

NORTH DAKOTA MEDICINE

THE UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Lifeblood of Research

Epigenetics

Celebrating the Power of Rural

**Ghana 2013:
Life Without Barriers**

Holiday 2013
VOLUME 38, NUMBER 4
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UND SCHOOL OF MEDICINE
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UNIVERSITY OF NORTH DAKOTA

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UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE AND HEALTH SCIENCES

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Why Philanthropy Still Matters



The School of Medicine and Health Sciences is extremely fortunate to have ongoing strong financial support from the people of North Dakota through appropriations authorized by the Legislature. Such contributions constitute about a third of the School's overall operating budget, a budget that will exceed \$100 million this fiscal year. But even with such terrific support—which exceeds the percentage of support most other public medical schools like ours receive from their states—we still rely on the generous philanthropy of our alumni, friends, and others. While these contributions may support faculty, programs, and facilities, their most important use is to support our

students, mostly by providing scholarships for needy students. But even with the strong financial support from the state and conscientious efforts on our part to limit tuition increases to the smallest amount possible, medical and health sciences student debt is a major concern.

The School of Medicine and Health Sciences has among the lowest costs of attendance in the country, ranking at about the 25th percentile (meaning that 75 percent of medical schools across the country cost more). Our tuition is consistently lower than our peer institutions, and our tuition increases usually smaller. Yet despite this, our students graduate with higher than average debt, at about the 75th percentile level (meaning that only about 25 percent of schools have higher average debt). So why is it that we have below average cost to attend and above average student debt? I think that there are at least two important reasons: first, we take students from across North Dakota. Eighty percent or more of our medical students hail from the state. We don't take the offspring of just the well-to-do, but we take students from rural towns as well as the larger cities, rich and poor and everywhere in between. Accordingly, many of our students come from modest backgrounds and do not come from families that can just pick up the tab. Second, we simply don't have sufficient funds to provide all needy students with the financial aid they need.

As a consequence, the average medical student graduates with about \$160,000 of medical school debt, and about \$190,000 in higher education debt if one includes undergraduate debt as well.

students (or for whatever other purpose you designate), but in recognition and appreciation, we will offer a wide variety of naming opportunities. Please see our menu of opportunities on page 33 of this issue, and contact Dave to discuss the options and procedures for your donation.

You can make the difference.

Large contribution or small—all matter.

Thus, I have established mitigation of student debt as the highest priority goal for the School and for our fund-raising efforts. Dave Miedema, our development director, working with Tim O’Keefe and DeAnna Carlson Zink of the UND Foundation, shares our passionate belief that the focus of our fund-raising activities over the next few years needs to be on students and student debt. That’s why your support of our students is so important. Can you imagine the difference that a just graduated student will feel if she faces her first day as a doctor with little or no debt, or conversely, has to step out into her new profession at an almost \$200,000 disadvantage?

You can make the difference. Large contribution or small—all matter. But for those of you considering an endowment gift, the State of North Dakota has further committed to UND to provide an additional \$1 (up to a total of \$10 million) for every \$2 raised in endowments. For those of you who are considering a larger gift, please consider one of the naming opportunities we have available in the new building, which will open in the summer of 2016. Your dollars will go to support

But please remember that you are the key to reducing student debt. I and the School’s dedicated leadership team will continue to keep the cost of education as low as possible and tuition increases as small as possible, but we need your help if we are going to reduce student debt. It takes almost a million dollars in cash donations each year to reduce each graduating medical student’s debt burden by \$10,000. So we really need everyone’s help as we struggle with the debt problem.

Please consider a generous donation to *your* School of Medicine and Health Sciences. The North Dakota Legislature has done its share; now it is time for you to do yours.

Thank you and best wishes for a wonderful holiday season!



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

UND biochemist garners funding to continue study of congenital heart disease

The National Institutes of Health awarded Linglin Xie, PhD, a research assistant professor in the Department of Basic Sciences at the University of North Dakota School of Medicine and Health Sciences, a \$394,128 grant over the next three years for her molecular and genetic study of the proper development of the heart in the womb. The NIH's grant continues Xie's work on the poorly understood mechanisms underlying a common type of heart condition at birth.



Linglin Xie, PhD

Xie's research is aimed at understanding why some kids are born with a "hole in the heart," clinically known as septal defects. Her group is specifically studying what causes atrial septal defect, in which there is an abnormal opening in the dividing wall between the upper filling chambers of the heart (the atria). As a group, atrial septal defects, ASDs, are detected in 1 child per 1,500 live births, and account for 30 to 40 percent of all congenital heart diseases.

"We specifically study a gene, *Tbx5*, whose mutation causes a disorder called Holt-Oram syndrome in humans," Xie said. "These patients are characterized by arm and hand malformation and heart defects, especially ASDs."

The hole in the dividing wall allows oxygen-rich blood from the upper-left chamber of the heart to mix with oxygen-poor blood from the upper-right chamber, resulting in excessive blood flow through the lungs. Atrial septal defect may cause an enlarged right heart, heart failure, heart arrhythmia, stroke, pulmonary hypertension, or other conditions.

"My previous work at the University of Chicago found how the *Tbx5* gene is a must in the formation of the atrial septum; however, many other factors are also needed in order for a normal septum to occur," she said. "We are now identifying what these other factors are and how they work together in forming a normal atrial septum."

For more information about Holt-Oram syndrome, see the NIH's National Center for Advancing Translational Sciences webpage at <http://rarediseases.info.nih.gov/gard/6666/holtoram-syndrome/more-about-this-disease>.

Fifth Annual ND INBRE Undergraduate Research Symposium

The fifth annual North Dakota INBRE Undergraduate Research Symposium was held on November 4 at the Alerus Center in Grand Forks. ND INBRE is the North Dakota IDeA (Institutional Development Award) Network of Biomedical Research Excellence. The goal of ND INBRE is to build biomedical research capacity by serving research universities, baccalaureate institutions, and tribal colleges within the state.



Donald Sens, PhD

The focus of the symposium was "Epigenetics – A New Center of Biomedical Research Excellence." Health and the environment are the focuses of research conducted under the ND INBRE program, which lends significant financial support to research projects at predominantly undergraduate institutions in the state. Information about the INBRE program can be found at <http://ndinbre.org/>.

The statewide INBRE network is administered by the University of North Dakota School of Medicine and Health Sciences under the direction of Donald Sens, PhD, a professor in the Department of Pathology at the UND School of Medicine and Health Sciences. "INBRE provides a broad range of benefits in biomedical research and science education encompassing research universities, baccalaureate institutions and tribal colleges across North Dakota," Sens said.

The morning session of this year's symposium was devoted to a series of presentations by UND scientists, who outlined the epigenetics-focused research that is pursued at UND's new epigenetics research center. In the afternoon, research posters were presented that highlighted the research by undergraduates from Dickinson State University, Minot State University, Mayville State University, Valley City State University, Cankdeska Cikana Community College, Turtle Mountain Community College, the University of North Dakota, and North Dakota State University.

11th Annual American Indian Health Research Conference

The 11th Annual American Indian Health Research Conference took place on November 4 at the Alerus Center in Grand Forks. The conference offers opportunities to discuss research directions, partnerships, and collaboration in health research focusing on American Indians. The conference featured Jerilyn Church, MSW, CEO of the Great Plains Tribal Chairmen's Health Board, who provided the conference's keynote address titled "Public Health in Tribal Communities."

Church, a Miniconjou Lakota, was born and raised on the Cheyenne River Sioux reservation in South Dakota. She is a second-language learner of the Lakota language. Church is the former executive director of American Indian Health and Family Services of Southeastern Michigan Inc.

Church has worked to improve the health of American Indian families since 1981 when she promoted children's immunization as Miss Indian America XXVII. She graduated with honors from Michigan State University with a Bachelor of Science in Social Work and an American Indian specialization. She obtained her master's degree in social work from the University of Michigan, where she was a Child Welfare Fellow. She earned the 2009 International Women's Who's Who in Michigan Professional Women from the International Institute of Metropolitan Detroit. In December 2011, she earned a Special Tribute of Acknowledgement from the State of Michigan for "hard work, dedication and leadership, and public service on behalf of Native Americans and their families in Southeastern Michigan."

Numerous posters and exhibits were on display at the conference, and there were sessions focusing on health risk and health promotion among Native American communities. The 11th Annual American Indian Health Research Conference was sponsored by the North Dakota IDeA (Institutional Development Award) Network of Biomedical Research Excellence, UND Center for Rural Health, UND Seven Generations Center of Excellence in Native Behavioral Health, and the UND Chapter of the Society of Indian Psychologists.

UND medical students receive scholarships for 2013–2014

A total of \$384,859 in scholarships has been awarded to 143 medical students at the University of North Dakota School of Medicine and Health Sciences for the 2013–2014 academic year. Funds for the scholarships come from various private sources, endowments and scholarship funds. A complete list of scholarship recipients is available online at <http://bit.ly/1bjfeNH>.

Gonzalez earns American Society of Microbiology Fellowship

The American Society for Microbiology (ASM) selected Tammy Gonzalez from the University of North Dakota School of Medicine and Health Sciences as a 2013 award recipient of the ASM Undergraduate Research Capstone Program.

The goal of the capstone program is to "fulfill the later stages of undergraduate professional development" for underrepresented minority students. This program seeks to enhance the presentation skills of students after their research experiences. The ASM Undergraduate Research Capstone Program focuses on enhancing presentation and networking skills, and provides students with resources to transition to disciplinary scientific meetings.

Capstone awardees demonstrate superior research project involvement and knowledge, commitment to research, and academic achievement. Each awardee received up to \$1,500 in travel support to the ASM Capstone Institute and 113th ASM General Meeting (if their abstract was accepted) and a two-year ASM student membership.

This year, 32 applications were received and 18 were awarded. Of the 18 awardees, eight students are from research and doctoral granting universities and 10 students are from undergraduate and master's degree granting institutions.

Catherine Brissette, PhD, an assistant professor in the Department of Basic Sciences at the School of Medicine and Health Sciences, is Gonzalez's mentor. The title of Gonzalez's research project is "Characterization of *Escherichia coli* Lpp as a Plasmidogen-Binding Protein."

The American Society for Microbiology (ASM), headquartered in Washington, D.C., is the world's largest scientific society of individuals interested in the microbiological sciences. Please visit <http://www.asm.org/students> for more information on this fellowship.

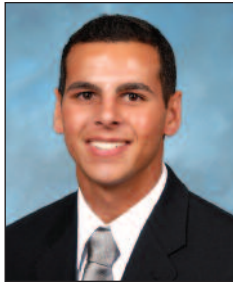


Tammy Gonzalez

Medical students' research is recognized at national conferences



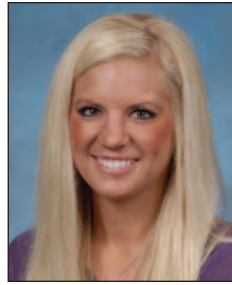
Jim Beal



Krishan Jethwa



Brooke Settergren



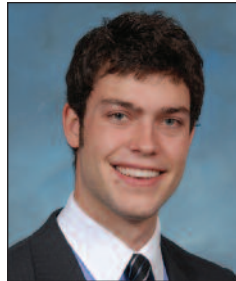
Brittany Berg



Michelle Cho



Nathan Carpenter



Samual Lohstreter

The UND School of Medicine and Health Sciences is one of the few medical schools that currently require all medical students to complete a clinical research project. The project is a requirement in the third-year clinical epidemiology course taught by Associate Professor James Beal, PhD, director of Research and Program Development in the Department of Family and Community Medicine at the School.

Krishan Jethwa, a fourth-year medical student from Minot, N.Dak., and his fourth-year colleagues Brooke Settergren from Bismarck, N.Dak., and Brittany Berg from Hawley, Minn., under the direction of Dr. Beal, found that women with breast cancer who had to travel long distances to a comprehensive cancer center were more likely to have later-stage disease at diagnosis and a mastectomy at surgery. Their results were presented at the 12th Annual American Association for Cancer Research International Conference on Frontiers in Cancer Prevention Research, held in National Harbor, Md.

Data analysis showed an association between patients' distance from a comprehensive cancer center and stage at diagnosis, as well as an association between distance and surgery type. The longer the travel distance, the more likely women were to have later-stage disease at diagnosis, and the more likely they were to have a mastectomy.

"The main purpose of this study was to determine if women in rural North Dakota and Minnesota were at a disadvantage in terms of breast cancer screening, treatment, and, ultimately, survival outcome," said Jethwa. "Travel in this part of the country can be long and difficult, especially during the winter. While investigating the public health implications of this, we found that women who live farther from a comprehensive cancer center were more likely to be diagnosed with later-stage disease. This highlights the need for improved access to screening and treatment for rural populations."

Jethwa and his colleagues analyzed demographic and clinical data from 260 women who were diagnosed with breast cancer between Jan. 1, 2007, and Dec. 31, 2007, and received treatment at a comprehensive cancer center in Fargo, N.Dak. The study investigated women aged 29 to 94 at diagnosis, with an average age of 60. All patients were white, and none had a prior cancer history.

Using the Mantel-Haenszel test for linear association, the researchers found that travel distance was related to both stage at diagnosis and surgery type. They found no association between distance and age at diagnosis, treatment with radiotherapy, or five-year survival.

Jethwa et al. highlighted several areas for future analysis, including how much the risk of later-stage disease at diagnosis increases as a function of travel distance and whether mastectomy among rural women is linked to more advanced disease. They noted it is possible the choice of mastectomy is independent of stage at diagnosis and related to daily travel requirements. Jethwa et al. also said that additional research on how travel distance affects the number of women receiving screening mammograms could help policymakers and health care providers devise effective interventions.

Nathan Carpenter and Samuel Lohstreter, fourth-year students from Bismarck and Mandan, presented their findings on the association between statin use and the risk of developing cataracts at the Association for Research in Vision and Ophthalmology Annual Meeting in Seattle, Wash. Statins are widely prescribed cholesterol-lowering drugs such as Lipitor and Crestor.

There is conflicting evidence that the use of statins may increase the risk of cataracts. A hospital-based case-control retrospective chart review was conducted on patients with and without cataracts from October 31, 2010, through October 31, 2012. The patients were predominantly from northeastern North Dakota and northwestern Minnesota and between the ages of 30 and 79 years. Institutional review boards of both Altru Health System and the University of North Dakota approved the study. Results of the study indicated no association between statin use and the risk of developing cataracts.

"Doing a research project in our third year gave us great, firsthand insight into how epidemiological studies are conducted," said Nathan Carpenter. "We came away with a greater appreciation for both the difficulties involved with testing a hypothesis as well as the great importance and impact these studies have in medicine. We chose to do our project within the field of ophthalmology because it is a topic that interests us both and will be relevant to our futures in medicine."

Carpenter and Lohstreter said that residency programs look for candidates' interest in their particular field. Conducting research in that field is just one way of showcasing that interest. They said it is worthwhile to the student to conduct a project

related to their medical career objectives and to set goals for the research project beyond the walls of the medical school by seeking to get their research published in a journal or showcased at a conference.

“We believe it makes the student more passionate about the project throughout the process and the successes that become of it that much more rewarding,” Carpenter said. “We were fortunate enough to see our work pay off as we presented a poster at the annual ARVO conference.”

Carpenter and Lohstreter worked with coauthors clinical faculty member Michelle Cho, MD, an ophthalmologist with Altru Health System’s Eye Department in Grand Forks, and Dr. Beal,

faculty advisor for the project

“I think both groups’ projects were a good representation of a new student-driven clinical research approach, in which the students generate the research project idea that can be further developed with the medical expertise of a clinical faculty physician and aided by the research and analytical expertise of an academic faculty member,” said Beal. “The traditional student-mentor approach is often a more mentor-driven approach with the student working on an existing project or developing a research project closely tied to the mentor’s research.”

Adopt-a-Med-Student

The third annual Adopt-a-Med-Student Luncheon was held on October 31 in the Vennes Atrium at the School. The program was created by Dean Joshua Wynne and the Office of Alumni and Community Relations in 2011.

For a gift of \$250, sponsors give first-year medical school students stethoscopes, a staple tool of all physicians. The students select the model and color they want, and their names are then engraved on the diaphragm. The stethoscopes are presented to the students at the luncheon in October.

Sponsors who attended the event were Heidi Bittner, Mark Koponen, Margaret Traynor Mickelson, and Michael Traynor.

Sponsors are paired with students mostly based on geographic location, possibly by other interests such as sports or hobbies (if evident) but sometimes simply at random. Some students have been surprised to learn they know their sponsor, and sometimes sponsors have attended the luncheon to personally present the stethoscope to the students.

If you are interested in sponsoring a member of the Class of 2018 next fall, please contact the Office of Alumni and Community Relations at (701) 777-4305 or e-mail kristen.peterson@med.und.edu.

Thank you to our Adopt-a-Med-Student sponsors

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Lifeblood of Research

Funding for the School's researchers is critical for advancing their knowledge of human health.

By Juan Pedraza

No blood, no go. That's the fundamental truth for just about all creatures above the cellular level. Metaphorically, that holds for institutions too.

Ask Dr. Joshua Wynne, cardiologist, UND vice president for Health Affairs, and dean of the School of Medicine and Health Sciences: he'll tell you that cash—including grant awards—is the go or no go of the research enterprise.

What's notable in this context is that by any measure of health, the SMHS's circulation—especially counting its flow of grants—is remarkably fit.

"The reason that we have been successful in getting grants in an incredibly competitive environment is that we have a strategic vision of where we were going from the research enterprise point of view," said Wynne, who, in addition to his MD degree, also holds an MBA and an MPH,



both testifying to his keen understanding of how a business such as the SMHS lives or dies by its cash flow.

“We provided appropriate support, encouragement, and rewards to carry out that vision. We were careful in our recruitment of younger faculty with high academic potential, and that has paid off to a remarkably positive degree,” Wynne said.

How positive?

In its most recent summary of grant awards, covering the federal fiscal year of 2012, the National Institutes of Health (NIH) reports that it awarded nationwide 13,989 grant applications out of the nearly 70,000 applications it received and reviewed. The NIH in 2012 awarded \$5.5 billion, or a 20 percent success rate (NIH defines success rate as the percentage of reviewed grant applications that receive funding).

Compare that success rate to the School’s, where from July 1, 2012 to June

30, 2013, SMHS researchers submitted \$90 million in grant applications to not only the NIH but also to the state as well as private and foundation sources. The SMHS got about \$27 million—a success rate of 30 percent. For fiscal year 2013, the SMHS recorded \$27.12 million in grant awards, more than double fiscal year 2012’s rate; this number does not include the recently announced \$10.5 million five-year grant for a Center of Biomedical Research Excellence in epigenetics research.

“That’s a remarkable achievement,” said Wynne.

He notes that since 2002, SMHS scientists have filed nearly \$1 billion in grant applications and received close to \$240 million, for a long-term success rate of 25 percent, significantly higher than the national average for research universities.

The School’s grant success rate—a clear testament to the quality of grant proposals—is all the more significant when compared to the benchmark NIH funding success rates, which have dropped in the last 10 years to an average of 20 percent.

“The key is having a vision; putting the vision into play; and then getting the right people to carry it out,” Wynne said.

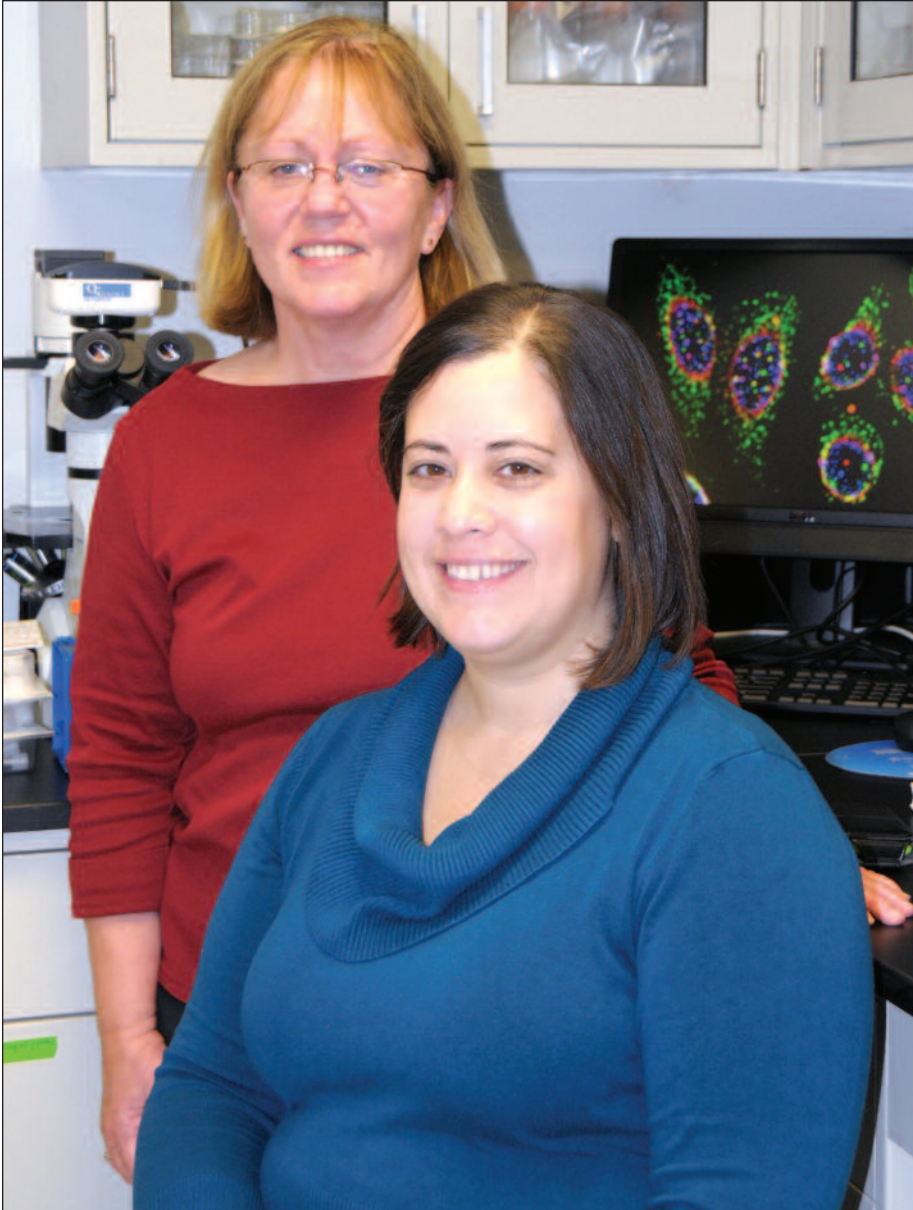
Part of that strategic vision was breaking down departmental barriers by consolidating departments into one basic research unit. That unit organizes research into functional and scientific interest groupings, rather than departments based on disciplines. This move was launched this summer with the appointment of Malak Kotb as chair of basic sciences.

As Wynne noted at the time of that move, most science historically was the product of lone geniuses, such as Albert Einstein.

“That model governed biosciences, too, such as Charles Darwin, taking notes by himself on the voyage of the Beagle and composing them in a lone study into his magnum opus, *On the Origin of Species*,” Wynne said.

Today, a new model—called team science—is taking over the research enterprise. The UND SMHS has forged ahead with this model, which underscores its commitment to forward-looking research—and to the grants that support it.

“We’re going to build on our success.”



Roxanne Vaughan, left, and Joyce Ohm

The NIH—the world’s largest funder of biomedical research—has a detailed how-to manual about doing team science. And to go a step further, there’s a recently developed software package—the Science Collaboration Framework—to help research managers handle this type of science.

The SMHS formalized the team concept with its Department of Basic Sciences, approved by the North Dakota State Board of Higher Education and headed by Kotb, herself an active biomedical researcher and science administrator.

Wynne says it’s all part of a longer-term health care strategy adopted by the NIH.

Wynne sees the new research structure leading to bigger and better things, and the School’s funding success rate—as compared to NIH success rate standards—underscores the wisdom of the vision.

“We hope to see as a result of all of this over the next decade a doubling of our research enterprise, whether measured by funding, grants, publications, or, even more importantly, by actual contributions to helping people live better, fuller, healthier lives,” Wynne said.

“We’re going to build on our success,” Wynne said. “With our strategic vision we saw that for programs that were doing well, or that demonstrated great potential, those were the ones that we were going to invest in.”

It also meant making choices and saying that in those four or five areas of strategic importance to the SMHS.

“Our vision was that we were not going to simply invest in everything,” he said. “Making choices means not only saying yes but it’s also figuring out where you’re going to say no. And we’ve done that.”

But, Wynne notes, success—such as the kind enjoyed by the School’s research enterprise—depends on establishing priorities and making productive choices.

“It also means saying yes! instead of just yes,” he said.

IDeA counts

“Clearly we’ve benefited by being an IDeA state,” Wynne said. “It’s still very competitive—NIH doesn’t just hand out the money because you’re an IDeA state.”

What does the IDeA program do?

The Institutional Development Award (IDeA) program broadens the geographic distribution of NIH funding for biomedical and behavioral research. North Dakota is one of 23 states designated in the IDeA network. The program fosters health-related research and enhances the competitiveness of investigators at institutions located in states in which the aggregate success rate for applications to NIH has historically been low.

The program also serves unique populations—such as rural and medically

underserved communities—in these states. The IDeA program increases the competitiveness of investigators by supporting faculty development and research infrastructure enhancement at institutions such as the SMHS.

COBRE grants—Centers of Biomedical Research Excellence—of which the SMHS has two, totaling more than \$20 million, augment and strengthen institutional biomedical research capabilities. These grants—one of which was just awarded to UND this year for epigenetics research—expand and develop the biomedical faculty’s research capability through support of a multidisciplinary center led by a peer-reviewed, NIH-funded investigator with expertise central to the theme of the grant proposal.

“Our most recent COBRE reflects a lot of credit to UND Vice President for Research and Economic Development Phyllis Johnson and Associate VP for Research Development and Compliance Barry Milavetz (who also is an active scientist at the SMHS) for first getting the epigenetics group together, which culminated in the awarding of a \$10.5 million grant,” Wynne said.

SMHS funding over the last 10 years also includes a 10-year INBRE grant totaling \$15.9 million—the largest grant in SMHS history. INBRE stands for Institutional Development Award (IDeA) Network of Biomedical Research Excellence, also part of the IDeA program. For Don Sens, those federal dollars are the key to helping the younger generation develop an interest in science and the health professions. Sens, professor of pathology and a longtime cancer researcher, coordinates the North Dakota INBRE.

INBRE grants are used to develop infrastructure, for example, labs, not just here at UND but around the state. A big part of that is getting undergraduates in all of North Dakota’s colleges and universities interested in research and health professions.

The School’s total grant awards over the last decade result from having a lot of smart people with excellent ideas, Wynne says.

“The institution is the people that make it up,” Wynne said.

And that, he noted, is the result of strategic recruiting.

“We look for people with a combination of excellent pre- or post-doc experience, coming from good scientific environments,” Wynne said. “The second factor in selecting good people is the record of productivity. We look at what they’ve done, their track record in research. Third, we examine the chemistry when they come here—how would their personalities, talents, experiences, etc. fit with what we have to offer here.”

The recruitment includes a final and vital step.

“Most important is the group estimate of their potential for major achievement in the future,” Wynne said. “If you pick right, you get some of the people such as epigenetics researcher Joyce Ohm, who hit a lot of home runs, including helping to put together the COBRE epigenetics grant application.”

About 40 percent of the external support received by the SMHS comes from the NIH, an agency of the federal Department of Health and Human Services; the School receives about 67 percent of its funding from the federal government. Last year’s NIH funding to the medical school included two new R01 grants, five years each at \$250,000 per year, including one to Ohm.

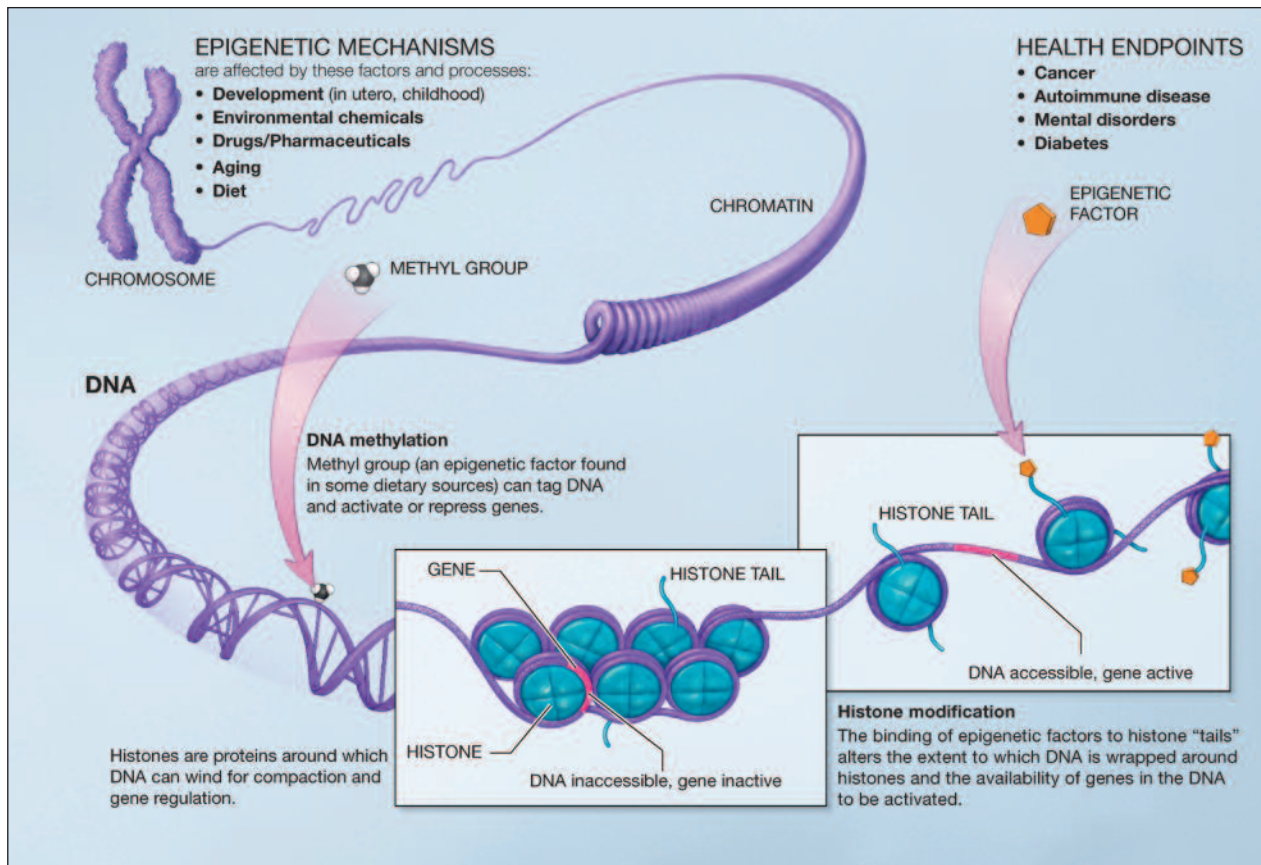
“We see that we’re getting better at research—and at getting research funding—and we’re doing it in an increasingly competitive environment,” Wynne said. 🍀

“
The institution is the
people that make it up.”

Epigenetics

The School's new research center will focus on the epigenome's role in disease development.

By Juan Pedraza



A Scientific Illustration of How Epigenetic Mechanisms Can Affect Health. Image courtesy of National Institutes of Health

Epigenetics—the hard science behind the mystery of who each of us becomes—is gaining lots of international attention. So much so that the federal government is investing a lot in programs that dig into the elusive mystery of this relatively new field of research.

The National Institutes of Health recently awarded the University of North Dakota \$10.5 million in a five-year grant to support an Institutional Development Award (IDeA) Center of Biomedical Research Excellence (COBRE).

“This COBRE is focusing on the role of epigenetic changes in human disease

development and progression, a cutting-edge field of scientific inquiry that could lead to new approaches to treatment and prevention,” said W. Fred Taylor, PhD, who directs the IDeA program at the NIH’s National Institute of General Medical Sciences.

This UND COBRE—an existing COBRE at the School is for neuroscience—will research the epigenetics of development and disease.

Epigenetics relates to the biochemical machinery at the cellular level that switches specific genes on—or doesn’t—affecting what each of us does, for example

what we choose to eat, how we sleep, how we get sick—for example, cancer or Alzheimer’s—and how we express a whole range of other behaviors, some good, some not so good.

“This grant will significantly expand epigenetic research at UND by instituting a variety of programs that will support young investigators at early stages in their careers, establish core facilities and purchase major equipment, and assist with faculty mentoring and development,” said Roxanne A. Vaughan, principal investigator of the COBRE and Chester Fritz Distinguished Professor at the UND School of Medicine and Health Sciences.

“Together these programs will enhance research across multiple disciplines and elevate the research capacity of the university.”

As an established biomedical research scientist, Vaughan’s participation in the grant proposal was crucial. The NIH expects that the principal investigator for a new COBRE must be able to ensure high quality research and has the experience to administer effectively and integrate all components of the program.

Vaughan will help support the projects of the new center’s core team members, who are early career investigators or those with established research programs in other fields whose research has led them to the exciting area of epigenetics: Lucia Carvelli, PhD, assistant professor; Archana Dhasarathy, PhD, assistant professor; Sergei Nechaev, PhD, assistant professor; and Joyce Ohm, PhD, assistant professor.

The new center expands UND’s ongoing epigenetics research program, which includes a group of interested scientists from several different departments and colleges as well the U.S. Department of Agriculture Grand Forks Human Nutrition Research Center; the group has been meeting regularly on campus since 2010.

The question of the epigenetic role in disease is uppermost on the horizon for this COBRE team.

“Abnormal epigenetic regulation has been implicated in a variety of human diseases,” said Ohm, who investigates,



Participating in UND’s second Epigenetics and Epigenomics Symposium on September 12 were, from left, Dean Joshua Wynne, Malak Kotb, chair of the Department of Basic Sciences, and epigenetic researchers Archana Dhasarathy, Lucia Carvelli, Joyce Ohm, and Brij Singh.

among other things, the abnormal epigenetic events in the initiation of human cancers. “Those diseases include cancer, obesity, diabetes, infertility, and neurodegenerative disorders such as Alzheimer’s disease or Parkinson’s disease. Researchers at UND are actively working to understand the bases for these diseases and to develop new strategies for treatments or preventions.”

Ohm and her epigenetics research colleagues note that the cancer you have today might be the result of your grandparents’ unhealthy habits, and your overeating or cigarette smoking today may have an effect on not only you but also your grandchildren.

Learning more about how that all happens is the key to UND’s new COBRE. 🌱

“Abnormal epigenetic regulation has been implicated in a variety of human diseases.”

Finalizing Schematic Design

Interdisciplinary learning communities are one of the hallmarks of the new SMHS facility.

By Lonnie J. Laffen, AIA, LEED AP



In the last issue, I wrote of the kickoff of the new School of Medicine and Health Sciences, a facility which is part of the University of North Dakota's Health Care Workforce Initiative to grow more North Dakota medical and health sciences professionals and, as a result, affect health care in our state for generations. Since that time, the design team of JLG Architects, Steinberg Architects, and Perkins+Will has made significant progress on the building.

As you may remember, over the past several months, the design team has been involved in programming, or the discussion of what actually goes into the building. The programming process involved hundreds of discussions with faculty, staff, students, and administrators—because who best to decide the usefulness of the spaces than those who actually use them? After presenting several options to the University, we now have a final building program, which integrates new ways of thinking about learning, researching, and

working together, and includes the following:

Interdisciplinary learning communities for all of the SMHS programs. The SMHS will feature eight learning communities, with 100 students each, which will be paired around a shared student lounge and practice exam room space, and have their own group study rooms, tutoring rooms, open work environments, and individual study stations and lockers. Each learning community will gather students from disciplines across the medical and health sciences spectrum—medical students, graduate students, occupational therapy, physical therapy, and others—in order to encourage collaboration between departments and promote interprofessionalism.

Shared and flexible research spaces. To allow successful grant programs to grow and contract as needed, the standard small, fixed, and “owned” lab spaces will now become large, open,

and flexible spaces to foster collaboration.

An interdisciplinary anatomy program with shared cadavers.

Currently, medical students and health sciences students study anatomy independently. Integrating medical students and health sciences students within anatomy further strengthens the goal of providing a meaningful interdisciplinary education.

Simulation training in all programs.

With five simulation rooms, 14 standard patient rooms, five debrief rooms, and a clinical skills laboratory, students will have multiple opportunities to hone their interpersonal and physical clinical skills.

Extremely flexible and agile large-group space and conference space.

Small, medium, and large conference rooms will be paired with break-out conversation spaces for any type of group meeting. The building will be open (but secured) 24 hours a day to act as a home away from home to best maximize collaboration and learning.

All of these learning and collaboration spaces have been designed around a central, sunlit “Main Street,” to make it easy for students and visitors to find their way around. A café is at the center of the building and will be a key aspect of the lobby and circulation space. Outdoor space for students and staff has been provided adjacent to the lobby and café, creating an active center of the building with direct views to the outdoors and a way to bring in even more daylight.

Interestingly, our programming sessions led to the one major change from the current SMHS facility—the elimination of the traditional library. We live in a digital world, and book stacks would take up precious space that will be better put to other use.

As we enter the design phase, we have added the final integral piece to our team. UND recently hired the team of PCL Construction Services and Community Contractors to provide construction manager at risk (commonly called CMaR) services. In a typical design-bid-build construction method, the entire project would be designed, and then contractors would be called to bid on the project by

looking at the drawings and providing their lowest estimated cost for construction. In CMaR delivery, the contractor team works alongside the architecture team from the beginning of design to provide cost estimates and identify potential scheduling and constructability issues. For a project of this size and complexity, the CMaR delivery system will help ensure that the



Lonnie Laffen

SMHS project will be delivered on time and on budget because it ensures that everyone is on the same page throughout the entire process.

And, thanks to the inclusion of PCL and Community Contractors, construction has already begun. Although we are still designing the facility, geotechnical investigations have been completed on the site, and the grading of the physical landscape has begun so that foundation construction can begin in winter 2014 as soon as we finalize the design and construction documents.

Speaking of design, we are currently in the process of finalizing schematic design, which will start to further detail the building layout, circulation, adjacencies, and the overall building appearance. We will continue to host workshops with users to make sure spaces connect where they should and stay separate when needed. By the end of schematic design, we will be able to show you a site layout, building mass, the arrangement of departmental adjacencies—and, most interestingly—the form, shape, and presence of the overall building.

“
Each learning community will
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Celebrating the Power of Rural

National Rural Health Day showcases the strengths of rural America.

By Mark Barclay



Today more than ever, rural health care, a major economic and quality-of-life factor in rural communities, is facing tremendous needs unique to rural areas. Health system issues like availability and accessibility to health care, workforce shortages, and reimbursement and payment structures along with population health issues such as behavioral risks, disease conditions, and health disparities are exacerbated in rural communities. While these struggles are very serious and demand complete attention,

they often overshadow the tremendous accomplishments and the power of rural. Rural communities are a wonderful place to live and work, and continue to make strides even when faced against the steepest of challenges. This message is the cornerstone of what has been an annual event since 2011: National Rural Health Day.

This year, National Rural Health Day was celebrated on November 21 across North Dakota and the entire United States. First and foremost, National Rural Health

Day is an opportunity to honor the selfless, community-minded, entrepreneurial spirit that resonates across rural America. Rural communities are and always have been a place where neighbors know each other and work together for the benefit of the community. Health care is a central part of any community, and often the largest economic driver in a rural community. National Rural Health Day is a chance to celebrate the power of rural and rededicate ourselves to ensuring that every rural citizen has access to high-quality local health care.

History of National Rural Health Day

National Rural Health Day was established in 2011 as an initiative of the National Organization of State Offices of Rural Health (NOSORH). NOSORH created National Rural Health Day as a way to showcase the good works of America's 59.5 million rural citizens and to promote the efforts of NOSORH, state offices of rural health, and others in addressing rural concerns. "At the same time, National Rural Health Day gives us an opportunity to raise awareness of the unique health care issues being faced by rural citizens, particularly a lack of health care providers and affordability issues resulting from larger percentages of un- and underinsured citizens and greater out-of-pocket health costs, to name a few," says NOSORH Director Teryl Eisinger.

State offices of rural health play a key role in the promotion and coordination of rural health across America. Each state has a federally funded state office of rural health, which can vary greatly in size and scope; however, all offices are tasked with creating partnerships, developing programs, and providing resources that help their state address the health care needs of its rural citizens.

The Center for Rural Health (CRH) at the University of North Dakota School of Medicine and Health Sciences, is the designated state office of rural health in North Dakota, and one of the nation's oldest and largest offices, employing approximately 51 faculty and staff and coordinating over 40 separately funded program areas to improve rural health in North Dakota and across the country. The mission of the Center for Rural Health is to connect resources and

knowledge to serve the people in rural communities. In fiscal year 2012, the CRH provided assistance to 121 North Dakota communities in 47 counties and awarded approximately \$924,000 in grant awards to rural health providers.

The Power of Rural in North Dakota

North Dakota has always taken pride in its rural heritage. Talk to any of the state's 362,000 rural residents and you will hear passionate stories of why rural North Dakota is a great place to live and work. Too often rural communities are viewed as remote patches of isolated farms, open and unpopulated landscape, and even quaint reminders of bygone eras. This clearly isn't the entire picture. While agriculture is a critical piece of the rural economy, there are many other large industries and small businesses that also play a central role. Rural communities also tend to strongly support local activities with a natural sense of interdependence. Attend a rural high school sporting event, theatre production, or a Native American Pow-Wow and you will see everyone in attendance from the local doctor to the mayor. This community focus builds extremely strong relationships where people aren't just acquainted but truly do care for one another.

At the heart of rural North Dakota is a vibrant and expansive health care system in which the state's 36 critical access hospitals (CAH) are the primary providers of care. These hospitals are classified as *critical access* because they have 25 beds or fewer, and are located at least 35 miles away from another facility (15 miles if the terrain is difficult). The effect of a CAH extends much beyond the hospital; it serves as a centralized hub for health care in its rural community. All but three of the 36 CAHs own and operate another health care business such as a primary-care clinic, nursing home, senior residential setting, or ambulance service. Additionally, CAHs play a large economic role in a community—contributing about \$6.4 million and 224 jobs on average to the local economy.

To help celebrate National Rural Health Day in North Dakota, a number of events took place across the state. November 21 was officially proclaimed National Rural Health Day in North Dakota by Governor

“We are so extremely blessed to have the level of **dedication and commitment** in North Dakota from our rural health care providers.”



Celebrating National Rural Health Day at Goose River Dental Associates in Mayville are, from left to right, Kelly Aarsvold, Dr. Rob Lauf, LuAnn Pedersen, Cindy Ingebretson, Lori Stenehjem, and Danielle Erickson.

Jack Dalrymple. In his proclamation, Governor Dalrymple touted the benefits of rural living, while recognizing the unique challenges facing rural health care, and acknowledging the distinct critical role played by the UND School of Medicine and Health Sciences to lead efforts to address these unique challenges. Rural health care organizations from Berlin, Lamoure, Edgeley, Dickinson, and Belcourt partnered with SIM-ND (Simulation in Motion—North Dakota) to offer on-site emergency training the week of National Rural Health Day. SIM-ND uses four large trucks equipped with human patient simulators to train North Dakota health care providers on emergency situations through advanced simulations.

The Center for Rural Health and the North Dakota Rural Health Association also

partnered to conduct the annual National Rural Health Day photo contest. Submissions were received from across the state with the subject of “What does rural mean to you?” The winner of the 2013 contest will receive a free registration to the 2014 Dakota Conference on Rural and Public Health. The Center for Rural Health and North Dakota Rural Health Association (NDRHA) also sent a thank you letter and token of appreciation to all rural North Dakota health care providers thanking them for their service. According to NDRHA Executive Director Kylie Nissen, “We are so extremely blessed to have the level of dedication and commitment in North Dakota from our rural health care providers. In addition to the doctors and nurses, many rural residents play a crucial role in maintaining access to care for their


community. The overall health of North Dakota is greatly improved by their service.”

Future of Rural Health

Despite the great advances being implemented throughout the state, there continues to be significant health needs in our rural communities. These needs were recently identified through a process known as a Community Health Needs Assessment. The Affordable Care Act mandates that every non-profit hospital conduct a Community Health Needs Assessment (CHNA) of the communities it serves at least once every three years. The Center for Rural Health assisted 21 of the 36 critical access hospitals in the state, and an additional 18 CHNAs were done by hospital staff or consultants for a total sample size of 39 hospitals out of 41 non-profits in the state. The CHNA process is informed by both primary (community member interviews, focus groups, and surveys) and secondary data (e.g., Robert Wood Johnson Foundation County Health Rankings, and North Dakota Department of Health population health data). Although methods differ between assessments, as a whole, the goal of the CHNA is to solicit community input on health needs and service gaps. The significant need most frequently reported in CHNAs was a health care workforce shortage. In 28 separate assessments, the need for more health care staff was expressed. The next most frequently perceived community health needs were obesity and physical inactivity (16 communities), mental health (15 communities), and chronic disease management (12 communities).

It is important to look at the identified needs not as a weakness but as an opportunity to make improvements in the health of our communities. The CHNA process is community directed and driven through community engagement techniques eliciting community input. Through the CHNA process, communities also implement a strategic action plan to take steps to address the health needs in their community. For example, if obesity/physical inactivity was identified as a major need, the community may look for opportunities to build a wellness center or walking path. Communities don't need to approach this by themselves, however. The Center for Rural Health,

works with communities to build capacity and facilitate strategic planning around the identified needs and share potential resources to support implementation projects. If one rural community has had success building a wellness program, another community can learn from their efforts. This collaboration is ever present in rural North Dakota. Communities understand that they are stronger by working together, and while no community is perfect, every community has strengths.

As health care delivery continues to evolve, in many ways, rural health care facilities have an advantage as compared to their urban counterparts. The main emphasis of rural health has always been on providing affordable, team-based, primary care. This focus on patient-centered preventive care is at the forefront of many upcoming changes in payment structures enacted as part of the Affordable Care Act. Rural health care, like so many other things in rural America, has always focused on relationships. Health care providers get to know the people they care for and have the opportunity to practice more patient-centered medicine. Rural health care has always faced a daunting task—providing quality care with very limited resources. National Rural Health Day is one day a year to acknowledge the tremendous power of rural in spite of the enduring challenges. 

Marching to His Own Beat

By Emily Aasand



Brandon Johnson in the Dr. Robert and Charlene Kyle Medical Laboratory.

The Medical Laboratory Science (MLS) Program is for people who possess nothing short of motivation and discipline. Not only does UND junior Brandon Johnson have those attributes but he has also decided to take his college career a step further by joining the school's band—The Pride of the North along with its drumline.

The Lino Lakes, Minn., native was aware of his interests early in life and knew he wanted to have a career in health care.

"I knew my interests weren't exactly in the one-on-one interaction, but more in

the behind-the-scenes, lab work analysis," Johnson said. "I want to be a part of health care, and I want to be one of the individuals who get to make a difference in the field."

Johnson began his college search by attending a college fair at the Minneapolis Convention Center. He knew he wanted a school that offered a Doctorate of Medicine and a Doctorate of Philosophy Degree (MD/PhD) because of his interest in oncology and research, and UND had just what he was looking for.

“I spoke with a UND representative and told him that my interests included doing lab work and research,” Johnson said. “That’s when he introduced me to the MLS Program, and it was exactly what I was looking for. I later came to Grand Forks for a tour and was blown away by the program. They absolutely sold me on it.”

One of those selling points was the UND faculty.

“I’ve really been able to spend more one-on-one time with my instructors,” Johnson said. “Having that experience, you feel more comfortable asking questions and getting to know more about what you’re studying. The atmosphere is one of my favorite things about UND.”

Not your average student

When Johnson’s not in class or studying, there’s a good chance you’ll find him at band practice. The “quints” (tenor drums) player spends an average of six to seven hours rehearsing with the Pride of the North and the UND drumline who perform at football games, and the men’s and women’s hockey games.

“It gets busy, but I love it,” Johnson said. “It’s my free time. It’s the time I get to spend with my friends in the band, and I get to do something I enjoy. It’s a way I can stay involved and be doing things on campus, but it’s a nice break from all of my classes.”

Johnson began playing the drums in sixth grade and is on his third year with the UND band. He’s also been the equipment manager for the Pride of the North marching and athletic bands since his freshman year.

“It is truly a pleasure having Brandon Johnson as a student and a member of the Pride of the North,” said Rob Brooks, director of the Pride of the North Bands. “Not only is he a talented percussionist, he is a student leader within our group and our equipment manager.”

“My duties as equipment manager include loading the instruments and equipment onto the truck as well as driving the truck to rehearsal and performance sites,” Johnson said. “Clearly, I like to stay busy.”

All about balance

Leading such a busy life, Johnson said the key to being successful is remaining balanced and focused.

“I have to use the time that I have to its maximum potential,” Johnson said. “I need to stay focused in what I’m studying and utilizing my time. In the limited time that I have, I want to make sure that I get the most out of it.”

“He effortlessly balances all of his involvement with the band with his rigorous studies as a medical laboratory science major and always does so without hesitation, question or complaint,” Brooks said. “I can truly count on him. Brandon exemplifies the meaning of our program’s name: The Pride of the North.”

This studious band student is also the president of the MLS Club on campus.

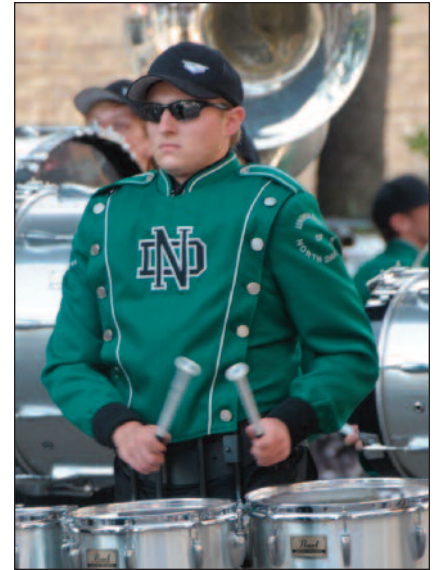
The club sponsors the Dak-Minn Blood Drives, presents at UND Wellness Center events, and takes an annual trip to the Mayo Clinic to tour their labs.

“On campus, we’re the voice behind the MLS Program,” Johnson said. “We get to explain to people what we do and what our involvement is in the health care field.”

Looking ahead

Johnson still has a year and a half left of school, but upon graduation, he’s weighing two options. One would be going on to get his master’s in MLS, and the other would be going into the MD/PhD program to specialize in pathology and oncology research.

“It’s great to see where health care is going and where the next generation of technology is going to come from,” Johnson said. “We’re on the brink of new technology, and it’s great that we’ll be the ones coming in with the knowledge of how to use it and how to help advance health care. It’s really exciting to be a part of that.”



Brandon Johnson playing with the Pride of the North in the Potato Bowl Parade.



Returning Home

Christopher Anderson and Allison Clapp, both MD '08, are returning to their hometown of Fargo to practice emergency medicine and radiology, respectively, and start a new chapter in their lives.

By Jessica Sobolik

Chris Anderson and Allison Clapp are at that point in their medical careers where they have finished their residencies and, for Allison, completing a fellowship. But they didn't have to think long about where to go next.

The couple is moving back to their hometown of Fargo, following their residencies at Mayo Clinic in Rochester, Minn. They have purchased a new home and will be getting married in December. The pace of their lives at the moment is a little hectic. Throughout all this, however, they made time to give back to their alma mater, where they repeatedly say they received a top-quality education.

"UND trained us well for the clinical challenges of residency," Allison said. "We felt fortunate we got into medical school,

and each scholarship helped so much, so we wanted to give back."

The couple has created the Drs. Christopher and Allison Clapp Anderson Scholarship Endowment, which will provide scholarships to UND medical students from North Dakota, with preference given to students who graduated from Fargo South High School, where both graduated in 2000.

While they knew of each other at that time, they didn't reconnect until medical school. Allison earned her bachelor's degree in biological sciences from the University of Nebraska, while Chris received his bachelor's degree in chemistry from UND.

When looking at medical schools in the region, they quickly realized that they

could get a quality education for much less cost at UND. They have not regretted that decision. “When you go to bigger medical schools and you’re in the patient room, there is a doctor, a fellow, and a number of residents and medical students,” Allison said. “As a third-year medical student there, you’re pretty much going to sit in the corner and observe. But at UND, third-year medical students are actively participating in clinical work. It made such a huge difference for us.”

Specialties

While their lives have followed a similar path, Chris and Allison have different professional interests.

Chris likes the action and variety of cases in the emergency room, thus his residency at Mayo was in emergency medicine. He started his new job in October at Essentia Health in Fargo, where he also completed a surgical rotation during medical school. “This was the best fit for me,” he said.

Allison, on the other hand, discovered she likes diagnostic work, and though she initially considered internal medicine as a specialty, she enjoyed aiding clinicians in the search for a diagnosis through radiology. After completing her radiology residency, she signed on for a Mayo fellowship specializing in breast and women’s imaging. She’ll finish the subspecialty fellowship this summer and already has a position with Sanford Health in Fargo. She will be one of the few physicians in the state with this experience. She chose Sanford because of its high throughput of cancer images provided by the Roger Maris Cancer Center.

When considering coming back to North Dakota, they both recognized a need for physicians in the western part of the state. “But Fargo is where our family is,” Allison said.

Scholarship Support

When Chris and Allison created their endowment at UND, they were able to take advantage of two programs to maximize the effect of their gift: the North Dakota tax credit and the North Dakota Higher Education Challenge Fund. The North Dakota tax credit allows them as North



Allison Clapp and Christopher Anderson on commencement day in May 2008.

Dakota residents to receive a state income tax credit equal to 40 percent of their charitable gift. And the North Dakota Higher Education Challenge Fund, passed by the North Dakota Legislature this year, adds \$1 to every \$2 of private gifts given for endowments, significantly growing the Clapp Anderson Endowment and creating more and larger student scholarships. “It was pretty obvious that we should take advantage of both opportunities,” Chris said.

'00s

Gaurav Bansode, FM Res '13, has joined the family medicine team at Trinity Health in Minot. Bansode provides primary care services to people of all ages, including diagnosis and treatment for a wide range of illnesses, management of chronic conditions such as diabetes and high blood pressure, geriatric care, and counseling patients on self-care skills to prevent disease.

Jennifer Mullally, MD '10, is a pediatrician at Essentia Health's South University Clinic in Fargo. She served her pediatrics residency at the Mayo School of Graduate Medical Education in Rochester, Minn.

Stephanie Delvo, MD '09, recently joined Mid Dakota Clinic. Delvo is a member of the American College of Obstetricians and Gynecologists and the American Medical Association.

Brad Kohoutek, MD '09, has joined Sanford Health in Fargo practicing psychiatry.

Jon Kolberg, MD '09, has joined the Family Medicine and Sports Medicine departments at Altru Health in Grand Forks.

Collette Lessard, MD '09, has joined Altru Health System in Grand Forks, specializing in obstetrics and gynecology.

Carrie Ann Ranum, MD '09, is now practicing pediatric medicine at West River Health Services' Dickinson Clinic.

Christopher Anderson, MD '08, has joined Essentia Health in Fargo as an emergency medicine specialist. A native of Fargo, Anderson completed his residency in emergency medicine at the Mayo School of Graduate Medical Education in Rochester, Minn.

Amanda Huber, MPAS '08, has joined Essentia Health's clinic in Jamestown. Huber will be practicing in the family medicine department. She is certified as a physician assistant by the National Commission on Certification of Physician Assistants.

Joshua Knudson, MD '08, has joined the care team at Sanford Clinic in Bismarck as a general surgeon. A native of Bismarck, Knudson provides surgical treatments for a wide range of diseases and conditions that involve the stomach, esophagus, pancreas, gallbladder, thyroid, lower intestines, and abdomen.



'00s

Richelle Knudson, MD '08, a board-certified dermatologist and dermatologic surgeon, has joined Sanford Health and opened Sanford Dermatology in the Sanford North Clinic in Bismarck. A Dickinson native, Knudson evaluates, treats, and provides consultation for skin conditions, diseases, and cancers.



Peter Biegler, MD '07, has joined the Sanford Health staff in Fargo practicing interventional radiology. Biegler completed his residency in diagnostic radiology at Mayo Clinic and Graduate School in Rochester, Minn., and his fellowship training in interventional radiology at Baptist Cardiac and Vascular Institute, Miami, Fla.

Aaron Luebke, MD '07, is now at the Hematology/Oncology Department at Mid Dakota Clinic in Bismarck. A native of Mohall, N.Dak., Luebke has a special interest in the research and treatment of prostate, ovarian, and colon cancer. He is board-certified in internal medicine and a member of the American College of Physicians and the American Medical Association.

Alicia Glynn, MD '06, was recently hired by Sanford Health in Fargo. Glynn will be practicing emergency medicine.

Jeremiah Penn, FM Res '05, has joined the comprehensive care team at Sanford Orthopedics & Sports Medicine in Bismarck. Penn is a fellowship-trained primary care sports medicine physician and provides nonsurgical sports medicine care.



Andrew Mutnan, BSAT '02, recently became head football athletic trainer for the Washington State Cougars, members of the PAC-12 Conference. Mutnan is originally from Arvada, Colo. After graduating from UND, he earned a master's degree from the University of Minnesota, where he also worked as an assistant athletic trainer. He worked at the University of Nevada from 2008 to 2013. He and his wife Amy have two sons.



'00s

Chris Cleveland, MD '00, has joined Sanford Health, Fargo, practicing in the areas of pediatrics, allergy, and immunology.

Lisa Henry, MD '00, has joined Hospice of the Red River Valley. Henry and the hospice team provide care to patients in 29 counties of North Dakota and Minnesota. Henry is board-certified in internal medicine and most recently was a medical director with Blue Cross Blue Shield of North Dakota.

'90s

Anthony Johnson, MD '94, recently passed the 2013 Maintenance of Certification for Family Physicians Examination given by the American Board of Family Medicine. The American Board of Medical Specialties issues this certification to ensure physicians meet the highest standards of accountability. ABFM MC-FP is a requirement that encourages clinical excellence and benefits both physicians and their patients. Johnson has been with Sanford Health, legacy Medcenter One, for 16 years.

Paul Hendrickson, FM Res '90, practices at Essentia Clinic in Frazee, Minn. The clinic recently ranked third out of 651 in Minnesota in patient satisfaction. The survey is part of the Affordable Care Act in which quality indicators such as surveys and patient satisfaction will play a role in clinic funding.

'70s

Dick Fraser, BS Med '76, MD '78, has retired after 32 years of practicing pediatrics with HealthPartners in the Minneapolis and St. Paul, Minn., area. After participating in the transitional "2-1-1" program of the new four-year UND medical school, he did his pediatric residency at Children's Hospital of San Francisco and completed the residency (3rd year) at Milwaukee Children's Hospital (now the Children's Hospital of Wisconsin). He practiced for 20 years at the HealthPartners Spring Lake Park Clinic and the last 12 at the HealthPartners Woodbury clinic. He and his wife Julie live in Roseville, Minn., and have three grown children and one grandson.



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Allison Kalb, right, and a physical therapist provide care for a child.

Ghana 2013: Life Without Barriers

Students and faculty from the Department of Occupational Therapy serve to learn during a special assignment in the Republic of Ghana.

By Juan Pedraza

In a detailed guide to cultural competence, UND's Department of Occupational Therapy (OT) outlines why such knowledge is essential to becoming a professional in this field. Faculty in the department are keenly attuned to the department's commitment to graduating culturally competent OTs.

A trip to Ghana this year by a group of OT faculty and students—both from the UND home campus and from its Casper, Wyo., facility—underscored the vitality of this educational concept. Students participating from the Casper campus were Anne Lee and Megan Mordecai; participating students from Grand Forks were Maranda Myrold and Taryn Wagner. They were also joined by UND OT alumna Allison Kalb, MOT, OTR/L, who is an

adjunct faculty member; and Janet Jedlicka, PhD, OTR/L, FAOTA, chair of the UND Department of Occupational Therapy.

On this trip, the connection with cultural competence may have started with a breakfast in one of the Ghanaian villages the group visited.

“For me, for most of us (in the United States), breakfast takes five minutes,” said Anne Haskins, PhD, OTR/L, associate professor of OT and one of the faculty on this trip. “But that’s our culture. There, breakfast took nearly two hours to prepare, starting with flour ground in a mortar and with a pestle and baked in an outside brick oven. For our students, learning to adapt culturally—cultural competence—is a core OT skill.”

Haskins says there's a special value as a teacher of OT in communicating this cultural message.

"We want our students to learn about caring for people regardless of culture," said Haskins. "Occupations are still occupations no matter where you are, whether it takes you five minutes or two hours to make breakfast."

The trip to Ghana was a model service-learning opportunity, resulting from an earlier scholarly project of two OT students on how to set up a service-learning experience.

"Those students had an opportunity to go to Ghana with an organization called Wheels for the World, which provides refurbished wheelchairs to people who need them," Haskins said. "They had a phenomenal experience, so we decided to set something up as a course."

The result: three months of coursework before the trip last spring; an informal seminar about Ghana with a UND group of Ghanaian students, faculty, and some of their family members; and a detailed travel plan for the actual journey to Ghana.

"We did it in conjunction with Study Abroad resources right here at UND," said Sonia Zimmerman, PhD, OTR/L, FAOTA and associate professor of OT, who had been to Ghana previously with her husband Delore, a well-known economic developer in the Red River Valley.

"This was organized because we wanted our students to experience the culture firsthand through service," said Zimmerman, who also went on the OT trip to Ghana this past summer.

Among the preparations for the trip was a special manual—a course capstone project—designed by two OT students specifically to educate Ghanaian parents of children with cerebral palsy. Illustrated by one of the students, the manual shows how to position and handle children afflicted with this neurodegenerative disease.

"This project was used as the foundation of a workshop for parents and hospital caregivers while we were in Ghana," said Zimmerman, who noted that Ghana launched its first OT training program—based at the University of Ghana—last year.

"It's terrific for an occupational therapy student to be able to see people living in



At Hohoe Regional Hospital in Ghana are, left to right, Sonia Zimmerman, Taryn Wagner, and Maranda Myrold.

such different circumstances, doing things we take for granted—such as preparing breakfast or dealing with daily power outages—in such radically different ways," said Haskins. "On this trip, they got themselves immersed in the day-to-day life of another culture."

For Zimmerman, there are many pedagogical benefits of a trip such as OT's recent Ghana service experience—especially acquiring some new cultural experiences.

"It's important that the occupational therapist recognizes the patient's culture and its impact on occupation," Zimmerman said. "Doing a trip like this forces students to grapple with different experiences, different ways of living life."

Instead of a scholarly report about the trip, Haskins noted, students assembled a Shutterfly project comprising 1,775 clearly organized and documented images they took during the trip. The Shutterfly page is available to everyone who took part in the Ghana trip and is open to additions from the faculty who accompanied the students.

“We wanted our students to experience the culture firsthand through service.”

Walter M. Callan, BS Med '71, '73, of Farmington, Conn., beloved husband of Marta (Zakrzewska) Callan, passed away peacefully on Friday, September 13, 2013, at Hartford Hospital. He was born September 14, 1939, to the late Walter P. and Annie (Long) Callan in Hartford. Walter was a graduate of Hartford Public High School, the University of Connecticut, University of North Dakota (B.S. in Medicine), and received his doctorate from the University of Connecticut Medical School in 1974. He served his country as a member of the United States Air Force during the Vietnam War. After establishing his own medical practice in Bloomfield for many years, Walter later worked as an emergency room physician at many area hospitals, including Windham Hospital, Willimantic, where he worked for over 15 years and experienced many fond memories with his coworkers. He had a passion for both playing and watching basketball. He enjoyed traveling to remote places, especially Culebra, Puerto Rico, where he spent many wonderful vacations with his wife. After his retirement, Walter enjoyed his time at home working on his amazing gardens and perfectly manicured lawn. Walter was most happy just tinkering around the house on various projects and was known for his ability to fix just about anything. He had a passion for all sciences, especially astronomy. When his children were little, he would have them climb up on the roof with him to gaze at the stars as he told them all about the various constellations. Even in his later years, he loved to bring out his telescope to examine the night sky. He often referred to the solar system above as the "cathedral in his yard." In addition to his wife of 20 years, he is survived by his children, Michael P. Callan of Baltimore, Md.; Marjorie Carson and her husband Thomas of Wethersfield; his stepdaughter, Patricia Bourque and her husband Abraham of Berlin; his sister, Agnes Gregan, his grandchildren, Edith and Charles Carson and his step-granddaughter, Alexis Bourque. He also leaves his brother-in-law, Arthur Tuttle, nieces, Wendy Watts, Kimberly Gottschall, and nephews, Richard Gregan, Robert Gregan, Arthur Tuttle Jr., and William Bazinet. In addition to his parents, he was predeceased by his sister, Patricia Tuttle.

Twila Ann Mitchum, BS PT '87, '88, 50, passed away Sunday, September 15, 2013, in Salinas, Calif. She was born July 10, 1963, in Laramie, Wyoming. Twila attended Slade School, Laramie Junior High School. She graduated from Laramie High School in 1981. She attended the University of Wyoming for premed education in 1981 and 1982. She received her physical therapy degree from the University of North Dakota. She practiced physical therapy in South Carolina for two years. In 1988, she realized her lifelong dream to live by the ocean and moved to Monterey. In 1990, she moved to Salinas and worked there for several years. In 1995, Twila opened her own business, Mitchum Physical Therapy Center, in Salinas. Twila was a gifted athlete and loved to compete. She was on many different sports teams from grade school through college. She eventually turned her talents to triathlons and competed in Ironman Hawaii and Ironman New Zealand. She enjoyed the competition, and her

talent and determination helped her win the 1990 Ironman Japan at Lake Biwa. Twila is survived by her parents, Douglas and Marcella; sister, Dawn; and brother, Derek of Laramie; and brother, Robin of Grand Junction, Colo.

Albert L. Steinbach, BS Med '44, '45, died Wednesday, July 3, 2013. He was born October 24, 1919, in Hettinger, N.Dak., to Albert and Leah Steinbach and earned a doctorate of medicine degree from the University of Illinois in 1945. He had a private practice for many years in the David Whitney Building and Harper Hospital in Detroit. He later joined the Henry Ford medical staff and was assigned to the Pierson Clinic in Grosse Pointe Farms, Mich. A major in the U.S. Army, he collected artifacts and had an interest in the Civil War. Steinbach is survived by his wife, Alice (née Woods); son, Joel of Romulus; sister, Leah Ann Wieland; and brother, Calvin.

Edward Elvis Waldron was born on June 5, 1943, in Sparta, Ill., to Billie Rafael and Alta Gayl (Becker) Waldron. He died September 11, 2013, in Portland, Ore. Ed was proudly named for his grandfathers, Elvis Waldron and Edward Becker. A scholar, teacher, lover of the arts, and jazz musician, Ed was a gracious and caring person, a man of humor and heart, who left a mark on the lives of countless friends and students, as well as his family. The middle of three sons, Ed enjoyed music and learning. Ed's love of music followed him to Southern Illinois University at Carbondale (Go Salukis!), where he received a B.S. in Education and an M.A. in American Literature, all while playing his bass trombone in every instrumental group available. It was at SIU that Ed found instrumental jazz, a passion for the rest of his life. While at SIU, Ed was inducted into Phi Mu Alpha Sinfonia, a national music honorary society. He was granted an NEH Fellowship in Afro-American Studies at Howard University while he conducted research at the Library of Congress for his dissertation. Ed received his PhD in modern American literature, with a minor in Afro-American literature, from Arizona State University. His love of teaching and widely varied career, included positions at the University of Arizona, Yankton College, the University of North Dakota School of Medicine, the University of Tampa (Fla.), and the University of South Florida. After supporting his wife Susan Roark through the trials of law school studies, Ed enjoyed the freedom of being the trailing spouse, continuing his musical pursuits, writing, and love of cinema when Susan's career led them to Washington, D.C., and then to Tampa. Ed used his writing skills as senior writer and editor at the Health Industry Manufacturers Association, and as a writer for Florida Medical Quality Assurance Inc. Mourning their loss are Ed's wife Susan; his son, Aaron (Michelle Diaz); brothers Thomas R. (Sandra) and W. Terry (Diane); maternal aunt, Katy Simonds; four nephews, two nieces, and six great-nephews and great-nieces, and their families; and an extended family including many cousins. Ed's parents predeceased him.



Exceptional SMHS—Building a new vision for North Dakota health care education

By Alyssa Konickson

During Homecoming week in October, UND celebrated North Dakota Spirit | The Campaign for UND, which will direct more than \$324 million to the University of North Dakota's passionate students, inspirational educators, innovative programs, extraordinary places, and priority needs.

At the School of Medicine and Health Sciences, Robert and Charlene Kyle made a signature gift during the campaign. Their \$300,000 commitment to the Medical Laboratory Science Program moved its laboratories from a traditional microscope lab to a technologically advanced digital slide lab.

"Because of their donation, faculty in our program have been able to enhance their current teaching methods, provide more effective feedback to students, and develop innovative tools for evaluation," assistant professor Brooke Solberg said.

"As an educator, it is so exciting to know that, because of this gift, we are actually ahead of the trends and that faculty and students will reap the benefits of this donation for many, many years to come," Solberg said.

Campaign 101

Campaign counting is confusing, because dollars raised don't necessarily equal immediate cash in hand. Campaign dollars are also future gift pledges as well as end-of-life gifts.

Of the \$324.1 million raised for the University of North Dakota, our alumni and friends directed \$30.8 million to the School of Medicine and Health Sciences.

Of that, \$7.1 million are **gifts available to spend**, \$8.6 million went to the School's **endowment**, and the rest—about \$15.1 million—has been promised in the form of **pledges and other future commitments**.

So what does that all mean?

◆ **Gifts available to spend (\$7.1 million)**. These gifts are or have been available to spend since the beginning of the campaign in 2005. They have already been directed to specific funds at the SMHS. Example: A 2007 gift from Blue Cross Blue Shield of North Dakota immediately provided more than \$4 million to the ND STAR (Simulation, Teaching, and Research) Center for Healthcare Education.

◆ **Endowment (\$8.6 million)**. \$8.6 million in new gifts to endowments were added to the SMHS endowment fund, which had a total market value of \$20.2 million on June 30, 2013. Endowments fund the School of Medicine and Health Sciences far into the future. Gifts are invested to provide support for specific purposes with the intent of growing the principal. Currently, our annual endowment payout is 4 percent, meaning that a fully funded endowment will pay out 4 percent of its average market value every year. In FY 2013, the SMHS endowment provided more than \$490,000 to programs, students, and faculty. Eighty new endowments were created during the campaign: 52 dedicated to new scholarships and 10 dedicated to educators, including one new chair.

◆ **Pledges and other future commitments (\$15.1 million)**. Pledges are gifts that donors have promised to pay over time, typically five years. For example, a donor may pledge \$25,000 to the SMHS through the UND Foundation. To achieve that, they may choose to pay \$5,000 per year for the next five years. The Kyle lab gift is an example of a pledge that will be paid to the SMHS over time. Future commitments are often end-of-life or planned gifts. They can include trusts, gift annuities, life estates, bequests, and more.

Thank you

to our thoughtful donors who recently gave gifts or made pledges to support the UND School of Medicine and Health Sciences.

Barbara Cushing, BS Med '65, of Grosse Pointe, Mich., has established the Ralph and Barbara Cushing Scholarship Endowment, which will provide scholarships to UND medical students. Her husband, Ralph, also a BS Med '65 graduate, passed away in January 2013.

Christopher Anderson, MD '08, and Allison Clapp, MD '08, natives of Fargo, N.Dak., have established the Drs. Christopher and Allison Clapp Anderson Scholarship Endowment, which will provide scholarships to UND medical students from North Dakota with preference given to students who graduated from Fargo South High School, as both Anderson and Clapp did. The couple will be married in December 2013. See their Alumni Profile on page 24 for more information about them.

Naming Opportunities

\$100 million

UND School of Medicine and Health Sciences building

\$40 million

Health Sciences Educational Building

\$15 million

Learning Center

\$1 million–\$10 million

Biomedical research facility\$9 million
 Endowed chair, dean of the School.....\$5 million
 Office of the Dean suite\$4 million
 Simulation suite.....\$3 million
 Basic Sciences suite\$3 million
 Endowed faculty chair position\$2.5 million
 Center for Rural Health suite\$1.5 million
 Endowed faculty professorship position\$1 million

\$550,000–\$700,000

Digital/biohazard lab\$675,000
 Learning hall\$600,000

\$100,000–\$500,000

Med gross anatomy lab\$500,000
 Information Resources suite\$500,000
 PT/OT Anatomy lab\$475,000
 Classrooms, extra-large\$450,000
 Department of Pathology suite\$400,000
 Department of Occupational Therapy suite\$350,000
 Office of Medical Education suite\$350,000
 Classrooms, large.....\$350,000
 Lobby\$350,000
 Food vendor + seating\$300,000
 Library suite\$300,000

Department of Physical Therapy suite\$300,000
 Medical Laboratory Science/Histotechnology suite ..\$275,000
 Indians Into Medicine suite\$275,000
 Family and Community Medicine suite.....\$250,000
 Multi-purpose therapy lab\$225,000
 Classrooms, medium (4)\$225,000
 Physician Assistant Program suite\$225,000
 Public Health Program suite\$225,000
 Sports Medicine Program suite\$225,000
 Academic and Faculty Affairs suite.....\$225,000
 Department of Surgery suite\$200,000
 Research core: Mass spectrometry/proteomics.....\$175,000
 Department of Pediatrics suite\$175,000
 Office of Student Affairs and Admissions\$175,000*
 Research labs\$150,000
 Student lounges\$125,000
 Student collaboration spaces\$125,000
 Classrooms, small\$125,000
 Conference rooms, large.....\$100,000
 Lab\$100,000
 Surgical suite/demonstration.....\$100,000
 Standardized patient skills lab\$100,000

\$55,000–\$95,000

Office of Alumni and Community Relations suite ..\$60,000*
 Geriatrics suite\$55,000

\$25,000–\$50,000

Simulation Center debriefing rooms\$50,000
 Faculty lounges/breakrooms\$50,000
 ICU patient simulation room\$45,000
 Conference rooms, small\$35,000
 Anatomy imaging area\$35,000*
 Small-group learning spaces\$35,000
 Regional Campus office suite\$25,000

* Reserved

Your commitment

The new building at the SMHS will serve as a solid foundation for medical education at the University of North Dakota.

To thank you and properly recognize you for financially supporting our students, programs, and faculty, a number of naming opportunities will be available throughout our 320,000-square-foot, four-story building. Named faculty positions are also available.

These naming opportunities are provided to recognize and honor your generous contribution to our students, faculty, and programs.



Please contact

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 Community Relations
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Marilyn Martin was bid a fond and heartfelt farewell for her more than 47 years of service to UND and the School at a special ceremony on November 7. The Vennes Atrium was filled with well-wishers, including many family members. At left, Marilyn's daughter Lori Beck and granddaughter Claire listen to former Associate Dean Judy DeMers, who saluted Marilyn via videoconferencing from Phoenix, Ariz.



Associate Dean for Student Affairs and Admissions Dr. Joycelyn Dorscher and Dean Joshua Wynne present Marilyn with a plaque to honor her service to the School.



In March 2013, graduates of UND and the School of Medicine and Health Sciences gathered in Palm Desert, Calif. Shown, from left, are Dr. John N. Youngs (MS Biochemistry 1962, BS Medicine 1964); Linda (Carlson) Youngs (Master's in Counseling 1991); Myrna (Bowman) Tarnasky; Dr. William Tarnasky (MS Biochemistry 1962, BS Medicine 1964); Dr. Darold D. Holten (PhD Biochemistry 1965); Dr. Virginia (Zewe) Holten (Biochemistry MS 1962 and PhD 1965); Janice B. (Nygaard) Nelson (BS Medical Technology 1960); and Dr. Dennis R. Nelson (PhD Biochemistry 1964).



Neither wind nor rain dampened the spirit and enthusiasm of the medical laboratory science and occupational therapy students who represented the School in the 2013 UND Homecoming Parade. They brightened the day for the children and adults who braved the weather to watch the parade.



Celebrating 60 years of Medical Technology/Clinical Laboratory Science/Medical Laboratory Science at the SMHS were, left to right, 50-year grads Linda Larson, Eunice MacFarlane, and Mary Noble with Dean Joshua Wynne. They were attending the School's Homecoming reception held at the North Dakota Museum of Art.



Michael Traynor, MD '86, presented a stethoscope to his niece Erin Follman of Devils Lake, Class of 2017, at the Adopt-a-Med-Student Luncheon on October 31.



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Upcoming Alumni Receptions*

Held in conjunction with national conferences



Physical Therapy

Feb. 4, 2014, Las Vegas

www.med.und.edu/events/pt-2014.cfm

Occupational Therapy
April 3-6, 2014, Baltimore

Physician Assistant
May 24-29, 2014, Boston



Athletic Training
June 25-28, 2014, Indianapolis

*Exact dates TBD. Invites are sent via e-mail or mail. To ensure you receive this information and that our records are up-to-date, please submit your contact info at www.med.UND.edu/events/contact.cfm.