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The University of Western Ontario







#### SHAPING THE FUTURE OF HEALTH CARE

#### Mission

The Schulich School of Medicine & Dentistry provides outstanding education within a research-intensive environment where tomorrow's physicians, dentists and health researchers learn to be socially responsible leaders in the advancement of human health.

#### Rapport

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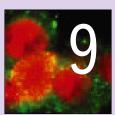
#### On the cover:

An Indonesian lab worker tests samples from pigs and chickens for bird flu. The deadly virus has killed millions of birds and more than 110 people, including 25 in Indonesia. Dr. Margaret Chan (BA'73, MD'77, DSc'99) is head of communicable diseases at the World Health Organization. Her job? Stop a worldwide human pandemic. More on page 10. REUTERS/Dadang Tri

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#### RAPPORT IS ALL ABOUT BUILDING STRONG RELATIONSHIPS

For the faculty, staff and students at Western's Schulich School of Medicine & Dentistry, building a rapport with partners, patients, colleagues and the community is more than a function of our jobs, it is an integral part of our culture.

As Dean, I witness this every day in our School through the warm interactions between our students and faculty; in the active exchange of ideas and expertise in research labs, classrooms and corridors; through our successful collaboration with London hospitals and research institutes; in the outstanding community work and international development activities undertaken by faculty and students; and through our growing network of partners all over Southwestern Ontario.

In this first edition of *Rapport*, an annual magazine for the School, you will find several inspiring stories about building relationships. Our featured alumna, Dr. Margaret Chan, has the onerous task of establishing vital connections across the globe to tackle the worldwide risk of a flu pandemic.

You will also read about dentistry students learning to improve communication skills with patients, role models in research and teaching, students making an impact in Africa, and an outreach program inspiring rural youth to pursue health professions.

The stories in this magazine represent a small sample of the work we do at Schulich Medicine & Dentistry, but we feel it's time we started sharing more of our stories with you – our alumni, partners and friends. Building relationships and dialogue with alumni in particular is a priority for the School.

We value the opinions and support of all our partners and friends as we continue to prepare tomorrow's doctors, dentists and health researchers to be outstanding leaders who will shape the future of health care.

Sincerely,

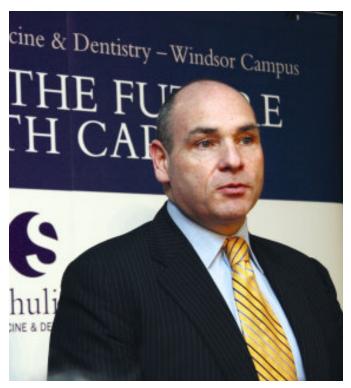
Dr. Carol P. Herbert

C. I. Herbert

Dean

### **Schulich Medicine & Dentistry Check-Up**

Recent news and announcements from the School



Ontario's Minister of Health and Long-Term Care George Smitherman announces new campus in Windsor

## **Expanding medical education in Windsor**

Schulich Medicine & Dentistry will operate a new four-year campus in Windsor as part of an Ontario-wide expansion of spaces for medical students announced in February.

The School will add 14 first-year spaces in the MD program over the next two years, then open the Windsor campus with 24 first-year students in 2008 (including 10 spaces transferred from London). The program will build on the success of clerkship training already provided in Windsor through the School's Southwestern Ontario Medical Education Network (SWOMEN).

Dean Carol Herbert says the expansion, a partnership between Western and the University of Windsor, offers renewed hope to a region in need of doctors. "The doctor shortage in Southwestern Ontario is most critical in Windsor and surrounding counties. We know medical students build links in the communities where they do their training and are more likely to practise there after graduation."

#### Sandhu appointed Director of Dentistry

Dr. Harinder Sandhu, Acting Director of Dentistry since July 2004, has been appointed as Associate Dean and Director, Dentistry, effective July 1, 2006 to June 30, 2011.



Sandhu received his dental education in Amaritsar,

India, then a doctorate from the University of Ottawa in 1982. He completed a postdoctoral fellowship at the College of Dentistry at New York University and specialty training in periodontics at Loma Linda University. He joined Western as Assistant Professor in 1987 and has served as Chair of the Division of Periodontics and Dental Admissions Committee, among other roles.

Sandhu has more than 40 publications in international journals and has mentored graduate and postgraduate students throughout his career. He continues to maintain an active periodontal practice.

#### Multi-faculty initiative examines health policy

A new initiative at Western is fostering communication and collaborative research on health issues. Led by Schulich Medicine & Dentistry's Dr. Moira Stewart and Carol McWilliam from the Faculty of Health Sciences, the Health Policy Initiative brings together more than 85 academics from seven faculties across campus.

Through high-profile speakers, seminar series and large interdisciplinary research projects, the initiative aims to answer: "What are the problems with Canada's health system? What are the solutions? And why aren't the solutions getting the attention of policy makers, practitioners and the public?"

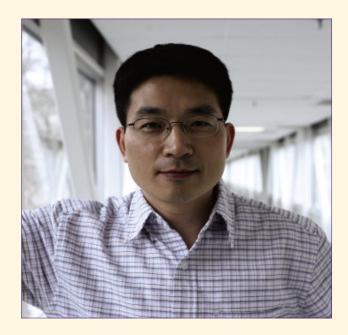
"We are examining everything from the social determinants of health, to how services are provided, to the economic aspects of health," says Stewart, who is Director of the Centre for Studies in Family Medicine and the Dr. Brian W. Gilbert Canada Research Chair in Primary Care. "We are passionate scientists who seek to change the world for the better."



#### School adds two new Canada Research Chairs

Faculty members Lique Coolen and Shawn Li were recognized in April as leading investigators in their field through the federal Canada Research Chairs (CRC) program.

Lique Coolen, CRC in Neurobiology of Motivation and Reward, studies the neural systems that regulate sexual motivation and reward. Coolen joined the school in December from the University of Cincinnati. She is developing new therapeutic tools for sexual dysfunction and, by comparing changes in the brain resulting from sexual reward with those



caused by drug exposure, she hopes to better understand drug addiction.

Shawn Li, CRC in Functional Genomics and Cellular Proteomics, is exploring how proteins in the human genome are interconnected within cells and how disruptions in protein networks can lead to diseases such as cancer. His research will lead to novel strategies for diagnosis and treatment.

Western now holds 53 Canada Research Chairs; 22 are at Schulich Medicine & Dentistry.

#### Cambodia conference

In January 2006, Schulich Medicine & Dentistry sponsored the First International Conference on the History of Medicine in Southeast Asia, a two-day event at the Centre for Khmer



Site of 13th-century hospital being excavated by Dr. Rethy Chhem.

Studies in Siem Reap, Cambodia. Organized by Dr. Rethy Chhem, Professor and Chief of the Department of Diagnostic Radiology and Nuclear Medicine, the conference shed light on the history of health care in Cambodia and other countries in the region.

Chhem and colleague Christophe Pottier, a French archeologist, are leading a team to excavate a 13th-century Angkorian hospital built by King Jayavarman VII. Chhem is a world-leading expert in paleoradiology, a passion he pursues outside of his clinical duties as a skeletal radiologist at London Health Sciences Centre.

#### Rebuilding Health in Rwanda

The Schulich School of Medicine & Dentistry will lead an external review of the Faculty of Medicine at the National University of Rwanda (NUR) this summer. The announcement was made during Rwandan President Paul Kagame's visit to Western in April.

Rwanda's health care system was decimated during the genocide of 1994. "In Rwanda today, there are 200 doctors for a population of eight million. That breaks down to one doctor per 40,000 people," says Dr. David Cechetto, who has been pivotal in organizing the review. "We hope that through this process we will be able to provide valuable information to the medical faculty at NUR in their efforts to rebuild their medical education system."

Cechetto started a collaborative project called "Rebuilding Health in Rwanda" in 2004, which, to date, has focused on educating and training nursing professionals at the Kigali Health Institute.



Dentistry student Jacob Rivkind consults simulated patient Mike Wilmot, while Dr. Barry Schwartz observes.

# **Dental Dilemmas**

Students boost patient communication skills under pressure by Kris Dundas

Third-year dentistry student Jacob Rivkind sits face to face with his patient, trying to control his nerves. He has made a mistake and extracted the wrong tooth. The patient is clearly upset as Jacob tries to find the words to handle one of the most difficult situations he will encounter as a dental professional. Next week, the patient will return to the clinic only to have the wrong tooth extracted again.

No - it is not a dental patient's worst nightmare. It is a new technique being used to teach dental students how to communicate with patients in difficult situations. We focus on the responsibility of the practitioner, what you say and how you say it, having humility and empathy, maintaining a high professional standard and addressing the patient's needs."

For the first time this March, third-year students in the Doctor of Dental Surgery (DDS) program used simulated patients for training in communication skills. Simulated patients are lay people who have been carefully coached to simulate the history, body language, physical findings, emotion and personality characteristics of actual patients. Developed by Dr. Barry Schwartz, Adjunct Professor in the Division of Practice Administration, the training sessions aim to create more empathetic practitioners who can maintain a high professional demeanor in the face of tough issues.

"It's a scary thing dealing with a patient when you are not yet confident in your own skills," says Schwartz. "If there's a problem it makes it much more difficult to maintain professional composure and perspective."

Drawing upon the resources of Schulich Medicine & Dentistry's Clinical Skills Program, which employs more than 300 simulated patients for training and evaluation of medical students, Schwartz created three case scenarios tied to classroom lectures in integrated ethics and communication.

Schwartz hopes the simulated patient sessions will be adopted permanently into the curriculum and says that when he went through dental school there was little emphasis on communication skills. "Now we are seeing the evolution of the dentist-patient relationship. Patients are more knowledgeable and we have a greater responsibility to accommodate their needs."

Schwartz estimates up to 90 per cent of public complaints to the Royal College of Dental Surgeons of Ontario are communication-based. That's why he believes training opportunities like this are so important for future generations of dental professionals.

"It's easy to focus on the technical aspects of dentistry and forget you are two people in a room trying to solve a problem together." says Schwartz. "I believe (the program) will benefit not only these students, but in the long-term the public opinion of the profession."

# 44 I'd like to see more of this type of training... I think every situation we will face as dental professionals will be different, but practising the approach is what's important."

The first involves a non-compliant patient: someone who has refused to take their medication, doesn't brush their teeth and rarely shows up for appointments on time. The second deals with delivering bad news about a patient's treatment process. The third situation examines the error: extracting the wrong tooth. Students work through the scenarios in small groups, with one student taking the lead as practitioner in each situation. A group discussion follows and evaluation is completed by the simulated patient, a peer observer and a trained observer.

"We focus on the responsibility of the practitioner, what you say and how you say it, having humility and empathy, maintaining a high professional standard and addressing the patient's needs," says Schwartz. "Overall, students have responded very positively."

Following her sessions, Yasmin Monemdjou, third-year dental student, said, "Before we came we were really nervous, but after today I'd like to see more of this type of training... I think every situation we will face as dental professionals will be different, but practising the approach is what's important."

Student Tom Adams was also impressed. "There was a lot of anticipation and anxiety about today but it ended up being a good opportunity." Adams enjoyed the small group learning which is also new to the DDS curriculum. "The small setting is conducive to treatment planning for particular cases, discussing cases and generally improving our clinical skills."

Future dentist Alnar Megjhi is one of the students who will benefit from a new focus on communication skills.





In her work, Dr. Rennian Wang takes certain types of mature pancreatic cells and induces them to return to an earlier phase of development – a process that mirrors the transformation the one-time surgeon underwent before eventually becoming a basic science researcher.

Sixteen years ago, Wang left behind a successful career in China and traveled to Belgium with her husband and two-year-old daughter to pursue studies at the Free University of Brussels. There, Wang embarked on the journey that ultimately led her to Western and her current research interests – finding a way to identify progenitor cells capable of maturing into insulin-producing beta cells. Her goal is to overcome one of the barriers preventing islet transplantation from becoming a commonplace diabetes treatment – a limited supply of donor organs.

"If we can discover the identity of the stem cells, we can take a tiny piece of pancreas from a family member, grow the cells in vitro, and transplant them," Wang says, "or even perform autologous transplants in type 2 diabetics who retain some healthy beta cells. This is my dream." It was Wang's work on her Masters thesis that initially sparked her interest in the possibility of regenerative therapy. "My supervisor said, 'Rennian, you should look at whether the pancreas continues to regenerate its beta cells," she recalls, "and once diabetes has developed, can those cells be regenerated again?"

Early studies revealed the answer was yes. A pancreas injured during infancy did indeed repair itself, regenerating about 40 per cent of its beta cell mass; however, once adulthood was reached, type 2 diabetes developed when beta cell populations became unable to keep up with demand. Wang delved further into pancreatic regeneration while studying for her PhD, when she demonstrated that following the destruction of the exocrine portion of an adult pancreas, ductal cells were capable of proliferating and differentiating. She and her supervisor, Dr. Günter Klöppel, speculated stem cells were 'hiding' within the ductal structures.

# 44 If we can discover the identity of the stem cells, we can take a tiny piece of pancreas from a family member, grow the cells in vitro, and transplant them. 77

During her post-doctoral training, Wang began examining exactly what happens to islet cells that undergo isolation and purification in preparation for transplant. "After isolation, you really damage the communication between the cells," she explains, and as a result 15 to 20 per cent of them die.

"You damage the basement membrane, and its interaction with the integrin receptors on the surface of the pancreatic cells." Wang was able to marry this new knowledge with her early interest in pancreatic stem cells in 2000, when she came to London. "Dr. David Hill, the scientific director of the Lawson Health Research Institute (Lawson), was looking for someone who was doing islet regeneration," she says. She wrote a flurry of grant applications – four within three months - ultimately receiving a University Faculty Award from NSERC and a New Investigator Scholarship Award from the Canadian Diabetes Association. Lawson also provided some start-up funds to set up her lab.

Wang's career as an independent researcher gained momentum the following year with grants from the Canada Foundation for Innovation and the Canadian Institutes of Health Research; and an appointment as Assistant Professor in the Department of Physiology & Pharmacology and a cross-appointment to the Department of Medicine.

Since then, Wang has successfully induced neonatal islet cells to dedifferentiate, expand into a huge population, and then mature once again into beta cells. She has also identified two potential markers for beta precursor cells – nestin and c-Kit – and proved that c-Kit positive cells can differentiate into insulin-producing cells.

One of her most recent discoveries is that a specific c-Kit mutation leads to early-onset diabetes in male mice.

"We want to learn more about this receptor, and how it's involved in beta cell function and differentiation," Wang says. She's also exploring the importance of several different factors – particularly matrix proteins and the integrin receptor – in beta cell differentiation.

She believes one of the keys to nurturing new beta cells that can successfully respond to a glucose challenge may turn out to be communication with the other types of surrounding islet cells.

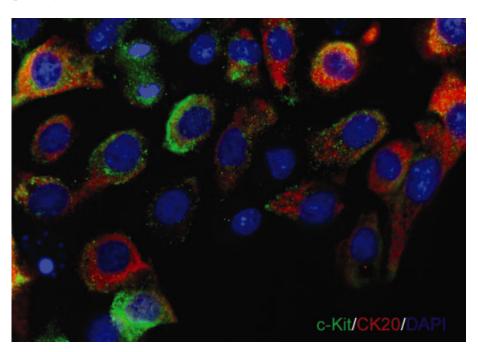
Outside the laboratory, Wang tries to impart the importance of knowing what happens at the bench to students. "I tell them a lot of clinical stories, and I tell them they should learn how to do research, to help them understand the incredibly lengthy, complex process that lies behind the treatments they will use in the clinic."

"I still have a little bit of regret for giving up my first career," she admits. "But I love my present job as well."

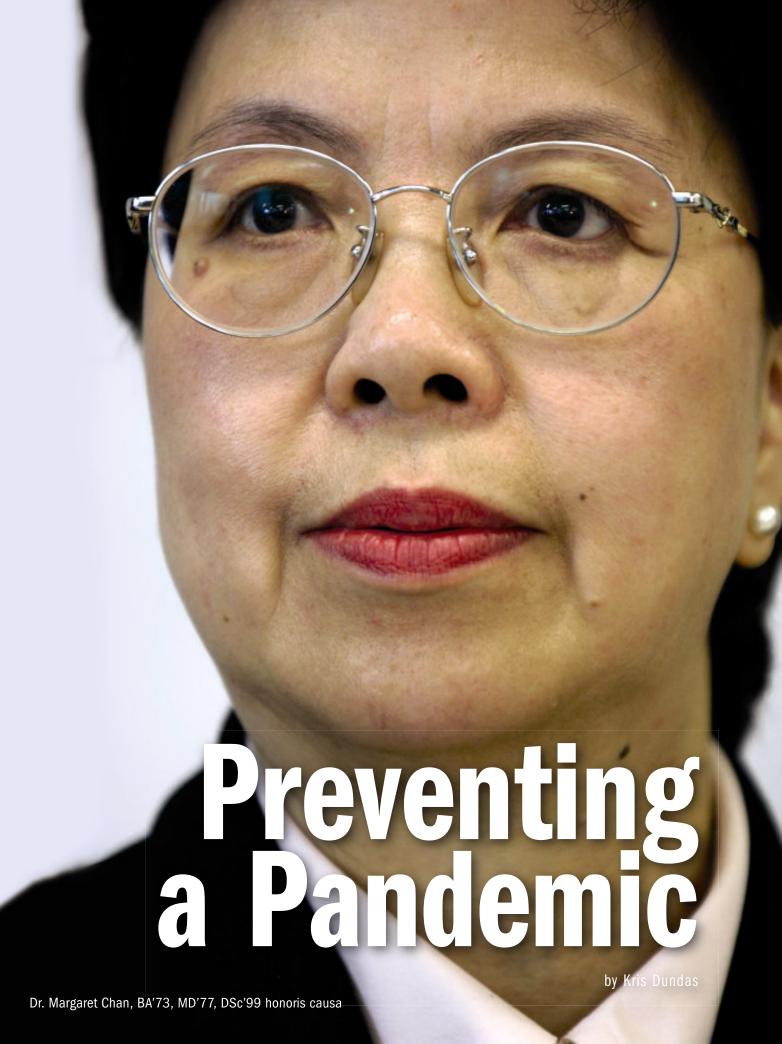
# Diabetes in Canada

- Two million people have diabetes
- Three million will be affected by 2010
- 10% have type 1 diabetes
- 90% have type 2 diabetes
- Cost to health system each year: \$13.2 billion
- Contributes to 41,500 deaths annually

Source: Canadian Diabetes Association



Wang has proven c-Kit positive cells such as these, as seen through fluorescent microscope, can differentiate into insulin-producing cells.



Through 26 years working with the Hong Kong government, and two-and-a-half years leading the World Health Organization's communicable disease department, Dr. Margaret Chan says, "There was never a night I could not sleep."

It's a remarkable statement for a woman who stands at the forefront of the world's effort to stop a flu pandemic, but the key to Chan's confidence and calm is in drawing upon the strength of others — a lesson she learned more than 30 years ago as a Western student.

Today, it is the same strategy that drives her determination as the World Health Organization's Assistant Director General of Communicable Disease and the Director-General's Representative for Pandemic Influenza.

Smart, spirited, 58-year-old Chan checks her ego and employs her diplomacy and charm to tap into the world's resources to fight the rising risk of a flu pandemic. She has taken on this high-profile role in the face of a spreading avian influenza (H5N1 virus) outbreak now detected in birds in more than 30 countries in Asia, Europe and Africa. Human cases have been reported in nine countries.

with many stakeholders to get the right information out. Number two, given the unprecedented spread in birds, the risk of a pandemic is there. The risk is great."

Though she emphasizes we are not yet in the beginning stages of a human influenza pandemic, we may be closer than at any other time since 1968. To combat the risk, the WHO has developed a five-pronged strategy which includes: reducing human exposure to H5N1, transparency and early information exchange across the globe, a rapid containment protocol involving anti-viral medications and other protective measures, helping countries build capacity to cope with a pandemic, and research and development on anti-virals and vaccines.

"Much work has been done in the last six to 12 months but much more needs to be done in order to effectively prepare the world for this challenge," says Chan.

So how does she cope with the pressure of a challenge that has created anxiety and sleepless nights for many across the globe?

"Of course, there will always be tremendous pressure at work... but I have a coping mechanism: I keep an open mind. If you are able to be inclusive and embrace all sorts of ideas, if you

# "Much work has been done in the last six to 12 months but much more needs to be done in order to effectively prepare the world for this challenge."

"In dealing with new and emerging infections, it's a very humbling experience," says Chan. "One should not be afraid to say 'I don't know what is going on,' and reach out to the international community...because we must understand that at the end of the day, our primary duty is to protect the health of the community."

Chan's track record in dealing with difficult health issues is impressive. As Director of Health in Hong Kong from 1994 to 2003, she led the fight against several serious disease threats, including Severe Acute Respiratory Syndrome (SARS) in 2003 and an H5N1 outbreak in that country in 1997.

"SARS created huge economic loss, a lot of anxiety in many countries and communities, but it is the sheer commitment of many governments, supported by a very responsible media and also deploying good old public health measures – very aggressive measures – that we managed to put the virus 'back in the box', so to speak...That was a very good example of international partnership and cooperation."

Now she is inspiring the WHO's 192 member states to take the same approach, this time to the threat of a worldwide flu pandemic. "In my job, the number one challenge is working have a wide latitude to look at different issues, and you do not get bothered by criticism or comments, then you are okay," she says simply. "Maybe I'm just blessed. I don't have worries."

Chan says another blessing that grounds her is her family. While Chan works out of Geneva, Switzerland, her son, Andrew, and husband, David (MD'77), remain in Hong Kong.

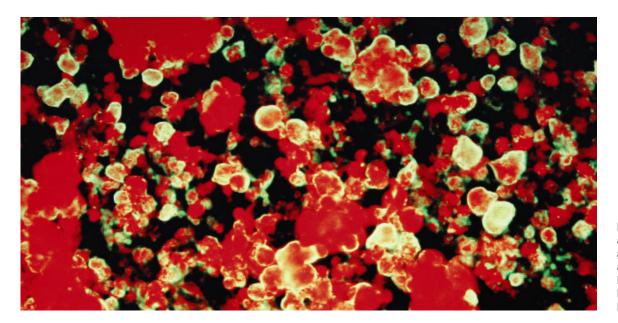
"Family support is extremely important. You must have a family, in my case my husband and my son, who are very supportive. I can devote 24 hours a day – if I need to – to my work and for that I am very lucky."

She also credits David with helping her survive the first few years of medical school. Chan followed David to Canada when he left Hong Kong in 1969. She completed her degree in Home Economics at Brescia University College in 1973, then, with the odds against her, she went on to apply to medical school.

Not only did she lack the prerequisite science courses, she had to gain immigrant status first. Luckily she had help from her classmates and professors at Brescia, who wrote letters on her behalf to the Canadian government and she was granted immigrant status just in time to be considered for medical school the following year.



Dr. Margaret Chan talks to journalists during a conference on the SARS crisis in 2003. REUTERS/Bazuki Muhammad



Influenza virus cells are highlighted through a fluorescent microscope at the WHO National Influenza Centre in Bankok. REUTERS/Adrees Latif

## "Western is a wonderful, wonderful university...it gives you the environment to pursue what you wish to do."

"The first year of medical school was very tough for me... Every night when we'd go home, David had to give me additional tutoring." She also credits the help she received from her professors and classmates in medicine, whom she remembers fondly. "Western is a wonderful, wonderful university. And the university is a beautiful university, I'm sure we can all agree on that," she recalls. "But it gives you the environment to pursue what you wish to do."

Though Chan did not set out on a career path in public health, a family illness took her back to Hong Kong following medical school. There she had trouble getting into her preferred field of pediatrics and accepted a role as a government medical health officer.

Twenty-eight years later, she champions public health to young graduates. "It is a wonderful opportunity to serve a big group of people. We don't really deal with patients on an individual basis but clinical medicine and public health are quite complementary," says Chan, who welcomes the opportunity to work with laboratory scientists, clinicians, hospital infection control experts, pharmacologists and dozens of other experts daily.

It is with these resources from the international community behind her that Chan convinces world leaders to listen to her advice about pandemic preparedness. Chan says the scientific community is predicting, by probability, that if any virus is going to ignite a pandemic H5N1 has a higher chance than any other virus sub-type.

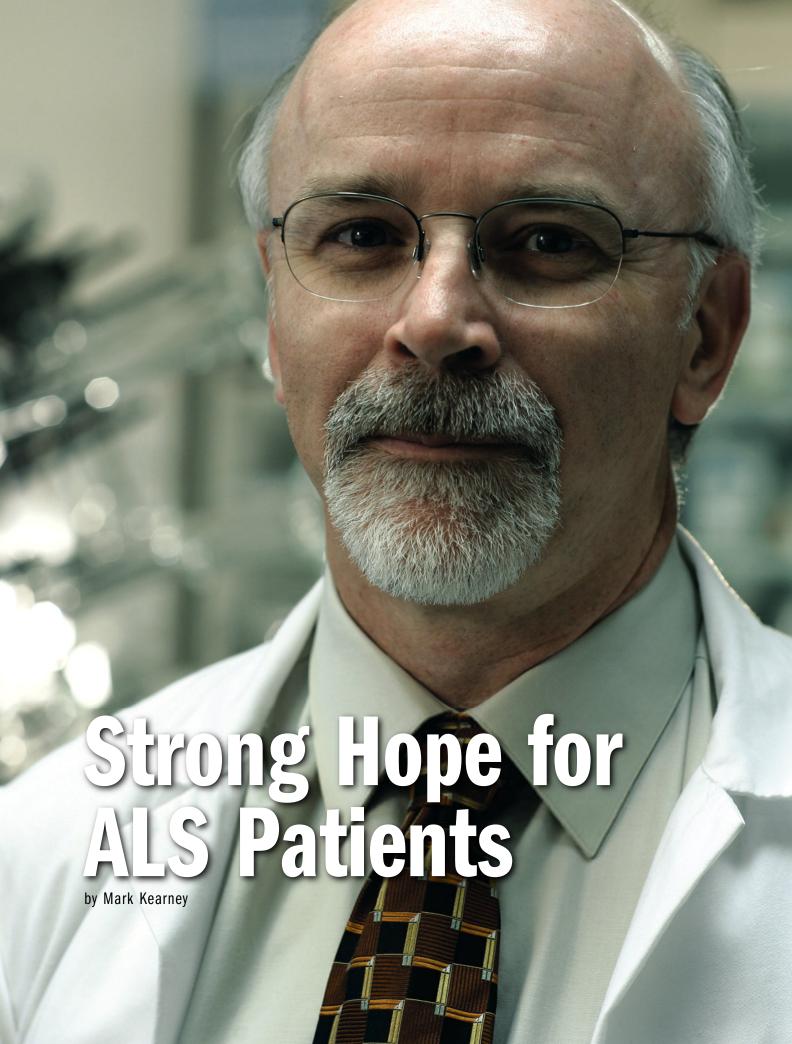
Though her job is to communicate the risk, Chan stresses maintaining a balanced picture. "The pandemic may come — we don't know when. We may be preparing for something that doesn't come within six months, within a few years, or ever. It's a public health dilemma." But she believes one hundred per cent in the value of the work she is doing.

"Often in the absence of hard evidence, you have to make tough decisions. But the price one has to pay for not being prepared is much higher."

With the World Health Organization now openly calling avian influenza the greatest potential challenge to world health than any other infectious disease, including HIV/AIDS, the pressure is mounting for Chan and her team to work even harder and faster. But she is not alone.

She says in part her experiences in Hong Kong and at Western, including the help she received so many years ago, reinforce her conviction that international collaboration and team work can tackle any problem – even a pandemic.

"Where there's a will, there's a way. Don't be afraid to ask for help and then things will turn out eventually much better. That's my experience."



Dr. Michael Strong likens amyotrophic lateral sclerosis (ALS) to what Parkinson's disease was back in the 1940s, and that's good news for anyone who may end up with what's better known as Lou Gehrig's disease.

In the mid-20th century, Parkinson's sufferers, like those with ALS today, could expect a lifespan of five years after they were diagnosed, but now they can have a good quality of life for 20 years. Thanks to groundbreaking research by Strong and his team, he believes a similar time frame can be extended to those with ALS.

"I don't think we'll cure ALS (in my lifetime), but we'll slow it down significantly," says Strong, who is co-chair of the Department of Clinical Neurological Sciences at the Schulich School of Medicine & Dentistry.

Strong says it's not so much what causes ALS that interests him as it is understanding how best to deal with it once a patient is diagnosed. Because the symptoms can lie dormant for an average of 14 months, doctors who see ALS patients are usually dealing with someone who already has it "full tilt," he says.

Strong, Chief, Division of Neurology at the London Health Sciences Centre (LHSC) and a Robarts Research Institute scientist, has made several advances in the understanding of ALS in the past 20 years which have led not only to a better understanding of the affliction but have provided ways to cope with its effects. Among his findings is the idea that ALS is "a syndrome rather than a disease" that is linked to frontotemporal dementia (FTD). He and his colleagues' studies on the inner dynamics of motor neurons show that ALS may affect structural proteins that allow neurons to maintain their lengthy connections to muscle.

His findings have influenced how clinicians view this nerve-wasting disease. FTD is a shift in mental processes that appears to accompany ALS in a number of patients and may even precede motor symptoms in some cases.

For his work, Strong received the 2005 Sheila Essey Award for ALS Research – considered to be the most prestigious award in the world in this field – presented by the American ALS Association and the American Academy of Neurology. Strong calls ALS "fascinating" and believes understanding the disease leads to an understanding of several other diseases as well as basic immunology and cellular function. "It's a phenomenal window to allow you to really understand cell biology," he says.

Strong has also discovered a relationship between the neuron that is injured in ALS and the immune system of the nervous system. His research team has observed that as soon as the neuron is injured, it sends out a signal to the inflammatory cell.

#### 44 I don't think we'll cure ALS (in my lifetime), but we'll slow it down significantly. ""

While pioneering further understanding of ALS is a crucial part of Strong's motivation, he's also inspired by his patients and their families who he says, "are the nicest people" he's ever known. He's not sure of the underlying reason for this characteristic but knows that he's not alone in these feelings. He recalls seeing a poster at a conference in Denmark some years ago entitled "Why Are ALS Patients So Nice?"

While studying ALS has been the driving force in his medical career, Strong, who also holds the Arthur J. Hudson Chair in ALS Research at LHSC, became interested in the syndrome only by happenstance. As a medical student, he saw an ALS patient and was told the condition was so rare that he'd likely see few others. But work at a teaching hospital in Denmark shortly thereafter exposed him to many other ALS patients, something that happened again when he came to Western to do residency work.

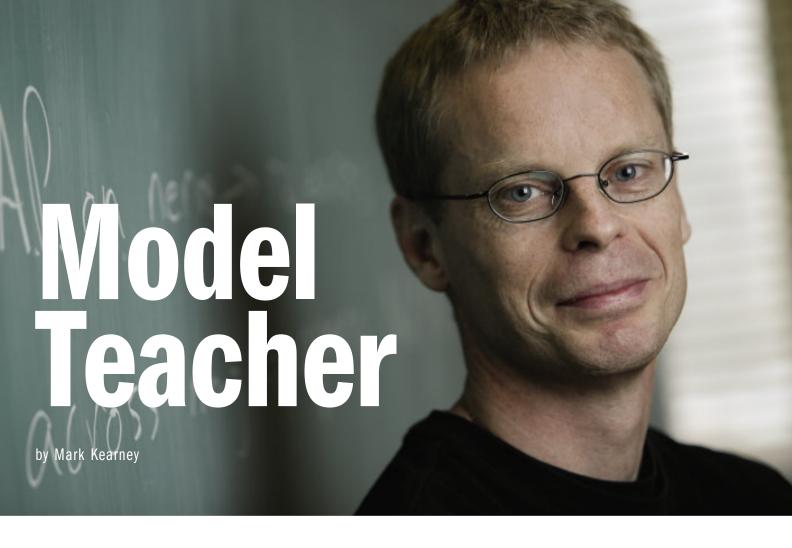
"At the time we knew very little of the biology of it" he says, but he was confident that it was a medical puzzle that could be easily solved. "Twenty years later it isn't so easy," he says.

But recent research into a genetic variation of ALS indicates that this form of the syndrome can be stopped within five years, he explains. "It's the first time that I can say this to patients," which gives hope to their children who may inherit ALS.

#### **ALS facts**

- A progressive neuromuscular disease
- Can strike anyone at any age
- Currently affects 3.000 Canadians
- Every day, two or three Canadians die of ALS
- 90% die within 3 to 5 years of diagnosis

Source: ALS Society of Canada



Tom Stavraky picks up a water jug containing two rubber gloves and sealed with a piece of old balloon fabric. He pinches the seal to inflate the gloves demonstrating how lungs work.

He then steps to the other side of the room to a contraption made of two-by-fours, an old door hinge, elastic bands, and a small weight at one end. Stavraky uses this device to show how muscles work. When he's in the classroom, he might get his students to do "the wave" as a way of demonstrating how impulses follow down the nerves.

They may not be orthodox, but Stavraky's teaching methods have enthralled physiology students at the Schulich School of Medicine & Dentistry for years and earned him several awards. The demonstration models, which he builds himself, are an integral part of his classroom lectures. And the challenge to enthrall can be great when standing in front of a class of 300 to 500, he says. "I make my

demonstrations and my movements a lot bigger."

But Stavraky, a lecturer in the Department of Physiology and Pharmacology, says he remembers best those professors from his undergraduate days who did this kind of interactive learning.

"I like to do the demonstrations. They really stick in the minds of students. The demonstrations are usually very simple in that they are the building blocks of education."

But Stavraky brings more than just odd gadgets to his classroom; he also brings enthusiasm. "I always try ... to impress upon students how incredible (the human body) is."

Emily Truscott, a Masters student in physiology who had Stavraky as an instructor when she was an undergraduate, says the demos and his enthusiasm were what made his classes so special. "It was easier to wake up for an 8 a.m. class knowing he was there," she says. Adds Amy Forbes, another physiology graduate student, "He can make a class of 300 feel like a class of five. It's like he's putting on a show."

Stavraky's approach has earned him several accolades. While he says he's most proud of winning the University Students' Council Award of Excellence because the students determine it, he's pleased his peers have also recognized his teaching skills. Among his awards are the 2005 Schulich Undergraduate Education Leader Award, a Fellowship in Teaching from Western's Teaching Support Centre, and the University's Marilyn Robinson Award for Excellence in Teaching.

Not bad for a man who as an undergraduate thought he would be a researcher. But once Stavraky got the opportunity to teach he was hooked. And perhaps it's in the genes; his grandfather, G.W. Stavraky, was a founding member of the Department

of Physiology and has a teaching award named for him. While Stavraky appreciates the need for professors to concentrate on research, he notes that top researchers are not always the best teachers. To that end, Stavraky has conducted seminars on teaching for fellow instructors and is always challenged to improve his skills in the classroom.

Forbes says Stavraky's name is often evoked as the model for what an instructor should be. Instead of having students learn by sitting in a lecture hall taking notes, Stavraky is willing to let his students interact and learn by doing, she says, a technique not common in the sciences.

Both she and Truscott credit Stavraky as a key reason they decided to pursue further studies in physiology.

"He definitely inspired me because he made it fun," Truscott explains.

44 I like to do the demonstrations.
They really stick in the minds of students.
The demonstrations are usually very simple in that they are the building blocks of education. 77

While Stavraky teaches several different courses per term and is known best for his classroom presence, he has also developed an interactive CD called Media Phys 3.0 – An Introduction to

Human Physiology. Published worldwide by McGraw-Hill, the CD has been used as far away as Australia. Ironically, for someone who stands out in a classroom setting, Stavraky has devised a teaching technique that works best for online learning.

Still, the face-to-face setting with his clever demonstrations is what students remember him for. One of his greatest satisfactions, he says, is having students tell him years later how well they remember a particular lesson. The demonstrations also allow him to gauge from student reactions whether they are grasping the principles he's trying to teach and whether he needs to adjust his lessons to ensure they do. But judging by his track record, he's quite the success.

Truscott refers to him as "setting the bar" for what a teacher can be.
"He genuinely loves what he does."

# Web site sparks science interest

Wanting to fill a void, a Schulich PhD student and post-doctoral fellow are bringing their science knowledge to the Internet with the first Canadian science Web site specifically for teens, called CRAM Science.

"The whole reason we started this is because we love science and we wanted to share that with others," says Mira Ray, co-creator of CRAM Science. "We realized adolescents are a harder demographic to target, so we want to show them how relevant science is to their daily lives."

The online magazine, launched in January 2006, is published once a month with additional special features throughout the year. "Content includes information on products teens use, health issues they face, to the shows

they watch - all from a cool science angle," says Amy Cook, co-creator. Meanwhile, the two say they love their day jobs as researchers at the London Regional Cancer Program and hope to continue working in research and education throughout their lives.

Visit the new site at: www.cramscience.ca





Smoke billows, and lights flash as emergency workers methodically move through a field littered with bloodied bodies and aircraft parts, stopping to tend to a teenage girl apparently suffering from a severe compound fracture.

This scene, enacted at the Sarnia airport last summer, isn't from the latest disaster movie: it was part of a week-long camp designed to expose both high school pupils and medical students to rural medicine. Launched in 2005, the inaugural session of the Schulich School of Medicine & Dentistry's MedQUEST camp was so successful the program has expanded from a single session to camps in six different communities this year. While the program is the second of its kind in Canada (the other is based in Newfoundland), it is nonetheless unique, says Dr. Tom Lacroix, Assistant Dean, Southwestern Ontario Medical Education Network (SWOMEN)/ Rural-Regional.

Lacroix was inspired to spearhead the project after a medical school applicant praised her experience at a similar European camp. Initially, the main focus was building a long-term recruitment

strategy to encourage high school students from rural and Aboriginal communities to consider careers in medicine, says Lacroix. However, once he began researching existing camps, he quickly grasped the potential for attracting medical students to eventually practise in under-serviced rural communities. In contrast to similar camps, which are delivered by staff, MedQUEST employs second- and third-year Schulich medical students to serve as counsellors and mentors, after spending several weeks in rural clinical placements.

"Once they're in medical school, the students you're going to influence the most are the urban-raised kids," says Lacroix. "I grew up in Montreal, and it was through rural experiences that I chose to come to Sarnia. What we do is say, 'I want you to sell rural family medicine to these high school students. What's provocative about it? Why

would you want to do this as your long-term career?"

"It's easy to get stuck in the perception that all the really interesting things happen in the university centres," notes Clarissa Holding, a second-year medical student and former counsellor whose rural placements have spanned sugery, obstetrics/gynecology and family medicine. "It was really nice to see a wide variety of professions are still represented in the smaller centres, and there are so many opportunities for different things, even research."

Building on these experiences, counsellors devised a week-long curriculum incorporating job-shadowing placements, an interview skills workshop, and hands-on demonstrations.

Campers practised casting, tested their 'post-smoothie' blood-sugars, learned

11 was an excellent opportunity to get more exposed to the medical field, and actually see what goes on from day-to-day. 77



"When I first heard of the camp, I thought, 'Wow! That would have been such a cool thing to do when I was in high school.""

Emergency workers tend to teens acting as disaster victims during the 2005 MedQUEST camp in Sarnia.

to use otoscopes and reflex hammers, honed suturing skills on teddy bears, and intubated a robotic baby that turns pink when the procedure is performed correctly.

In short, it was the kind of experience few aspiring doctors obtain outside of MedQUEST. Second-year medical student Jessica Ratcliffe, a former small-town resident who was lucky enough to receive a job-shadowing offer from a family friend prior to university, says, "When I first heard of the camp, I thought, 'Wow! That would have been such a cool thing to do when I was in high school."

And campers concur. "It was an excellent opportunity to get more exposed to the medical field, and

actually see what goes on from day-to-day," says Nicole Buscema, a Grade 12 student. She also found it helpful to hear about the medical school application process – something perceived by many rural teens as an almost insurmountable barrier. "It convinced me this is definitely what I want to do with my life, and no matter how hard it is, I can do it."

But the most dramatic event of the week was undoubtedly the mock air crash, which pulled in local physicians, nurses, police officers, fire fighters, paramedics, and other emergency services personnel. Campers donned convincing fake blood and wounds (courtesy of the Red Cross) to play crash victims. This summer, MedQUEST will plan and stage six separate disaster-planning operations.

Aside from disaster planning assistance, research suggests MedQUEST will benefit surrounding communities in other ways; spurring local teams to develop long-term, sustainable strategies for recruiting and retaining doctors. Small wonder the initiative is attracting more than \$100,000 in community support to defray costs not covered by the nominal \$100 tuition fee.

Judging by Buscema's enthusiasm, those investments are already bearing dividends. "I got to follow Dr. Lacroix through his normal day, and go to the hospital with him to see all the premature babies. That was amazing — where else can you get experience like that? It really opened my eyes to how rewarding that type of job can be, and how challenging, and interesting."



Campers with casts.



Suturing a stuffed toy.



Proudly sporting a mock injury.



A group of students sits in awe on the back of a jeep as they travel the long, dusty road from the Kilimanjaro International Airport to Arusha, Tanzania. They barely speak a word as they take in the beautiful landscape, passing the occasional group of women dressed in colourful African clothing carrying water or wood on their heads. They would have walked for miles and miles like this.

Each summer, for a select group of medicine, dentistry and nursing students from Western, this is not just a powerful introduction to a completely different continent and culture. It is the realization of a year-long effort to prepare, fund and coordinate MedOutreach, a student-directed mission to provide primary health care, prevention and teaching in a developing country.

Founded in 1986, MedOutreach is celebrating its 20th anniversary in 2006 – a testament to the efforts of more than 150 students who have handed down from year-to-year the determination and ability to make a difference in international health.

"Our history is a huge asset of MedOutreach," says Caitlin Dunne, a medical student who was part of the 2005 team and is now advising the 2006 team. "It has such deep roots it enables us to branch out and make things more sustainable."

Sustainability of health and dental care in Tanzania is a challenge that can sometimes seem insurmountable, say the students who've been there. "The whole time you are there, there's a constant

feeling of energy and excitement," says Julie Johnstone, a Schulich medical student who participated in MedOutreach 2004. "But there are also feelings of doubt: are we really helping here? Are we doing the right thing?"

# "As a student, I took more away from the experience than I could ever give."

Adam Pite's experience indicates the group can and does make a difference. The fourth-year dentistry student traveled to Tanzania in 2005 – the only dental student teamed with four colleagues from medicine and two from nursing. Pite worked in an Arusha dental clinic, and for two weeks in Nkoaranga village, helping the poorest citizens deal

with dental difficulties. In Nkoaranga, Pite extracted 64 teeth in just three-and a-half days, without a single radiograph and communicating in broken English and Swahili with his patients.

"MedOutreach is a unique opportunity, especially for someone in my program, to get exposed to what third-world dentistry is like," says Pite. "After only eight months of clinical exposure, I was thrown into this world. It was tremendous. My skills in oral surgery and extraction improved a thousand-fold."

Aside from the opportunity to improve skills, most participants say MedOutreach is life-changing.

"It opens your eyes to health care abroad and how lucky we are in Canada to have the health system we do," explains Laura McGrath, nursing student, MedOutreach 2005.



Children at a home for street youth in Maji ya Chai try their skills at medicine during MedOutreach 2005.



Smiles reward medical student Caitlin Dunne and Dentistry's Adam Pite during a dental screening clinic in Nkoaranga.

Johnstone agrees. "It helps you with perspective so you don't complain as much about the system here. With our health system, it's like you are driving a BMW and the sun-roof is broken...but you're still driving a BMW."

Each year, MedOutreach students begin planning in early fall. They take on the responsibility of raising the funds and collecting medical and dental supplies as well as other goods to take with them to Africa. They also practise Swahili weekly and plan out the kind of work they will do. Since the program has been operating in Tanzania, the group's advisor on the ground has been Dr. Peter Mhando. The group works out of Mhando's clinic for part of the time, and is assisted by Mhando and his wife throughout their stay in Tanzania.

Aside from medical and dental clinics, the students also visit orphanages, schools, villages, HIV/AIDS and leprosy clinics, and conduct teaching sessions for Tanzanian health care workers. For the past few years, MedOutreach has also worked with a home for street youth in Maji ya Chai. They have also funded approximately 40 full scholarships for children from the poorest of families to attend high school – a rare opportunity because of the cost.

Despite the long preparations before departing, Dunne says nothing can prepare you for the experiences students encounter there. Her most vivid memory is of visiting a one-room home the size of a small shack with a dirt floor, where a 24-year-old mother was so sick with AIDS she couldn't get out of bed. "Her children took turns staying home from school to look after her. The rent for her house was \$6 US a month and she can't afford to pay it because she can't work."

# 44 They have so much to teach us about being a community, about how to love people instead of things. 77

Still, the people are welcoming and kind-hearted despite hardships, say the students. "Over there people are happy with what they have without wanting more," says Johnstone, a feeling that gave her 'reverse culture shock' upon returning to Canada. "They have so much to teach us about being a community, about how to love people instead of things."

Nearly all the students who participate in MedOutreach say they want to go back. "In a heartbeat," says Dunne, who cried the day she left Arusha. "As a student, I took more away from the experience than I could ever give." Asked if the experience will make her a different doctor, she immediately replies, "One hundred per cent."

Some students have plans to make international work a part of their careers in future and credit MedOutreach with

exposing them not only to international health but the strengths of other health care professions.

"It's a really good idea to have the three units working together," says McGrath. "As new health care professionals, it is good to get used to working in that type of team." Pite agrees. "It's a tremendous chance to learn from each other," he says, acknowledging that his group developed a new found respect for colleagues from different disciplines.

In 1986, the first MedOutreach group had the same aspirations, but likely did not imagine the impact the program would have over the decades to come.

MedOutreach '86 raised more than \$20,000 to send eight medical students and a nursing graduate to Haiti to vaccinate 25,000 children. The program moved to Nigeria in the 1990s, then to Tanzania where it has remained since 1994. The eight-member MedOutreach 2006 team aims to raise more than \$50,000 to cover travel, supplies, and educational scholarships for up to 45 Tanzanian high school students.

Dunne says past work has laid the foundation for MedOutreach's impact in Tanzania today. "Things like this would never be possible on a one-off basis. It takes years of building to get to this level. It's a credit to every team who has gone before."

For more information about MedOutreach, visit:

www.medoutreach.ca



MedOutreach students are welcomed with open arms to communities benefiting from their visit each summer.



Bachelor of Medical Sciences students benefit from a new teaching laboratory named in honour of a \$300,000 donation from Daniel and Leonard Drimmer.

# Cornerstone Remodelled by Kris Dundas

A four-year, \$34-million transformation has renewed one of the crown jewels in Schulich Medicine & Dentistry's building complex on The University of Western Ontario campus.

The Medical Sciences Building opened in 1965 and is considered one of the 'cornerstones' of the School. Though its outside appearance hasn't changed much, inside labs, lecture halls, offices and core research facilities have undergone extensive renovations to create a modern teaching and research environment that can support new technology and new models of collaborative education and research.

The final phase of construction will be complete in August 2006. Here are some of the highlights of the building's transformation.



#### Sources of Support

Renovations were completed thanks to the following partners:

#### \$26 million from:

Canada Foundation for Innovation **Ontario Innovation Trust** Ontario Ministry of Training, Colleges and Universities SuperBuild Fund Western Capital Expenditures

#### \$8 million from private donors including:

The Kresge Foundation G. Scott Paterson Daniel and Leonard Drimmer Dr. Cecil and Mrs. Linda Rorabeck The Late Dr. C. Douglas Keeley

The Late Estelle Francis Easton The Late Mrs. Grace H. Robinson Dr. and Mrs. Geno F. Francolini and many generous alumni, faculty and community members, as well as donors who wish to remain anonymous.

### **Enhancing Undergraduate Medical Sciences**

A new laboratory facility on the first floor is largely dedicated to students in the Bachelor of Medical Sciences Program. The modern, modular labs include barrier-free workstations and can accommodate a class of 114 or allow three smaller classes to operate simultaneously. Instructors use the latest video and audio technology to conduct labs, with the capability of projecting lessons on five large screens at the same time.

Courses offered in the 6,000-square-foot facility include: Anatomy & Cell Biology (histology), Microbiology & Immunology, Biochemistry, Medical Biophysics, Medical Sciences and Clinical Biochemistry. Dentistry students use the space for Oral Pathology laboratory work and Faculty of Science students also have access.

Laboratory is a state-of-the-art facility allowing us to provide new technology to students and build on the basics of the medical sciences...We now have the capability of exposing students to multiple disciplines in a single environment — something we couldn't do before. 77

- Wayne Flintoff, Associate Dean, Basic Medical Sciences Undergraduate Education.

### Promoting Interdisciplinary Research and Advanced Research Facilities

The speed with which new developments in health research take place demands that the School keeps pace to remain competitive in attracting faculty and graduate students.

Revitalized laboratories throughout the building foster collaboration among scientists from different fields around research themes. This allows for creativity and the open exchange of expertise, as well as efficient use of resources, equipment and staff.

Enhanced biomedical research facilities now housed and consolidated in the building include the Biomolecular Nuclear Magnetic Resonance (NMR) Laboratory, the Advanced Biotechnology Research Centre, a Macromolecular X-Ray Crystallography Facility, and several others dedicated to understanding the molecular nature of protein function in disease and health.

This is the type of innovative research that may lead to tremendous leaps in medical knowledge, the development of important diagnostic tools and new health care products, and new treatments for major illnesses. 77

- Dr. Carol Herbert, Dean



Professor Gary Shaw and graduate student Anne Dempsey work in the new Biomolecular Nuclear Magnetic Resonance Laboratory.

#### Cornerstone Remodelled (continued from p.23)

#### Improving the Working Environment and Student Experience

A 40-year-old building is naturally susceptible to problems with heating, cooling, communication systems, workplace safety and space constraints. The aging environment built in 1965 was not conducive to supporting today's students and faculty members.

Though the four-year project has disrupted students and faculty in the short-term, in the long-term the renovations have enhanced safety, security and general environment to the benefit of all. Enhancements include:

- Modern laboratory safety and emergency equipment
- New heating and cooling systems throughout the building
- Capacity for modern computer and communication technology
- Advanced security system
- Improved emergency power to ensure important research projects are not interrupted

difference is it's a brighter, more energetic work environment. The labs, offices and halls are brighter, safer and cleaner...It's a place people are proud of and they want to be here."

Gary Shaw, Professor,
 Department of Biochemistry, Director,
 Biomolecular NMR Laboratory

# Doctor in the House? Try Three.

By Karmen Dowling

First-year medical student Lembi Hess says the Schulich School of Medicine & Dentistry feels like home – and it should, with two older sisters in the program.

Western seems a popular destination for the Hess family as another older sister, Helve, is studying in the Faculty of Law.

Meanwhile the three medicine sisters, Lembi in first year, Tiiu in second year and Talvi in her graduating year, enjoy having their own family support network in a demanding and challenging program.

"I love having two sisters in med school at Western with me," says Lembi. "I was really lucky to have them to give me an idea of what to expect before I got here and to be here to answer the two million questions I have daily."

The four Hess girls grew up in the small community of Queensville north of Newmarket, along with their youngest sister and only brother. Their grandparents emigrated from Estonia

to escape occupation by communist Russia around the time of the Second World War. Their father is a cardiologist and their mother is also involved in the health care field. While all four went to different universities for undergraduate degrees, the professional programs at Western drew them here.

impressed by the medical students I met here; they were very warm, friendly and down-to-earth, with tons of class involvement in social and athletic activities. 77

"I liked the combination of a large city with a wide variety of medical cases but with a friendly small-town atmosphere," says Talvi. "I was also very impressed by



From left: Lembi, Tiiu and Talvi Hess, Medicine class of 2009, 2008 and 2006, respectively.

## 44 I was really lucky to have them to give me an idea of what to expect before I got here and to be here to answer the two million questions I have daily. 77

the medical students I met here; they were very warm, friendly and down-toearth, with tons of class involvement in social and athletic activities."

Tiiu says she chose medicine because of her father. "I used to go into the hospital with my dad sometimes when I was little, and I think just seeing how much he was helping his patients made me think about medicine really early. As I got older, I saw a lot more of what my dad actually did and some of the science behind it, and I just found it to be interesting and rewarding at the same time."

She hasn't decided what specialty she wants to pursue yet, maybe something in internal medicine, but at this point

anything is possible. It is also early for Lembi to finalize her future career path, but she says pediatrics and sports medicine have peaked her interest. Talvi will begin residency in internal medicine this summer at Schulich Medicine & Dentistry.

The sisters are living in their own places with friends in London, but see each other and talk often. While their brother is at another university, their youngest sister is still at home attending high school and they don't know if she will decide to also get into medicine or come to Western.

Their parents are strong believers in education but never pushed them into one direction. "I know our parents

are really proud of us," says Lembi.
"They've always encouraged us to
pursue our dreams, whatever they
might be, so I think they are happier
that we have all gotten the opportunity
to study our own interests, rather than
that we all got into med school."

Talvi jokes, "My parents want to know if there's a tuition discount for having four children at one university at the same time."

# Schulich Medicine & Denti

As much as this magazine is about our people – students, faculty and alumni and their accomplishments – we also wanted to share some highlights of the School's recent achievements "by the numbers." These pages display facts about our progress in research, enrolment, faculty complement, fundraising, and student financial accessibility.

Building on these achievements and others, in 2006 we have embarked on a new four-year academic and strategic plan focused on six priority areas:

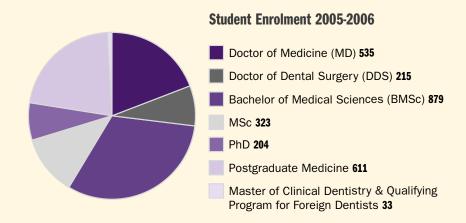
- Enhancing our research capability, productivity and impact
- Expanding and enriching our educational programs
- Providing the best student experience

- Strengthening and supporting our faculty and staff
- Fostering collaboration and integration locally, regionally and globally
- Building our infrastructure and funding base.

Although we are proud of our success to date, we are never content to rest on our laurels. Each milestone we mark positions us to reach further towards our vision of "Shaping the Future of Health Care." I welcome any questions, comments or recommendations as we continue to pursue that vision.

Sand Herbert

Dr. Carol P. Herbert Dean



#### **Applicants to Professional Programs 2005-2006**

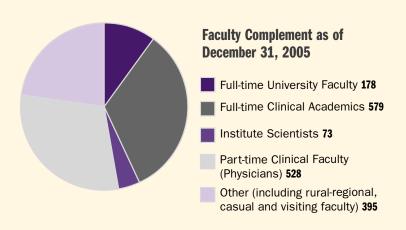
	MD	DDS
For September 2005	1874	486
For September 2006	2523	591
Positions Available	133	55

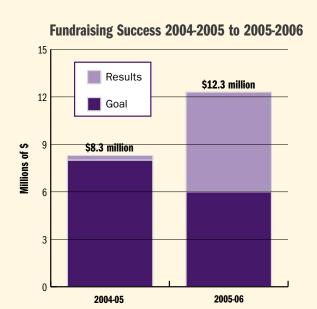
#### **Student Financial Assistance 2005-2006**

Type of Assistance	Number Available	Value
Need-Based Scholarships	235	\$2,429,574
Privately Funded Bursaries	73	\$161,050
University Supported Bursaries	Variable (according to need)	\$1,952,790*
TOTAL	308+	\$4,543,414

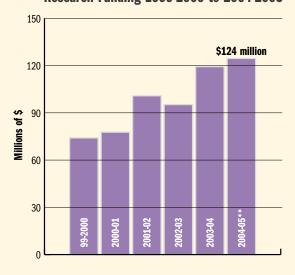
<sup>\*</sup>figure is based on bursaries provided to students in 2004-2005

# stry By the Numbers



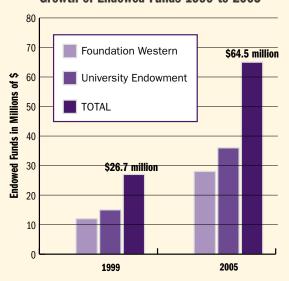


#### Research Funding 1999-2000 to 2004-2005\*



\*includes funding to Schulich Medicine & Dentistry and affiliated research institutes
\*\*most recent year for which data is available

#### Growth of Endowed Funds 1999 to 2005





Schulich School of Medicine & Dentistry

# SHAPING THE FUTURE OF HEALTH CARE



