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NORTH DAKOTA MEDICINE

UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

Heart & Soul

Exploring the similarities and connections
of our emotional and physical hearts

A Woman's Heart

When in 'ROME'

On the Mend

Research Meets Real World

Inside and Out

WINTER 2007
VOLUME 32, NUMBER 1
www.ndmedicine.org

AS THE NEW YEAR BEGINS, SO DO our goals to continue building upon the success of the School of Medicine and Health Sciences. A primary focus for upcoming years is to significantly increase financial partnerships with alumni, friends, foundations and businesses to grow North Dakota's only medical school into an even stronger institution. The school is fortunate to have talented educators on staff, and they are ready to take the next step in preparing the future generation of physicians, scientists and allied health care professionals, but they need help!



H. David Wilson, M.D., (center) and Charles Christianson, M.D., Co-Director of year 01 PCL Clinical Sciences, demonstrate intubation on an infant simulator.

Almost Human

Learning via simulators is nothing new; it has been prominent in the aeronautics field since the 1940s. State-of-the-art medical simulation technology is now available, and the days of "see one, do one, teach one" is quickly changing. With the use of a human patient simulator, a faculty member can now ensure a student has achieved the desired knowledge and skill level before treating a real patient. Imagine what this can mean for confidence building. Imagine what it can mean for patient safety.

I was impressed when I saw these

mannequins - at first because they were actually breathing, and then because I learned they were inhaling oxygen and exhaling carbon dioxide at the same rate as you and me. They are remarkably lifelike, capable of responding to medical treatment and drugs, allowing students to diagnose and administer correct treatments. They can blink, dilate their eyes, drool, bleed, talk and more. Once the instructor initiates the software, the mannequin is completely responsive and no interaction from the instructor is needed (so the instructor can actively guide or demonstrate the procedure). If a procedural error is made, the mannequin responds accordingly. The technology is sophisticated and can provide learning in real-time, and is capable of simulating nearly any possible human medical emergency, including heart attacks, seizures, allergic reactions, effects of nerve gas, drug overdoses or severed limbs to name a few.

Statewide Benefit

A Human Simulation Laboratory would be particularly beneficial in North Dakota, because aside from students, the lab could also be used by practicing physicians, nurses, EMT's, healthcare professionals, firefighters and law enforcement officers as a tool to learn or refine skills. That's a powerful asset in a rural state where every healthcare professional may not have the opportunity to practice every procedure they are expected to know.

It is a goal of ours that the only medical school in North Dakota will soon be home to the only Human Simulation Laboratory in the state. This lab will be expensive, but it is a reality through financial partnerships and endowment funding. Our students and citizens are outstanding, and we owe them the best possible education! We look forward to providing this new service in the future.

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



NORTH DAKOTA MEDICINE

UNIVERSITY OF NORTH DAKOTA
SCHOOL OF MEDICINE AND HEALTH SCIENCES

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UNIVERSITY OF NORTH DAKOTA SCHOOL OF MEDICINE & HEALTH SCIENCES

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Heart & SOUL

Exploring the similarities and connections
of our emotional and physical hearts



Joshua Wynne, M.D., M.B.A., M.P.H., executive associate dean, professor of medicine, and practicing cardiologist.

Rosanne McBride, Ph.D., a clinical psychologist and assistant professor of family and community medicine.



MORE AND MORE STUDIES ARE showing that our emotional hearts and our physical hearts are connected. North Dakota Medicine's Amanda Scurry sat down with **Joshua Wynne, M.D., M.B.A., M.P.H.**, executive associate dean, professor of medicine and practicing cardiologist, and **Rosanne McBride, Ph.D. (Psychology '95)**, a clinical psychologist and assistant professor of family and community medicine to discuss the similarities and connections of our hearts.

ND Medicine: Does our physical heart react to what our emotional heart is feeling?

McBride: Absolutely. Studies have shown that the human experience of an emotion occurs in part because of the brain and the heart interacting. For example, when you experience a negative emotion such as anger or sadness, your brain sends the heart a signal and your heart's rhythm tends to become more erratic. These changes in the heart rhythms are recognized by the emotional centers in the brain as stressful or negative feelings. This interaction of signals between the brain and the heart contribute to the physical feelings we experience in the heart area of our body when we are sad, grief stricken, and so on. On the other hand, heart rhythms are smoother in response to positive emotions and experiences and contribute to the warm feelings we experience in the heart area when we are, say, in love. The heart is letting the brain know that it feels good. There are even some treatments to improve cardiac rhythms that involve having patients recall positive experiences that elicit warm feelings-also called emotion-focused techniques.

Wynne: Emotions and psychological factors may have profound influences on the heart. An example of this is personality types. Two types of personalities have been found, Type A and Type B. Type A personalities are time focused, goal orientated, and work obsessed. They are also more likely to have underlying emotions that include anger and hostility. Type B personalities roll with the punches and are much more laid-back. Type A personalities are more associated with heart disease than Type B. The flip side of that association, however, is that being a Type A personality may actually help you to treat heart disease. Type As tend to be more committed to their treatment plans, spend more time in cardiac rehabilitation, and are more intense about exercise.

ND Medicine: What effect do personal relationships, like being in love, have on our emotional heart and our physical heart?

W: People who are married seem to fare better from a health perspective than those who are not, not only from a heart disease standpoint, but from all-cause mortality. The idea being, that it appears that people who have robust social networks and feel fulfilled in their jobs, do better.

M: Helen Fischer at Rutgers University is an anthropologist who studies the chemistry of romantic love. She studied a large number of couples who had been in a relationship for at least seven months. She had them look at a neutral picture and a picture of their partner and then did MRI scans on them. She found increased dopamine activity in their brains when they looked at a picture of their partner.

One of the things that scientists are finding is that during this romantic, more lustful stage of love, the brain is awash in dopamine. Dopamine is a chemical in the brain that gives you energy, makes you feel good, makes you feel like you can stay up all night-like what many people describe when they fall in love-"we stayed up all night and watched the sun come up". So, when you are talking about falling in love, this is one of the things that is going on in your brain.

Other studies have shown that in addition to increased dopamine, people experiencing romantic love show decreased levels of serotonin, another brain chemical. Interestingly, one study compared "lovesick" people with individuals diagnosed with obsessive-compulsive disorder. They found decreased levels of serotonin in the brain, which is characteristic in obsessive-compulsive disorder, in both the obsessive-compulsive group and the lovesick group and not in a control group. In the end, the authors of the study said that it is difficult to differentiate between the brain activity of the "lovesick" individuals and those with obsessive-compulsive disorder. This might help to explain why people in love can't get their mind off their lover.

On the other hand, if a person stays in a relationship over a longer period of time, the dopamine level gradually decreases and the brain chemical or neurohormone that then comes into play is oxytocin, which is sometimes called the "attachment hormone" which is released in response to touch, hugs, etc. Animals like dogs, cats, and birds are used in therapeutic and institutional settings like nursing homes in order to improve the emotional well-being of those residing there. A recent study was done looking at animal therapy effectiveness using dogs and measured blood pressure and the levels of several hormones, including cortisol (the hormone released during stress) and oxytocin in both humans and dogs. After allowing a period of time in which the people interacted with the dogs, they found decreased blood pressure, decreased cortisol levels and increased oxytocin levels in the person as well as increased oxytocin levels in the dog.

A glad heart makes a cheerful countenance, but by sorrow of heart the spirit is broken.

-Proverbs 15:13



“Just like there are two sides to the brain, there are two aspects to illness - the physical and the emotional. One of the things we do well in this school is that we address both aspects.”

Joshua Wynne, M.D.,
M.B.A., M.P.H

Human beings in long-term relationships have higher levels of oxytocin, which as I said before is called by some the "attachment" or "bonding" hormone. Studies have found higher levels of the hormone oxytocin in animals in the wild that mate for life, and if the oxytocin receptors in the brain are blocked in these animals, they tend to roam.

Also interesting is that scientists have started looking at the oxytocin levels of autistic people because people with autism have profound difficulties with social relationships and interactions.

Some recent experiments treating autistic people with oxytocin have shown improvements in their social interaction. The bottom line is that it appears that oxytocin affects the quality and longevity of relationships and visa versa—relationships affect the body's release of oxytocin. Hugs are good for us!

ND Medicine: Can our hearts break? If so, can we die from it?

W: There is a cardiac syndrome called the acute apical ballooning syndrome. This was first described in the Japanese literature and was called Takotsubo Cardiomyopathy because the damaged heart looks like the trap Japanese use to trap octopus (which is called takotsubo in Japanese). This fascinating and uncommon condition is typically found

in young to middle-aged women who appear to have what looks like a heart attack. What is unusual about this syndrome is that it typically occurs after intense emotional stress, and the patients have normal coronary arteries without the expected blockages. With this condition, the damaged heart returns to normal function over time, which would be very unusual in a "normal" heart attack. It has been

reasonably demonstrated that the condition is due to really high levels of hormones in the blood that appear to damage the heart. The hormones are released by the glands in direct response to an intense emotional experience such as bereavement. Thus, this condition is almost literally a broken heart and although mortality is lower than with a regular heart attack, people can die from it. The good news is that complete recovery is the rule.

ND Medicine: What benefits does exercise have on our physical and emotional hearts?

W: One of the critical components in a weight control or weight loss program is exercise. Weight reduction can have other secondary positive effects. First, there is the simple mechanical one: Your knees wear out more if you're heavier, so you'll improve that with weight loss. Two, blood pressure control is better and easier. Third, diabetic control is better. Lower blood pressure and better diabetic control can have direct beneficial effects on cardiovascular health.

People who exercise feel better and in some cases are better. Exercise positively influences the quality of life and to some degree the quantity of life.

Many people who exercise say, "I like to exercise because I feel the high from it." Most of us who exercise know what they mean. When people feel

“Exercise gives you endorphins. Endorphins make you happy. Happy people just don't shoot their husbands. They just don't.”

-Reese Witherspoon as Elle Woods
“Legally Blonde” (2001)

better, they tend to exercise more. Now what leads to what? Are they feeling better because they're exercising or are they able to exercise because they are feeling better?

M: Endorphins are naturally occurring opiates in the brain. Exercise not only counteracts the effects of stress, but it makes us feel good because it results in an endorphin release in our brains.

W: That's right. They are naturally occurring hormones that are elevated during exercise and they have opiate-like activities on the brain. They are a mediator of why you feel better after exercise. That "runner's high" is attributed to high levels of endorphins and similar compounds.

M: Also, although more well-controlled studies need to be done, many studies are showing strong evidence that regular

ND Medicine: Do our physical and emotional hearts like sex?

M: Many studies are showing that this whole concept of falling in love is something that is hard-wired in our brains and driven by survival factors. Scientists are finding that certain aspects of who we are attracted to are hard-wired in terms of body proportions, facial features and proportions, and age such that our brains are hardwired to

It is a curious sensation: the sort of pain that goes mercifully beyond our powers of feeling. When your heart is broken, your boats are burned: nothing matters any more. It is the end of happiness and the beginning of peace.

-Ellie, "Heartbreak House"
George Bernard Shaw (1856-1950)

exercise can decrease the symptoms of depression because of its effects on the release of certain brain chemicals as well as interactions between the central and peripheral nervous systems.

W: One of the biggest benefits of exercise is with depression. Exercise has been shown to have an effect of improving depression. The problem is that when we're depressed, one of the things you don't do is exercise, because you don't feel like it. When people feel better, they exercise more. So, to some degree, it is the horse and cart. Which comes first? Are they feeling better because they are exercising? Or are they exercising because they feel better?

The data are not clean, but it does appear that exercise can have physically beneficial effects in addition to the psychological benefits. It isn't that you just feel better. You probably are better. Now, how much of that is mediated by actual conditioning and how much is through emotions and endorphins is not known. But we do encourage sensible exercise for everyone, but especially people who already have cardiac problems. We know they will feel better and they probably are better, so exercise is good for both physical and emotional well being.

pick up on the primary age of fertility for example.

Obviously, relationships are more complex than this but there is substantial evidence that aspects of human attraction are deeply rooted in our survival instincts.

Another example of this "hardwiring" is a study that had heterosexual women sniff men's sweaty t-shirts and rank them from the most pleasant smell to the least pleasant smell. They found that the t-shirts that smelled the "best" were those from a man who was the most genetically different from themselves. One of the theories used to explain this is that the most genetically dissimilar couple would provide two immune systems that would be the most different. In terms of their offspring, this would allow for better survival because it would combine aspects of both immune systems.

W: From the standpoint of heart patients, one of the things that we talk about if someone has had a heart attack is an exercise prescription. But one of the things physicians and other health care providers sometimes don't talk about, because it is very private, is when is it OK to resume normal sexual relations. Patients and their partners are a little uncomfortable talking about it,

“Many studies are showing that this whole concept of falling in love is something that is hard-wired in our brains and is driven by survival factors.”

Roseanne McBride, Ph.D.



but it needs to be discussed. The good news is that for most heart disease patients, with common sense and some guidance they can resume this normal part of life.

ND Medicine: How do you teach our medical students to take into account both the physical and the emotional heart?

M: Our students learn a lot about cardiac anatomy, physiology, pathology and so on, but because we have a patient-centered curriculum, students really get at the core of another aspect of healing that involves the relationship between the doctor and patient. In talking with people from other medical schools, it would appear that we're well ahead of the game in teaching patient-centered care in terms of our coursework and PCL cases. Further, the



intercourse, for example. Our school has traditionally focused on the behavioral aspects of health and illness. With our patient-centered learning curriculum, it enables the students to use a holistic approach with the patient, integrating both physical and emotional care.

One of beauties of patient-centered learning is that the questions about the

I will remember that there is art to medicine as well as science, and that warmth, sympathy, and understanding may outweigh the surgeon's knife or the chemist's drug... I will remember that I do not treat a fever chart, a cancerous growth, but a sick human being, whose illness may affect the person's family and economic stability. My responsibility includes these related problems, if I am to care adequately for the sick.

-Academic Dean of the School of Medicine at Tufts University

organization and processes of this curriculum send a message to our students that our institution places a high value on relationship- or patient-centeredness. This by itself creates a powerful learning experience for the students in terms of the implicit message it conveys. Namely, that the relationship between the doctor and patient is a central aspect of good medical care.

W: Just like there are two sides to the brain, there are at two aspects to illness- the physical and the emotional. One of the things that we do particularly well in this school is that we try to address both aspects. You wouldn't want to have a doctor who is a wonderful communicator but didn't know how to take care of a heart attack, for example.

But similarly, you don't want a doctor who knows all about the latest treatment for a heart but doesn't talk with the patient about resuming sexual

case under study come from the students themselves. A natural outgrowth of this learning process is the students come to understand not only what causes heart disease and how we treat it, but they also understand the patient's reaction to it, the psychological issues for the patient, the emotional issues for the families, and the attendant stresses on relationships. The students learn not only about heart disease, but also about the person in whom that heart disease resides. That person has emotions, fears, baggage, and relationships. The students have to know the principles of biochemistry, they have to know the drugs that we use to treat disease, but they also have to know the dynamics of relationships and the importance of emotions. 🌱

-Amanda Scurry



A Woman's Heart

Center of Excellence in Women's Health Supports Efforts to Improve Cardiac Health

Women are even more different from men than previously understood; educators seek to raise awareness of those differences in consumers as well as clinicians.



The CoE project focuses on outreach and encouraging women to become informed consumers and managers of their health and health care, says director **Elizabeth Burns, M.D., M.A.**, pictured here with the Red Dress symbol of the American Heart Association

HEART DISEASE IS THE NUMBER ONE killer of women, nationally and in North Dakota.

Statewide, it is estimated that, each day, three women die of cardiovascular disease, defined as heart attack and stroke. One in every three women will die from cardiovascular disease.

"It's very serious," said **Elizabeth Burns, M.D., M.A.**, professor of family

and community medicine and director of the National Center of Excellence (CoE) in Women's Health Region VIII Demonstration Project, Grand Forks.

She stresses the need for everyone to be aware of women's heart disease and is working "to increase the awareness at the consumer level and the physician level."

Men and women are more different

than previously understood and, when it comes to heart disease, "there are differences in symptoms and in (patient) presentation," Burns explains. With women, physicians "tend to think it's something else" such as a gastrointestinal problem like reflux disease or a pulmonary problem – "although I think that's changing."

In order to address this tendency in health care, "we need to make sure that we have more primary care physicians," she says, and "we need to make sure that there are enough primary care physicians out there who know the differences."

Center, Fargo, a woman's heart has smaller arteries and when it is not functioning properly there is more potential for spasm.

Research has found that, in women with heart disease, "the vessels are remodeled," Farkas says, instead of a single lesion such as occurs in men, women are more likely to have multiple little lesions. And, because the size of the vessel is smaller, it is not possible to stent as well."

Women experience "worse outcomes from bypass surgery or heart attack," she says, "and have a higher mortality rate" from cardiovascular disease.

Unfortunately they sometimes ignore their symptoms, or they may "present with less pain and more with fatigue and generalized symptoms such as nausea or a very atypical discomfort in the chest," she says.

"But they also *can* present with typical symptoms such as crushing chest pain or a feeling of heaviness in the chest."

Teaming up to raise awareness

With Burns' leadership, the CoE has tackled the issues of women's health, including cardiac health, on multiple levels and in multiple venues. Last fall, for instance, the CoE sponsored the first North Dakota Women's Health Connection in Grand Forks to encourage women to take a more proactive role in their own health care. The event featured endocrinologist and geriatrician **Saralyn Mark, M.D.**, assistant clinical professor of medicine and obstetrics at Yale University School of Medicine and consultant to NASA, who spoke on women's heart health.

The CoE also has partnered with the state chapter of the American Heart Association in support of its "North Dakota Goes Red" campaign designed to raise public awareness of heart disease in women.

"Partnerships like these help us by providing more opportunities to reach a larger audience of women and their families, and convince them to join the movement and to love their hearts,"

.....**Warning Signs**.....

<p>Heart attack</p> <ul style="list-style-type: none"> - Uncomfortable pressure, squeezing, fullness or pain in the center of the chest that lasts more than a few minutes, or goes away and comes back - Pain or discomfort in one or both arms, the back, neck, jaw, stomach - Shortness of breath along with, or before, chest discomfort - Other signs each as breaking out in a cold sweat, nausea or lightheadedness 	<p>Stroke</p> <ul style="list-style-type: none"> - Sudden numbness or weakness of the face, arm or leg, especially on one side of the body - Sudden confusion, trouble speaking or understanding - Sudden trouble seeing in one or both eyes - Sudden trouble walking, dizziness, loss of balance or coordination - Sudden severe headache with no known cause
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If you see or have any of these symptoms, call 9-1-1. Treatment can be more effective if given quickly. Every minute counts!
Courtesy of the American Heart Association

Different symptoms, different structure

In the past, biomedical research has focused almost exclusively on men. Health professionals have practiced on the pervasive assumption that knowledge gained from this research could be applied to women.

"When women have cardiac disease, they may have different symptoms," Burns asserts. "When they're having pain, it may be in a different location. The doctor may need to do different kinds of tests" to determine the correct diagnosis.

According to **Susan Farkas, M.D.**, cardiologist with MeritCare Heart

according to **Joan Enderle**, director of the Go Red for Women campaign, Jamestown.

"We want to encourage them to learn their risk factors and ways to reduce those factors in order to improve their health."

The state Go Red for Women campaign also aims to reach health professionals who take care of these women, Enderle says, noting that cardiovascular disease takes more North Dakota women's lives than the next four causes of death combined.

"Raising awareness at the consumer level and the physician level is key," Burns says, "and we're here to help."

In the clinical realm, the CoE sponsored **Michael Brown, M.D. '82**, clinical assistant professor of obstetrics-gynecology and director of the CoE clinical component, and **Cindy Anderson, Ph.D. (Physiology '03)**, assistant professor of family and community nursing, both of Grand Forks, to attend training using "Heart Truth" materials in Washington, D.C. The training is aimed at increasing physician awareness of women's heart disease.

The goal is to "bring people in, get them trained, so they can go out" and educate other health professionals about new advances in knowledge of women's heart disease, Burns says.

As director of the CoE educational component, **Rosanne McBride, Ph.D. (Psychology '95)**, clinical psychologist and assistant professor of family and community medicine, Grand Forks, analyzes patient "paper" cases used in teaching medical students "to ensure that, if there's a gender difference in presentation of diseases or in any diseases found more often in women, that aspects of gender-based medicine are included," Burns said.

"We have a good number of cardiac cases," McBride says, in which "we can bring out the fact that there are differences."

Medical students can learn to compare differences in biological functions, development and pharmacological response in males and

females, she says, and learn about conditions that are more common, more serious or have interventions that are different in women.

McBride uses guidelines from the Association of Professors of Gynecology and Obstetrics to assess "what we're currently teaching and identify any gaps concerning women's health education."

"There is so much communication among faculty and students about curriculum issues and so many opportunities to integrate changes into our patient-centered curricular structure," she says, "any gaps can be relatively quickly addressed."

Medical School for the Public: Women's Health through the Lifespan

Topics:

- *Hormone therapy*
- *Infertility*
- *Cancer screening*
- *HPV (human papilloma virus) vaccine*
- *Depression and anxiety*
- *Incontinence*


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North Dakota Women's Health
CORE
CLINIC RESEARCH | OUTREACH EDUCATION



Keeping North Dakota
women connected to a
healthier tomorrow

"Our Office of Medical Education works very hard to consistently refine cases and our curriculum so it can be better and better all the time," she says. "Women's health education is one example of this." 

-Pamela D. Knudson

WEB EXCLUSIVE:
For more information about the CoE or the Go Red for Women campaign visit:
www.ndmedicine.org



When in R·O·M·E·

Students Learn by Doing

AT JAMESTOWN WHERE HE IS studying and training for seven months in the Rural Opportunities in Medical Education (ROME) program, third-year medical student **Justin Reisenauer** says he has "been treated like a colleague" and has found tremendous enthusiasm for teaching by physicians and other health professionals who have made him feel very welcome.



The ROME program "is about doing, not passively watching or shadowing a physician," says **Justin Reisenauer**, third-year medical student (center), shown here examining a patient with **William McMillan, M.D. (B.S. Med. '82)**, clinical assistant professor of family and community medicine, Jamestown.

"Everyone here wants to teach you in their area of expertise," he exudes. "They are all willing and excited to teach - from the nurses to the radiology techs and respiratory techs to laboratory staff to physicians in surgery and radiology, and many more health care team members.

"Everyone goes out of their way to make a teaching point, when they can."

The greatest advantage for students in ROME, Reisenauer says, is the

opportunity to witness the continuum of care. For example, he was part of an expectant mother's office visit to her physician, later helped to deliver her child and, sometime later, conducted a well-baby exam on the infant.

In the traditional curriculum, there would be three different students seeing that patient on those occasions, he says.

Describing himself as "an active learner," he says he "is able to formulate a better understanding when allowed hands-on training. There is no competition for hands-on training in the ROME program - no other residents or students actively seeking guidance from the preceptor." There's just the one-on-one, physician-to-student training.

"I enjoy working closely alongside the physicians in the diagnosis, treatment and management of each patient," he says. "It is valuable to gain experience in dermatology, radiology, emergency medicine, anesthesiology and other specialties.

"To have these exposures as well as participate with the specialist are invaluable."

According to **David Muhs, M.D. '85**, clinical associate professor of family and community medicine, who directs the program in Jamestown, the strength of the ROME experience "is the fact that students get a wide variety of exposure to a lot of different (aspects of medicine) over a period of time, and it is more clinically-based," rather than hospital-based, which is how medicine is practiced today.

"They can follow a patient through a process," Muhs says, "not just stick to" one specific specialty.

Reisenauer cites the "high quality of education and training in Jamestown," noting that the hands-on training is "extremely beneficial and allows you to strengthen the weaker aspects of your knowledge base."

Dickinson added as ROME Site

"We are very excited to add Dickinson" to the roster of communities involved in the ROME program, says **Roger Schauer, M.D. (B.S. Med. '69)**, associate professor of family and community medicine, Grand Forks. "We have been working for several years to add Dickinson as a ROME site." Students will begin their ROME experience there in November 2007.

Coordinators are: **Heather Hughes, M.D. '01**, and **Kamille (Bachmeier) Sherman, M.D. '99**, both clinical assistant professors of family and community medicine at the UND medical school. **Thomas Arnold, M.D. '84**, clinical assistant professor of obstetrics and gynecology, was instrumental in getting the ROME program started in Dickinson.

Hughes went through the ROME program in 1999-2000, at Williston, as a medical student at UND; she is one of the first ROME students to establish a medical practice in North Dakota.

Other ROME sites are Devils Lake, Hettinger, Jamestown and Williston.

ROME Research Reveals Student Preferences

	ROME Students	Traditional Program Students
Selected primary care* residency training after earning MD degree	62%	36%
Selected family medicine training after earning MD degree	38%	16%
Selected general internal medicine training after earning MD degree	21%	11%

*family medicine, internal medicine, combined medicine-pediatrics

Note: Data compiled by Department of Family and Community Medicine over a six-year period ending in 2004

Along with Muhs, **Scott Rowe, M.D. (Family Medicine '85)**, **Ryan Holzwarth, M.D. '02**, **Philip Jystad, M.D. (Family Medicine Residency '91)**, **Steven Maier, M.D. '79**, and **Raymundo Tan, M.D.**, "have all been extremely helpful with their exceptional" teaching skills.

According to **Joshua Ranum**, a ROME student in Hettinger, "We are treated as equals by the staff and patients, and not second-class labor. The doctors treat us (and expect us to act) like interns..."

"We're not limited by the rotation we're on, and the staff is very good about grabbing us" if a patient with a new problem walks through the door.

"The teaching is great," he says, "everyone is willing to teach and let us learn by doing. All of the physicians have been excellent teachers, and we've learned a great deal from them all."

"Another great advantage of ROME is the ability to become an active part of the community. Already this year, I've participated in the local band, officiated football games, helped out at church, and even found time to hunt pheasants."

Ranum is "headed toward a career in family medicine," he says. "I definitely want to practice in a rural area

where you can have a much broader practice. I was set on practicing in a smaller community even before ROME, but the program has definitely made me realize that rural medicine is a great fit for me."

Mandy Sorlie, a fourth-year medical student who plans to practice family medicine in rural North Dakota, says, "I thought that ROME would prepare me for my future practice better than a traditional curriculum."

As a senior who will graduate in May, she says, "I value the continuity of care that I was able to provide during my seven months in the ROME program."

"Continuity of care is the basis of family medicine in my opinion, and it is what draws me to this specialty. I truly enjoyed the relationships I built with my patients during ROME."

She took the ROME program in Jamestown where, she says, "everyone was great to me, really taking time to teach me and make me feel welcome."

"My ROME experience reinforced that family medicine is the field for me and opened my eyes to a possible practice site."

-Pamela D. Knudson

On the Mend

Physical therapy students learn cardiac rehabilitation throughout their education



UND physical therapy students (*from left to right*) **Heather Stecher** of Hettinger and **Laura Parent** of Minot supervise fellow PT student **Adam Suedel** of Grand Forks as he exercises on the NuStep. In laboratory and clinical experiences, PT students learn to place heart monitors on patients and monitor patients' EKGs during exercise.

THIS YEAR ABOUT 1.2 MILLION Americans will have a first or recurrent heart attack. For those who survive, a comprehensive cardiac rehabilitation program may enhance recovery.

At the UND School of Medicine and Health Sciences, physical therapy (PT) students are exposed to all four phases of cardiac rehabilitation.

Rehabilitation Rundown

According to the American Heart Association, cardiac rehabilitation is a medically supervised program to help patients with heart dysfunction recover quickly and improve their overall physical and mental functioning. The goal is to reduce the risk of another cardiac event or to keep an already present heart condition from getting worse.

"Cardiac rehab isn't just walking on a treadmill three times a week," explains **Renee Mabey, P.T., Ph.D. (M.S. Exercise Science '84, Ph.D. Teaching and Learning '95)**. "It is all-encompassing and includes maintaining a healthy lifestyle overall."

To help establish and maintain a healthy lifestyle, patients typically work with a team of health care professionals, led by a physician. The team can include a nurse, dietitian, physical therapist, occupational therapist, smoking cessation counselor and vocational counselor. Physical therapists assist the patients with safe exercise and return to activities.

Mabey was a practicing PT for 14 years, 10 of which were in cardiac rehab, before she started teaching at UND where she provides an overview of PT's involvement in the four phases of cardiac rehabilitation.

The first phase occurs in the hospital directly after the heart attack. The PT works with patients to increase their activity levels safely in preparation for going home. In the 12 weeks following release from the hospital, patients move to Phase II. Phase II includes monitored exercise sessions several times a week, often in an outpatient setting. Phase III, a community-based program, has the patient working to improve function and maintain healthy habits with only occasional guidance and help from their rehabilitation team. Finally, at Phase IV, rehabilitation is complete and the patient is able to self-sustain a healthy lifestyle.

Once isn't enough

Students who are pursuing a Doctor of Physical Therapy degree at UND are exposed to all phases of cardiac rehabilitation throughout their education. In lectures, they are taught the anatomy, function and disorders of the heart. In laboratories, students perform physical assessments, body composition procedures and exercise testing for heart and lung fitness. They also use case studies to write exercise prescriptions.


In clinical experiences, students gain an in-depth knowledge of Phases I and II. **Jerry Knute, B.S.P.T. '76**, practices at Warren Community Hospital in Warren, MN, and has served as a clinical instructor for UND PT students for 15 years. He works to make certain students are exposed to all aspects of rehabilitation.

"Before the patients come in, students get to read through the files and see what procedures they've had," said Knute. "They get to know the patients' histories before they even meet them."

In addition to working with Knute, the students team up with a registered nurse and a dietician to provide the hospital's comprehensive cardiac rehabilitation program.

"We make sure the students know to counsel patients on dietary changes, stress reduction, self-monitoring during exercise and proper cool-down routines," explains Knute.

During the nine-week rotation, students gain experience with all the tools of the trade as well. They lead patients through warm-up exercises and take regular blood pressures throughout the workout. They also learn to place telemetry heart monitors on patients and monitor the patient's EKG while they are exercising.

"UND sends us nothing but exceptional students," said Knute. "They are always very knowledgeable and ready to work. I learn just as much from them as they do from me." 

Jerry Knute, B.S.P.T. '76, established his physical therapy practice at Warren Community Hospital in Warren, MN in 1976. Ten years later, the hospital established one of the first cardiac rehabilitation programs in the area.

Knute's PT facility can serve up to four people at a time. The Warren Community Hospital cardiac rehabilitation program has up to 12 people enrolled at any one time.

"We have excellent community support," said Knute. "Almost all of the equipment came from individual donations or fundraising efforts in the community."

-Amanda Scurry

RESEARCH Meets REAL WORLD

Moving Knowledge to the Marketplace

BORDERS' Partnership Forecasts Job Growth and Expanded State Economy

THE UND MEDICAL SCHOOL'S BORDERS project and its corporate partner, ProLogic Inc., are expected to be the first tenants when the Center for Life Sciences and Advanced Technologies (COELSAT), a research and commercialization facility, opening in late 2007 on the west end of the UND campus.

The \$12-plus million, secured 50,000-square-foot COELSAT facility is the result of a partnership between the UND Research Foundation, the North Dakota Department of Commerce and the Grand Forks Economic Development Corporation. Groundbreaking took place in December.

The goal is to create high-wage jobs in new market sectors through the development of research innovations with UND into high-value products that are made in North Dakota.

BORDERS (Biological Organic Radiologic Educational Response System) was launched in the aftermath of the 9/11 attack with a three-year, \$2.4 million grant

from the U.S. Department of Health and Human Services (DHHS) to train health professionals to respond to man-made and natural disasters. It is now a collaborative project involving commercialization partner, the UND Research Foundation, and ProLogic, Inc.

BORDERS personnel created a complete emergency preparedness training program for health care professionals with the DHHS funding which ended in August.

Senator Byron Dorgan (D-ND) brought Pro-Logic and BORDERS together and was successful in securing \$1.3 million in 2007 federal appropriations funding for the BORDERS project from the U.S.

Department of Defense.

"We created a curriculum that would sustain itself beyond the grant period," said **Linda Olson, Ed.D. '96**, BORDERS director and director of special projects development in the Office of Medical Education at the UND medical school, Grand Forks.

"We ended up with a



Linda Olson

The \$12 million Center of Excellence in Life Sciences and Advanced Technologies will link UND researchers with private companies to create new technologies and new jobs that strengthen the region's economy.



WORLD

product that has great potential to improve patient care in the military sector and in civilian settings," Olson said.

In partnership with Virginia-based ProLogic, BORDERS is conducting collaborative research on new products and developing new contracts aimed at providing up-to-date information on giving emergency care to victims of an attack or natural disaster.

"We take the technology and put it in a format the Army can readily digest," said **Paul Maguire**, ProLogic's vice president for business development.

Using the latest information created by BORDERS on an electronic, handheld tablet, Army personnel can treat patients and store individual medical records that can be accessed by personnel wherever the patient may be transferred. A kind of electronic field manual, this technology replaces traditional patient charts on paper, greatly reducing or eliminating lost records.

The device, which the Army calls a "joint theater trauma registry (JTTR)," is being used in Baghdad by U.S. military personnel to provide improved treatment and follow-up care for casualties. Outside the military, it's been dubbed an "emergency medical

responder tablet," Maguire said.

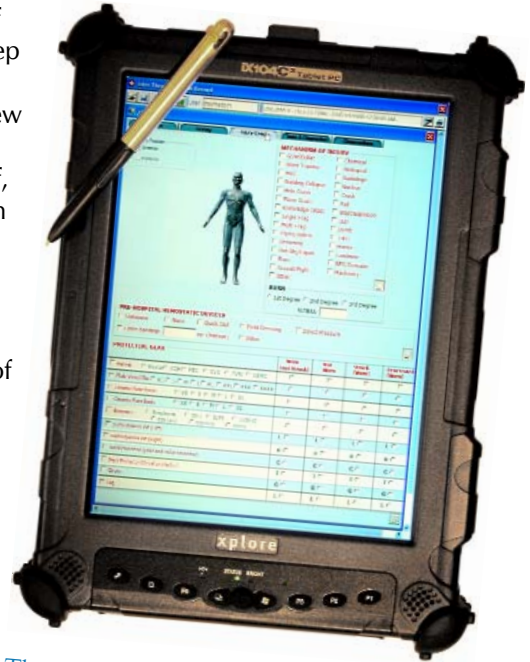
The welcome advantage of this product is that "we can keep track of who has this (disease condition) and when we get new information, we can contact them," Olson said, especially if, for example, vaccine protection is very limited.

"New symptomology of a disease can be immediately communicated," said **James Petell, Ph.D.**, UND's director of technology transfer and commercialization and executive director of the UND Research Foundation.

Maguire likened ProLogic to a "middle man" that "finds customers for technology they (universities) have on the shelf to meet the unfunded requirements of the military," he said.

"For the federal government, the best way to solve problems is not starting from scratch but taking technology that's 80 percent complete and modifying it a little to suit (their) needs."

- Pamela D. Knudson



The new electronic field manual, containing information created by the BORDERS project at the UND medical school, is being tested by the U.S. military in Baghdad.

About the Center for Life Sciences and Advanced Technologies (COELSAT)

Commercializing Intellectual Property for Job Creation

Six corporate life-science and advanced technology partners have signed on to occupy the COELSAT, joining forces with UND to bring intellectual property from the university to meet "real world" needs, according to **James Petell, Ph.D.**, director of technology transfer and commercialization at UND, including both well-established and start-up companies.

COELSAT, developed under the Center of Excellence program, a new economic development initiative sponsored by the North Dakota Legislature, allows UND to

"change the dynamics of current jobs in North Dakota," Petell said.

The new facility provides an environment where high-paying jobs and new student internship opportunities can be developed as UND faculty continue, or begin, merging their research with the interests of private companies.

Over the next five years, activities at the center are expected to generate 150 new jobs with an average annual salary of \$65,000, said **Peter Alfonso, Ph.D.**, vice president for research at UND. He expects up to three buildings to be built in the park within that time frame.

Inside & Out

Diagnostic imaging gives medical students another view in gross anatomy lab



Clockwise from top right: **Kenneth Ruit, Ph.D.**, and **Patrick Carr, Ph.D.**, associate professors of anatomy and cell biology, show first-year medical students **Lacey Armstrong** and **Justin LeBlanc**, both of Bismarck, a diagnostic image of a patient's heart.

"UNLESS THEY BECOME SURGEONS, this is the last time they are going to see their patients that way," said **Kenneth Ruit, Ph.D.**, associate professor and vice chairman of anatomy and cell biology at the UND School of Medicine and Health Sciences, about the gross anatomy lab medical students are required to take.

Cadaver dissection is essential to medical students' knowledge of basic human anatomy, but instructors have found it difficult to apply that knowledge to what the students will experience in their practices. But now, thanks to the medical school's new radiology chair, **Edward ("Ted") Fogarty, M.D. (Transitional Residency**

'98), first-year medical students are starting to see anatomy lessons inside and out.

“When I was learning to read diagnostic images later in medical school I remember thinking ‘this would have been nice to have in the gross anatomy lab’.”

Edward (“Ted”) Fogarty, M.D.,
UND medical school radiology
chair

High-tech photo album

Fogarty provides anatomy instructors like Ruit with a library of electronic diagnostic images of the abnormalities and pathologies the students are seeing in the cadavers. These images can be from x-rays, Computed Tomography (CT), angiography, mammography, Magnetic Resonance Imaging (MRI) or ultrasound. Faculty members display the related images on a large screen, located in the gross anatomy lab, and explain how to see the abnormality or pathology in the image.

"This lets them translate what they learn with the cadaver to diagnostic imaging right in the gross anatomy lab," said Ruit. "We are combining the traditional dissection-based learning of anatomy with state-of-the-art digital technology for navigating and interpreting clinical imaging of patients."

The faculty members are using a free, downloadable Apple platform-based program called OsiriX to manipulate and display the images for the students. The program allows faculty and students to create multidimensional images and combine different types of images. The program also can separate out only parts of the image so, as an example, an image can be changed to reveal only blood vessels.

The goal of the addition of radiology to gross anatomy lab is

twofold: It will improve radiology teaching among first- and second-year students who have often found interpreting diagnostic images difficult when they entered their clinical years and it will connect cadaver dissection (which is not an option when diagnosing a patient) to the reality of diagnostic imaging (which is).

Something old, something new

The idea of connecting basic science learning to real life is not a new one at UND. Since 1998, medical students have been taught using a curriculum that places the patient at the center of learning. From the first day of medical school, students are introduced to patients, in "paper cases," each week and learn the basic sciences necessary to arrive at the correct diagnosis for the condition presented.

When Fogarty, a radiologist based in Bismarck, came on board as chair of the medical school's radiology department in July, he was determined to expose medical students to radiology from the beginning of their education.

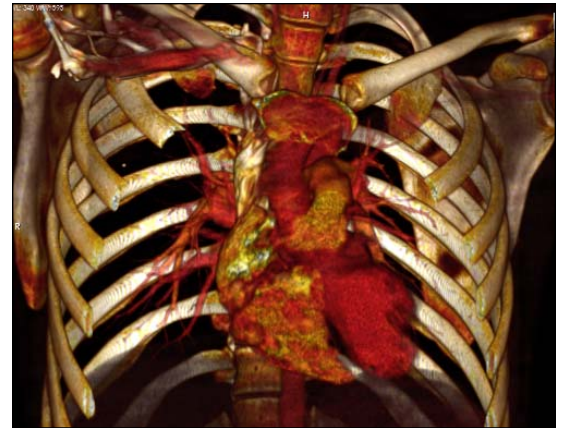
"When I was in medical school, I had some great anatomy teachers, but I never fully grasped some of the relevance," said Fogarty. "When I was learning to read diagnostic images later in medical school I remember thinking 'this would have been nice to have in the gross anatomy lab.'"

"I hope this will create a bridge of knowledge from clinical imaging anatomy to what is initially learned in the first year," he continued. "This is a way for the students to look at the whole picture."

Although cadaver dissection is one of the oldest forms of medical education, in the lab at UND it is being combined with modern-day technology to ensure that medical students can fully understand the anatomy of the human

body and the diseases that affect it.

-Amanda Scurry



OsiriX, a free, downloadable Apple platform-based program, can be used to perform "virtual" dissections on diagnostic images. In this image, the sternum and portions the overlying muscles and ribs are removed revealing the heart chambers.

WEB EXCLUSIVE: Learn more about OsiriX image processing software by visiting www.ndmedicine.org



Doctor Duet

Richelle and Miran
BLANCHARD
MD Classes of 2008
and 2010
HOMETOWN:
Dickinson, ND



ON A DESK IN DICKINSON, ND, there are two framed acceptance letters from the UND School of Medicine and Health Sciences. **Joel Blanchard, M.D.,** is the proud father of two current medical students.

Richelle Blanchard is a third-year medical student, studying at the medical school's Southeast Campus in Fargo and **Miran Blanchard** is a first-year medical student.

The siblings grew up around medicine and discovered their passion for it at an early age. Born in Canada, the Blanchards lived in Saskatchewan until moving to Dickinson in 1992.

Joel, who was a family practitioner in Canada, provided emergency room care in Dickinson for 14 years. He recently joined the Medcenter One Walk-in Clinic North in Bismarck.

"When we lived in Canada, our dad was always so busy that on weekends we would spend time with him while he was reading ECGs," remembers Miran. "We always tried to guess if they were normal or not and to show him what wasn't normal in them. We were probably five to eight years old."

"You could tell that he really liked what he did," remembers Richelle of her father's career as a physician.



Richelle and Miran Blanchard, siblings who used to elbow each other while forced to play piano duets, are now both medical students at the UND School of Medicine and Health Sciences.

"People would stop us in the store to say hello to him and send us cookies, all because he was their doctor."

"It is not unusual to have siblings going through medical school within a few years of each other," said **Judy DeMers**, associate dean for student affairs.

"There is often times a family influence in medicine and the first sibling's interest clears a path for the

other sibling to develop their own interest."

Still, the siblings agree that neither their father nor their mother, **Marie-Anne**, who was a nurse herself, pressured them to go into medicine.

"It was just a natural interest for us," explains Richelle. "We would go to medical explorers classes... anything where we could learn more about medicine."

DeMers said having an older sibling who has just been through what you are going through has its benefits.

"They have someone to go to about format or types of possible exam questions, the ideal order for their clerkships, what to expect in interviews and what residencies to look at," she said.

Miran has reaped the benefits of having a sister just two years ahead of him in medical school.

"You know what to expect," he said. "If I have a question I can always ask her and get a better idea of what I'm heading into."

The siblings' similarities continue beyond medicine. Both graduated from UND with Bachelor of Science degrees, Richelle in 2004 majoring in biology with a minor in chemistry and Miran in 2006 majoring in chemistry and biology with minor in anthropology. Both have studied the piano extensively, traveled and studied abroad and have well-rounded educations overall.

"They are the whole package of what medical schools look for," said DeMers about both Blanchard siblings. "A varied background in the liberal arts is important because most doctors have to relate closely to patients. Having a variety of experiences, like Miran and Richelle do, supports your understanding of what is happening in the world."

But wait... there's more. One more, actually. The youngest Blanchard, **Stephane**, will be a freshman at UND in the fall and it seems dad could be adding one more framed UND medical school acceptance letter to his desk someday. 🌿

-Amanda Scurry

Coming Home to Fight Cancer

William Noyes, M.D. '89, returns to his home state to open the Cancer Center of North Dakota, adding another option for patients in the region.



SIGNIFICANT STRIDES HAVE BEEN made in the field of oncology, says **William Noyes, M.D. '89**, radiation oncologist at the Cancer Center of North Dakota and clinical associate professor of internal medicine, Grand Forks.

"There's more of a team approach" that encourages specialists to work together, he says. At the Cancer Center of North Dakota "we designed the floor plan so that the different professionals *have* to work together. That's what the future will look like - immunotherapy, radiation modalities, chemotherapy, various radioactive modalities, surgery," all working together for the benefit of the patient.

Opened in June 2005, the Cancer Center of North Dakota is the result of

an idea that grew from an observation a couple of physician colleagues shared with Noyes, along the lines of "don't you think Grand Forks could use a center dedicated to comprehensive cancer care?"

The idea germinated, grew and, after much study on Noyes' part, became a reality that now enhances cancer patients' options in the region.

"We wanted to create a cancer center that would differentiate itself," he says, "where people could go and be the center of their care - not a number. Where they would receive the same quality of care that's as good as anywhere else, in- or out-of-state.

"We researched our options and then invested in the latest generation of technology, including bringing the first

On-Board Imager to North and South Dakota, to provide world-class cancer treatments here in Grand Forks, allowing people to stay close to family and friends."

The Cancer Center of North Dakota, a full-service, outpatient clinic which recorded more than 300 patient visits in the past year, is designed to accommodate up to four or five doctors, Noyes says. He and his partner, medical oncologist, **Richard Cambareri, M.D.**, have privileges at the local Altru Hospital.

Why oncology?

So what led this bright, personable and remarkably gifted North Dakota native to a career in medicine and eventually in radiology oncology?

"I thought about becoming a doctor off and on from high school forward," says Noyes who grew up in Cando, ND.

In medical school at UND he says "it was difficult" to narrow his career choice; he was drawn to internal medicine and surgery. He credits oncologist **Judith Kaur, M.D. (B.S. Med. '77)**, then practicing and teaching in Bismarck, and **Irwin Epstein, M.D.**, an internal medicine faculty member in Minot who has since passed away, as influential role models.

An "unbelievable experience" is how he describes medical school. The advantage that students have in a rural setting is the one-on-one relationship they can build with faculty members, he says. "I was allowed to see, do, manage and treat things that others haven't."

Intriguing disease process

After graduating medical school, he took training in internal medicine at Gundersen Medical Foundation in La Crosse, WI, and in general radiology oncology at the University of Wisconsin, followed by two fellowships. As a fellow, he wrote grants and received funding to study the role of the drug, tamoxifen, relative to the effects of radiation and another to study anti-androgen therapy for prostate cancer.

Noyes was excited to see how the field was changing with the use of

computers. Ultimately, he chose oncology because "the pathophysiology, the disease process of cancer - how it works, was very intriguing..."

Brighter prospects for patients

"So much more is known about cancer now, a lot of things are changing."

Today, in his practice, "it's the rare patient who we can't offer anything for," he says, "however, it's difficult when you see a younger patient" who's battling cancer.

"It would be great if we could hit home-runs all the time," he notes. For example, the survival rate for bladder cancer, all stages, is 45 to 55 percent.

"What we need to do is figure out what we're doing well and do it better so that number goes up to 85 to 95 percent."

"Even when patients are facing end-of-life, we can improve their outlook and improve quality of life for them and for their families," he says. At such a time, "little things mean so much."

The hope lies in research, he says, adding that "we're getting ramped up to do clinical research. There are several tumor groups that we're involved with."

Making a difference

As he considers the medical landscape of his home state, he recognizes the need for primary care doctors, especially in rural regions, as well as all types of physicians.

"There is a large need for primary care physicians," he says, but "when patients need a specialist, it becomes more obvious that there's a need across the board."

And further, he believes "people who were raised here are the best people to come back, stay and try to make a difference," he says. He and his wife, **Kari (B.S.N. '87)**, and daughters, **Hannah, 11**, and **Rebekah, 8**, reside in Grand Forks.

"There's always something special about coming back to your homeland."



A compelling interest in the disease process, how cancer works, led **William Noyes, M.D. '89**, to a career in radiation oncology and to establish the Cancer Center of North Dakota in Grand Forks.

-Pamela D. Knudson

Prospective Med Students Seek Admission to UND at Rate of 5:1

Five applications for each available seat have been received for the Doctor of Medicine (M.D.) Class of 2011, according to **Associate Dean Judy DeMers**, student affairs and admissions, at the UND School of Medicine and Health Sciences.

A total of 276 applications have been received for the 55 state-supported seats in the first-year class which begins study in August 2007, DeMers said.

"We are very pleased with the quality of the applicant pool this year," DeMers said. "Not only are they well-qualified academically, but they also appear very committed to helping people with their knowledge and skill."

The medical school's admissions committee recently completed about 140 interviews to select students for the regular seats in next year's incoming class. In February, the committee will conduct interviews for seven federally-funded seats to select qualified students to be admitted through its Indians Into Medicine (INMED) Program.

Outstanding Occupational Therapy Awards



Stube



Zimmerman



Lemoine

Jan Stube, Ph.D., O.T.R./L., associate professor of occupational therapy, was recognized with the Occupational Therapist of The Year Award for 2006 by the North Dakota Occupational Therapy Association. **Sonia Zimmerman, M.A., O.T.R./L., F.A.O.T.A.**, assistant professor of occupational therapy, was recognized nationally with the Pi Theta Epsilon Scholar of the Year Award for 2006. **Monica Lemoine**, a senior OT student, was recognized by the North Dakota Occupational Therapy Association with the Occupational Therapy Student of the Year Award.

UND Neuroscience Research Takes Center Stage in India



"This helps put UND on the international screen," says **Jonathan Geiger, Ph.D. (Pharmacology and Physiology M.S. '75, Ph.D. '82)**, professor and chair of pharmacology, physiology and therapeutics, about the symposium he organized for the International Update on Basic and Clinical Neuroscience Advances and 24th Annual Conference of Indian

Academy of Neurosciences in December at Lucknow, India.

He organized the symposium on neuropathogenesis of HIV-1 dementia which showcased his research and that of other authorities from the U.S. and India. At the event, supported by grants from the International Society of Neurochemistry and the UND medical school, speakers presented their latest findings to an audience of clinical and academic neuroscientists.

The event is part of UND's efforts to increase ties with India. **Peter Alfonso, Ph.D.**, UND vice president for research, spoke at the assembly about UND's research generally and neuroscience research in particular. **Surendra Parmar, Ph.D.**, Chester Fritz Distinguished Professor Emeritus of Physiology, also has been involved in advancing UND's association with academic leaders in India.

INBRE to Host States Regional Meeting in May

The North Dakota Idea Network of Biomedical Research Excellence (INBRE) will host the annual Idea (Institutional Development Award) States Regional Meeting May 21-22, 2007, at the Radisson Inn in downtown Fargo.

Participating states include North Dakota, South Dakota, Nebraska, Kansas and Oklahoma. INBRE and Center of Biomedical Research Excellence investigators and staff are encouraged to participate. Meeting participants will include staff from the National Institutes of Health (NIH) National Center for Research Resources which funds and administers the Idea program.

The Idea program broadens the geographic distribution of NIH funding for biomedical and behavioral research. Idea increased the competitiveness of investigators through support for faculty development and enhancement of the research infrastructure at institutions located in the currently eligible 23 states and Puerto Rico.



North Dakota INBRE is a statewide network administered by the UND School of Medicine and Health Sciences in collaboration with North Dakota State University. Major projects are led by researchers at Dickinson State University, Mayville State University, Minot State University, Turtle Mountain Community College and Valley City State University.

WEB EXCLUSIVE: To learn more or register online, visit www.ndmedicine.org



Sens Appointed to National Association of Medical Examiners' Board of Directors



Mary Ann Sens, M.D., Ph.D., chair and professor of pathology at the UND School of Medicine and Health Sciences, has been appointed to the board of directors of the National Association of Medical Examiners (NAME). NAME is a professional organization of physician medical examiners, medical death investigators and death investigation system

administrators who perform the official duties of the medical and legal investigation of deaths of public interest in the United States.

Her appointment is significant because rural areas have not had representation on this board. She also is a member of the American Society of Clinical Pathology (ASCP), currently serving on the group's nine-member Fellows Council. She serves on ASCP's President's Emergency Plan for AIDS Relief committee which oversees the Bush Administration initiative to establish quality laboratories in Africa. Sens also serves as medical coroner for Grand Forks County in North Dakota and Marshall and Red Lake counties in Minnesota.

Nominations Sought for Charles E. Kupchella Preventive Medicine and Wellness Award

Nominations are being sought by UND for the Charles E. Kupchella Preventive Medicine and Wellness Award.

The award recognizes the achievements of individuals and organizations who have worked to improve health and wellness through lowered rates of disease and disability by developing and delivering effective health promotion and prevention initiatives.

Named for the current president of UND, the Kupchella Wellness Award will be presented in May during the UND medical school's M.D. Class of '07 commencement awards brunch.

UND is seeking nominations of individuals and organizations in North Dakota and surrounding states who have contributed significantly to disease prevention and healthful living.

The award recipient will receive a \$1,000 cash award and a commemorative plaque. A picture of the recipient will be displayed on a plaque in UND's Student Wellness Center.

The award has been made possible by a gift to the UND Foundation from Dr. Manuchair Ebadi, senior advisor to the president and associate vice president for health affairs and medical research at UND and associate dean for research and program development at the UND School of Medicine and Health Sciences.

The nomination letter and supporting materials are due by 5 p.m. on March 1, 2007, in the Office of Public Affairs, UND School of Medicine and Health Sciences, 501 N. Columbia Road Stop 9037, Grand Forks, ND 58202-9037.

WEB EXCLUSIVE: For award criteria, visit www.ndmedicine.org



Neuroscience Addition Completed

The recently completed, \$1 million addition to the Neuroscience Research Facility provides 2200 square feet of laboratory space for investigators studying neurodegenerative diseases such as Alzheimer's, Parkinson's, epilepsy, HIV-associated dementia, multiple sclerosis and nerve regeneration. The Neuroscience Research Facility, located west of the UND medical school at Hamline and Fifth Avenue North, is a 17,000 square-foot structure constructed with total funding of \$4 million from the U.S. Department of Health and Human Services.



New Program Brings Research into Rural Practice

The UND School of Medicine and Health Sciences is bringing rural physicians, nurse practitioners and physician assistants together to look at the best way to maintain high quality of care in their practices. The new program is funded by a Physicians' Foundation for Health Systems Excellence grant of \$370,000 a year for up to three years. Selected from over 200 applicants, the UND program is one of only 15 grantees to receive funding.

The Department of Family and Community Medicine at the UND medical school will use the grant to establish a practice-based research network of rural health care professionals in the Upper Midwest. There are more than 100 such networks nationwide, but the UND network will be one of the few focused on rural practices.

WEB EXCLUSIVE: To participate in the research network or learn more about the project, visit www.ndmedicine.org



Summit Addresses State's Health Workforce Shortages

Nearly 200 people with an interest in the state of North Dakota's health care workforce met in Bismarck in December to discuss expanding, recruiting and retaining the workforce.

The North Dakota Health Workforce Summit brought together state policy makers and government agencies; primary, secondary and college-level educators and career counselors; health care administrators, state health care organizations and licensing boards and public health representatives.

Participants shared efforts underway in North Dakota and other states to expand, recruit and retain the health workforce, consider current and projected health workforce information in North Dakota and the nation, and work together to develop strategies to address North Dakota's health workforce needs.

Today, 81 percent of North Dakota's 53 counties are federally designated health professional shortage areas and approximately a quarter of the state's physicians and nurses could retire within the next ten years, according to a study by the Center for Rural Health.

The summit was sponsored by the Dakota Medical Foundation and Center for Rural Health Programs including the Dakota Geriatric Education Center, North Dakota Medicare Rural Hospital Flexibility Program, State Office of Rural Health, Robert Wood Johnson Policy Forums. The summit was supported by the North Dakota Department of Career and Technical Education, Community HealthCare Association of the Dakotas, North Dakota Medical Association and the North Dakota Healthcare Association.

Wakefield Receives U-Mary Excellence in Health Care Award



Mary Wakefield, Ph.D., R.N., F.A.A.N., associate dean and director of the Center for Rural Health at the UND School of Medicine and Health Sciences, received the Schafer Excellence in Health Care Award from the University of Mary.

The Schafer Excellence in Healthcare Award recognizes those who contribute or have contributed to even greater possibilities in the field of health care for the citizens of North Dakota.

UND to Host Rural Surgery Symposium

The Department of Surgery at the UND School of Medicine and Health Sciences will host the Third Annual Rural Surgery Symposium, a national meeting for surgeons who practice in rural areas in Grand Forks this fall.

The event is dedicated to addressing and resolving problems encountered by rural surgeons in the United States, as well as providing an educational forum for these surgeons, according to **Robert Sticca, M.D.**, UND surgery department chairman and residency program director.

David Antonenko, M.D., Ph.D., professor of surgery and director of surgical education, is coordinating the educational component of the meeting, set for September 2007 at the Alerus Center and Canad Inn. It is expected to draw up to 200 rural surgeons from throughout the United States, especially those who practice in the Midwest and West.

The UND Department of Surgery's residency program also has earned an exemplary reputation for its training of surgeons for rural areas, Sticca said, noting that more than 45 percent of its graduates practice in rural communities in North Dakota and around the country.

ND OPPORTUNITIES

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

WEB EXCLUSIVE: For the complete list of North Dakota practice opportunities, visit: www.ndmedicine.org



Grants Encourage Use of Technology to Improve Rural Health Care Delivery

Six grants have been awarded to North Dakota facilities that have shown the initiative to utilize information and communication technology to improve health care delivery in rural communities.

Nearly \$350,000 was awarded through the Blue Cross Blue Shield of North Dakota's (BCBSND) Rural Health Grant Program, administered by the Center for Rural Health at the UND School of Medicine and Health Sciences.

WEB EXCLUSIVE: For a list of the grantees and their projects, visit: www.ndmedicine.org



Hostetter Appointed Program Director at Family Medicine-Bismarck

Jeff Hostetter, M.D. (Family Medicine Residency '03), assistant professor of family and community medicine, has been named director of the UND Center for Family Medicine-Bismarck, effective Dec. 1, 2006. He replaces **Guy Tangedahl, M.D. '82**, who served as director for the past 12 years and will continue on a part-time basis as an assistant professor with the Center.

Hostetter has been on the Center's faculty since he

completed the program in 2003, serving part-time until 2005 when he accepted a full-time appointment. In addition to teaching and caring for patients, he provides coverage of emergency room and hospital services on weekends in Garrison, N.D. He has served as assistant professor and community faculty preceptor during his tenure at the UND Center for Family Medicine.

His research includes work on resident education and hepatitis C treatment for state penitentiary inmates, the latter he presented at national conferences sponsored by the Centers for Disease Control and the American Corrections Association. He is serving as sub-investigator for a study of an investigational medication for obese patients.

A graduate of Montana State University, he earned the Doctor of Medicine degree from the University of Washington School of Medicine, Seattle, and has received special training in Indian Health Pathway and wound care. He is a former teacher with extensive background in education.

Upon completion of residency training in 2003, Hostetter received the William Buckingham Award for an Outstanding Family Medicine Resident. He practiced at Standing Rock Indian Health Services Hospital in Fort Yates.

ALUMNI NOTES

'00s

Christina Knott, M.O.T. '05, licensed certified occupational therapist, has joined Altru's Outreach Therapy department in Crookston and Red Lake Falls, MN. Before joining Altru, she provided occupational therapy services at Northwestern Medical Center, East Grand Forks, MN.

Andrea Howick, M.D. '04, was recently voted Resident of the Year at Loyola University Chicago Stritch School of Medicine in Maywood, IL. She is in the obstetrics and gynecology residency program at the Loyola University Medical Center.

Jeffrey Geddes, M.D. '03, joined Altru Health System's emergency medicine team in Grand Forks. He received his medical degree from the UND School of Medicine and Health Sciences and completed an emergency medicine residency with the Regions Hospital/Healthpartners Medical Group in St. Paul, MN. He is a member of the American College of Emergency Physicians, the American Medical Association and the Society of Academic Emergency Medicine.

Augusto Alonto, M.D. (Internal Medicine Residency '02), infectious disease specialist, joined MeritCare Broadway Health Center in Fargo. He earned a medical degree from the University of Illinois College of Medicine, Chicago, and completed a fellowship in infectious diseases at the University of Michigan Medical School, Ann Arbor, and a residency in internal medicine at the UND School of Medicine and Health Sciences. He was previously employed as assistant professor of medicine and director of infection control at the University of Illinois Hospital and Jesse Brown V.A. Medical Center, Chicago.

Keith Swanson, M.D. '01, a hospitalist with Altru Health System, has been named associate medical director of Altru's managed care department. His duties include quality improvement, guideline development and utilization and referral management. He is also chair of Altru's guideline utilization committee. He received his medical degree from the UND School of Medicine and Health Sciences and completed his internal medicine residency at Mayo College of Medicine in Jacksonville, FL.

'00s

Ender Raghieb, M.D. '00, opened Pediatric Arts Clinic in Fargo. His practice covers a wide spectrum of pediatric care, from newborn care to well-child checks, immunizations, acute illness and injury. He earned his medical degree from the UND School of Medicine and Health Sciences and completed residency at Creighton - University of Nebraska Joint Pediatric Residency Program in Omaha.

'90s

Mamad Bagheri, M.D. '98, board certified dermatologist, has opened the North Dakota Center for Dermatology, Mohs Surgery, and Aesthetics, located in the Aurora Medical Park building in Grand Forks. He practices general and cosmetic dermatology, and Mohs skin cancer surgery, the most advanced surgical technique for treatment of skin cancer.

He earned his medical degree from the UND School of Medicine and Health Sciences. He completed his internship and residency at the Mayo Clinic, Rochester, MN, and New York Medical College, Valhalla, NY. His advanced fellowship in Mohs surgery was done at the University of Wisconsin, Madison, and he is the only fellowship-trained Mohs micrographic surgeon in North Dakota. In addition to general and surgical dermatology, he has special expertise in cosmetic dermatology, including facial rejuvenation, chemical peel, Botox, collagen and other fillers, fat transfers, sclerotherapy of leg veins, scar revision, lasers and acne treatment.

Chris Meeker, M.D. '97, joined Medcenter One in Bismarck. He is an emergency and trauma physician responsible for stabilizing patients with all injuries, illnesses or traumas who enter the emergency room. He earned his medical degree from the UND School of Medicine and Health Sciences and completed his residency at the University of Arkansas in Little Rock.

'80s

Paul Carson, M.D. '86, was appointed the president of the North Central Chapter of the Infectious Disease Society of America for 2006 and 2007. This chapter represents North and South Dakota, Minnesota, Iowa and western Wisconsin. He is an infectious disease specialist at MeritCare Broadway Health Center in Fargo, ND, and an associate professor of internal medicine with the UND School of Medicine and Health Sciences.

Tammy Smith, B.S.P.T. '86, has joined Integrated Rehabilitation Group at Murphy's Corner Physical Therapy in Everett, WA, as a clinical staff physical therapist and manager of the aquatics therapy program. She has more than 20 years' experience with specialization in industrial medicine and work rehabilitation, geriatrics and orthopedics and aquatics rehabilitation.

Larry Johnson, M.D. '83, a family practice physician at Medcenter One Jamestown Clinic, was recently appointed to the North Dakota Board of Medical Examiners by Governor John Hoeven. The North Dakota State Board of Medical Examiners is the state agency responsible for the licensure and discipline of all physicians and all physician assistants who practice in North Dakota. Johnson will serve a four-year term.

CORRECTIONS

Clayton D. Fetsch, M.D. '01, began his practice at St. Luke Hospital in McPherson, Kansas. He is trained in general surgery but has a special interest in laparoscopic procedures. Fetsch completed his surgical residency and internship at the University of Kansas School of Medicine in Wichita.

Mark Wiest, M.D. '77, M.S., C.P.E., medical management executive, is medical lead for CIGNA's health benefits plans throughout the region, including health advocacy programs such as the award-winning CIGNA Well Aware for Better Health(SM) disease management programs and medical management.

Wiest rejoins CIGNA from Prevue Health Services in Green Bay, WI, where he served as senior vice president and chief medical officer since 2003. Previously he was medical director for CIGNA HealthCare of Arizona, where he led best-in-class clinical programs for the region. Prior to CIGNA, Wiest served in clinical leadership roles for a number of physician practices based in St. Paul, MN.

Wiest holds a Doctor of Medicine degree from UND, where he also earned a bachelor's degree in medicine. He has also earned a master's degree in administrative and preventive medicine from University of Wisconsin-Madison and a bachelor's degree in psychology from UND.

Vernon M. Griffin, M.D. (B.S. Med. '36), Mauston, WI, died Dec. 19, 2006. Originally from Devils Lake, ND, he graduated from the UND medical school in 1936 and completed his medical degree from the University of Oregon Medical School in Portland, OR, in 1938. He continued with a one-year internship at Anker Hospital in St. Paul, MN, and a two-year surgery preceptorship in Grand Forks.

A lieutenant colonel during World War II, he was stationed at various Army medical units across the country. He retired in 1982 after nearly 40 years of active practice. He was a member of Burton-Koppang American Legion Post #81, past member of the Mauston Lions, and life member of the Knights of Columbus. He was a member of the American Medical Association, the Juneau County Medical Society and the Wisconsin Medical Society where he was elected vice chairman of the House of Delegates. He was an active member of the board of directors of Hess Memorial Hospital and served as president for 18 years.

Alvin L. Fields, M.D. (B.S. Med. '47) died Oct. 26, 2006 in Seattle, WA. He graduated from Whitman College, UND and Tufts Medical College. He married Lee Bushkin in 1950 and served in the Korean War as a lieutenant in the Navy. In 1952, Fields practiced family medicine in north Seattle and in 1962 built the Terrace Park Medical Clinic, retiring in 1988. He was a diplomat of the American Board of Family Practice, a clinical assistant professor at the UW for 17 years, and on the medical staff for Northwest Hospital from 1960 to 1988. He was the president of the King County Academy of Family Physicians from 1960 to 1961.

Joseph H. Schoonmaker, M.D. (B.S. Med '49), Seattle, WA, died Jan. 3, 2006. Born in Lanovla, India, he earned degrees from Wheaton College, Central Bible College, the UND School of Medicine and Health Sciences and the University of Colorado Medical School. He married Marilyn Shively in May 1943. They served three terms (1954-71) as BGC medical missionaries at Baptist Christian Hospital in Tezpur, India.

Charles R. Myers, M.D. (B.S. Med. '56) of El Paso, TX, died Oct. 8, 2006. He graduated from the UND School of Medicine and Health Sciences and completed his medical degree at the University of Nebraska, followed by a residency in anesthesia at Brooks Army Medical Center in San Antonio, TX. He served in World War II as chief of anesthesia at William Beaumont Army Medical Center from 1964 to 1967 and then went into private practice with Anesthesia Consultants until his retirement in 2001. He had the honor of being assigned as the medical doctor on the recovery ship for the first Gemini Space Mission.

Susan J. (Sheldon) McLean (B.S.P.T. '71) of Oakes, ND, died Sept. 2, 2006. She attended UND, graduated from the physical therapy program in 1971 and married Steph McLean later that year. She worked as a physical therapy with the UND Rehabilitation Center before moving to Oakes in 1973 where she established the first Physical Therapy Department at the Oakes Community Hospital. She worked there until 2004.

Mickey Knutson, P.A. (B.S.N. '58, F.N.P. '78), founder and



former director of the Physician Assistant (PA) and Nurse Practitioner programs, died Jan. 2, 2007 at Orlando, FL. She was 70.

In the early 1970s, she was instrumental in the development of the physician assistant and nurse practitioner programs at the UND medical school. She served as director of the Family Nurse Practitioner

Program from 1972 to 1977 and as co-director of the PA Program from 1982 to 1998.

A native of Grafton, ND, Knutson earned a bachelor of science degree in nursing at UND and a master's degree in nursing at the University of Washington in 1961. She completed the Family Nurse Practitioner Program in 1978 at UND.

In 1963, she joined the UND College of Nursing faculty where she served for three years before being named director of St. Francis School of Nursing in Minot. In 1972, she was named director of the Family Nurse Practitioner Program at the UND medical school where she wrote numerous grants which brought more than \$2 million to UND.

During her career, she held many leadership positions with the National Organization of Nurse Practitioner Faculties (including president in 1982), Association of Physician Assistant Programs, North Dakota Academy of Health Practitioners, among others, and wrote extensively on the education of family nurse practitioners and related topics. She received the UND President's Award for Outstanding Service in 1990.

She is survived by her husband, Larry Knutson, Orlando; son and daughter-in-law, Dr. James and Theresa Knutson and grandson, Cole Knutson, all of Sioux City, Iowa.

Memorials may be sent to: The **Mickey Knutson Scholarship Endowment**, UND Foundation, PO Box 8157, Grand Forks, ND 58202.

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Faith (left) and Hope Stramer are the three-year-old twin daughters of Dani and Wyatt Stramer, Grand Forks. Dani works in the Office of Research and Program Development at the medical school.

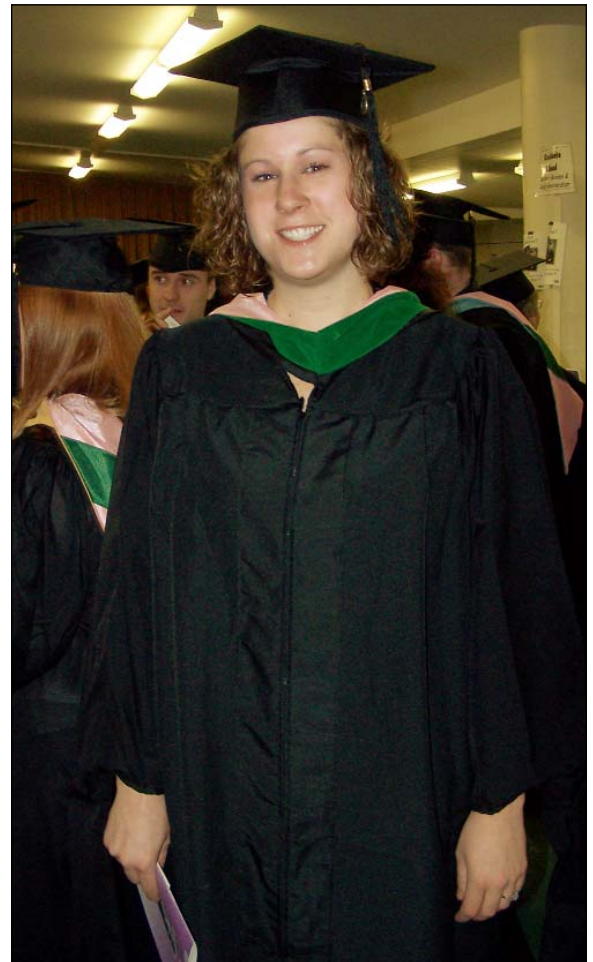




Norwegian medical exchange students, **Anna Sorte Grindvik** and **Tove Birkeli** (second and third from left), recently completed five months studying in North Dakota through a program of the UND medical school. Their rotations covered a wide range of specialties including orthopedic surgery, dermatology, radiology, emergency medicine, infectious disease, among others, as well as experience on a Native American reservation. **Linda Olson, Ed.D. '96**, director of program development (left), Office of Medical Education, and **Ben Clayburgh, M.D. (B.S. Med. '47)**, retired clinical professor of surgery (right), coordinate the program.



Mohamad Hamad, Ph.D. '06, (left) of Saida, Lebanon, pictured with his advisor, **Matthew Nilles, Ph.D.**, associate professor of microbiology and immunology, received his doctoral degree in microbiology at the UND winter commencement in December. He has accepted a postdoctoral position with the University of Colorado Health Sciences Center in Aurora, CO.



Kathryn Conrad, M.O.T. '06, of Vadnais Heights, MN, received her Master of Occupational Therapy degree at the UND winter commencement in December. She is working at the Sister Kenny Rehabilitation Institute at United Hospital in St. Paul, MN.



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Eric Swensen, M.D. '02 (Psychiatry Residency '06), is featured in the AspiringDocs nationwide advertising campaign by the Association of American Medical Colleges to encourage minority students to pursue careers in medicine. The psychiatrist, who practices in Belcourt, is highlighted along with **Candelaria Martin, M.D. '04**, a third-year resident at the UND Center for Family Medicine-Minot. Both attended UND medical school through its Indians Into Medicine (INMED) Program.



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