

The Many Paths to Medicine

Breaking the Mold

**Antioxidants:
The Body's Warriors
Against Diabetes**

**Finding a Solution
to Creaky Joints**

**Medicine
with a Mission**



The Road to Success is Not Always a Straight One

AS I WAS DRIVING THROUGH SOME of North Dakota's inevitable summer road construction the other day, the street took a detour before bringing me to where I wanted to go. It reminded me of the feature story in this issue

The Many Paths to Medicine, (page 4) about medical students who take an entirely different and nontraditional path to medical school.



A gathering with UND alumni in northern California at the home of Kevin and Sandy Fickenscher. (L to R) Kevin Fickenscher, M.D. '78; Richard Gray, M.D. (B.S. Med. '68); David Simundson, M.D. (B.S. Med '68); Al Royse, J.D. '76; David Borge, M.D. '86; David Wilson, M.D.; Adrienne Borge; Saundra Fickenscher, M.A. (Speech Pathology and Audiology '78); and Carolyn Gray.

The road of life is not a straight path, and despite our best-laid plans and preparations, sometimes it takes us on a different route, opening our eyes and touching our hearts along the way. When Laurie Betting battled breast cancer in the midst of finishing her doctoral degree in physical therapy and planning for the new UND Student Wellness Center, she called the cancer nothing more than an *inconvenience* (page 22). Her determination and positive attitude are simply amazing. When Brian O Neil left Texas for football and college in Idaho, he likely never imagined that someday he'd be in North Dakota studying physical therapy—but here he is, and are we ever proud!

I just recently returned from a trip to California where I caught up with some old friends and made some new ones. It's fun to hear about what their lives were like in medical school, as well as what people have been up to since. The web of our alumni stretches across the country, and world, and what fascinating paths you've taken since your days here! We invite you back to campus for Homecoming this October to share your stories with each other, and us, while checking out all of the new and exciting things on campus.

As the buzz of student activity picks up again this fall, I can't help but pause and reflect on what an interesting and inspiring road the School of Medicine and Health Sciences is on. Classes full of talented students, cutting-edge research, and nationally recognized outreach services further improve the school every day, and drive a powerful economic engine for North Dakota.

Our accomplishments are not going unnoticed. The medical school received not only full accreditation but also high praises from the Liaison Committee on Medical Education (LCME) (see story on page 25). With our strong history of excellence, I'm looking forward to the paths that lay ahead.

As always, if you are in this area of the country (we hope you'll return for Homecoming), consider taking the scenic route and stopping by the school—we're always pleased to see you.

H. David Wilson, M.D.
Vice President for Health Affairs and
Dean



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NORTH DAKOTA MEDICINE

UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES

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The Many Paths to Medicine

Nontraditional Medical Students Take Different Routes to Medical School



WHEN MOST PEOPLE THINK ABOUT what it takes to become a doctor, they probably imagine more than 20 years of school, challenging classes, labs, endless studying, rounds, exams and residency training before being ready to actually be a practicing physician.

For some medical students, that path is not as clear, and they travel a different journey before entering medical school. Although medical school can be more challenging for people who have been away from the academic scene for a time, these non-traditional students can also excel in areas of their medical education due to different life experiences and maturity.

In the 70s and early 80s, if you were any older than 27, for most, you were too old to start medical school, said **Judy DeMers**, associate dean for student affairs and admissions at the University of North Dakota (UND) School of Medicine and Health Sciences. But that all started to change in the late 80s, early 90s.

DeMers credits the women's movement of the time as a major factor for the increase of non-traditional medical students.

Many women were looking for the career they weren't able to pursue 10 or 15 years before, she explained. This was especially true of those who were already in the medical field, such as nurses, who now wanted to go back to medical school so they could gain greater autonomy in patient care.

However, it isn't just women or people from the healthcare field who choose to attend medical school later in life. Medical students who attend the UND medical school come from a wide array of backgrounds. This variety of ages, undergraduate degrees, family situations and life experiences enriches the education students receive.

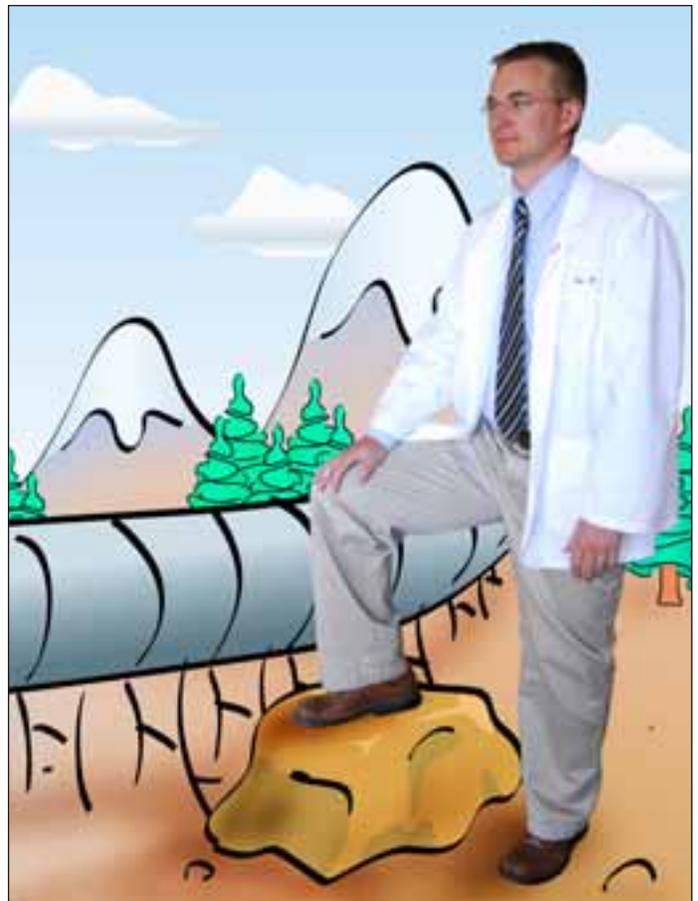
Here we hear from an engineer, a teacher, a pastor and a lobbyist who were, or are non-traditional UND medical students and learn just what it was about becoming a doctor that caused them to uproot their jobs, families and lives to make a major career change to the field of medicine.

An Engineer

When fourth-year medical student **Eric Deal** entered the University of North Dakota as a freshman, he started on the pre-med route. However, a summer job working in construction introduced him to engineering and he changed directions. Later he would graduate from UND with a bachelor's degree in civil engineering and a master's degree in structural engineering.

Following graduation, employment sent him to the mountains of Colorado to build a pipeline that moves the water from melting snow down the mountains to be used by the city of Boulder.

I really enjoyed what I was doing, said Deal, a native of Wahpeton, ND. But it wasn't what I wanted to do for



Fourth-year medical student **Eric Deal** spent three years as a structural engineer in the mountains of Colorado before returning to medical school.

And so, only three years after leaving UND, Deal returned as a freshman medical student.

I knew that I wanted to do it, he said. I am really glad that I went back to medical school. If I hadn't, I would have always been an engineer wishing I was a doctor.

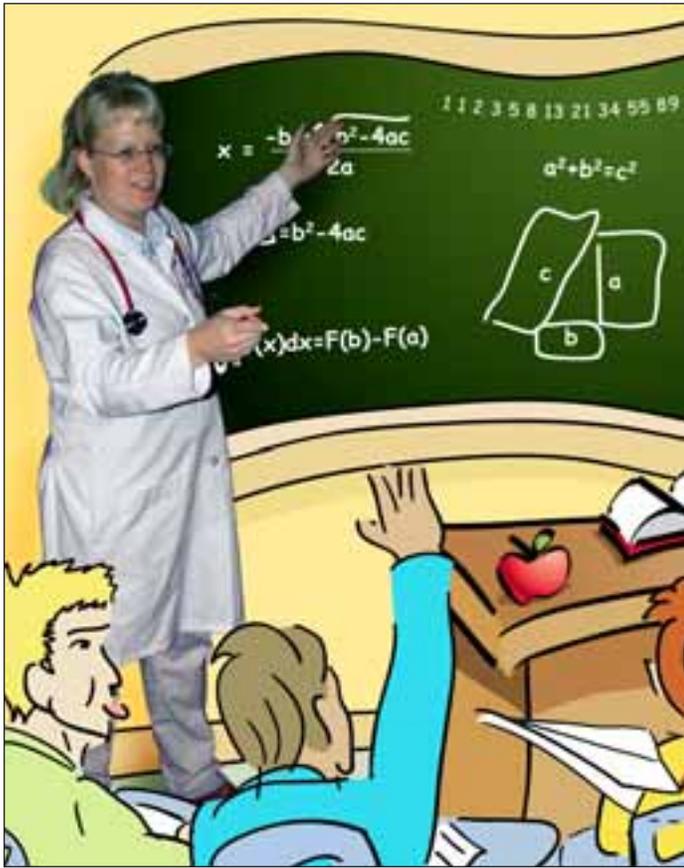
A Teacher

Growing up with a dad who is a pharmacist in Mankato, MN, **Karin Lokensgard Pierce, M.D. '06**, remembers showing an interest in medicine early in her life.

I remember seventh grade life science class, she said. We studied the parts of a cell and I thought it was so cool.

But, her dream would wait for a while. At St. Olaf College, competing on the alpine ski team left little time to take the intensive courses needed to apply to medical school. Still, she graduated with degrees in religion and mathematics. After graduation, she spent a year as a ski instructor until a teaching position brought her to Grand Forks. She taught mathematics at Red River High School for three years, taking the classes she needed for medical school in her spare time.

She was admitted to medical school at UND in 1996, but motherhood delayed the plan further as Lokensgard



Karin Lokensgard Pierce, M.D. '06, worked on her medical school prerequisite classes in her free time from teaching mathematics to students at Red River High School in Grand Forks, ND.

“I am really glad that I went back to medical school. If I hadn't, I would have always been an engineer wishing I was a doctor.”

Fourth-year medical student
Eric Deal

Pierce chose the career of stay-at-home mom for the next six years.

Our first baby was three months old when I was scheduled to begin medical school for the first time, she remembers. At that point, my head and my heart were consumed with nurturing our new son, and I couldn't imagine handing him over to a daycare to raise. I withdrew from medical school and tried to put the whole idea out of my mind.

But six years and another child later, Lokensgard Pierce joined the Class of 2006 and hit the ground running. She is now in her first

year of residency training at the Grand Forks Family Medicine Residency Program.

A Lobbyist

After graduating from the University of Montana with majors in political science and German, **Karin Willis M.D. '05**, began a ten year career working in the public policy arena in Washington, D.C.

The Bismarck, ND, native moved to D.C. fresh out of college because she knew she had to be part of politics.

For five years she worked as a staffer on Capitol Hill for the likes of John Kerry on his POW/MIA affairs committee and Al Gore's vice presidential transition team.

I loved it because I love politics, she said. You don't get paid a lot and you work long hours. I lived and breathed and loved it. But, I got a little burnt out.

Looking for a little more money and a lot more free time, Willis left the Hill and spent six years in the Beltway working on health policy. She initially provided government relations and marketing services to the Army Medical Command and then became a consultant for health care firms that specialize in military health care.

Her jobs kept her in the medical realm, allowing her to work with many doctors and nurses. She was inspired by what they did.

I got into politics because I wanted to change the world, said Willis, who is in her second year of residency training at the UND medical school's family medicine residency program in Bismarck. But I wasn't and I wanted something more fulfilling.

And so, at the age of 28, when the typical medical students are already halfway through their residency training, Willis began taking the courses she would need to get into medical school and volunteering at area medical centers to be sure it was what she wanted.

When she told friends and family of her plans to move to Grand Forks and begin medical school, she received mixed reactions.

My boss at the time was impressed and completely supportive, she said, acknowledging that it would be unusual to finish her residency training at the age of 40. I was afraid of what my parents would say, but my dad was thrilled with the idea and that really propelled me.

The only ones that told me I was crazy were the doctors, she laughed.

A Pastor

Although the connection between being a pastor and a doctor may not seem obvious, **David Carlson, M.D. '91 (Psychiatry Residency Program '95)**, found his interest in medicine intersecting with his ministry more often than not.

I had acquired an interest in medicine long before seminary. Visiting parishioners in the hospital kept it front-to-mind, said Carlson. Often they were afraid to ask their doctors questions and many times the answers were not clear. I'd end up being the go-between at times.

Carlson, a Bismarck, ND, native, graduated from Luther Theological Seminary in St. Paul, MN, in 1982 and was ordained in the American Lutheran Church (now Evangelical Lutheran Church of America) that same year. He served parishioners in eastern North Dakota for five years, helping many of them through tough times.

I had training to help them only so far in certain areas, he said, then I had to refer them to a mental health professional.

He began thinking about going back to medical school and even began taking the required classes in organic chemistry and biochemistry on the side. It was when tragedy hit that he reached the turning point in his life.

When my daughter had cardiomyopathy [a disease or disorder of the heart muscle] when she was just a baby, I spent even more time in the hospital, observing the health care system, said Carlson. Her death propelled me into looking seriously at medical school.

Not surprisingly, Carlson chose psychiatry for his discipline. Currently he practices at Dakota Clinic in Fargo, Solutions Behavioral Healthcare in Moorhead, and also serves as director of medical student education in psychiatry for the Department of Clinical Neuroscience and the psychiatry clerkship director for the UND medical school. He hasn't deserted his past, however, as Dr. Carlson is still also Reverend Carlson.

I never lost my interest in theology, he said. He still holds a position with the synod office, helping new pastors transition into the ministry as well as helping pastors address issues of conflict and pastoral care within their congregational or chaplaincy settings.

He feels his pastoral background

serves him well in his practice.

I think I pay attention more closely to the viewpoint and backgrounds of patients, he said. People all have their own stories in life, which are important to people's current thinking, choices and needs.

Challenges and Benefits

Getting into medical school is just the first step for would-be doctors. Then you have to get through medical school.

Some of our older students have a hard time adjusting to being students again, said **Richard Vari, Ph.D.**, associate dean for medical education for the UND medical school. Medical school is hard, especially the first year. But once they get through that, they know if this is what they want to do.

Willis agrees.

I had my doubts when I first moved back to Grand Forks, she said.

But after a year I knew this was what I wanted to do.

Many older students also have families, which can be difficult to juggle while in medical school.

"I got into politics because I wanted to change the world, but I wasn't and I wanted something more fulfilling."

Karin Willis, M.D. '05



Karin Willis, M.D. '05, became interested in medicine while providing government relations and marketing services to military health care organizations in Washington, D.C.



David Carlson, M.D. '91 (Psychiatry Residency Program '95), is still ordained in the Evangelical Lutheran Church of America and holds a position with the synod office, helping new pastors transition into the ministry.

“Older students bring a lot into the small group work we have in our curriculum. All those experiences are valued and are brought into their group to enrich the learning experience.”

**Richard Vari, Ph.D.,
Associate Dean for
Medical Education
for the UND medical school**

Suddenly I was a student again, remembers Deal. I no longer had any income or benefits and I had no free time to spend with my family.

But more often than not, non-traditional medical students have maturity and experience to handle difficulties and give their all to becoming doctors.

Older students also bring a lot into the small group work we have in our curriculum, said Vari. All those experiences are valued and are brought into their group to enrich the learning experience.

In the medical school's patient-centered learning curriculum, students teach each other through small group learning.

My teaching experience really came in handy in the first two years, said Lokensgard Pierce, who received the North Dakota Medical Association Peer Teaching Award as a sophomore medical student.

Many serve as role models, mediators and do conflict resolution in

the group, said Vari. I like to look to them for leadership roles in the class.

Non-traditional students often shine in the clinic setting as well.

They are more consistent, said Vari when asked what makes the older students different from their classmates.

They treat school like a job.

I think the third and fourth years were a little easier for me to adjust to, said Lokensgard Pierce. I already understood what it meant to get up, get dressed and go to a professional work environment every day.

There is definitely a benefit in maturity, said Deal. It really helped to have experience working with people in a professional setting.

Although DeMers says that the majority of applications still come from traditional students, there will always be a few who finally get around to making their lifelong dream of becoming a doctor come true.

-Amanda Scurry 

BREAKING the MOLD

Innovation Sparks Growth in Clinical Laboratory Science



AT A TIME WHEN AT LEAST A fourth of the roughly 200 clinical laboratory science (CLS) programs around the country are closing down, the UND program is going strong, attracting more and more students through a novel approach to education that features flexibility and innovation in distance learning.

One of the largest in the country, the CLS program at the UND medical school is building a national reputation for breaking the mold on how best to deliver education and retain critically needed lab professionals, especially in rural and other undeserved areas.

If our progression holds, by 2007 we will be responsible for ten percent

Clinical laboratory science students (from left) Carrili Johnson, Gwinner, ND; Atlanta Begay, Page, AZ; and Matt Paul, Long Prairie, MN, read a gram stain to identify a particular organism as part of their studies in microbiology.

“If our progression holds, by 2007 we will be responsible for ten percent of the people taking the national exam in clinical lab science.”

Mary Ann Sens, M.D., Ph.D.
Medical Director
CLS Program

of the people taking the national exam in clinical lab science, says **Mary Ann Sens, M.D., Ph.D.**, professor and chair of pathology and medical director of the CLS program.

The whole area of on-line education has opened new doors of opportunity for a field that is in dire need of more professionals.

Some say that distance education isn't high quality, says **Ruth Paur, (MSMT '93)**, assistant professor of pathology and CLS program director, but when they look at our students national exam scores, that's just not the case.

Part of the extraordinary success of the CLS program involves more than 100 Mayo Clinic employees who enroll at UND to earn a degree in clinical laboratory science while remaining on the job in Rochester, MN.

They may be working in bloodbanking for part of the day, but switch hats later to become a student and learn microbiology, Paur says.

According to **Jemee Kathrotiya**, who is pursuing the bachelor's degree in CLS, The true advantage of this degree has been versatility. Few degrees offer such a variety of options and the opportunity to live nearly anywhere in the world. I highly enjoyed the BS in CLS program from UND.

To date, about 30 students have graduated, earning UND bachelor's degree in CLS through the Mayo program. Five students have earned the CLS master's degree, including **Jill Vandenameele '05**, who said, (T)he availability and flexibility and distance/web-based learning provided the schedule and resources that would otherwise have been impossible to accommodate in a traditional graduate program... I could not have completed the program without the infinite support and encouragement of... UND staff.

In 2005, all graduates passed the national certification exam, scoring 75 to 100 points higher than the national average. The pass rate for UND CLS is over 95 percent, compared to a national average of 80 percent.

We've got a different model. No one else in the country has done it, Paur says. It's working... and we haven't sacrificed quality.

Mayo program skyrockets; employees recruit each other

Since 2002 when UND announced its agreement to train Mayo employees in clinical laboratory science through on-site and on-line education, the program has skyrocketed, according to **Rob Porter (BSMT '93)**, instructor in pathology and Mayo Cohort Program education coordinator.

The Mayo Cohort is highly individualized and flexible, he says.

A student can take three CLS courses at a time to finish sooner or one course and stretch it out longer. We academically advise each student from start to finish, whether he or she is enrolled in a CLS course at UND or a prerequisite course at another college. It's unique, and also challenging.

In addition to on-line coursework, we bring the labs to them, Porter says.

This is an innovative model. We travel to Mayo Clinic three times a year - spring, summer, fall - for two-week, intensive laboratory training sessions.

All these employees are working full time and trying to raise their level of education, he says. They want to know what's involved and how long it's going to take them to finish.

Porter spends two or three days a month at Rochester, meeting with students and answering questions about their program of study. These days, he says, prospective students are coming in with much more knowledge because they've been informed and sold on the program by their co-workers.

It's really a nice sign, he says.

They're self-recruiting from their peers.

He credits Mayo as a huge supporter of education, providing a culture which encourages professional growth.

WCACLS improves outlook for rural health care

Another collaborative venture of UND's CLS program, the Western College Alliance for Clinical Laboratory

(continued page 12)

'Pathways Into Health'

UND Selected as Test Site for National Effort to Improve Native American Health



Altanta Begay, a Navajo from Page, AZ, is the first student to train in CLS at UND under Pathways Into Health, a federal program that allows students to take most of their education in their home towns, stay connected to their culture and obtain a first-rate education.

Definitely.

This is **Altanta Begay's** swift, affirming answer when asked if she would eventually like to return to her home community to tend to the health care needs of other Navajo Indians in Arizona.

I am close to home and close to my family, she says of her hometown, Page, AZ. We have a lot of elderly where I live. It's important for the Navajos to take care of the elderly.

Traditionally, her people led a healthy lifestyle, she says, noting that her great-grandmother, who's over 100, is healthy as a horse. In the past, elders in her family looked after a lot of sheep, so were walking around constantly; their diet consisted of corn, grains and wild potatoes, onions and tea.

As lifestyles have changed, Begay sees more diabetes and heart disease among Navajo people, and she wants to be part of improving their health.

It's really important to me to study these changes and try to convince people to live the way our grandmothers did, she says.

Begay, who is working on a bachelor's degree in clinical laboratory science (CLS) at the UND medical school, is the first student to participate in Pathways Into Health, a national project funded by the U.S. Department

of Health and Human Services, through the Indian Health Service. The CLS program, the pilot program of Pathways Into Health, is being watched closely as a model for encouraging Native Americans to enter health professions using distance education.

Begay has fit most of her studies around her work as a medical technologist at Tuba City, AZ, but much has been taken on-line, through distance education. She plans to return to Tuba City for her clinical rotations and complete her degree by the spring of 2007. She already holds a bachelor's degree in microbiology from Northern Arizona University.

With her sights set beyond the laboratory, she hopes to go on to medical school, possibly in North Dakota (It's a pretty nice place, I'd like to come back here) or closer to home in Arizona, California or Nevada. She is considering family medicine, pathology or pediatrics as possible career choices.

She believes her CLS degree will provide an excellent foundation for the study of medicine.

I think it'll help a lot, she says. Every (test) the physician would order - we have to know how to work it and understand what's going on.



Pathways Into Health is an exciting new collaborative of tribes, tribal communities, universities, tribal colleges and the Indian Health Service focused on the development of professional health education for American Indians and Alaska Natives offered through culturally reinforcing distance education. This program has a significant potential to improve the health, health care and health education in Indian communities.

We are honored to be a partner with the outstanding programs at UND and are especially pleased to have the leadership of the CLS program as we develop nationally available programs for Native Americans. Our first on-site student at UND, Atlanta Begay, is an example of the outstanding quality students we are working with UND and other universities and tribal colleges to develop.

James Galloway, M.D., F.A.C.P., F.A.C.C.
Director, Native American Cardiology Program
Associate Professor of Clinical Medicine and Public Health
University of Arizona

(continued from page 10)

Science Education (WCACLS), also has grown significantly, Paur says.

WCACLS provides students at 11 regional colleges the opportunity to earn a bachelor's degree in CLS. Launched in 1995 with its first partner, the University of Mary in Bismarck, WCACLS has grown to also include Minot (ND) State University, Jamestown (ND) College, the University of Montana, Montana State University campuses in Billings and Bozeman, Bemidji (MN) and Winona (MN) state universities, the University of South Dakota, South Dakota State University, and the University of Wisconsin-La Crosse.

The program allows students to remain closer to home, Paur says, noting that about 35 WCACLS students come to Grand Forks for only 13 weeks of intensive laboratory education in the summer prior to a two-semester clinical

experience in their final year.

Because of WCACLS, more rural areas retain CLS graduates. Their students are home-grown, Paur says. Since they don't relocate to Grand Forks for an extended period of time, they are more likely to stay and work in their rural communities where they are most needed.

Many rural medical centers are giving incentives to students, she notes, including sign-on bonuses and loan forgiveness if the CLS graduate stays in the profession and in the region.

Job market pushing up demand

Nationally, 4,200 people enter the clinical laboratory workforce annually to fill 12,400 jobs, according to Sens.

This deficiency is becoming critical for many medical centers and threatens their ability to function effectively.



“In 2005, all UND CLS grads passed the national certification exam, scoring 75 to 100 points higher than the national average. The pass rate for UND CLS is over 95 percent, compared to a national average of 80 percent.”

Mary Ann Sens, Ph.D.
 Medical Director
 CLS Program

CLS Enrollment Soars

Clinical Laboratory Science Program	Students Enrolled	
	1996	2006
Bachelor of Science Program (on-campus)	100	100
Master of Science Program	12	60
Mayo Cohort Program	0	100
WCACLS Program	3	40

The UND-Mayo partnership represents a new model in clinical laboratory science education; it demonstrates how an academic institution can work with health care providers to tailor education programs to meet specific needs.

The growing shortage of clinical laboratory scientists nationwide, which the federal government has declared a crisis, has fueled increased demand and pushed up salaries. The shortage is expected to become more severe as the first wave of baby-boomers hits their 60s and 70s.

The wages are excellent and the job opportunities are unlimited, says Paur, noting that many students who are enrolled in or have earned bachelor's degrees in other sciences are discovering CLS, especially because of bright prospects for employment.

-Pamela D. Knudson 

WEB EXCLUSIVE:
 For more information on
 the CLS program, visit:
www.ndmedicine.org



Antioxidants:

The body's warriors against the effects of diabetes



Edward Carlson, Ph.D. '70, Chester Fritz Distinguished Professor and chair of the anatomy and cell biology department at UND, and his students study the effects of antioxidants on the cells and basement membranes of diabetic mice.

IN THE BATTLE AGAINST DIABETES, researchers are still searching for the ultimate warrior: A material that will prevent the chronic effects of diabetes on the body. A researcher at the University of North Dakota (UND) hopes that he and his co-workers have found just such a warrior.

The Diabetes Dilemma

Most of the food we eat is turned into sugar, or glucose, for our bodies to use as energy. The pancreas, an organ that lies near the stomach, makes a hormone called insulin to help glucose get out of our blood and into our cells to be used as energy. The body of a person with

diabetes either does not make enough insulin or cannot use its own insulin as well as it should. This causes sugar to build up in the blood, or diabetes.

According to the Centers for Disease Control and Prevention (CDC), diabetes is the sixth leading cause of death in the United States. Just over six percent or 18.2 million people in the U.S. have diabetes. More than a quarter of those people have not been diagnosed.

The long-term effects of having too much sugar in the blood, or hyperglycemia, can be chronic complications in four main areas of the body: the eyes, nervous system, heart and kidneys.

Killing the Kidneys

The most recent research of **Edward Carlson, Ph.D. 70**, Chester Fritz Distinguished Professor and chair of the anatomy and cell biology department at UND, looks at the long-term effects of diabetes on the small blood vessels of the kidney.

Although these tiny blood vessels, or capillaries, are only a tenth the diameter of a human hair, they play an important role of fencing protein in the blood stream. The capillary walls of the kidney include a tube-like structure called the basement membrane, which works as a filter allowing the blood to jettison things that are not needed and keep what is. However, long-term hyperglycemia caused by diabetes can start to make the basement membrane rigid, brittle and more permeable, allowing protein to leave the capillary. This results in renal disease, or disease of the kidney.

Diabetes is the leading cause of end-stage renal disease, accounting for 44 percent of new cases, according to the CDC. In 2001, nearly 143,000 people with end-stage renal disease due to diabetes were living on chronic dialysis or with a kidney transplant.

Carlson and his research partner, former UND pharmacology chair **Paul Epstein, Ph.D.**, are looking at ways to counteract the effect high blood sugar has on the basement membrane of kidney capillaries.

We can estimate your age by looking at your capillaries, explains Carlson. Diabetes is sometimes called the disease of premature aging. The capillaries of a person with diabetes will look much older than they actually are.

Antioxidants Attack

Carlson and Epstein are studying the effects of antioxidants on this premature aging of the capillaries, which causes them to become rigid and more permeable much sooner than they should. This premature aging of the capillaries is caused by an unusually high level of free radicals in the bodies of people with diabetes.

Epstein, an animal geneticist who is now professor of pediatrics at the University of Louisville, has developed two types of mice for their work. The first type of mouse is born with diabetes. The second kind of mouse is also diabetic, but it also creates more antioxidants than a typical mouse.

Significantly, in the diabetic mouse that creates more antioxidants than usual, basement membranes are protected against increased permeability and other characteristics of advanced diabetic kidney disease. Carlson and his students are examining the cells and basement membranes in these genetically engineered mouse models using the UND medical school's electron microscope. They have demonstrated several new findings including changes in basement membrane thickness as well as altered cell shape and number.

It seems that the excess antioxidants are eating away at the free radicals that cause the filtering mechanism in the kidney to age prematurely, explained Carlson.

Carlson hopes that their work will inspire clinical trials in which people with diabetes could be treated with antioxidants and, hopefully, have the same results as these mice.

We hope that it can be shown that antioxidants successfully prevent the chronic complications of diabetes, he said.

This is truly exciting work, said Carlson. It is so much fun. I get up every morning and I can hardly wait to get here to see what is happening now.

-Amanda Scurry 

Sources of Antioxidants

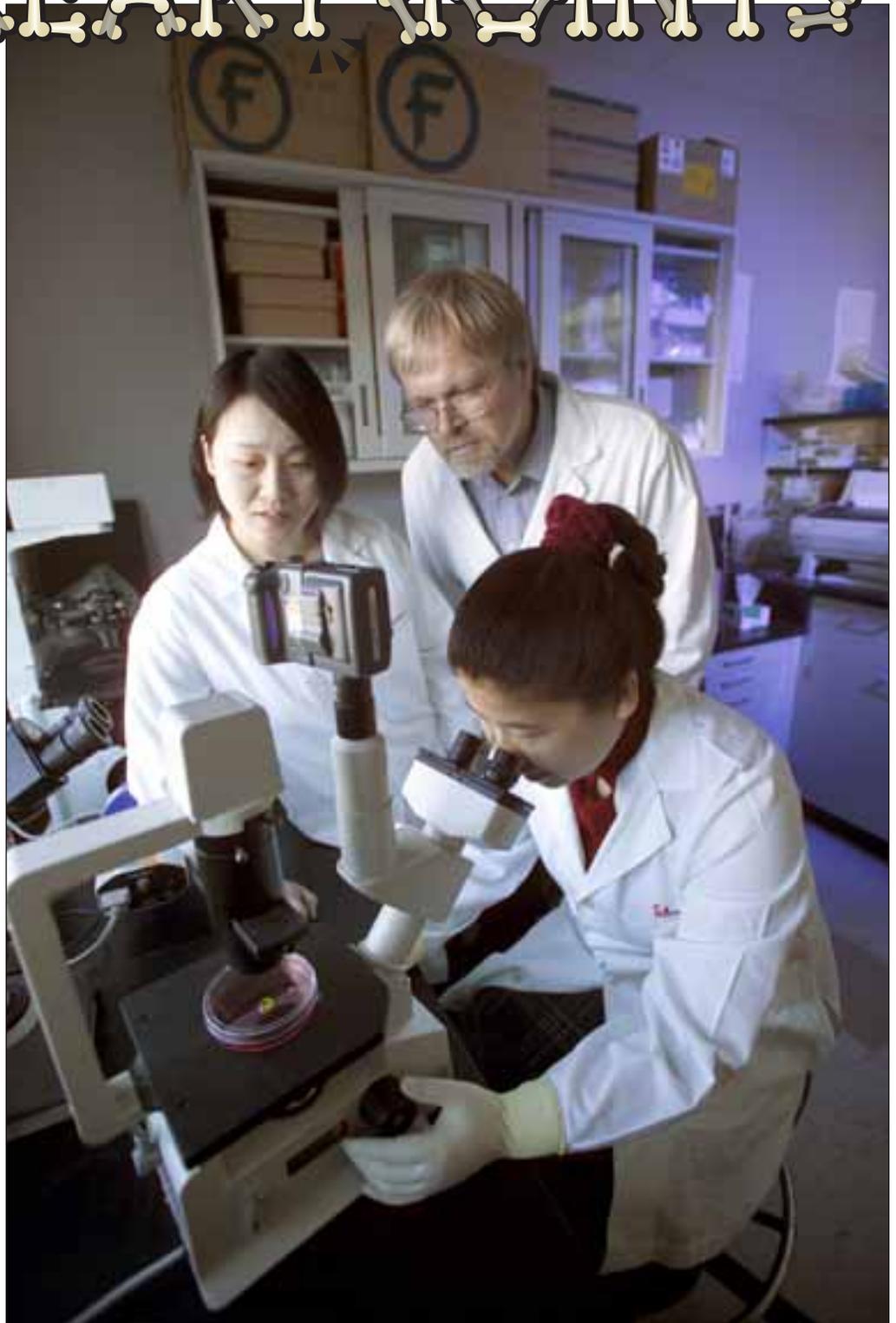
- Cranberries
- Blueberries
- Blackberries
- Red, black, pinto and kidney beans
- Artichoke hearts
- Russet and sweet potatoes
- Spinach
- Eggplant
- Apples
- Peaches
- Mangos
- Melons
- Green and black teas
- Coffee

Source: WebMD.com

Finding a Solution

to **CREAKY JOINTS**

Gene Homandberg, Ph. D.,
professor and chair of
biochemistry and molecular
biology (back), Danping
Guo (left) and Lei Ding
(front) take turns
examining cartilage
through a microscope.



MANY OF US IN OUR LATER YEARS suffer from a disease that is most noticeable when getting up in the morning, walking down stairs or simply spending time on our feet. The disease is osteoarthritis and most of us feel its effects as we age or as our joints experience excessive wear. For some, the pain can be unbearable.

Disease of the Bone and Joints

Osteoarthritis is caused by a gradual deterioration of cartilage, the tough yet elastic tissue that covers the ends of long bones and cushions joints. This very common disease can be caused by an injury or by the aging process.

At least 50 million adults in the United States alone and close to 15 percent of the world's adult population suffer from this painful and disabling disease. There is no cure and there are few treatments that have been shown to slow the progression of the disease. Current treatments mostly decrease the pain that results when the cartilage wears away and bone rubs against bone.

Since joining UND in 2002, **Gene Homandberg, Ph.D.**, professor and chair of the biochemistry and molecular biology department, has formed a team to investigate cartilage damage. They are hard at work studying osteoarthritis in order to provide a better understanding of the disease's progression and to test possible treatments that may slow the progression or even reverse the damage of osteoarthritis.

One of his team's recent studies that looks at the effects of glucosamine and chondroitin sulfate on cartilage damage soon will be published in the journal *Osteoarthritis and Cartilage*, one of the two top journals that publishes biochemical studies of osteoarthritis.

Supplemental Treatment

Glucosamine and chondroitin sulfate are naturally occurring food supplements that many take in over-the-counter pill form to alleviate joint pain. In their study, Homandberg's team

including **Danping Guo, M.S.**, **Linda Ray, B.S.** and graduate student, **Lei Ding, B.S.** found that these agents not only prevent cartilage damage, but can actually restore cartilage in their laboratory model for the disease.

Prior to this study, many researchers believed that a patient can't get enough glucosamine and chondroitin sulfate through supplements to make a difference, said Homandberg.

However, he and his team demonstrated that these agents, at concentrations as low as found in patients taking these supplements, are effective at preventing cartilage damage and even restoring tissue in cultured cartilage.

Recent clinical studies have suggested that these supplements do have a weak effect but only in patients with severe cartilage damage, said Homandberg. However, our results still leave open the possibility that taking these supplements earlier could slow the progression of cartilage damage in those patients predisposed to severe osteoarthritis.

This work will bring attention to UND, Homandberg said. More and more people are interested in the role of nutrition and supplements in maintaining healthy cartilage and pay attention to new discoveries that they think may provide a higher quality of life. Baby boomers are especially interested in staying active in their later years and so many magazines and Web sites provide extensive coverage of observations such as ours.

-Amanda Scurry 

WEB EXCLUSIVE:

To learn more about osteoarthritis and Homandberg's research, visit: www.ndmedicine.org



Medicine with a Mission

“It is incredibly important to us that the UND Center for Family Medicine (CFM) is teaming up with us on this research. There’s been no shortage of interest on the part of residents and faculty members at the CFM. It was their enthusiasm that allowed us to go forward...”

“From a public health perspective, this study is of great benefit to North Dakota... and, it gets the residents thinking.”

John Hagan, M.D.
North Dakota Department of Corrections and Rehabilitation
Clinical assistant professor of internal medicine, UND School of Medicine and Health Sciences

IN THE STATE S PRISON POPULATION, we knew we had an issue, and we knew we had to deal with it.

The issue, said **Kathleen Bachmeier (MSN ’90)**, director of medical services at the North Dakota Penitentiary in Bismarck, is the explosion in the number of inmates who have contracted active hepatitis C due to drug use (mostly methamphetamine) or infection from tattooing with dirty needles.

Research conducted by a team of four physicians and two nurses has demonstrated that an alternative, less costly drug regimen is effective for treating prisoners with hepatitis C. The team includes **Kent Martin, M.D.**, clinical associate professor of family medicine; **Jeff Hostetter, M.D. (Bismarck Family Medicine Residency ’03)**, assistant professor of family medicine and assistant program director at the UND Center for Family Medicine-Bismarck; **Olimpia Rauta, M.D. (Bismarck Family Medicine Residency ’06)**; **John Hagan, M.D.**, clinical assistant professor of internal medicine, with the North Dakota State Prisons Division; **Bachmeier**, and **Beth Taghon**, a nurse at the state penitentiary, all of Bismarck

At the Center for Disease Control’s National Hepatitis C Conference last year, they presented a poster on their preliminary findings about the efficacy of a hepatitis C treatment that is given to prisoners in the state’s correctional facilities. They explained their initial success in treating hepatitis C with consensus interferon rather than peginterferon alpha-2b, the more common regimen.

Spike in meth use reflected in prison population

The epidemic rise in methamphetamine use in North Dakota

has fueled a huge increase in the number of prisoners who have active hepatitis C in North Dakota prisons. The increasing prevalence of the disease is striking, said Hagan, who teaches UND medical students and residents in Bismarck. It’s been explosive as the rate of IV meth use has grown.

In order to address this public health emergency, the medical staff at the state’s Department of Corrections and Rehabilitation (DOCR) enlisted the help of Martin, infectious disease specialist with the Quain & Ramstad Clinic in Bismarck. Martin and Hostetter, who have been working in this area for several years, agreed to track and write up the results.

Initial treatment with peginterferon alpha-2b proved to be too costly to maintain for the large number of prisoners who require treatment, Martin said. In addition, the side effect rate in the prison population was unacceptably high, and treating these side effects is costly. His research uncovered little-known data that showed consensus interferon could be equally efficacious and has a much lower side effect rate.

The DOCR implemented this treatment regimen and Hostetter, Hagan and Rauta have tracked the results.

Alternative treatment reduces cost

Initial data is very promising and patients are tolerating the therapy much better, according to Martin. Added advantages are: the cost of medications is 35 percent less and the need for subspecialty referral has declined to near zero.

Using the standard regimen, the cost of treating a prisoner was \$22,000 per year; with the alternative treatment, that cost has been lowered to \$14,000. The result has been an effective treatment regimen that is sustainable within the current medical budget of the DOCR.

We were able to show excellent treatment results, he said. Our results of success and treatment are as good or better (than the traditional regimen). We are able to treat many more people and bring more effective treatment to more people.

Even if we haven't changed behaviors, the inmates we've treated – when they're released – won't be able to infect anyone else, he emphasized.

The group is pleased that initial findings have been well-received. Data collection is ongoing and there are plans to submit final results for publication.

Really a team effort

It's a wonderful partnership, said Bachmeier, who championed the project and requested the state legislature to fund it. The prison couldn't have done it alone. This is really a team effort... We've done all this with no extra money. It started from very, very humble, modest beginnings.

We work with people who really want to change their lives, she said.

We want to be good stewards of the state's money; we select prisoners who are compliant with the drug and alcohol treatment and are stable emotionally, based on psychiatric assessment. Prisoners must go through six months of close monitoring before ever entering into treatment.

In what might be described as a snowball effect, Martin and Hostetter were invited to present their findings at a meeting of the American Corrections Association in August at Charlotte, NC. And the CDC has approached the researchers about putting our program on their Web site as an outstanding



Beth Taghon, a nurse at the state penitentiary, gives inmate Stuart Kelly an injection of consensus interferon, an alternative treatment for hepatitis C.

prisons hepatitis C model, Hostetter said.

A resource for the state

One of the roles of physicians, residents and faculty in state-supported academic medical institutions is to be a resource for the state, Hostetter said.

This is the perfect setting where the UND Department of Family and Community Medicine can assist another state agency by utilizing our resources to enrich their programs.

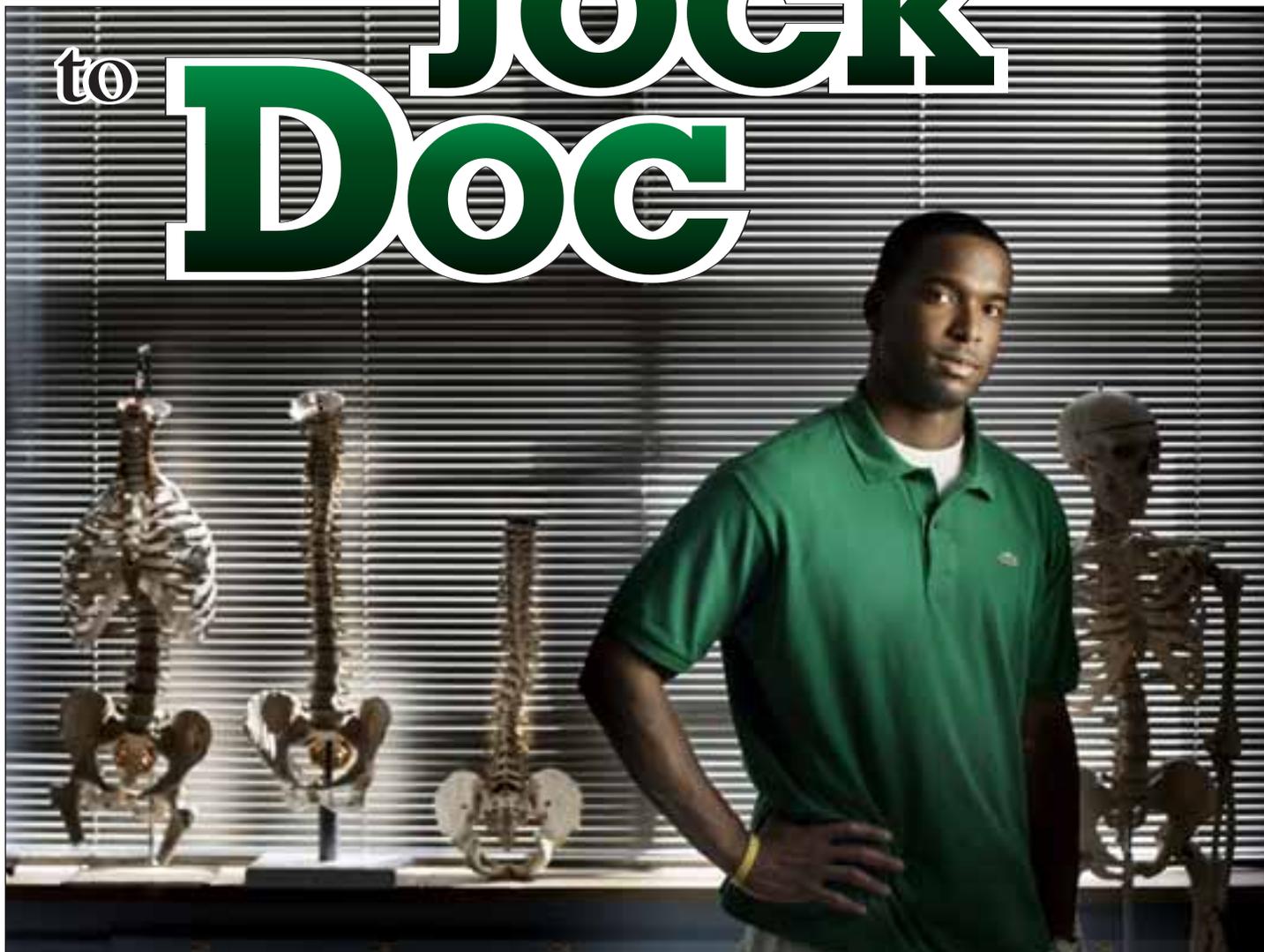
It is important for resident-physicians to be involved in research in order to teach them how progress in medicine is truly made, he emphasized.

Most significant medical advances can be traced to community clinicians who have made astute observations that researchers have only further elucidated.

It is important for faculty to give residents the skills to function in this arena of family medicine as well as day-to-day clinical practice.

-Pamela D. Knudson 

From **JOCK** to **DOC**



Boise PT Alumni convince D1 football player to pursue DPT degree at UND

BRIAN O'NEAL

Doctorate in Physical Therapy

CLASS OF 2008

HOMETOWN:

Galveston, Texas

PARENTS:

David and Coretha O Neal
and Rita O Neal

WHERE MOST SERIOUS ATHLETES see an injury only as a hindrance keeping them from playing the game, Brian O'Neal used inevitable injuries sustained while playing years of high school and division one college football as an opportunity to learn about a future career.

Red-shirting the 1998 season after a transfer from another school, O'Neal played wide receiver for the Boise State University Broncos in the 1999, 2000 and 2001 seasons.

I became interested in physical therapy when I was treated by a physical therapist for football injuries, said the Galveston, TX, native who still seems honored to have had the chance to play on Boise State's unique blue football field.

O'Neal, now a sophomore physical therapy (PT) student at the University of North Dakota (UND) School of Medicine and Health Sciences, was one of the few of his teammates at Boise State University to take his competitive

nature off the football field and into the classroom.

I always knew what I wanted to do, O'Neal explained when asked why he took class work more seriously than most of his teammates. When I was playing football, people called me a perfectionist. I was just as competitive in the classroom.

O'Neal's hard work paid off, earning him a Bachelor of Science degree in athletic training in 2003.

Following graduation, O'Neal was lucky enough to work with both the New York Giants and the Washington Redskins football teams on athletic training internships. These experiences furthered his interest in PT.

At the Redskins I worked with a PT/ATC [physical therapy/athletic training-certified] and I really enjoyed everything I did, he said. The experience showed me that PT was what I wanted to do.

When he returned to Boise he took a job as an ATC/rehab tech at St. Luke's Idaho Elks Rehabilitation Services. It was there that he learned of the physical therapy program at UND.

I worked with so many PTs from UND and they were all just great, O'Neal said.

Some of the UND alumni he worked with in Boise included **William Moats (BSPT '82)**, **Scott Billing (BSPT '94, MPT '95)**, **Jerret Hopstad (BSPT '97, MPT '98)**, **Kelly Jorschumb (BSPT '02, MPT '03)**, **Eric Paur (BSAT '01, MPT '04, DPT '04)**, **Lynae Jost (DPT '05)**, and **Kristi Kjellgren (DPT '05)**.

When I was looking at PT programs they convinced me to apply to UND, he said.

I was accepted into two programs, he said. UND and the program in my hometown.

He chose UND, even though it would cost more and he had never actually been in North Dakota.

First of all, it was a doctorate program instead of just a master's degree, he explained. Plus, I think learning is more than reading the words in books. It is about new experiences and different people. I left Texas for

college to experience something new and I came to North Dakota for the same reason. I love it here, he said, hesitating. Ok, not the weather, but the people and the school are great.

Even though I have a related degree and I have been working in physical therapy for a while, I'm still challenged here, he says. What we learn is very practical. It is information that we can apply directly to our work.

-Amanda Scurry 🌿

O'Neal's Career at Boise State University

- One of seven WRs to see extensive playing time in the 1999 season
- Made nine catches totaling 99 yards and two TDs in 1999 season
- Played in all 11 games of BSU's 2000 season
- Caught seven passes in 2000 season totaling 81 yards and one TD
- Clocked as the fastest Bronco during spring 2000 testing (4.45 sec 40-yard dash)
- Western Athletic Conference Scholar Athlete Award 2001



UND sophomore physical therapy student Brian O'Neal played wide receiver for the Boise State University Broncos in the 1999, 2000 and 2001 seasons.

Infectious Excitement



For the students and by the students, the 107,000-square-foot UND Student Wellness Center houses 79 cardio and 180 weight machines, a 200-meter running track, three professional quality basketball courts and a 32-foot rock-climbing wall.

Recent physical therapy grad shares her enthusiasm for life with UND students through wellness programming.

You'd better wear your Depends, girl!

That was the response of the University of North Dakota (UND)'s Assistant Vice President of Wellness **Laurie Betting (BSPT '98, MPT '99, DPT '04)** when this writer expressed her excitement at seeing the university's newest addition.

The UND Student Wellness Center, set to open with a week-long series of events starting September 25, is causing

of a wave of rising excitement on campus and Betting is leading the charge.

A Grand Forks, ND native, Betting has always found importance in wellness. It is all about having fun, she says, admitting she is the silliest person at work. It is this positive attitude that has allowed her to lead the building of a state-of-the-art university wellness program and facility for the students of UND while overcoming an inconvenience along the way.

An Inconvenience

In July 2004 Betting's positive outlook was put to the test. She was finishing up her Doctorate of Physical Therapy degree and in the middle of developing the new Student Wellness Center when she found a lump in one of her breasts. Initially dismissed by her physician, she was persistent and was eventually diagnosed with breast cancer, had a mastectomy, chemotherapy and radiation treatments. Still, she continued to work.

I tend to see the good in things, to look through a different lens, she said. Really, I saw having cancer as an inconvenience.

I would go in for radiation treatment at 7 a.m., right before work, she explained. I saw the treatments as just something to get done before I could go to work. There were others who, for them, the trip to get radiation was the only thing they had that day. It was apparent that they were not nearly as well off as I was. I had a building to finish!

Physical Therapy outside the Clinic

Betting decided to earn her DPT degree from UND because I was drawn to it by those who were doing it, she said.

The program has high standards for their students, she explained. They always call for more, but not the impossible. It made me recognize that I had more in me than I had thought.

PTs are people doing the right things for the right reasons, she said.

I am not seeing patients in a clinic, but hopefully I am still touching lives.

Not Your Parent's Gymnasium

For the students and by the students, the 107,000-square-foot UND Student Wellness Center is much more than a gym.

Even before its completion, it has been called The Engelstad of Wellness

Centers, and The Best in the Nation, with which it is easy to agree when Betting starts to explain the facility and the painstaking care she put into every detail. Her face lights up. She sits at the edge of her chair. She explains all the aspects of the building as if she is reading a child a story about a wonderful fantasyland. She gazes off as she describes facilities, architecture and resources.

I learned it was not a good idea to take pictures in the women's room of an airport when I found some great faucets, she remembered, laughing.

She designed the facility, and her wellness programming, to be more than just a way to get fit.

We are co-curricular, she explains. We are part of the learning that takes place at the university.

The new Student Wellness Center anticipates 300 student employee positions and internships will be available upon opening the new building. More than just part-time jobs, Betting provides these students with a chance to develop professionally before they even leave college, offering regular performance evaluations, a network of previous wellness center employees and supervising positions.

She isn't having any trouble finding students to fill these position or volunteers from the campus community.

Wellness is a magnet, she explained. People are volunteering left and right, from physicians at the medical school to steam plant workers.

Jon Allen, M.D. '84 (B.S. Med. '82), assistant dean of the medical school's Northeast Campus, Grand Forks and **Jonathan Geiger, Ph.D. (MS '74, Ph.D. '82)**, professor and chair of the Department of Pharmacology, Physiology and Therapeutics, are two of many members of the campus community who are lending their services to the new center. They both will be leading spin, or stationary bike, classes.

We call them the spin doctors, quipped Betting.

They will be biking in style, too. The spinning room boasts 21 stationary bikes where bikers can virtually tour national parks and other natural



Laurie Betting (BSPT '98, MPT '99, DPT '04) serves as Assistant Vice President of Wellness at UND.



The Center's cardio deck overlooks the weight room containing nearly 100 pieces of cardio equipment. A running track encircles the area, allowing runners a view of the outdoors through huge windows.

attractions displayed via a large television screen at the front of the room.

Around Seven Dimensions in Seven Days

Each day of the Student Wellness Center's opening week will be themed around one of the seven dimensions of wellness. Based on a model from the National Wellness Institute at the University of Wisconsin-Stevens Point, the seven dimensions of wellness are physical, intellectual, emotional, social, spiritual, environmental and occupational.

Starting with physical wellness, the grand opening will kick off on September 25 featuring nutrition and healthy cooking. For the event, Betting is bringing back Grand Forks native **Donald Hensrud, M.D., M.P.H. (80, B.S. Med. 82)**, chair of the Division of Preventive, Occupational, and Aerospace Medicine and associate professor of preventive medicine and nutrition at

the Mayo Clinic in Rochester, MN.

Hensrud served as editor-in-chief for Mayo Clinic Healthy Weight for EveryBody, a comprehensive and sensible approach to eating healthy, The New Mayo Clinic Plan - 10 Essential Steps to a Better Body and Healthier Life, and the award-winning The New Mayo Clinic Cookbook. He also was instrumental in developing the Mayo Clinic Healthy Weight Food Pyramid.

Because of my work, I am very aware of the importance of building this facility, said Hensrud. Being an alumnus makes me very proud of UND for undertaking it. I'm very much looking forward to attending the Grand Opening of this exciting event.

After giving a presentation during the opening ceremony, Hensrud will be doing a cooking demonstration in the center's demonstration kitchen.

The new Wellness Center at UND is the right thing to do for so many reasons, said Hensrud. It will be great to see students come to UND from many places, obtain an excellent education while taking care of themselves in the process, and leave with the knowledge and tools they've acquired - for their mind and their body. The UND Wellness Center is a progressive and visionary endeavor; its significance will become more and more apparent as time goes on.

WEB EXCLUSIVE:

To take a video or virtual tour of the new UND Student Wellness Center and see a listing of grand opening events, visit: www.ndmedicine.org



New Student Wellness Center Highlights and Facts

- 107,000 square feet
- 15,000 square feet for 79 cardio and 180 weight machines
- 200-meter running track
- Three professional quality basketball courts
- Multipurpose Activity Court for roller hockey and indoor soccer
- 32-foot rock-climbing wall and a 12-foot bouldering wall
- Spinning room with 21 stationary bikes and virtual tours
- Demo kitchen and juice bar
- Quiet and resource lounges

-Amanda Scurry 

Medical School Fully Reaccredited

- Dean, Faculty, Curriculum Praised

The University of North Dakota (UND) School of Medicine & Health Sciences was fully reaccredited recently receiving praise for its dean, faculty and curriculum.

Liaison Committee on Medical Education (LCME) voted to reaccredit the UND medical school for eight years.

The committee listed several areas of institutional strength at the school including the vision and energy of Dean H. David Wilson in implementing the Patient Centered Learning (PCL) curriculum at the school.

PCL is innovative and prepares students exceptionally well for their clinical (third and fourth years) education and the practice of medicine, the committee's letter to UND President Charles Kupchella said.

UND's PCL curriculum teaches medical students using real patient cases, where lectures, labs and small group work help the students learn the basic sciences behind the patient's condition and others like it.

The committee also cited the commitment and cooperative spirit of the volunteer faculty. More than 900 clinical faculty members serve on a part-time or voluntary basis teaching medical students in 30 communities throughout the state during their third and fourth years of medical school.

In addition, the school's Rural Opportunities in Medical Education was said to help address the state's physician workforce needs in rural areas and that it provides students

with excellent opportunities for education in rural communities.

The committee also applauded the medical school's focused and self-sustaining research program for its growth and strength saying it is a model for community-based medical schools.

The Indians into Medicine program was also commended stating it has a well deserved national reputation while the school's Clinical Education Center is a model for clinical skills learning, assessment and improvement.

We are very pleased our medical education program has earned this extraordinary vote of confidence from the accreditation body for all medical schools in the nation, said Kupchella.

I am so proud of all the great work that our administrators, faculty, staff and students do here every day, said Wilson. Our full reaccreditation shows that this small medical school has big ideas that produce great results.

This is by far the best evaluation the UND medical school has had, said Associate Dean for Administration and Finance Randy Eken, who has been with the school for more than 25 years.

Accreditation is an evaluation that determines whether an institution meets established standards while encouraging improvement. The process includes gathering school information to submit to the committee, conducting a self-study and a several-day site visit when several members of the committee visit the school.

"We are very pleased our medical education program has earned this extraordinary vote of confidence from the accreditation body for all medical schools in the nation."

Charles E. Kupchella, Ph.D.
President,
University of North Dakota



The UND School of Medicine & Health Sciences is located on four campuses throughout North Dakota (from left): Bismarck, Fargo, Grand Forks and Minot.

Center for Rural Health Part of New Grassroots Rural Policy Project

The Center for Rural Health at the UND School of Medicine and Health Sciences is one of the first participants in the national Rural People, Rural Policy program.

The new five-year national initiative, funded by the W.K. Kellogg Foundation of Battle Creek, MI, builds and strengthens networks of local organizations to develop policy that will help rural communities and small towns.

This initiative intends to grow from regional networks into a national network of rural organizations and national service groups working on a variety of economic and social issues that impact rural America, according to a statement by the Kellogg Foundation announcing the awardees.

The foundation funded only 24 of the 190 proposals they received for the first year. The Center for Rural Health is the only health-related organization selected to participate. The remaining 23 are primarily community development, youth or policy organizations.

New Program to Provide Better Care for Traumatized Children

Mental health professionals with the Neuropsychiatric Research Institute (NRI) and the UND medical school are developing a program to train their colleagues to provide more effective treatment for children who are victims of trauma, particularly in the form of abuse and neglect.

In a new two-year program, the NRI will offer training for North Dakota mental health clinicians in new treatments that have been found to be effective in assisting children who have been victims of abuse and neglect.

NRI has received funding support for this initiative totaling \$150,000 from the Otto Bremer Foundation and \$50,000 from the Dakota Medical Foundation.

Women's Health Conference Held Sept. 18

The first North Dakota Women's Health Connection will be held Monday, Sept. 18 from 1-5 p.m. at the Alerus Center in Grand Forks. The event, sponsored by the North Dakota Women's Health CORE located in the UND Department of Family and Community Medicine, will address a variety of issues affecting women across their life spans including preconception planning, depression, healthy relationships, fibromyalgia, varicose veins, incontinence and healthy aging.

NASA Consultant Saralyn Mark, MD, will provide the keynote address on women's heart health. Tickets are \$10 in advance, \$15 at the door, for more information please contact Alicia Sandbakken at 7-3264 or asandbakken@medicine.nodak.edu

Bismarck Radiologist Appointed Chair



Edward (Ted) Fogarty, M.D., a Bismarck radiologist, has been appointed chairman of the Department of Radiology at the UND School of Medicine and Health Sciences effective July 1.

Fogarty, who joined the UND medical school faculty in October 2003, will continue to live and practice in Bismarck at Medcenter

One Health Systems.

Fogarty completed an undergraduate degree, with honors, at the University of Chicago in 1993 and then worked as a research assistant at the Howard Hughes Medical Institute in Chicago. He went on to earn the Doctor of Medicine degree from the University of Nebraska College of Medicine in Omaha in 1998.

After medical school, he took one year of training in UND's transitional year internship program based at MeritCare Hospital in Fargo and, in 2003, completed a four-year radiology residency program at Creighton University Medical Center, St. Joseph Hospital, in Omaha. During residency training, he served as chief resident and received the RSNA Roentgen Resident/Fellow Research Award. He was also elected into the Alpha Omega Alpha honor society as a resident while at Creighton University Medical Center. In 2003, he joined the Medcenter One Health Systems as a staff radiologist.

Feds Fund Mental Health First Aid Program in State

Three North Dakota health organizations have teamed to receive a \$375,000 federal grant to establish a mental health first aid program in North Dakota.

The Tribal Health Program of the Standing Rock Sioux Tribe in Ft. Yates, ND, partnered with the **Center for Rural Health** at the UND School of Medicine and Health Sciences in Grand Forks, ND, and West River Health Services in Hettinger, ND, to apply for the competitive grant from the federal Office of Rural Health Policy. The grant program is designed to encourage the development of new and innovative health care delivery systems in rural communities that lack essential health care services.

The mental health first aid program developed through this grant over the next three years will be the first of its kind in the nation. Similar to basic first aid courses that many Americans take to provide immediate help to physical injuries, mental health first aid helps people learn how to provide initial support to those showing signs of mental health problems or in a mental health crisis until appropriate professional treatment is received.

INMED Summer Institute Prepares Students

Native American junior and high-school-level students from across the country were at UND for six weeks this summer as part of the Indians into Medicine (INMED) Summer Institute program.

The annual Summer Institute is designed to bolster participants' math and science skills, teach students about health careers, and help them develop their potential to achieve in health science classes.

Approximately 90 Native American junior and high-school-level students from 10 states attended INMED Summer Institute this year.

The program includes daily group and individualized instruction in mathematics, physics, chemistry, biology, communication and study skills. Indian health professionals and experts who represent a variety of health disciplines serve as guest speakers, giving an overview of health careers opportunities. The Summer Institute experience also includes field trips, recreation, pow wows, and Indian awareness workshops.

Cornatzer Receives Research Fellowship



Eric Cornatzer, a medical student at the UND School of Medicine and Health Sciences, received a Medical Student Fellowship from the American Dermatological Association (ADA) to conduct research this summer.

The son of Dona and **Bill Cornatzer, M.D. (B.S. Med. '79)**, of Bismarck is one of only eight students selected to receive the award this year,

according to the ADA which accepts applications from U.S. and Canadian medical students. Eric recently completed his first year of medical education at UND.

With this fellowship, he conducted research on alopecia areata, a scalp condition characterized by patches of baldness in affected areas, with **Maria Hordinsky, M.D. '76**, at the University of Minnesota in Minneapolis. Hordinsky, a native of Drake, ND, is the daughter of Dr. and Mrs. Bohdan Hordinsky.

Singh Nets Awards from NIH and NSF



Brij Singh, Ph.D., assistant professor of biochemistry and molecular biology, Grand Forks, has received a five-year, \$1.2 million grant from the National Institutes of Health (NIH) to study calcium's multiple, complex roles in human health and disease.

Singh's research involves the study of vital calcium mechanisms in the body that can, when they don't work

properly, lead to diseases such as cancer, Parkinson's disease and Sjogrens syndrome, a salivary gland dysfunction.

The former NIH researcher has also received a three-year, \$405,000 grant from the National Science Foundation (NSF) to pursue related research that could define the mechanism and regulation of these channels, which may lead to tools that could quickly, accurately and noninvasively diagnose an individual's chances of getting cancer and other diseases related to calcium signaling dysfunction.

"Everything you do requires calcium," says Singh. "Even something as simple as lifting a pencil requires a very specific calcium balance." If that calcium mechanism gets out of whack, things can go seriously wrong in the body, he says.

"When the calcium transport channel gets out of balance – and we're not sure why that happens – then the body goes into a disease state. That can be Alzheimer's, Parkinson's, heart disease - they're all related to a calcium deficiency - or cancer, which can result when too much calcium is released."

"The NIH grant is very prestigious and extremely hard to get," says Gene Homandberg, Ph.D., professor and chair of biochemistry, Grand Forks. Singh's RO1 grant was ranked in the 2.5 percentile, a level that "no one in North Dakota has ever gotten."

"It is almost unheard of " for a researcher to obtain awards from both the NIH and the NSF, Homandberg says. "It's a clear testament to the high regard in which Dr. Singh's peers and other NIH and NSF scientists hold his work."

ND OPPORTUNITIES

This feature offers information for physicians and other health care professionals interested in practice opportunities in North Dakota. For more information about these listings or loan repayment programs, please contact Mary Amundson, M.A., at 701-777-4018 or mamundsn@medicine.nodak.edu.

This is a partial list; for the complete list, go to: <http://www.ndmedicine.org>.



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Lloyd Everson, M.D. (B.S. Med 67), vice chairman of US Oncology, has been appointed by President Bush to the National Cancer Advisory Board (NCAB). The NCAB advises, consults and makes policy recommendations to the Secretary of Health and Human Services and the Director of the National Cancer Institute on issues related to cancer care. He is one of 18 members appointed by the President to serve rotating six-year terms.

Everson has served in many roles throughout his career, including the practice of oncology and hematology, cancer research, academic and administrative medicine. He was one of the founders of US Oncology as well as the US Oncology Research Network, one of the largest community-based research organizations in the nation.

He earned a B.S. in Chemistry in 1965 and a B.S. in Medicine in 1967 from the University of North Dakota. He received his M.D. degree from Harvard University in 1969, completed his internship and residency at Cornell Cooperating Hospitals, New York and Memorial Hospitals, and was a senior resident in Medicine in Oncology at Memorial Sloan Kettering.

This is an incredible honor and I am very excited about the opportunity to contribute to such a prestigious and influential board, said Everson. In my role as vice chairman of US Oncology, I work with approximately 1,000 oncologists across the country and I am inspired by their innovation and dedication to advancing the quality of care available to cancer patients. I look forward to providing a credible voice for their important work and for their patients.

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Kirsten (Andresen) Peterson, M.D. 87, a board-certified internist, has joined Altru Health System in Grand Forks.

After earning the Doctor of Medicine degree at UND, she completed internal medicine training at Gundersen Lutheran in La Crosse, WI.

Prior to joining Altru in July, she had been on staff at Gundersen Clinic in La Crosse.

92



Rance Hafner, M.D. 92, has been named full-time medical director at Unity, a not-for-profit partnership of health care facilities in Green Bay, WI. He will oversee Unity's new residential hospice facility in Ledgeview, WI; construction began on this facility in June.

Unity, dedicated to hospice and palliative care, was established through a partnership of Green Bay's three not-for-profit hospitals: Bellin Health, St. Mary's Hospital Medical Center and St. Vincent Hospital. Its staff provides hospice, palliative

care and grief support in 12 counties in northeast Wisconsin.

I have a special affinity for end-of-life care, he said. I believe in the team approach to patient care, working with our nursing staff, social workers, chaplains, grief counselors and volunteers to deliver the highest quality care possible to patients and their families at such a critical time.

Hafner, certified as a palliative care physician by the American Board of Hospice and Palliative Medicine, is a member of the American Academy of Family Physicians and the American Academy of Hospice and Palliative Medicine, among other medical societies.

He resides in Green Bay with his wife, Kristin, and sons, Samuel and Max.



Milissa McKee, M.D. 92, will be receiving the Young Alumni Achievement Award at the Sioux Awards Banquet on October 5, 2006. The UND School of Medicine and Health Sciences will host a reception in her honor in the Vennes Atrium on Thursday, October 5, 2006 from 2-3 p.m. The public is invited to attend.

McKee, originally from Minnesota, graduated from the UND School of Medicine and Health Sciences at the age of 19. She completed her general surgery residency at Loma Linda University Medical Center in California and earned a master's degree in public health from Johns Hopkins University School of Medicine. McKee was a fellow in pediatric surgery at Johns Hopkins Hospital, Children's Medical and Surgical Center and University of Maryland Medical Systems.

McKee is a member of the American Medical Association, the Candidate Group of the American College of Surgeons, the American Pediatric Surgical Association, and the International Pediatric Endosurgery Group. She is board-certified in general surgery and pediatric surgery. She has also authored several research publications and book chapters.

McKee currently resides in Branford, CT, where she is an assistant professor of pediatrics and surgery at Yale University School of Medicine. She is an attending surgeon and director of pediatric trauma services at Yale-New Haven Children's Hospital, director of pediatric minimally invasive surgery, and surgical co-director of the pediatric intensive care unit at the hospital.

Benjamin Ginsberg, M.D. (B.S. Med. 47), of St. Petersburg, FL, died June 2, 2006. He was 87.

A native of Grand Forks he earned the Bachelor of Science in Medicine degree at UND in 1947, and went on to earn the Doctor of Medicine degree at Loyola University of Chicago Stritch School of Medicine in 1949.

The board-certified anesthesiologist was director of the anesthesiology departments at Little Company of Mary Hospital in Chicago and Palms of Pasadena Hospital in South Pasadena from 1970 to 1988.

Edwin Hemness, M.D. (B.S. Med. 51), a retired orthopedic surgeon, died June 12, 2006, at his home in Clarksdale, MS, after a lengthy illness. He was 82.

The Fargo native attended the UND medical school for two years prior to enrolling at the University of Louisville School of Medicine where he earned the M.D. degree. He took medical internship at the Puget Sound Naval Hospital in Bremerton, WA, and took residency training in adult orthopedics at the National Naval Medical Center in Bethesda, MD. He also trained at DuPont Children's Hospital in Wilmington, DE.

In the 1960s he practiced orthopedic surgery at Pensacola, FL, and Millington, TN, before military service with the U.S. Navy in Vietnam from 1967 to 1968. He returned to Millington where he practiced until 1972 when he moved to Clarksdale. He retired in 1986.



Robert Ivers, M.D. (B.S. Med. 53), former clinical professor of internal medicine, died July 19, 2006 in Fargo. He was 76.

A native of Christine, ND, he earned the Bachelor of Science in Medicine degree at the UND School of Medicine and went on to complete the Doctor of Medicine degree at Northwestern University School of

Medicine. He took internship training at then-St. Luke's Hospital in Fargo and practiced general medicine in Pelican Rapids, MN, before deciding to pursue training in neurology at Mayo Clinic in Rochester, MN.

After residency he returned to Fargo where he joined The Neuropsychiatric Institute in 1961 as the first neurologist in North Dakota. A board-certified neurologist, he was a member of the medical staffs of Fargo and Moorhead hospitals and consultant to the North Dakota State Hospital in Jamestown.

During his career, he served in several leadership roles including president of the First District Medical Society and chair of the North Dakota Developmental Disabilities Council, the Impaired Physicians Committee of North Dakota and the board of the former Lutheran Health Systems.



William McCullough, M.D. (B.S. Med. 50), retired clinical professor of radiology, Mandan, died June 11, 2006, after a short, courageous battle with cancer. He was 78.

A native of Bottineau, he was raised there and graduated from the Bottineau School of Forestry and later attended UND where he earned the B.S. Med. degree before going on to

complete the M.D. degree at the University of Colorado. He took training at the University of Minnesota School of Radiology in Minneapolis and additional training in surgery and obstetrics-gynecology at St. Luke's Hospital in Fargo.

He practiced in Bottineau for five years before moving to Bismarck where he joined Central Dakota Radiology at St. Alexius Medical Center. He served as a flight surgeon in the U.S. Air Force for two years and in the North Dakota National Guard for 25 years. In 1987, he retired as a Full Bird Colonel from the Happy Hooligans. An avid sportsman, he was a life sponsor of Ducks Unlimited.

Dr. McCullough was one of our very much loved faculty members, said **Lonna Augustadt**, administrative officer, Southwest Campus of the UND medical school, Bismarck.

Susan Stenehjem-Brown (BA 70), clinical instructor of clinical neuroscience, Fargo, died June 27, 2006. She had battled Pick's disease and ALS (Lou Gehrig's) disease since June 2005. She was 58.

Originally from Williston, ND, Ms. Stenehjem-Brown earned a bachelor's degree in social work at UND in 1970 and a master of arts degree in counseling and guidance from the University of Nevada in Reno in 1972.

She served as director of addiction counseling at Memorial Health and Retardation Center in Bismarck. She was an addiction counselor at Heartview Foundation and West Central Human Services Center in Bismarck before becoming assistant clinical director at Heartview where she served for a time as its only female acting executive director.

A pioneer in the addiction counseling profession on national and state levels, she drafted many of the national addiction counseling licensure regulations and wrote North Dakota's laws governing her profession.

A Kaess of Gratitude

AN INSTITUTION IS ONLY AS GOOD AS ITS FACULTY is a statement Dean H. David Wilson, M.D. uses time and again. It's a continuum, really, because exceptional university programs require excellent faculty—which stimulate student excellence—and so the cycle continues.

Meet **Carolyn Kaess**, San Diego, CA. Her beloved husband, the late **Karl Kaess, M.D. (B.S. Med. '38)**, was a long-time physician who served in the United States Navy medical core for 32 years, holding distinguished positions as chief of dermatology at naval hospitals in Camp Pendleton, Chelsea, Newport, Guam and Bremerton.

Dr. Kaess had a longtime friendship and admiration for Dr. Harley French, who taught anatomy at the medical school and served as its dean for many years. It is in his honor that Carolyn establishes the *Dr. Karl and Carolyn Kaess Professorship of Anatomy* for the benefit of the anatomy program at the UND School of Medicine and Health Sciences. The professorship will be awarded to an individual who is an outstanding teacher with great dedication to the students.

Named professorships provide a donor the opportunity to create a legacy in honor and memory of a loved one, while assisting the university in building the endowment funds to strengthen and grow programs for the future.



Blanche E. Abdallah and Carolyn Kaess

On behalf of the students, faculty and staff, it is with respect and gratitude that we thank Mrs. Kaess for her kindness and generosity.

For more information on the named endowment program, please contact Blanche E. Abdallah, Director of Development, 701.777.2004 or babdallah@medicine.nodak.edu.



Karl Kaess, M.D., and Carolyn Kaess

Endowment funds are invested for growth, and a portion of the earned interest is used each year to fund a faculty position named by the donor:

Endowed Professorships - Earnings fund a professorship to recognize a faculty member for quality and dedicated teaching and research (donor may select the department); established with gifts beginning at \$300,000.

Endowed Chairs - Undeniably the most distinguished position for a faculty member to hold; established with gifts beginning at \$1.5 million.

M.D. Class of 2010 Arrives on Campus



Front row (seated from left): Daniel Morgan, Katrina Gardner, Ashley Hagel, Emily Koeck, Ashley Gorby, Sara Mayer, Amanda Johnson, Stephanie Jellen, Tiffany Weber, Mahale Parker, Allison Rouillard, Benjamin Wilkenson
Second row (seated): Kendra Siefken, April Catudio, Rachel Redig, Lacey Sauvageau, Megan Miller, Ana Tobiasz, Jocelyn Mattson, Jessica Lichter, Jennifer Johnson, Erica Martin, Christian Buhr, Ian Lalich
Third row (seated): Tracey Sollin, Priyanka Singh, Gillian Lavik, Anneel Damie
Fourth row (two seated, the rest standing): Kyle Hoffert, Jennifer Mullally, Brett Whistler, Miran Blanchard, Jason Halle, T. Joseph Gaddie, Kathryn Kingsley, Stacie Wellman, Rachel Sullivan, Lacey Armstrong, Jonathan Eklof, Matthew McCleod, Jared Darveaux, Nathan Bro, Matt Heffty, Michael Bagan, K.K. Miyagawa
Back row (all standing): Evan Kemp, Daniel Gullickson, Jason Halls, Dustin Leigh, Justin LaBlanc, Patrick Stevens, Rodrigo Rios, Kelsey Hoffman, Justin Gorss, Aaron Jones, Josh Eken, Jeff Nelson, Luke Van Alstine, Mark Eaton, Charity Bishop, Lindsay Bogardus, Chad Hanson, Daniel Dixon, Aaron Van Ningen

SIXTY-TWO NEW FRESHMAN MEDICAL STUDENTS, members of the Doctor of Medicine (M.D.) class of 2010, began their medical education Aug. 7 at the University of North Dakota (UND) School of Medicine & Health Sciences.

The 62 new freshman medical students range in age from 21 years to 42 years, with the average age being 24 years. Half of the class members are women.

These students come to the UND medical school with degrees in a variety of disciplines including biology, chemistry, anthropology, engineering and global studies.

"It's always exciting when a new class of medical students arrives on campus," said Judy DeMers, associate dean for student affairs and admissions at the UND medical school. "It's a brand new beginning and a whole world is opening up for them that they have never experienced before."

Medical students' first week is dedicated to orientation, which includes an introduction to the four-year, patient-centered-learning curriculum. Special emphasis is placed

on the students' new roles as health care professionals and expectations of them as professionals.

The students' orientation week concluded with the M.D. Class of 2010 White Coat Ceremony. During the ceremony, students were "cloaked" in white coats, the traditional garment of the physician, which were donated by the North Dakota Medical Association. They recited the Oath of Hippocrates, an ancient vow to uphold basic professional principles.

Dr. Robert Beattie, professor and chair of the Department of Family and Community Medicine at the medical school, presented the keynote address to the students, their families, friends, and faculty and staff.

Each student also received the book, "On Doctoring," edited by Drs. Richard Reynolds and John Stone and donated by the Robert Wood Johnson Foundation, and a pin engraved with the words, "Humanism in Medicine," from the Arnold P. Gold Foundation.

September 18:

Dean's Hour

Saralynn Mark, M.D., senior medical advisor, Office on Women's Health, Department of Health and Human Services. Noon - 1 p.m., Reed Keller Auditorium. Open to the public.

North Dakota Women's Health Connection

1-5 p.m. at the Alerus Center in Grand Forks
The event, sponsored by the North Dakota Women's Health CORE located in the UND Department of Family and Community Medicine, will address a variety of issues affecting women across their lifespans.

September 25:

Dean's Hour

Donald Hensrud, M.D., Chair, Division of Preventive and Occupational Medicine, Mayo Clinic, Rochester. Noon - 1 p.m., Reed Keller Auditorium. Open to the public.

October 5:

Dean's Hour

Don Vereen, Jr., M.D., MPH, Special Assistant to the Director, National Institute on Drug Abuse, National Institutes of Health, Bethesda, MD. Noon - 1 p.m., Reed Keller Auditorium. Open to the public.

Reception for Young Alumni award recipient

Milissa McKee, M.D.

2 - 3 p.m., Vennes Atrium. Open to the public.

October 5:

The Sioux Award Banquet,

5:30 p.m. social, 6:30 p.m. dinner and program, Alerus Center Ballroom; register online at www.undalumni.org, or call Barb at (701) 777-4078.

October 6:

School of Medicine and Health Sciences Open House 2 - 5 p.m., Vennes and Fercho Atriums. Open to the public.

Class Reunions for the MD Classes of '96, '86 and '76 and the B.S. Med. Class of '76.

5:30 - 8:30 p.m., Alerus Center. Register online at www.undalumni.org or call Barb at (701) 777-4078.

October 7:

School of Medicine and Health Sciences Alumni Brunch

8:30 a.m. - 10:30 a.m., Vennes Atrium. Register online at www.undalumni.org or call Barb at (701) 777-4078.

Homecoming Parade

10 a.m., University Avenue

For a complete listing of Homecoming activities, visit www.undalumni.org or call (701) 777-4078.



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