Noeman Mirza and Sandra Woltman are excited about the possibilities of a career in nursing.

**The future of nursing**

**BY ELAINE HUJER**

Specialized training is the key as health care needs change

Nursing is much more than it used to be. In addition to the important role of bedside nursing, nurses now use their expertise to contribute to community boards, influence health policy development, conduct specialized research and take leadership roles in primary care and community outreach.

Times have changed for nurses in Canada since the 1990’s when health care restructuring prompted many Canadian nurses to seek employment in the U.S.

By January, 2005 all nurses seeking registration must have a Bachelor of Science in Nursing (BScN) university degree. Although current nurses with college diplomas will not be required to upgrade, that change has instigated several programs.

Diploma nurses have had the opportunity to upgrade their education to the nursing degree at McMaster since 1982. As well, community colleges with nursing programs across the province have banded together with university nursing schools so their students may receive a nursing degree.

McMaster, in a unique collaboration with Mohawk and Conestoga colleges, now has Ontario’s largest nursing program with 800 full-time students at the three sites. The program is the only fully integrated program in the province, with all the students being taught the McMaster curriculum. The first students of the new four-year program will graduate in the spring of 2005.

Story continues on page 4
Touching the lives of students
The McMaster Student Opportunity Fund

When Kathleen and Dennis McCalla decided to support student bursaries at McMaster they had no idea their gift would instantly double in value. “It was a wonderful surprise,” says Kathleen. Kathleen and Dennis’s gift to student financial aid qualified for matching funds from the provincial government under the McMaster Student Opportunity Fund initiative.

Dennis is a former dean of science and former vice-president of Health Sciences at McMaster University. When he received a pension surplus payment from the University, he and Kathleen decided to donate the full amount to McMaster.

“We feel we have a responsibility to the younger generation,” says Dennis. “When I was in university in the 1950s, tuition was inexpensive and summer jobs were plentiful, especially for young men. It was relatively easy to earn what you needed to pay for a university education. You just didn’t hear about students who had to go deeply into debt to pay for their education. Today, the rules have changed - it is not uncommon for students to owe thousands of dollars when they graduate.”

Kathleen knows first hand how important bursaries can be. As a young student at the University of Alberta she received bursary support. “I would have got to university somehow, but the bursaries made it easier and allowed me to devote full attention to my studies instead of having to take part-time jobs. We want to help ensure that good students have the opportunities we had.”

Dennis joined McMaster as an assistant professor of biochemistry in 1961. “It was a wonderful time to be a faculty member,” he says. “The federal government had decided that Canadian science needed to be strengthened and the Province was increasing support for universities at an astonishing rate. McMaster enabled me to have a varied and interesting career for which I am grateful”, he says. Kathleen, appreciated the wonderful sense of community at McMaster. “We raised our children in Westdale and had a very interesting life.”

The McCallas know from experience that university can make a considerable difference to a person’s life. “Through our contribution to the McMaster Student Opportunity Fund we hope to give back some of what we were given by helping today’s students.”

* For more information on how to double your donation to student financial aid through the McMaster Student Opportunity Fund, please call the Development Office at (905) 525-9140 Ext. 27602.

Botanical atrium to showcase MDCL building

A botanical atrium at the front of the Michael G. DeGroote Centre for Learning and Discovery (MDCL) will enhance campus and five endowed chairs will recruit and retain outstanding scholars.

These were just two of the items approved by McMaster’s Board of Governors last week, during a special meeting in the Psychology Building. Prior to a tour of the newly renovated facilities, the Board celebrated the significance of a $105-million donation from Michael G. DeGroote to McMaster, by approving the construction of an atrium that will be added to the front of MDCL. The atrium, to be constructed at the east of the front entrance, will include botanical features and a “floating meeting room” at the third-floor level.

“The atrium is spectacular,” said Board member Edward Minich. “It will really set off University Ave. and give the building a sense of an open, room” at the third-floor level.

The approximately $4-million “winter garden atrium” will be funded from the Michael G. DeGroote donation.

Endowed chairs in humanities and social sciences

McMaster’s Board of Governors approved the establishment of five Senator William McMaster Chairs in Humanities and Social Sciences.

These prestigious endowed research chairs are expected to retain and recruit outstanding scholars to McMaster, said President Peter George to the Board of Governors.

The University will allocate $1 million from the Pension Surplus Fund as an endowment to fund each of the five chairs.

Medard DeGroote Chair in Medicine

The $105-million gift from Michael G. DeGroote is bearing more fruit. Some of the funds of this gift will support a Medard DeGroote Chair in Medicine. The Board of Governors approved the terms of reference for the chair that will reside in the DeGroote School of Medicine’s Department of Medicine. The five-year chair will focus on internal medicine.

Frozen tuition fees

The Board of Governors approved 2004/05 tuition and miscellaneous fees. There will be no increase for domestic fees in regulated and deregulated programs, based on government legislation that all domestic tuition fees be frozen at 2003/04 levels. This legislation overrides the fee increases for 2004/05 previously approved by the Board of Governors in April 2000.

Contingent on Hamilton City Council’s approval, The Hamilton Street Railway monthly bus pass fee will increase five per cent, to $68.25 from $65.
Lessons from McMaster’s ‘troll in the hole’

S
omewhere, amid more than two kilome-
tres of shelving that’s teeming with boxes
of historical records, large and small arte-
facts and rare books, there is man at a
small desk that’s piled high with new
archival donations to be filed. He’s the self-pro-
claimed “troll in the hole,” working to organize,
preserve, and amass McMaster University’s
archival history along with the Canadian Baptist
Archives, deep within the belly of Divinity College.

An instructor at both Divinity College and Toronto’s
Tyndale Seminary, part-time archivist, pastor at a
church in Toronto, and author, Professor Mark
Steinacher says he likes to keep busy. He can be found
in the archives three days a week, orchestrating a great
reorganization of existing files and finding space for
recent additions that donors often bequeath to the col-
lection, which is also the third-largest Baptist Archives
in the world.

“People who come to the archives need to under-
stand it’ll take them some time to sort through boxes
of information, and that nothing is Internet-ready,”
says Steinacher. “But that’s my favourite part about
archives – the Easter eggs or interesting tidbits you dis-
cover even when you’re not looking for them.”

The archives hold diverse forms of information
including documents, journals, correspondence, and
rare books. There are also more than 1,400 glass slides
that are between 70 and 110 years old, often taken by
ministers and missionaries who made efforts to docu-
ment their way of life and work. The historical infor-
mation found in the archives spans continents, because
in addition to once-rural and remote areas of Canada,
many items hail from Baptist missions in locations as
culturally diverse as Africa, Bolivia, and India.

But Steinacher says it’s the items contained in the
archive vault that are perhaps the main attraction
for some. The vault contains a number of artefacts
that are too valuable and historically significant to
leave on permanent display, including two win-
dows from Senator McMaster’s home in Toronto –
one etched glass and the other stained-glass – bear-
ing the McMaster family crest. There’s also pottery
that dates back to as early as 2000 BC, and signifi-
cant materials that relate to well-known Baptist fig-
ureheads such as David Livingston and William
Carey [see sidebar].

Steinacher can recount the story behind many items
in the archives, and the people to whom they once
belonged. It’s those little details that help him to round
out a story, and add an extra dimension to history.

“Working in the archives, you really get a feel for
people,” says Steinacher. “They’re not just a
portrait on the wall, or a 100-word biography –
there’s a chance to learn what their circum-
stances were like, how they lived, their best qual-
ities and their worst.”

Steinacher – a church historian by training –
began working part time in the archives when he
was still a graduate student six years ago. Some
of the information he’s discovered while sifting
through the archives has helped inspire two
books in progress: one, a translation of his doc-
toral thesis into a more reader-friendly format,
and a second book tentatively titled A Brief
History of the End of the World an examination of
some end-times beliefs through the ages.

The Divinity College Archives are available to
students, staff, faculty, and community members.

Buried treasure

Some items in the Divinity College Archives include:

- Two windows from Senator William McMaster’s home in Toronto – one stained glass, one etched glass, bearing the McMaster family crest. (The home later became Moulton College, a residential all-girls school named after Lady Moulton McMaster.)
- A piece of a tree from David Livingston’s burial site in Africa. (The missionary’s body was buried in England, but his heart was buried in Africa. A tree grew above the heart’s grave.)
- Cupboard door and fountain pen from William Carey’s home. (Carey was a pioneer Baptist missionary who went to India. Funding was scarce, so Carey paid his own way by working full-time at a dye factory. In his spare time he learned 23 languages and provided a number of bible translations.)
- Back issues of a French-Canadian multi-denominational protestant newspaper, L’aurore. (Currently the Quebec government has launched a search to stock copies for archival purposes.)
- Academic costumes from McMaster University’s early days (originally located in what is now the Royal Conservatory of Music building in Toronto) and its pre-cursor school, the Canadian Literary Institute, which moved to Toronto from Woodstock in 1860.
- Also included are ancient pottery dating back to 2000 BC, a bayo-
net, blueprints for churches, political cartoons, and wood carvings.
Another change is the recent announcement by the Ontario government of an additional $50 million in funding for nurses, particularly full-time nurses, in both large and small hospitals across the province.

Catherine Tompkins, acting associate dean of nursing in McMaster’s Faculty of Health Sciences, is happy to see that nursing has once more become an attractive career choice. The current nursing shortage provides greater job opportunities and security.

Noting that the whole cycle of nursing surpluses and shortages is affected by very complex causes, Tompkins explains that, “In the 1990’s hospitals downsized because of reduced provincial funding and the number of nursing positions were substantially reduced. Many nursing jobs became part-time, as hospitals tried to save on benefits and nurses often had to take additional part-time jobs to survive. Quality of life and health care in Canada became a huge issue for nurses and so many went to the States where there was greater opportunity and security.”

This situation has changed for several reasons. “Now, the fear is that the average age of nurses in Ontario is in the early 50’s, so there will soon be widespread retirements. Nursing is a very demanding job physically and emotionally, and most nurses don’t work until they are 65 - so everyone is anticipating a huge attrition of nurses.”

Moreover, Tompkins notes that Canadian graduates have been complemented with nurses from developing countries for many years. “But now that an RN in Ontario requires a BScN or Baccalaureate degree, many of these nurses [from developing counties] will have to be upgraded.”

Research is a relatively new role for nursing graduates, but one that gains necessity as nurses face increasingly complex demands. Dr. Heather Arthur, another professor in McMaster’s School of Nursing, holds the first Heart and Stroke Foundation of Ontario Chair in Cardiovascular Nursing and conducts a program of research related to health behaviour and its relationship to heart disease.

She says that the nurse as a researcher is a small but significant group. “In Canada there are 671 PhD prepared nurses but there are 231,000 nurses. About 55 are career investigators, people like me who are essentially scientists, conducting studies, running large groups of researchers. Typically the public doesn’t see nurses in that role but it’s important to correct that impression.”

Specialized training is becoming increasingly important for nurses as health care needs change. Now that there is more emphasis being placed on keeping people healthy, nurses will be required to plan and implement health promotion programs for whole groups and communities.

This new approach is called primary health care and will involve more nurses working independently. The advanced practice nurse, or nurse practitioner, is an example of a nursing professional who will be able to ease the shortage of physicians.

Faith Donald is a doctoral student in McMaster’s School of Nursing, but she is also an assistant professor at Ryerson University where she has been teaching in the nurse practitioner’s program since 1996.

Donald says, “The Primary Health Care Nurse Practitioner (PHCNP) is a registered nurse who has specialized training and has achieved certification by the College of Nurses of Ontario. Nurse practitioners can diagnose and treat minor illnesses and injuries, can order a variety of diagnostic tests and can prescribe certain specified drugs. They work collaboratively with family physicians and other nurses to very specific standards.”

Currently, at McMaster, the nurse practitioner’s certificate requires a one calendar year course of study for nurses with a BScN and a two-year course for nurses with a diploma. McMaster has had a nurse practitioners course since 1996 and, according to Donald, was the leading university in Ontario’s Western Region with the program.

The course attracts students from many countries and admission is competitive.

Karen Clayton, a student from the Cayman Islands, heard about the McMaster Review

“The job is rewarding because you are working to the full strength of your abilities.”

— Suzanne Doucette

The average age of nurses in Ontario is in the early 50’s, says Catherine Tompkins.
course from a visiting physician, but laughs as she says, “I chose McMaster because they had the best brochure—the package was so organized and had everything I needed.”

Clayton has found the course itself very “do-able” and is looking forward to the clinical component where she will be out, working in the community for 13 weeks. Later, she hopes to do a placement in northern Ontario.

The value of the nurse practitioner for Canada’s remote and rural areas can’t be overstated.

Suzanne Doucette is a PHCNP who co-ordinates the English and French curriculum for the Council of Ontario Universities Programs in Nursing. Doucette worked for the federal government as a nurse practitioner in the North West Territories for seven years and was director of hospitals for the First Nations/Inuit Health Branch. She recalls that a great deal of consultation via telephone is necessary in remote areas and that there is even a Telehealth system set up in large centres where nurses and physicians and clients can share information using video cameras.

“The job is rewarding because you are working to the full strength of your abilities. It’s a challenge to work within another culture and I felt very privileged that people would share their culture with me,” says Doucette.

But the advanced practice nurse has a necessary role to play in the inner city as well. Dyanne Semogas, an assistant professor in McMaster’s School of Nursing is a post master’s/NP and has taught in Mac’s nurse practitioners’ program since 1990.

In 1999, Semogas and a couple of other faculty were asked to accompany student volunteers to distribute food and clothing to the homeless in Hamilton. Noticing that one of the big problems of the homeless and impoverished was arthritis and diabetes and a lack of decent footwear, Semogas instituted a free foot care clinic, held every Wednesday evening. Over a period of time, the group of volunteers grew and in January 2000, the Federal government awarded funding to the group which became known as the McMaster University Student Outreach Clinic (MacSOC).

Semogas also became aware of the large number of young people living on the streets, an interest that evolved into an organization called M.A.C. (Making a Change) Door, an intervention and research facility for street youth. The success of M.A.C. Door has led to the institution of the Girls’ Circle, a program which assists young girls with social skills and provides work placements in local private businesses. Semogas now is clinical director of M.A.C. Door and also offers a special topics course to level four nursing undergraduates that combines tutorials with a service-based component.

“It’s a huge eye-opening experience and many students feel compelled to continue the volunteer service after the course ends,” Semogas says.

Tompkins acknowledges the need for nursing students to acquire specialty skills.

“Right now we’re looking to develop masters programs in the areas of mental health and oncology. There a real need for nurses to take on leadership and management roles.”

“This is a very exciting time for the profession with a lot of good leaders. The Registered Nurses’ Association of Ontario is working with the universities to generate a vision that will move nursing forward. There is lots of potential for the profession and excellent prospects for the future.”
Construction project approval

McMaster’s Physical Plant has developed a policy on who approves construction and maintenance projects on campus. The purpose of the policy is to set out the responsibilities and accountabilities associated with construction.

The policy states that all projects with a budget more than $5 million will be approved by the Board of Governors; projects between $1 million to $5 million will be approved by the Planning and Building Committee; those between $200,000 and $1 million will be approved by the President and vice-president administration; and those up to $200,000 will be approved by the director of physical plant.

— Chantall Van Raay

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At McMaster we believe that no student should be denied access to higher education because of financial need. For more information on how you can help McMaster’s students realize the dream of a higher education, contact the Development Office at: (905) 525-9140 ext. 27602
Facing the facts about recognizing faces

BY LISA MCLEAN

Notice anything different about these two pictures? It’s the same person, with one small difference. One image has been altered, but most people won’t see how until they’re viewed upright.

This is one example of the so-called “inversion effect” – it’s harder for the brain to process upside-down objects than upright objects, and the inversion effect is especially strong for the perception of faces.

“For most people, it’s easy to recognize a range of faces, even under various lighting conditions and from different views. But when those faces are turned upside-down, we experience problems,” says Allison Sekuler, professor of psychology and Canada Research Chair in Cognitive Neuroscience at McMaster University.

Sekuler says human faces consist of two eyes, a nose, and a mouth, organized in just about the same way for every face. For decades, people thought the face inversion effect meant that the brain uses the information in faces in very different ways to recognize upright and upside-down faces.

Traditionally, recognition of upright faces was thought to hinge on the organization of features across the whole face, whereas recognition of upside-down faces relied much more on identifying local features.

Sekuler and her team set out to test that idea directly. Their results, which appeared in the journal Current Biology, provide an entirely new picture of what goes on when our brains picture faces. To obtain a clear view of how the brain processes information about faces, the researchers actually added “visual noise” (resembling snow on a de-tuned television) to face images. By keeping track of how that “visual noise” affected perception, the researchers were able to tell what parts of the faces were most important for recognition.

Surprisingly, all observers relied mostly on information in the middle or bottom. One image has been altered, but most people won’t see how until they’re viewed upright.

According to this view, the inversion effect is a fascinating example of how the human brain processes information, and how our brains can be trained to process difficult tasks more efficiently. In a related study, to be published in April in the journal Cognitive Science, Sekuler and her research team applied similar “noise” obstructions to faces and unfamiliar textures to determine how people’s recognition skills improved with learning. With both types of patterns, everyone who was tested improved. For faces, people became more efficient at picking out the relevant information around the eyes and eyebrows. For textures, different individuals adopted different strategies for improvement.

“Traditionally, recognition of upright faces was thought to hinge on the organization of features across the whole face, whereas recognition of upside-down faces relied much more on identifying local features,” says Sekuler. “Although most of the relevant information for recognizing our faces was right around the eyes, people seem much more efficient at picking up that information in just the right way when the face is right side-up.” These results fly in the face of previous theories of face recognition. Instead, the researchers suggest that the face inversion effect may be an example of the old saying, “practice makes perfect” – people simply have a lot more experience recognizing upright faces, and that makes them better.

According to this view, the inversion effect is a fascinating example of how the human brain processes information, and how our brains can be trained to process difficult tasks more efficiently. In a related study, to be published in April in the journal Cognitive Science, Sekuler and her research team applied similar “noise” obstructions to faces and unfamiliar textures to determine how people’s recognition skills improved with learning. With both types of patterns, everyone who was tested improved. For faces, people became more efficient at picking out the relevant information around the eyes and eyebrows. For textures, different individuals adopted different strategies for improvement.

“In working with textures, we found that people learned to recognize them in different ways, even though they all ended up performing the task equally well,” says Sekuler. “For the first time, we were able to get a direct view of what strategies the brain used to improve recognition. Understanding the unconscious learning strategies people use, and how those strategies vary across individuals, will help us to establish more effective training techniques.”

Sekuler hopes that by identifying how the brain normally processes this kind of information, she and her group will be able to develop training programs for people who have impaired facial recognition skills, such as autistic individuals and some stroke victims.

“The first step toward improving performance in impaired populations is to understand how the typical brain processes information,” she says. “With this work, we’ve made a big leap toward that end.”

Sekuler’s research team includes Patrick Bennett, professor of psychology and Canada Research Chair in Vision Science, and Carl Gaspar, graduate student, from McMaster University, and Jason Gold assistant professor of psychology from Indiana University. The work was funded by the Natural Sciences and Engineering Research Council of Canada and the Canada Research Chairs.

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Appearances can be deceiving, says McMaster’s Allison Sekuler.
The year in review

Plans for double cohort students were put to the test

By Julia Thomson

The students currently completing their first year at McMaster University—and other post-secondary institutions across Ontario—are part of one of the most discussed, controversial, and analyzed groups to frequent McMaster’s campus.

But was the double cohort—the combination of Grade 12 and OAC students—all we thought it would be? Were classes crowded? Did students struggle? Were resources stretched?

To answer some of these questions, the Review took a look back over the past year. Read on to find out what lasting impressions the double cohort has left with us.

Numbers

● 16,111 full-time undergraduate students studied at McMaster this year.
● 5,314 of those students were first-years.
● Over the past two years, the Centre for Student Development (CSD) has seen a large increase in the numbers of students taking advantage of personal, academic, and disabilities services offered at the Centre. Personal counseling increased by 30 per cent among first-year students, and academic counseling increased by 40 per cent.
● Across Ontario, applications to post-secondary institutions are down 32 per cent from the double cohort year. In 2002, about 22,000 students applied to McMaster, and in 2003 that number increased to about 44,000. This year, McMaster has received 51,000 applications.
● The enrolment target for 2004-05 as established by the Enrolment Management Team is 4,886 Level I students.

Registrar Lou Ariano doesn’t think that the numbers will ever go back to what they were before the double cohort and baby boom echo. “The days of 22,000 applications here [at McMaster] are probably over. It’s probably going to be around 28,000 to 30,000 applications a year coming into McMaster,” he predicts. “I think all of the universities are going to realize that. I don’t think anybody is going to go back to the 2002-03 levels.”

What the students are saying

● First-year engineering student Holly Dzuba was part of the younger half of the double cohort, made up of students who completed four years of high school and graduated in grade 12. She says, “I’m glad that I came [to university] in grade 12. Age doesn’t make a difference.” For Dzuba, her first year held a few surprises, some nicer than others. Professors were friendlier and more approachable than her high school teachers had said that they would be, but the work was much tougher than expected. Those nice professors “make the workload so hard, they make you think that you hate it,” she says of the first year Engineering courses. “But, in the end, I’m happy with what I’m doing.”

● Nicholas Petera studied science in his first year at McMaster. Next year, he’s hoping to begin majoring in biochemistry. When he first began university, Petera was shocked by the amount of homework he had. “It’s pretty hard just to adapt,” he says. “But once I realized what effort I needed to put in, second semester was better.” Overall, he feels that his first year “went pretty well.”

● Raymond Levy found that living on-campus in Hedden Hall made a big difference in his first-year experience. “You get to have a feel for how other students are coping and how other faculties work,” he explains. “I met so many different people from so many different places, and got a lot of different perspectives and viewpoints. I feel like I gained a lot from people within my classes and from outside.” Hoping to study economics and Japanese next year, Levy is looking forward to working with his professors and teaching assistants. “There’s an equality between professors, TAs, and students. We’re talking as people, and they have a lot of interesting stories.”

What the staff is saying

● Debbie Nifakis, a psychologist with CSD, helps first year students adjust to the transition from high school to university. “Transition and adjustment to university is the hardest,” says Nifakis. She explains that many students have difficulty dealing with the independence, work, studying, and organization that are part of a university education. Nifakis believes that the attention paid to the double cohort has primed first-year students to use services such as those offered at CSD. “This group seems to be more inclined to ask for help.”

● Peter Walsh, academic skills counselor at CSD, learned quickly that double cohort students have high expectations. “For some of the students I’ve seen, they think they’re flunking if they get a B,” he explains. “I’ve learned to ask what they mean when they say they’re ‘bombing.’” Walsh has developed new programs such as Full Frontal Learning, Just Enough Time Management, and Tactical Motivation and Procrastination Avoidance to help address common issues students face in university. He hopes that new programs will further aid students in the transition. As well, Walsh and other counselors are developing new group and online programs to help give students the service they need in a timely fashion.

● When Associate Professor Dick Day steps into his lecture hall on the first day of classes, he is stepping into one of the largest courses at McMaster, Introductory Psychology. Despite having an enrolment of more than 3,000 students, Day and his undergraduate teaching assistants work to ensure that classes are never bigger than 50 students. Video lectures from Day and discussion with TAs make up most of the class time. Day feels that small groups help make the transition from high school to University easier and discussion time allows students to connect with the material they are learning. Overall, the double cohort was a fairly typical class for Day, if a little larger. “I haven’t seen anything in the students’ performance that would suggest that these students are any different from groups we’ve had before."