, if you will, of how we take care of people,” he said. “Specifically, I believe we’re getting into an era where the use of virtual technologies is becoming increasingly important as a modality and as a very important component of the overall delivery of care that didn’t exist 20 years ago.”

“I think that rural health will end up being better.”

By Brenda Haugen

FROM DISTANCE TO PRESENCE

UND's Remotely Operated Biomedical Telepresence Systems project revolutionizes telemedicine and team-based healthcare education in the United States



TELE-DOC

UND medical students practice their telemedicine skills with SMHS associate professor and Simulation Center Director Jon Allen, MD

"These are huge. They should be implemented into every medical program there is," noted the white-coated medical student as she finished her home health simulation at the UND School of Medicine and Health Sciences (SMHS) Simulation Center late in 2017. "This was literally the most valuable learning experience I had this semester."

Knowing that UND is already a leader in medical simulation in the upper Midwest, this particular third-year student had gotten used to honing her clinical skills in the School's "Sim Center." But something just felt different—better—about this latest session.

The simulation was part of the School's new Remotely Operated Biomedical Telepresence Systems (ROBOTS) project, a series of three interconnected scenarios that follow a single patient over the course of her medical treatment for a myocardial infarction, or heart attack. Building on the existing simulation program at UND, ROBOTS represents a potential paradigm-shift in medical education: not only is it highly interprofessional—involving students from social work, nursing, and physical and occupational therapy—but it also trains students in the latest developments in telehealth.

I, ROBOTS

Back in 2015, Senior Associate Dean for Education and Faculty Affairs Gwen Halaas, MD (now retired), and 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. The group sought to develop curricula to teach both interprofessional healthcare and telehealth (or telemedicine) in order to prepare healthcare professionals for the future in rural healthcare.

After winning the support of Dean Joshua Wynne, the team pitched its idea to the American Medical Association as part of the Accelerating Change in Medical Education consortium of 32 leading medical schools. The AMA invited SMHS to join the consortium and the team took off, expanding the project to include six Double Robotics 2-wheeled robots—imagine a Segway with a tablet for a head—for the telemedicine component.

The team also realized that telemedicine in the future will extend far beyond a patient or provider interacting with a faraway physician through a fixed screen. The robots mobilize the tele-physician by connecting her to a device that can be maneuvered throughout the clinical setting as she interacts with colleagues and the patient.

“...I play one on TV”

According to both Johnson and Allen, while most medical students enter their studies aware of the need for and value of learning about telemedicine, they often struggle to understand how their etiquette, voice modulation, and body language have to change when interacting with patients through a screen—and how the screen alters the doctor-patient relationship.

“There’s so much students need to learn with the camera, so we need to train them for those skills as well,” explained Johnson, “but these robots are designed to be driven around—to be in the room with you. What that does differently from typical telemedicine is give you a sense of agency that you wouldn’t normally have.”

“This is a game-changing experience for healthcare,” said Van Eck, who is also the School’s Dr. David and Lola Rognlie Monson Endowed Chair for Medical Education, “because it creates ‘telepresence,’ which is the feeling for both doctor and patient that they are together in the same space. And there’s research that shows that this translates to better patient satisfaction—the patient feels more like the doctor was listening to them or cared—all because the robot allows the physician to behave as if they are really there in person.”

Furthermore, the researchers are quick to point out that what drives these simulations is the need to provide the best possible healthcare outcomes by providing the best possible healthcare education.

“And that means interprofessional teamwork,” added Johnson. “Given the unique mission of the UND SMHS to train healthcare providers for North Dakota, we felt it was important to recognize the role that telemedicine plays in interprofessional teamwork.”

“You might be able to pick up a phone or stick your head out the door at Johns Hopkins and call in any number of different specialists, but with rural healthcare, you need to reach beyond your own setting,” said Allen, noting that the School’s North Dakota context requires training students how to collaborate in person and at a distance. “I’m not aware of anyone doing this sort of thing anywhere else—combining telepresence robots with interprofessional simulation is particularly novel.”

Building confidence

Such training is especially valuable in North Dakota in so far as it helps provide the state with more health practitioners of all types.

“Through our rural, underserved scenarios, students are learning that even if they are working in those environments, they’re not all by themselves,” said Johnson. “It’s good to know that I can work in Hettinger and still get a cardiologist telemed consult right now from Bismarck. I think students look at that as they make decisions about specialization and choosing where to practice and feel more supported, more encouraged, especially in a rural environment.”

“That leads to getting more doctors back into a rural state,” Allen quickly added. “If they can feel comfortable with telemed, they’ll feel more comfortable being that primary care physician out in Tioga or Garrison or somewhere else where there aren’t specialists. Now, they’ve got those specialists at arms-length, regardless of where they practice.”

For Van Eck, not only do health students understand the pace at which health care is changing today, but they recognize that future models of care are less likely to rely on the co-location of providers and patients.

“They see the value in learning about telemedicine,” he concluded. “We heard dozens of positive comments about how each profession holds a different piece of the puzzle and how satisfying it is to work as a team to provide better healthcare than any one profession could do alone.”

By Brian James Schill

CONNECT AND ENGAGE

Critical Access Hospitals in North Dakota use telehealth to meet the needs of their rural patients

Telemedicine connects—and re-connects—patients to health providers in a variety of ways. Years ago, Dr. Eric Johnson, associate professor in the Department of Family and Community Medicine at the UND School of Medicine and Health Sciences (SMHS), provided mentorship at a diabetes summer camp that helped kids learn how manage life with diabetes. Fast forward, years later, and those same children from that camp sought out Dr. Johnson as adults after learning they could “see” him in Rugby, N.D., without traveling all the way to his primary clinic site.

According to Dr. Johnson, who was trained in family medicine and serves as Assistant Medical Director for the Altru Diabetes Center in Grand Forks, it’s this type of connection that is changing rural healthcare for the better in multiple ways.

Diabetes at a Distance

Altru Health System works in partnership with Heart of America Medical Center (HAMC) in Rugby by providing psychiatry, dermatology, cardiology, and diabetes care through telemedicine. For the past four years, a diabetes telemedicine clinic facilitated by Dr. Eric Johnson has been offered twice monthly. Patients from HAMC with Type 1 or Type 2 diabetes are able to receive care remotely through this clinic, saving time and improving their health. In addition to Rugby, Dr. Johnson provides similar telemedicine clinics to Carrington and Devils Lake.

Although Dr. Johnson is located in Grand Forks, he is assisted by Kathy Brandt, a certified diabetes educator and dietician serving as the telemedicine nurse at HAMC. Brandt meets with patients in person, taking vital signs and updating their electronic medical record (EMR) so that Dr. Johnson has all the information he needs for the “visit.”

“If the patient is wearing an insulin pump, I’m able to generate reports and upload them to the EMR, and I can also scan blood sugar logs so Dr. Johnson is able to review them,” Brandt said.

This makes the visit virtually identical to an in-person visit—and arguably even more effective. According to a 2016 study

conducted by Dr. Johnson, patients at HAMC who experienced telemedicine visits showed improved A1C scores (a test that indicates blood sugar levels), and in some cases better patient satisfaction, relative to patients who had done traditional in-clinic visits only.

To ensure patients are comfortable during the exam, the provider at the distance site, where Dr. Johnson is, and the nurse or dietician at the originating site, where the patient is, work together to deliver care and coordinate follow-up patient education or appointments.

Still, Dr. Johnson says delivering care effectively through telemedicine can take some time to learn.

“It often doesn’t work to simply put a patient in the room with a camera,” he said. “You need someone on the other end to facilitate the conversation, and that’s where the provider in Rugby, for example, really helps with keeping the patient engaged.”

Virtual E.R.

Another “virtual” service helping rural North Dakota meet the healthcare needs of its patients is eEmergency, provided by Avera Health in South Dakota. Brought about by a grant from the Leona M. and Harry B. Helmsley Charitable Trust, Avera eEmergency made its way into North Dakota in 2009 and is now present in the emergency rooms of 29 of the 36 Critical Access Hospitals around the state. Nikki Johnson, CEO for Cooperstown Medical Center (CMC) in Cooperstown, N.D., appreciates the peace of mind Avera eEmergency gives both providers and patients.

“We have a small staff, and eEmergency helps keep the E.R. service open in our community and helps our providers manage care better,” Nikki Johnson said.

Avera eEmergency works by simply pushing a button located in the emergency room. If a rural provider pushes the button, a certified emergency room physician located at a hub site in Sioux Falls, S.D., pops up on a monitor mounted in the room. The board-certified emergency physician and her team are then able to assist in any way the providers in Cooperstown need.



GRAND FORKS TO GARRISON

UND medical students on both sides of the camera work on their “webside manner” at the School of Medicine and Health Sciences

Sometimes the rural providers just need the distance physician to observe and chart the visit. At other times, the rural providers need advice, consultation, and guidance on how to best treat the patient. The Avera eEmergency team will even assist in making patient transfer arrangements.

Johnson says this is not only a helpful tool in patient outcomes; it helps with recruitment of new providers too.

“Rarely do we have a job candidate that doesn’t ask if this is available,” she said of eEmergency. “Providers feel more comfortable knowing they have board-certified physicians available to help them deal with complex medical conditions at the push of a button.”

Johnson added that providers are encouraged to use eEmergency to discuss difficult patient conditions outside of the E.R. as well. “Without eEmergency, we would lose the ability to recruit, which of course would impact the care we provide our surrounding communities,” she said.

While telehealth is already filling a few key areas of need throughout the state, the trend is clear: care delivery in this manner will only increase. In a recent study conducted by the UND Center for Rural Health, telemedicine is being implemented in each of the 36 critical access hospitals in the state; on average, the top three telemedicine services being

used are e-emergency, radiology, and dermatology. Telehealth services these rural hospitals say they are most interested in adding are behavioral health, speech therapy, asthma management, and oncology.

Whether it’s by computer screen or personal cell phone, the wave of the future will be providing virtual care. And North Dakota is already working hard to ensure that future physicians are prepared to enter the telemedicine environment post-training.

“In Rugby, we’re saving patients about a 300 mile round-trip drive,” concluded Dr. Johnson, noting his use of the virtual stethoscope. “On the patient’s end the nurse has something that looks like a regular stethoscope that you can put to the patient’s lungs, and we both have headphones so we can listen. The sound quality is very good, so 200 miles away I can be listening to somebody’s heartbeat. This is changing everything.”

By Stacy Kusler

LIKE A SURGEON

Department of Surgery Professor Mark Jensen publishes major new surgery textbook

“You wouldn’t want to get on a commercial jet whose pilots hadn’t gone through various training scenarios and been through simulations. Why would it be any different for surgeons?”

So asked Mark Jensen, MD, matter-of-factly in a question that almost answers itself: “Simulation in medicine is coming on strong—it’s expanding rapidly, of course. But really the only high-fidelity simulator for surgery is still the human body.”

Scanning the market for years to find a surgery textbook that could assist him in teaching surgical residents at his clinical practice in Fargo, Jensen, a professor of surgery with the UND School of Medicine and Health Sciences Department of Surgery since 1993, eventually just gave up looking—and wrote one himself.

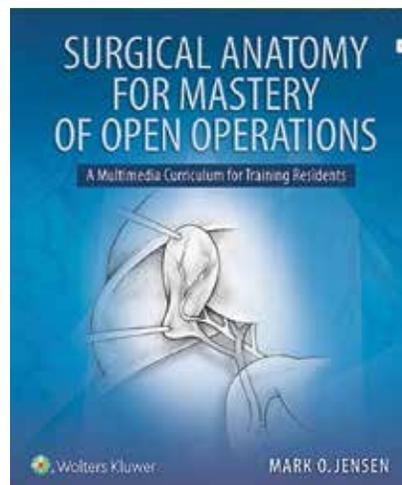
According to Jensen, as he and his colleagues—including former department chair Dr. David Antonenko—gained more experience teaching the School’s general surgery course, and the market still failed to offer surgeons a useful guide, the idea of pitching a textbook to publishers became not only increasingly plausible, but necessary.

“I started this book fifteen years ago,” continued Jensen, who began teaching a surgical anatomy course for the SMHS in 1995. “I started dictating and writing down what we were teaching residents and edited the course based on what the residents were telling us worked or didn’t.”

The result of Jensen’s labor of love is *Surgical Anatomy for Mastery of Open Operations: A Multimedia Curriculum for Training Surgery Residents*. Published by Wolters Kluwer in May 2018, the textbook is ten chapters long and contains detailed instructions and advice for performing over 75 different operations.

Speaking to the need for such a resource internationally, said Jensen, is the fact that Wolters Kluwer is translating the book into 30 different languages. “They really looked for another source like this, but couldn’t find one,” the teacher-surgeon added. “To dedicate resources like that to this project—they’re anticipating that this will have appeal internationally as well, so it looks like UND is going to get on the map here.”

And with good reason: this isn’t your average medical student anatomy textbook, Jensen admitted. It’s a training curriculum for surgery residents that “fills an important niche in education



Dr. Jensen’s labor of love, 15 years in the making

of surgeons in training and in practice,” as Associate Executive Director of the American Board of Surgery Mark A. Malangoni, MD, put it in the book’s Forward, adding, “It is a ‘go to’ reference for open operations, both common and uncommon.”

Assuming a more modest pose, Jensen was concerned only with teaching what he felt needed to be taught. “You have to modify your operative strategy based on what each particular patient needs,” he explained. “The strategy you use on a patient’s leg, for example, changes depending on if the problem in question is a result of a tumor or a traumatic event or a vascular problem. How you address that is all strategy, and there’s no simulator for that.”

The book’s contributing surgeons were all SMHS faculty members: Cornelius Dyke, MD, FACS; Linda B. Lindquist, MD; Kurt D. Lindquist, MD, FACS; Denise M. Rondeau, MD, FACOG; Robert P. Sticca, MD, FACS; and Andrew Terrell, MD, FACS. Furthermore, several reviewing surgeons listed in the book are also SMHS faculty, including, Robert J. Bates, MD, FACS; Michael S. Bouton, MD, MA, FACS; Jason M. Erpelding, MD, FAAOS; John W. Jones, Jr., MD, PhD, FACS; Jay M. MacGregor, MD, FACS; Michael Traynor, MD, FACS; and Thomas Wambach, MD.

“There are medical schools now with no cadaver-based anatomy—it’s all on a screen,” Jensen concluded. “For some folks that might be perfectly fine, but we have students entering surgical residencies who need a much better foundation for their profession. So what we’ve done at UND—and there’s no other program like this in the United States—is build the best surgical anatomy program in the country, the most comprehensive. That’s one thing the taxpayers in North Dakota can be proud of.”

By Brian James Schill

THE SUPERBUGS' KRYPTONITE

UND researchers help develop synthetic molecule to fight multidrug-resistant bacteria

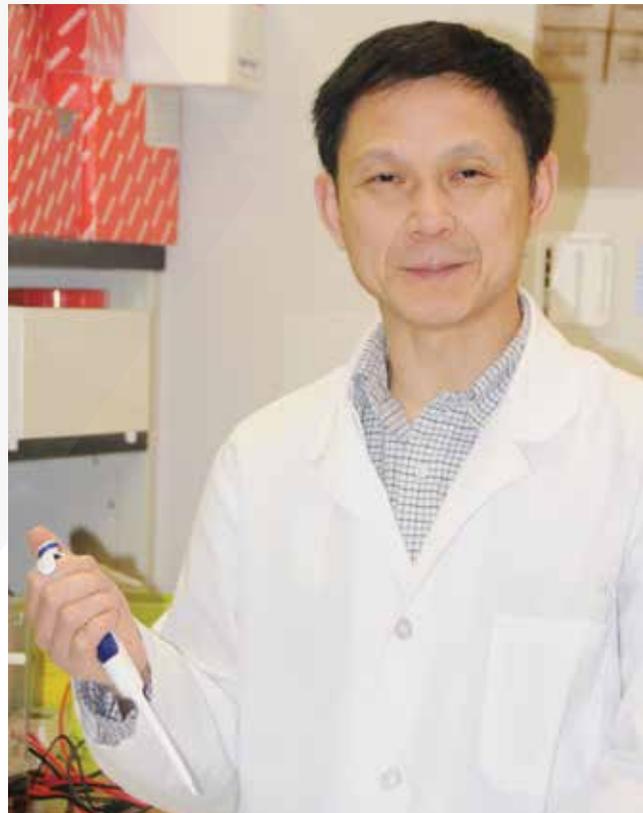
An international research team led by the Institute of Bioengineering and Nanotechnology (IBN) at A*STAR (Singapore), IBM Research, and the University of North Dakota has developed a synthetic molecule that can kill five deadly types of multidrug-resistant (MDR) bacteria with limited side effects. The new material has the potential to be developed into an antimicrobial drug to treat patients with so-called “superbug” infections. This finding was reported recently in the scientific journal *Nature Communications*.

“There is a desperate need for innovative anti-microbial treatments to counteract the international crisis of MDR infection,” noted Min Wu, PhD, professor in the Department of Biomedical Sciences at UND’s School of Medicine and Health Sciences (SMHS) and an immunologist who has made a series of contributions to understanding pathogenesis of and host defense to bacteria. “As many previously treatable bacteria are fast becoming antibiotic-resistant, even some last-line antibiotics are struggling to control infections.”

According to Wu, MDR bacteria kill around 700,000 people worldwide each year, largely because bacteria are fast developing resistance to the last-line antibiotics, which are given only to patients infected with bacteria resistant to weaker antibiotics. If these antibiotics continue to lose their effectiveness, by 2050 as many as 10 million people could die annually from MDR infections.

To address this problem, IBN brought together a multidisciplinary research team from the U.S., China, and Singapore to develop a new class of synthetic antimicrobial polymers called guanidinium-functionalized polycarbonates with a unique mechanism that can target a broad range of MDR bacteria and is biodegradable and non-toxic to human cells.

SMHS collaborators on the project included Wu and Qinqin Pu, a visiting graduate student in UND’s Department of Biomedical Sciences. Wu and Pu tested the effectiveness of the polymers on mice with two types of systemic infections caused by superbugs: peritonitis (an infection of the abdomen’s inner lining) and certain lung infections. The



Min Wu, PhD

polymers eliminated the bacterial infections in both groups of mice with negligible toxicity.*

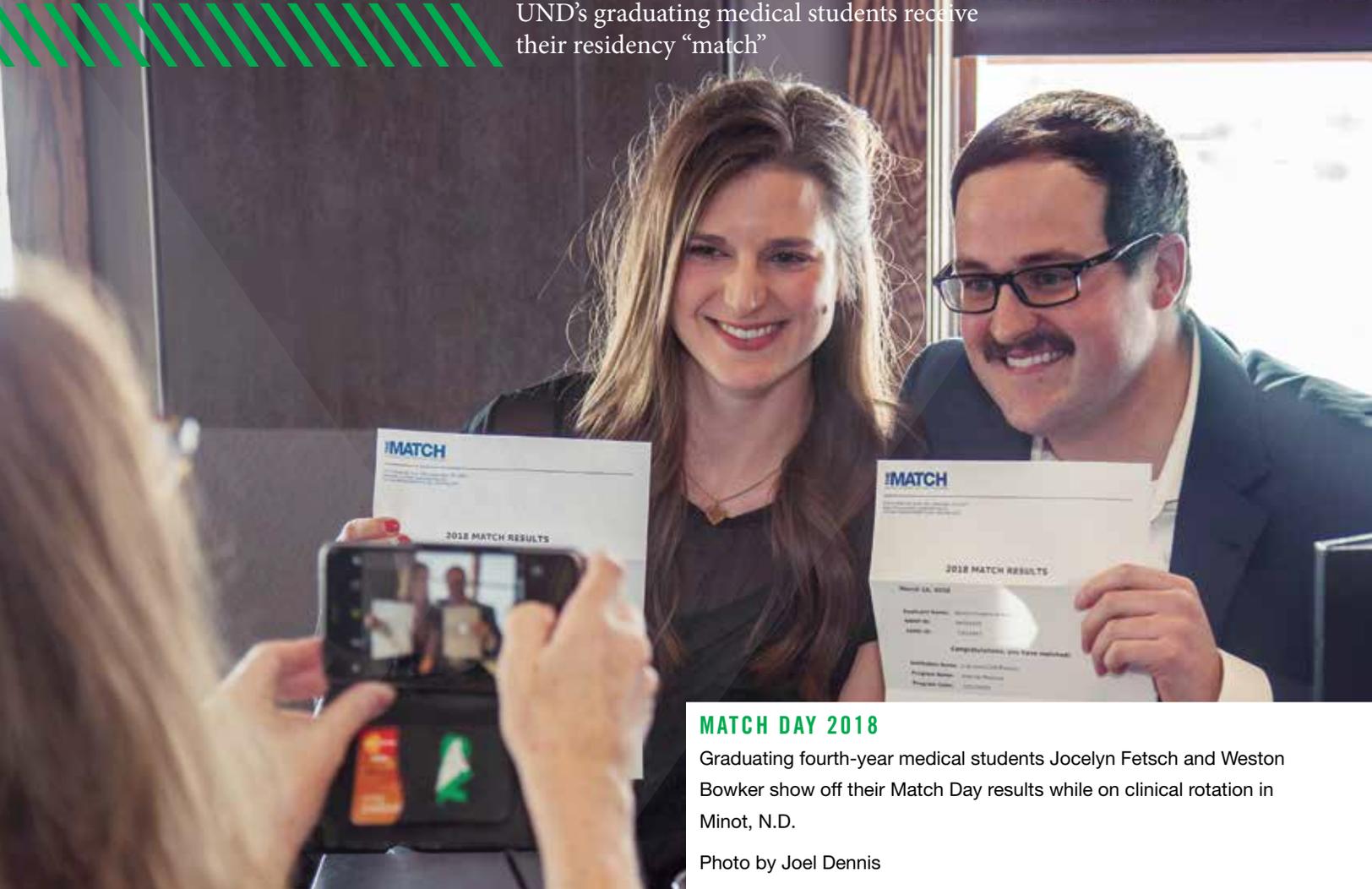
IBN, IBM, and UND are now seeking collaborations with pharmaceutical firms to develop the polymers into an antimicrobial treatment for patients, meaning that Dr. Wu’s project is one of many projects at the SMHS that fall under the category of clinical and translational research (CTR): research that “translates” discoveries made at the laboratory bench for clinical implementation to directly benefit patients. The SMHS has made CTR a priority in recent years, especially in the area of human-microbe interaction through a CoBRE (Centers of Biomedical Research Excellence) grant supported by the National Institutes of Health.

By Brian James Schill

* All experiments were performed in accordance with the Office of Laboratory Animal Welfare guidelines and were approved by UND’s Institutional Animal Care and Use Committee. All experiments were conducted within biosafety Level-2 and Animal biosafety Level-2 facilities.

STRIKE THE MATCH

UND's graduating medical students receive their residency "match"



MATCH DAY 2018

Graduating fourth-year medical students Jocelyn Fetsch and Weston Bowker show off their Match Day results while on clinical rotation in Minot, N.D.

Photo by Joel Dennis

Holding his "Match Day" envelope in anticipation, fourth-year medical student and Colorado native Adel Mergoum sat patiently as Susan Zelewski addressed Mergoum and his fellow soon-to-be medical doctors, each on the cusp of finishing their clinical training in Grand Forks.

The waiting is the hardest part.

"This is such an exciting day," said Zelewski, assistant dean for the School of Medicine and Health Sciences (SMHS) Northeast campus, to the group. "It has been a long road for each of you, getting to this point, but each of the faculty here are so happy to have been able to share that journey with you. Know that you all make us proud."

And with that the students were free to tear into their letters. "Match Day" for graduating medical students is one of the

most important milestones of their careers. Each year on Match Day, medical school seniors across the country learn where they will complete their residency, a period of advanced education in their chosen specialty before independent practice as a physician. Depending on the medical specialty, graduates complete anywhere from three to seven years of residency training after medical school.

And the result for the 67 members of the UND School of Medicine and Health Sciences Doctor of Medicine Class of 2018? Relief—and a few happy tears.

Hoping to be either an oncologist or hospitalist, Mergoum learned that he will soon begin an Internal Medicine residency at the SMHS Southeast campus in Fargo.

"I'm not at all shy to admit that [North Dakota] was my first choice," he smiled after opening his Match Day letter in Grand Forks. "My family moved to Fargo from Colorado when I was younger, so this area is like home to me."

Similar thoughts and smiles were at that moment happening across the state as fourth-year medical students opened their Match Day letters in Bismarck, Fargo, and Minot as well.

Fargo natives and identical twins Kathryn and Adria Johnson held each other on their phones as they simultaneously opened their letters in Bismarck and Fargo, respectively.

"I would say our Match Day results are awesome! I'm very excited about them," beamed Kathryn, who is on her way to a general surgery residency at Hennepin County Medical Center in Minneapolis.

"Absolutely. I'm very happy with my placement," added Adria, who learned that she will be going to the Maine Medical Center in Portland, Maine, also to complete a residency in general surgery. "I went to Portland for an away rotation this fall and loved the area and the program. I'm ecstatic that Kathryn and I matched in the specialty we both love."

While the Johnson sisters are set to begin residencies in general surgery, 17 of the 67 SMHS graduates matching this year are pursuing family medicine (25.3 percent), which is almost triple the national average of graduating medical students entering a family medicine residency.

In addition to family medicine, matches for UND medical students in the other primary care specialties include the fields of internal medicine (15), pediatrics (4), and obstetrics/gynecology (3). This makes for a total of 39 of 67 (58.2 percent) SMHS Class of 2018 medical doctors entering primary care.

Other specialties chosen by this year's class include diagnostic radiology, dermatology, neurology, anesthesiology, emergency medicine, psychiatry, orthopedic surgery, and otolaryngology.

One such specialist is Joley Beeler, who is entering a diagnostic radiology residency at the University of Kansas School of Medicine in Kansas City, Kan. "Kansas was in my top three choices," said the Minot native. "My family has a background in imaging, so I'm happy I got this far with this specialty."

Match Day is the culmination of work conducted by the National Resident Matching Program (NRMP), a private, not-for-profit corporation founded in 1952 at the request of medical students to standardize the residency selection process and establish a uniform date of appointment to positions in graduate medical education (GME) training programs. It is governed by a board of directors that includes representatives



MATCH DAY 2018

Graduating medical student S. Nabeel Hyder shows off his Match Day results.

Photo by Will Kincaid

as well as medical students, resident physicians, and GME program directors.

The NRMP's 2018 Main Residency Match was the largest in history, exceeding the more than 43,000 applicants who registered for the 2017 Match and the more than 31,000 positions offered last year. Results of the Main Residency Match are closely watched because they can predict future changes in the physician workforce.

"We should have some very happy students," concluded Joycelyn Dorscher, associate dean for Student Affairs and Admissions at the School. "This year's class matched into some extremely competitive programs and specialties, including placements at Mayo, Tufts Medical Center in Boston, and the Yale-New Haven Hospital, among others."

A full list of MD Class of 2018 resident matches can be found on pages 20 and 21.

By Brian James Schill

MEDICAL RESIDENCY MATCH DAY

Anesthesiology

Brock Davidson – Mayo Clinic College of Medicine and Science, Rochester, Minn. (following a Transitional Year at the UND School of Medicine and Health Sciences Southeast Campus in Fargo, N.D.)

Jordan Ernst – Baylor College of Medicine Program, Houston, Texas

Dermatology

Adam Swigost – MedStar Washington Hospital Center, Washington, D.C. (following transitional year at the University of Central Florida College of Medicine in Ocala, Fla.)

Diagnostic Radiology

Joley Beeler – University of Kansas School of Medicine, Kansas City, Kan.

Landon Melchior – Norwalk Hospital Program, Norwalk, Conn. (following a Transitional Year at the UND School of Medicine and Health Sciences Southeast Campus in Fargo, N.D.)

Matthew Wagner – St. Joseph's Hospital and Medical Center, Phoenix, Ariz. (following a Transitional Year at the UND School of Medicine and Health Sciences Southeast Campus in Fargo, N.D.)

Emergency Medicine

Jordan Bleth – Western Michigan University Homer Stryker MD School of Medicine, Kalamazoo, Mich.

Daniel Kolm – University of Kansas School of Medicine, Kansas City, Kan.

Lisa Poole – Mayo Clinic College of Medicine and Science, Rochester, Minn.

Family Medicine

Travis Anderson – UND School of Medicine and Health Sciences Southwest Campus, Bismarck, N.D.

Tyrone Berentson – Altru Health System Family Medicine, Grand Forks, N.D.

Elizabeth Blair – Altru Health System Family Medicine, Grand Forks, N.D.

Kiesha Bullock – University of Wisconsin School of Medicine and Public Health, Madison, Wis.

Eric Christensen – University of Minnesota Medical School - St. Cloud Hospital Program, St. Cloud, Minn.

Jocelyn Fetsch – University of Arizona College of Medicine, Phoenix, Ariz.

Katrina Foster – UND School of Medicine and Health Sciences Southeast Campus, Fargo, N.D.

Michael Gilchrist – Mayo Clinic College of Medicine, Rochester, Minn.

Jason Greenwood – Mayo Clinic College of Medicine, Rochester, Minn.

Mark Hovland – Mercy Medical Center - North Iowa, Mason City, Iowa

Lee Kiedrowski – UND School of Medicine and Health Sciences Southwest Campus, Bismarck, N.D.

Kelsey Lambrecht – Providence Sacred Heart Medical Center, Rural Spokane, Wash.

Cameron MacInnis – Idaho State University Program, Pocatello, Idaho

Bruce Pehl – Altru Health System, Grand Forks, N.D.

Megan Schmidt – Allina Health Program, St. Paul, Minn.

Megan Schwartz – Utah HealthCare Institute, Salt Lake City, Utah

Katherine Wilt – University of California Davis Medical Health Center, Sacramento, Calif.

Internal Medicine

Weston Bowker – University of Arizona College of Internal Medicine, Phoenix, Ariz.

Justin Buzick – University of Iowa Hospitals and Clinics, Iowa City, Iowa

Spencer Campbell – UND School of Medicine and Health Sciences Southeast Campus, Fargo, N.D.

Matthew Glogoza – Abbott-Northwestern Hospital Program, Minneapolis, Minn.

Marc Granrud – Mayo Clinic College of Medicine and Science, Rochester, Minn.

S. Nabeel Hyder – University of Michigan Hospitals, Ann Arbor, Mich.

Nolan Kleinjan – Gundersen Lutheran Medical Foundation, La Crosse, Wis.

Carrie Mahurin – University of Vermont Medical Center, Burlington, Vt.

Adel Mergoum – UND School of Medicine and Health Sciences Southeast Campus, Fargo, N.D.

Jared Steinberger – Central Michigan University College of Medicine, Saginaw, Mich.

Amber Stola – Greenville Health System/University South Carolina, Greenville, S.C.

Siri Urquhart – Mayo Clinic College of Medicine and Science, Rochester, Minn.

Gregory Wieland – Hennepin County Medical Center, Minneapolis, Minn.

Medicine/Preliminary

Justin Berger – Christ Hospitals Program, Cincinnati, Ohio

Jill Wieser – University of Nebraska Medical Center, Omaha, Neb.

Neurology

Mary Jenö – University of Iowa Hospitals and Clinics, Iowa City, Iowa

Nathan Seven – Mayo Clinic College of Medicine and Science, Rochester, Minn. (following a Preliminary Medicine year at Wake Forest University School of Medicine/Wake Forest Baptist Medical Center in Winston-Salem, N.C.)

Otolaryngology

Whitney Bettenhausen – University of Texas Health Science Center, San Antonio, Texas

Obstetrics/Gynecology

Grace Carson – Mercy Hospital, St. Louis, Mo.

Brandon Hart – University of Kansas School of Medicine, Wichita, Kan.

Jonathan Werner – Texas Tech University, Amarillo, Texas

Pathology

Deland Weyrauch – Yale-New Haven Hospital, New Haven, Conn.

Pediatrics

Mari Goldade – University of Utah Affiliated Hospitals, Salt Lake City, Utah

Dhilhan Marasinghe – University of Nebraska Medical Center, Omaha, Neb.

Cory Miller – St. Louis Children's Hospital, St. Louis, Missouri

Shubha Singh – University of Maryland Medical Center, Baltimore, Md.

Psychiatry

Daniel Augustadt – Tufts Medical Center Program, Boston, Mass.

Seth Kalin – University Hospitals-Jackson, Jackson, Miss.

Vanessa Stumpf – Hennepin County Medical Center, Minneapolis, Minn.

Surgery (General)

Elizabeth Anderson – Ochsner Clinic Foundation Program, New Orleans, Lou.

Logan Erz – Summa Health System/NEOMED, Akron, Ohio

Jennifer Glatt – St. Joseph's Hospital and Medical Center, Phoenix, Ariz.

Adria Johnson – Maine Medical Center, Portland, Maine

Kathryn Johnson – Hennepin County Medical Center, Minneapolis, Minn.

Benjamin Keith – UND School of Medicine and Health Sciences Northeast Campus, Grand Forks, N.D.

Maxwell Otto – Spectrum Health/Michigan State University, Grand Rapids, Mich.

Surgery (Orthopedic)

Anthony Arveschoug – Beaumont Health System-OUWB, Royal Oak, Mich.

Brandon Fisher – UND School of Medicine and Health Sciences Southeast Campus, Fargo, N.D.

Thomas Seaver – Boston University Medical Center, Boston, Mass.

Surgery (Plastic)

Katherine Benedict – University Hospitals-Jackson, Jackson, Miss.

Transitional

Anna Kozlowski – Gundersen Lutheran Medical Foundation, La Crosse, Wis.

A group photograph of the MD Class of 2018 can be seen on page 35.



ENJOY THE SMALL THINGS

Senior Medical Laboratory Science undergraduate Tiffany Belgarde talks INMED, rural healthcare, and her next steps

UNDER THE MICROSCOPE

2018 Medical Laboratory Science graduate Tiffany Belgarde identifies samples in the Dr. Robert and Charlene Kyle Medical Laboratory at the SMHS

Thanks for your time, Tiffany, and for driving down here.

I needed to be on campus anyway. I had my final comprehensive [exam] today. We do that at the end of clinical rotations for the MLS major. We have a 52-week clinical rotation, and students get sent all over the U.S. for that. We start in the summer—May to August here at UND. Then we go straight to clinicals off-campus from October to May.

And how'd the exam go?

We don't have results yet, but I think it went all right. Hard—very hard. [laughs]

What brought you to UND's Medical Laboratory Science program?

I first went to a two-year college in the Dunseith area where I received my degree to be a medical lab technician. So I decided to continue my education here and get the bachelor's degree.

And the clinical rotation you just mentioned was in Thief River Falls in your case?

Yes. I've been living there for the rotation. I lived here in Grand Forks last year for school, but I'm from Dunseith, North Dakota, way up north near the Canadian border. It's part of the Turtle Mountain Band of Chippewa.

So you're graduating finally—what's next? Back to Dunseith?

I plan to start working—not sure where yet, but here in North Dakota. I have a few job offers in the area, but haven't decided. I plan on working as a generalist for now, which means working in every department of the laboratory. I want to get more experience in that role before specializing.

What are some of the specializations you have the option of choosing?

In the lab you can specialize in things like blood chemistry, hematology, microbiology, or blood bank. In the future I might like to specialize in blood bank or chemistry. I like the blood bank because I love the hands-on work it consists of, such as the blood typing and screens of patients, cross-matching, antibody identifications, and so on. It's a department with a lot of responsibility.

Any interest in continuing on with education at this time?

Nope. [laughs] I don't plan on going back.

I appreciate the firmness of that answer—you do have two degrees already...

I'm very appreciative of the education I got here at UND. I've learned an extreme amount of information that I had to take in and the instructors here in MLS make sure you're going to be successful. That's one thing I've really appreciated because I know that the money I spent here will be worth it in the end. The instructors for the Essential Studies classes were good too. I took the general chemistry and physiology courses here. I also took a lot of "work-out" classes. [laughs] You know, relieve stress.

On that note, you're coming from a rural community and have some interest in maybe going back to work in such a setting. Are there particular health needs or "stresses" you see in more rural parts of the state that you hope to address with your MLS degree?

Back home we have an IHS [Indian Health Service] hospital and that's it. And so I chose this degree because while they do have four-year degree folks working in the hospital they need more. Due to staff shortages there are a lot of patients that need to be sent off to the larger cities in the state—they only do minor procedures and cases where I'm from. There are two colleges within 20 miles of Dunseith, which includes a nursing school and the MLT or phlebotomy program I mentioned. So we're able to fill some of the positions [for healthcare workers], but there's still a need.

Did you notice any differences in procedures or culture between the colleges and clinics in Dunseith, Grand Forks, and Thief River relative to what you've been taught in the classroom, or urban versus rural settings?

Not really. For the most part, the labs throughout the U.S. try to maintain a consistent set of results. So, Fargo and Thief River both have to agree on their results, which are based on specific lab methods. And it costs a lot to do these procedures. For example, for a hospital to process something like a CBC

[complete blood count], which ninety-some percent of patients get, can cost up to \$100. A comprehensive metabolic panel or CMP—another common test—can cost up to \$300. So, it's very expensive.

Also, you've been involved with UND's Indians into Medicine (INMED) Program, right? Can you describe what that organization provided you as a student?

Yes. My first summer that I moved here I joined the INMED Program, in part because I was coming from a small college with fifteen students per class to this big school and I was... very scared. [laughs] And INMED gave me an outline of what to expect in my fall semester, a built-in community here on campus. Last November I had the chance to give a talk about the MLS profession to other INMED students and told them what my years here consisted of—my clinical rotations, exams, summer practicum—and talked about the major in a general way. It was helpful.

Historically, in the world of U.S. medicine there was a separation among the disciplines both in the educational setting and professional world. That's changing, of course, especially at UND with our interprofessional education curriculum, but did you get that sense of separation among professions in a smaller program like INMED?

No. I felt like everyone was welcomed by the people there—you were always welcome to ask any questions or walk right through [faculty] doors. With INMED you have students from all majors and programs, and there's not much separation. You all become friends in the end. I worked a lot with [INMED College Coordinator] Kathleen Fredericks. She was a big part of my experience. Kathleen is very involved with the students—she was the one we met with every day, she emailed us daily, and always reminded us that the program was there for us if we needed anything. I applied for the INMED program not really knowing what it was or what we would be doing, but she made sure to guide us throughout the program.

Interview conducted and edited by Brian James Schill



BIGGER DATA BETTER HEALTH

MPH Program grads Sunita Thapa and Michael Mudgett mine data big and small in an effort to inform health policy for the entire country



MAPPING OUT HEALTH POLICY

UND Master of Public Health Program graduate Sunita Thapa, MPH (left), at the School of Medicine and Health Sciences

From her desk at the Vanderbilt University Medical Center in Nashville, Sunita Thapa is crunching numbers. Again.

A graduate of the Population Health Analytics track within UND's Master of Public Health Program, Thapa is today in the middle of two projects designed to analyze Medicare claims data. The first project is looking at the factors that have slowed the growth of federal Medicare spending in recent years; the second is exploring how enrollment in Medicare Shared Savings Program-based Accountable Care Organizations (ACOs) changes the appropriateness of screening for breast, colorectal, and prostate cancers among the Medicare beneficiaries.

On the opposite side of the country, Michael Mudgett, an epidemiologist with the California Rural Indian Health Board who graduated with an MPH degree in Health Policy and

Management in 2015, is collecting data on behavioral health risk factors among American Indians in his state.

"My role is to work on sampling design, data collection, analysis, and reporting to Indian Health Service [IHS] programs, which are very interested in our findings," Mudgett told *North Dakota Medicine* over the phone from his office in Sacramento. "We serve the California IHS region by providing surveillance, statistics, and epidemiological support to tribes, clinics, and IHS programs throughout the state."

While often conducted in a low-profile sort of way, the work that both graduates of the UND Master of Public Health Program do every day impacts the wellbeing of local communities, marginalized populations, and even the future direction of U.S. health policy.

Bending the cost curve

“It’s been great here so far,” said Thapa from Vanderbilt, adding that she felt well-prepared for her work. “I had a good experience at UND working on research with data, with my advisors. The coursework gave me a basis for public health policy, and the research projects aided substantially to sharpen the knowledge I gained from the courses to conduct epidemiological research.”

Originally from Nepal, Thapa came to the U.S. in 2009 to attend college at Minnesota State University – Moorhead. After earning an undergraduate degree in health service administration, she stayed in the Fargo-Moorhead area, taking a job with the Family Healthcare Center in Fargo.

“While I was working there I was looking for a graduate degree program that was more technical,” Thapa recalled. “That’s when I found the UND MPH Program, which was a good combination of research, statistics, data analysis, and public health. That’s what made me choose UND.”

And Thapa’s former instructors are glad she did.

“Sunita perfectly represents the skills and knowledge we strive to cultivate in our MPH students,” said Arielle Selya, assistant professor in the SMHS Department of Population Health and Thapa’s adviser. “During her time here, she became proficient in applied data analysis of health-related data, and learned how to use those data to inform public health questions. I’m thrilled that Sunita’s hard work and perseverance are paying off at Vanderbilt.”

Or, as the program manager for UND’s Master of Public Health Program, Ashley Evenson, put it, “Sunita is absolutely a ‘poster graduate.’ She utilized our program to the fullest and left UND with publications on her resumé.”

Among those publications were a paper on nicotine dependence (co-authored by Selya and assistant professor S. Cristina Oancea) and helping program faculty Raymond and Karen Goldsteen update portions of their influential health policy textbook *Jonas’ Introduction to the U.S. Health Care System*.

Correcting the database

For his part, Mudgett earned an undergraduate degree in psychology from UND before entering the School’s MPH Program.

“A big part of what we do here is advocacy,” explained Mudgett, who was raised on the Spirit Lake Reservation in North Dakota and completed an MPH practicum with the Urban Indian Health Institute in Seattle, Wash., before ending up in California. “Regular state and national data tends not to represent American Indians well. When you’re not represented,

you don’t generalize to the survey results, which then don’t apply to you. So when funding is available for populations at risk for certain behaviors—drug use for example—if survey data doesn’t apply to your population, you can’t get grant funding.”

So is Mudgett working to correct such data. As a result, Mudgett said, much of his job requires that he be a health data conduit between state government and California’s more than 100 American Indian tribes.

“In a nutshell, it seems that American Indians are ‘born Indian, but die white,’ as my friend put it,” Mudgett laughed. “What that means is that we’re often not captured in mortality data accurately. For example, our preliminary results [from a recent mortality study] show an almost 30 percent rate of misclassification in sexually-transmitted infection data for Indians. So, what we’re doing now is correcting that sort of thing in the state database, hoping to get better estimates for injury deaths as well. Because our communities are telling us this is an issue, but we’re not seeing it in the data. And since we can’t tell our communities they’re *wrong*, we’re exploring this and correcting the IHS data to get new estimates for these conditions affecting our communities.”

Collecting data, providing accurate information to policymakers, and improving the health and wellbeing not only of the American population but the entire health system: such is the work graduates of the MPH Program at UND are accomplishing in North Dakota and across the nation every day.

Or, as Thapa summarized, “My job is to get results from the data.”



Michael Mudgett, MPH

By Brian James Schill

ALL IN THE FAMILY



Cavalier native Basir Tareen, MD, completes the circle, calling upon the man who used to call on Tareen’s father in rural North Dakota to make a gift to the School

CLOSE TO THE TREE

Drs. Mohiba (top-left) and Basir (seated) Tareen and their five children

Basir Tareen, MD, was impressed.

Having been asked to return to his alma mater to give a “urology case wrap-up” for second-year medical students in early 2017, the Cavalier, N.D., native almost couldn’t believe the size and scope of the facility he was touring in his unassuming home state.

“I was pumped up when I saw how cool the new medical school was—and a little jealous,” admitted Tareen to *North Dakota Medicine*. “I remember thinking, ‘I wish we had this [when I was in medical school]. This is so awesome.’”

So impressed was Tareen, that he made it a point to connect with former SMHS Development Director Dave Gregory shortly after his lecture to discuss going about making a donation to the UND School of Medicine and Health Sciences (SMHS) that year.

Completing the circle

A 2002 graduate of the SMHS, the younger Tareen connected with Gregory, who had worked in the pharmaceutical industry and called upon Tareen’s father Jamil Tareen, MD, many decades ago.

For most of his career, Dr. Jamil Tareen was the only surgeon within a 40 mile radius in northeastern North Dakota. Jamil and his wife Rehana had emigrated from Pakistan to the United States via Canada, said Basir, where the elder Tareen completed his residency.

“They came for an interview in Cavalier and really fell in love with the town,” Basir laughed. “Their initial plan was to stay for only a couple of years—you know, get a foot in the door, see what America is all about. But they just stuck around.”

For his part, Gregory remembers well Basir’s father. “Dr. [Jamil] Tareen always stopped and gave me a couple minutes of his time,” he said. “I remember him as a kind and curious man, a call I always looked forward to.”

Gregory began visiting Jamil up in Cavalier not long after Jamil had established a practice. So it was that 35 years after Basir’s parents settled in North Dakota and met Gregory, the circle completed itself: the Tareens’ son graduated from the UND SMHS and eventually reconnected with Gregory in an effort to make a gift to the School—the Tareen Family Medical Scholarship Endowment.

It's a storyline that tends to happen only in places like North Dakota.

"I was fortunate to have the medical education I did," Basir added. "During my first year, the School chose some students to get a full tuition waiver and I was lucky enough to be picked. So I felt like this was my chance to give back."

Reserved for one third- or fourth-year medical student each year, the scholarship was designed by Basir and his spouse Mohiba, a dermatologist in the Minneapolis-St. Paul area, not only to support the next generation of physicians, but recognize the contributions Jamil and his family made to North Dakota medicine over several decades.

"We wanted to support students who embody the principles my father displayed for decades as a rural surgeon," Basir said. "This includes a strong commitment to service, especially in under-served areas."

Patient-centered learning

Basir is not shy about crediting the SMHS patient-centered learning curriculum—or PCL—with helping him get to where he is today: a successful urologist with Minnesota Urology and CEO of Tareen Dermatology, the dermatology group founded by Mohiba and Basir.

Calling PCL "great"—the foundation of his practice today—Basir says he cannot imagine learning medicine any other way.

"They had completely renovated [the former SMHS, now known as Columbia Hall] and my class was the first to go through the new PCL curriculum," he continued. "It was a pretty big shift from the 'lecture hall' model to how they do things now with small group learning and patient-based care. Back in the day you'd have two years of didactic-only science lectures where it was a challenge to see the applicability to patient care. For our class, it was refreshing to learn the science that was based around patients and clinical vignettes. I think that really helped a lot when we went into our third and fourth years."

It was this shift that Basir says helped push the SMHS to the next level of medical education and push him not only toward a urology residency at Northeast Ohio Universities College of Medicine (now Northeast Ohio Medical University), but also a fellowship in urologic oncology at New York University Medical Center, several publications to his name, and a successful practice that allowed him to give back to the School.

All in the family

An attending physician with Minnesota Urology since 2011, Basir today lives in Minneapolis with Mohiba and the couple's five young children, ranging from eight months to eight years of age. Retired since 2005, Basir's parents live nearby in the Twin Cities.

Dr. Jamil Tareen has stayed busy not only with his grandchildren, but also founding and running a volunteer medical group, known by the acronym OMEED, which helps provide medical care in underserved regions of his native Pakistan.

That's a lot of physicians in close proximity. And given that not only Basir's but Mohiba's parents are physicians, one cannot help but wonder if the couple's children have expressed any interest in medicine as well.

"One can always hope," Basir shrugged, acknowledging the challenges of balancing work life with family life. "They're pretty young yet. But we've been very lucky. Medicine has been very good to us and we both love our jobs and taking care of patients."

The inaugural the Tareen Family Medical Scholarship will be awarded later this year.

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.

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■ '50s

Kenneth Kihle, BS Med '57, was given a very warm “thank you” recently in the *Westhope Standard* newspaper, whose readers and supporters count themselves among the many patients seen by Dr. Kihle since he began practicing at the Westhope Clinic in 1974. Although Dr. Kihle is still practicing medicine, the clinic saw its last patients on December 6, 2017, closing thereafter.

■ '80s

Tom Witt, FMR '84, has joined the Essentia Health-Virginia Clinic in Virginia, Minn. In addition to caring for patients, Dr. Witt will also serve in an administrative leadership role overseeing Essentia Health's regional clinic strategy and development.

■ '00s

Joshua Ranum, MD '08, has been elected a Fellow of the American College of Physicians (ACP). The distinction recognizes achievements in internal medicine, the specialty of adult medical care. Dr. Ranum was elected upon the recommendation of peers and a review of the ACP's Credentials Subcommittee. He is the only internist in North Dakota, South Dakota, Wyoming, or Montana to be so elected this year. He has been practicing at West River Health Services in Hettinger, N.D., since 2012. He is also active with the North Dakota State Trauma Committee, and medical student education through the UND School of Medicine and Health Sciences. In 2016, he received the Dean's Recognition Award for outstanding medical student teaching.

Jon Solberg, '06 MD, served as team physician on a one month expedition to Greenland, the first ever to attempt crossing the island's long axis by motor vehicle, in May and June 2018. During the 5,200km round trip journey across the glacier Dr. Solberg conducted water quality research in conjunction with a UND Resident Physician, caring for the medical needs of the eight-person team and serving as crevasse rescue and safety officer.

Laura Kroetsch, MD '04, is the new medical director in Behavioral Health for Blue Cross Blue Shield of North Dakota. In her role, Kroetsch forms part of the Health Network Innovation team and focuses on behavioral health review. Kroetsch previously worked for the North Dakota Department of Human Services at Southeast Human Service Center in Fargo, N.D., where she served as a staff psychiatrist and medical director.

■ '00s continued

Andy Mutnan, ATC '02, has been named Head Football Athletic Trainer by Penn State University. The appointment comes on the heels of his winning the 2018 Above and Beyond Award from the National Athletic Trainers' Association for his dedicated service to the student-athletes at Washington State University. The Above and Beyond Award recognizes one athletic trainer or one instance of care in the collegiate setting for exceptional performance in athletic training or non-athletic training activities occurring in the past year.



Kenneth Kihle, MD



Jon Solberg, MD



Tom Witt, MD



Laura Kroetsch, MD



Joshua Ranum, MD



Andy Mutnan, MEd, ATC

LIFE ON THE WARDS: “WHY DO YOU WANT TO DO THAT?”

For better or worse, the question above has become part of me throughout the course of my medical education. But it is through these seven words that I am grateful, because this question has probed me to reflect about why people ask this of me. You see, as a medical student, one of the most common questions we get asked by friends, family, or colleagues is: “So, what are you going into?” And although the question is always asked out of genuine curiosity, most medical students respond with vague clichés such as, “I am undecided yet” or “I just want to be a good doctor” or “I just want to survive medical school.” I think any medical student is guilty of these responses at some point in their training. But now, as a senior medical student, this question has become commonplace in my day-to-day life on the wards. And these days an especially common answer students give to this question is to tell the preceptor we are with for a specific clerkship—from surgery, family medicine, and radiology to pediatrics, internal medicine, or obstetrics/gynecology—that we want to enter their field of expertise.

Guilty.

But the more I think about what field I want to enter, the more I realize that sometimes the field chooses you. I want to be a hematologist/oncologist—someone who specializes in blood diseases and cancer. There, I said it. But what crosses your mind when you hear that? Is it, “Why do you want to do that?” Is it, “It takes a special person to do that.” Is it, “Ugh, that’s a tough job.” If any of these things came to mind, I do not blame you because you are not alone in such thoughts. These three responses make up about 95 percent of the responses I get when I tell people this. And that’s okay. I understand that oncology is not for everyone. And I am certainly not going to say that I am on a pedestal for choosing this specialty. I am just a student doctor following his dream and his calling, just like my fellow classmates are doing.

To answer this essay’s lead question, then: My dad was diagnosed with cancer when I was 20 years old. It just so happens his diagnosis came precisely at the beginning of when I was scheduling my Medical College Admission Test as an undergraduate and getting ready to apply to medical school. At the time, yes, it was tough. It was new territory for my family. I was in the middle of my junior season of college golf and, in retrospect, yes, it did affect my performance in tournaments.

When I received this news, I wasn’t one to share much information. I kind of kept things inside. And that was fine. I felt like I didn’t need to tell anyone. I was mentally tough. My dad was, too. But, man, he was sick. I’ve never seen my dad like that. Cancer beats you up. Cancer treatment really beats you up.

There’s no doubt about that. We were fortunate to receive the good news that his cancer responded to treatment and was in remission. Five years later, all things considered, dad is doing well today. For that, I am grateful.

A couple years after his diagnosis, though, I realized how much of an impact that specific diagnosis had on me in my path to becoming a doctor. The experience opened my eyes to medicine. I saw the impact a physician can have and the teamwork and coordination of resources that make cancer care so special. I had been waiting for this moment—that “A-ha!” lighting strike moment of your life where you know the path that you are meant to follow becomes clear. I will admit, entering medical school I was certainly biased towards oncology. But as I progressed in my education, I realized that nothing fascinates me more than learning about cancer. Cancer is so powerful, both the science of it and the humanistic aspects of the fight against it. So back to those seven words. Yeah, I want to be a cancer doctor. I know the road is long to get there, but I’m ready for that challenge. And I’m excited for that journey.

Ed. Note: As the Hippocratic Oath reminds us, “there is an art to medicine.” This is why North Dakota Medicine makes an effort to address the “medical humanities” by including, where appropriate and when available, student submissions of writing and visual art.



by Robert Kraft
MD Class of 2019



SMHS hosts fifth annual Epigenetics & Epigenomics Symposium

The Fifth Annual Epigenetics & Epigenomics Symposium was held at the School of Medicine and Health Sciences (SMHS) on the campus of the University of North Dakota May 7-8, 2018.

Researchers studying epigenetics explore the mechanisms that regulate gene expression and the activation and deactivation of specific genes. Improved understanding of how the human body can turn genes on and off during growth, aging, and in response to the environment has important implications for the diagnosis and treatment of many diseases, including cancer, diabetes, and neurodegenerative disorders such as Alzheimer's Disease and Parkinson's Disease.

Academic participants from around the region—including researchers from North Dakota, South Dakota, Montana, Indiana, Arkansas, and Manitoba—were in Grand Forks to share their research on epigenetic mechanisms in health and disease.

The symposium is sponsored by the Centers of Biomedical Research Excellence (CoBRE) program, which was established by the National Institutes of Health to promote collaboration among researchers and strengthen research infrastructure at biomedical research institutions. The purpose of the symposium is to bring nationally recognized experts in the biomedical sciences to share their work as well as to highlight the research being accomplished at the University of North Dakota.

“The field of epigenetics is growing at a fast pace, and researchers in many fields are actively uncovering the role of epigenetics in a variety of human disorders and diseases,” noted Roxanne Vaughan, PhD, professor in the Department of Biomedical Sciences at the SMHS and principal investigator of the CoBRE grant. “The understanding that environment and lifestyle can impact the genome to influence how genes are expressed has driven a number of discoveries, including many obtained here at UND. This symposium is an exciting opportunity for our researchers to learn about cutting edge epigenetics research from leaders in the field and showcase their own research and form productive collaborations.”



Roxanne Vaughan, PhD

Warne named Associate Dean for Diversity, Equity, and Inclusion and Director of Indians into Medicine (INMED) program at UND School of Medicine and Health Sciences

Donald K. Warne, MD, MPH, has been named Associate Dean for Diversity, Equity, and Inclusion and Director of the Indians into Medicine (INMED) program at the UND School of Medicine and Health Sciences (SMHS). Most recently the Chair of

the Department of Public Health in the NDSU College of Health Professions, Warne assumes the role of INMED Director long held by Eugene Delorme, JD, who retired in 2017. Joycelyn Dorschner, MD, has served as interim INMED director since last year.

Among other duties, in his new role Warne will support the needs of American Indian healthcare students on the University of North Dakota campus; help provide reservation communities with culturally competent healthcare providers; maintain strong relationships between the SMHS and tribal communities in North Dakota and the surrounding region; and contribute to the School's scholarly, service, and teaching missions.

“I look forward to the challenges and responsibilities of helping to engage and train the next generation of American Indian healthcare providers,” Warne said. “I am also deeply honored to hold these positions at the School, and I hope to build upon the great work of our previous generations' leaders, scholars, and healers. I cannot imagine a better opportunity and fit for me personally and professionally.”

An enrolled member of the Oglala Lakota Tribe in Pine Ridge, S.D., Warne received his Doctor of Medicine degree from the Stanford University School of Medicine in 1995 and his Master of Public Health degree from Harvard University in 2002. A prolific scholar and grant writer, Warne is also Senior Policy Advisor for the Great Plains Tribal Chairmen's Health Board and former Senior Fellow of American Indian Health Policy for the Robert Wood Johnson Foundation Center for Health Policy at the University of New Mexico.



Donald K. Warne, MD, MPH

UND School of Medicine and Health Sciences announces Frank Low Research Day award winners

The 38th annual Frank Low Research Day was held at the UND School of Medicine and Health Sciences (SMHS) on Thursday, April 19. Following the event, several of the more than 120 participants were given awards for their poster presentations. Congratulations to the winners of the best poster awards, who earned \$100 each from the SMHS. The winners, by category, are the following:

Biomedical Sciences Graduate Students

Moriah Hovde (Mentor: James Foster)

Anne Schaar (Mentor: Anne Schaar)

Jared Schommer (Mentor: Othman Ghribi)

Jessica Warns (Mentor: Othman Ghribi)

Health Sciences Graduate Students

Alycia Heisler, Occupational Therapy (Mentor: LaVonne Fox)

John LeClerk, Occupational Therapy (Mentor: Anne Haskins)

Patrick Olson, Master of Public Health (Mentor: C. Cristina Oancea)

Undergraduate

Larson Danes (Mentor: Junguk Hur)

Medical Student—Clinical

C. Leigh Moyer (Mentor: Larry Burd)

Medical Student—Basic

Michael Storandt (Mentor: James Foster)

Jacob Greenmyer (Mentor: Larry Burd)

Postdoctoral

Qinggang Wang (Mentor: Marc Basson)

Medical Resident

Karen Luk (Mentor: Mary Aaland)

Named in honor of the former SMHS anatomy professor who came to UND in the 1960s and pioneered a series of new techniques for the electron microscope, Frank Low Research Day is the culminating event of the academic year for many area researchers working in the biomedical and health sciences.

At this year's Frank Low Day event, 122 faculty members, post-doctoral fellows, and students presented oral and poster presentations on a wide range of basic biomedical, health sciences, translational, and clinical topics.

UND medical students and NDSU pharmacy students train together at School of Medicine and Health Sciences



On April 9, more than 70 University of North Dakota medical students and more than 60 North Dakota State University doctor of pharmacy students trained together at the Simulation Center in the UND School of Medicine and Health Sciences.

As part of the State Legislature's Healthcare Workforce Initiative (HWI), both universities' health programs have been asked not only to expand the number of health professions graduates working in the state, but to cultivate these professionals' collaborative and interdisciplinary skills. This event was the first time the universities have conducted this type of simulation training jointly, with medical students and doctor of pharmacy students side-by-side.

The SMHS Simulation Center—the largest and most active facility of its kind in North Dakota—is a hands-on, state-of-the-art simulation training facility for interprofessional health care providers that uses interactive simulation in teaching, educating, and research. The space offers a clinical setting where health professionals can actively apply their knowledge in simulation, observation, and debriefing of real-life patient scenarios, with the goal of improving patient safety and care. In high-fidelity patient simulations, computerized manikins are used to simulate situations such as cardiac arrest, stroke, or drug overdose, among other scenarios.

Marketa Marvanova, PharmD, PhD, chair of Pharmacy Practice in the NDSU School of Pharmacy, and Simulation Center Director Jon Allen, MD, FACP, served as coordinators of the joint training. Both agreed on the importance of getting medical students and PharmD students to collaborate on patient care.

"Since working on opioid abuse together last year, Dr. Marvanova and I have had a great working relationship and looked forward to this collaboration between our schools," Dr. Allen said. "It's vital to the education of health care professionals, not only regarding opioids, but also regarding the teamwork experience that will be part of these students' entire careers."

Bruce M. Carlisle, MD '76, of Fargo, N.D., passed away Monday, February 26, 2018, at Avow Hospice Inpatient Center, Naples, Fla., after a two-year battle with pancreatic cancer. Bruce was born June 29, 1949, in Valley City, N.D., to John and Carol Jean (Larson) Carlisle. He graduated from Valley City High School in 1967 before attending the University of North Dakota where he graduated with a major in philosophy in 1971. He married Nan Norman on May 1, 1970, at Holy Family Catholic Church, Grand Forks, N.D. He graduated from the UND School of Medicine in 1976 and completed his residency in internal medicine in Fargo. He founded Internal Medicine Associates (IMA) in 1979. He had offices in Fargo, Hawley, and Barnesville. He was Vice President of Medical Affairs at Blue Cross Blue Shield of North Dakota for 12 years. He finished his working career as an emergency room physician at Lake Region Medical Center, Fergus Falls, Minn. Bruce truly loved his profession, medical colleagues, and patients. He loved spending time with his family and friends in the Detroit Lakes area. Bruce is survived by his wife of 47 years, Nan, Fargo; children, Corey Carlisle, Washington D.C., Christopher (Katherine) Carlisle, Fargo, N.D., Casey (Natasha) Carlisle, Hatton, N.D., and Kelly (Tom) Kopp, Fargo; 12 grandchildren; brother John "Hap" (Sally) Carlisle, Asotin, Wash.; sisters, Beth (Dick) Anderson, Bellingham, Wash., Peggy Carlisle, Bainbridge Island, Wash., and Eileen Carlisle, Santa Rosa, Calif.; mother-in-law, Mary Jane Norman, Fargo, N.D.; and many nieces and nephews. He was preceded in death by his son, Robert John, parents, John and Carol Jean, and father-in-law, Robert "Bob" Norman.

Karen M. Olson, BS MedTech '62, died Friday, March 9, 2018, in Minot, N.D. Karen was born May 12, 1940, in Minot, the daughter of Edwin and Genevie (Quarne) Olson. She was raised in Minot and graduated from Minot High School in 1958. She continued her schooling at the University of North Dakota in Grand Forks, graduating with a degree in Medical Technology in 1962. Karen returned to Minot, where she was employed at St. Joseph's Hospital and later with Trinity Medical Center for a period of nearly 40 years. She enjoyed teaching and training many of the new Med Tech students going into her field of work. She was recognized by the hospital as the Employee of the Year during her tenure there. She had most recently been a resident of the Wellington Assisted Living Facility, where she was named the resident of the month and year in 2017. Karen was a lifelong member of the Congregational United Church of Christ, where she sang in the church choir. She was also a member of the PEO Chapter AG in Minot. She enjoyed her pet cats and crocheting. Karen's loving family includes: sister, Judy Sterud, Plymouth, Minn.; her nieces, Julie Tomlinson and Amy Kennedy; a nephew, Steve

Sterud; and all of their families. Karen was preceded in death by her parents; brother-in-law, Gary Sterud; and godmother and aunt, Margaret Gudmunson.

Donald Ellsworth Skjei, BS Med '44, physician and long-time resident of Williston, N.D., passed away on March 22, 2018, at his residence in Laguna Hills, Calif. Don was born November 9, 1920, in Kempton, N.D., the oldest of four children born to Janive and Raynold Skjei, and was married 24 years later to a beautiful, smart, and clever nurse, Avis Marie Lommen of Fordville, N.D. Together they raised four children. A 1938 graduate of Williston High School, he received his undergraduate degree at UND in 1944, a Doctorate General Medicine at Temple University in 1946, and a post-baccalaureate degree at the University of Wisconsin in 1986. He served in the United States Army from 1947-48 at Schofield Barracks, Hawaii, and Fitzsimons General Hospital, Colo. In 1949, after his military service, Captain Skjei returned to Williston where, for nearly 40 years, he practiced medicine with the Williston Clinic and Western Dakota Medical Group, the Good Samaritan Hospital, and Mercy Hospital. In 1984 he was granted a Bush Fellowship in hospital administration and in 1986 became VP of Medical Affairs at Mercy Hospital in Williston, until his retirement in 1988. Don was a member of the American Medical Association, Kotana Medical Association, North Dakota Medical Association, the Elks, and a founding member of Fort Buford's Sixth Infantry. Donald was a devoted healer; a beloved husband, father, son, and friend; a ravenous reader; a tenacious lawn gardener; an on-and-off collector with impeccable tastes; and a so-so golfer. Dr. Skjei was preceded in death by his parents; wife; siblings Lola Jean, Roger, and Mark; and son Stephen.

Ronald L. Wagner, MD '78, passed away April 12, 2018, at Abbot Northwestern Hospital in Minneapolis, Minn. Ronald was born Jan. 16, 1950, in Carrington, N.D. He graduated from the University of North Dakota School of Medicine in 1978 and practiced family medicine until his retirement. He is survived by his current wife, Debra Manning; and his children with Cheri (Stewart) Flanagan: Heather (James) Blackburn, Jason (Kristen) Wagner, Heidi (Joseph) Andruski, and Raina (Jay Johnson) Wagner. He is survived by his step-daughters with Terry Hepper, Trudy (Ryan) Riehl and Holly (Danell) Murphy. His grandchildren are Samantha, Jadee, Amanda, Drew, Isaac, Nick, Lily, Zain, Addy, Chelsea, Gabe, Cambria, and Lauren. His surviving siblings are Wanda Clark, Cheryl Buskness, Walter Wagner, Teresa More, and Allen Wagner. He had a number of surviving nieces and nephews. He was preceded in death by his parents, Walter Wagner and Marjorie Mansco; and his grandson, Jacob Stahl.



PHYSICAL THERAPY



PHYSICIAN ASSISTANT STUDIES



OCCUPATIONAL THERAPY



ATHLETIC TRAINING



MASTER OF PUBLIC HEALTH



INDIANS INTO MEDICINE



DOCTOR/PARENT

The fourth-year UND medical students who also happen to be parents gathered for a group photo in 2018. The students, left to right, are: Beau Billadeau, Spencer Uetz, Jared Weinand, Shyleen Hall, Leigh Moyer, and Faith Thompson.



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