

McMaster Review

McMASTER UNIVERSITY'S MONTHLY NEWSMAGAZINE

VOLUME 2, NUMBER 8



Rafael Kleiman holds some of the micro devices that are being studied in the clean room at the department of engineering physics.

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6 October 2003

Big things come in small packages

BY JOHN BUGAILISKIS

Rafael Kleiman's work on transistors that can "feel" will help change the way the world works



The shrinking of silicon-based electronics has truly revolutionized our world, placing far more computing power in the palm of our hands than the Apollo astronauts had in the spacecraft that transported them to the moon. Now that we have taught sand to "think," the next leap will be in transforming these static chips into minuscule machines that can feel, smell, see, hear and act. McMaster researcher Dr. Rafael Kleiman has taken on the task of developing these MicroElectroMechanical systems (MEMS) right

here on campus.

Kleiman, who was a senior researcher at Bell Laboratories, the research and development arm of Lucent Technologies in the U.S., has over the past 20 years become one of the leading forces in MEMS research. He joined the department of engineering physics this past May.

Although revolutionary in design and function, MEMS are actually the latest milestone in a continuum of microminiaturization that began in the 1940s, with the introduction of the first transistor.

Story continues on page 4.



McMaster to remain open during Road World Cycling Championships

McMaster University, including the Downtown Centre, will remain open during the Road World Cycling Championships Oct. 6 to 12.

Exams, classes and programs will continue as usual that week, except for at the Centre for Continuing Education at the Downtown Centre, which will not hold classes during the week of Oct. 6-12. Both Hamilton boards of education and Mohawk College will close schools for the championships.

While everyone will be able to get to campus and the Downtown Centre, traffic congestion is expected to be heavier than usual, and delays should be anticipated. McMaster employees and students are encouraged to study race routes and schedules, available at <http://www.hamilton2003.com> to know when affected roads will be closed each day of the event which will determine where congestion occurs on other alternate routes through the city.

Main Street will close between James Street and Queen Street for the duration of the event. Other roads will close one hour prior to the start of each race and will reopen approximately one hour after the finish of each race. Routes and race times will vary each day of the race. Because of street closures and altered bus routes, some University employees may be interested in scheduling vacations for this time or arranging alternative work schedules.

There is the potential of ramp closures at the Main Street and Aberdeen Street access points off Highway 403. Ministry of Transportation officials will monitor traffic during the race event to determine if access points should be closed due to traffic congestion on alternative routes. The York Boulevard access point will remain open at all times and will be used for all traffic accessing downtown Hamilton from the 403. Everyone who needs to access the University during this week is encouraged to consider an alternate route to the 403.

Hamilton Street Railway buses will continue normal operations throughout the week and people are encouraged to take the bus to minimize traffic congestion.

The week-long event is expected to bring up to 250,000 spectators, 1,000 athletes from 50 countries, 750 team support staff, 2,000 to 3,000 volunteers and 800 to 1,000 media into the region and attract an international television audience of 500 million.

Details of the race, including race routes, can be found at www.hamilton2003.com or www.mcmaster.ca/bikerace/.

These stories are excerpted from the McMaster Daily News Web site.

For additional details or to read other McMaster news, visit <http://dailynews.mcmaster.ca>

Parking is bumper to bumper

— LISA CAINES

Students and employees have returned to campus in full force, but as traffic and parking demands reach new heights, all visitors and permit holders have been able to find a parking spot.

John Abraham, manager, parking and transit services is working to keep it that way, by helping traffic to existing parking lots move more smoothly, and finding permanent spaces for permit-holders currently on temporary grass-based lots.

“After the first few weeks we have a better idea of how crowded the parking lots are at any given time of day, and we can decide how many more permits the lots can accommodate,” says Abraham.

In August, the University launched a new pilot parking project that reroutes traffic to Zone 1 along Forsyth Street to the north entrance of the parking lot. The new route reduces congestion near the University’s main gates at Sterling and Forsyth. An off-duty police officer has been retained to direct traffic and pedestrians in and out of campus in a safe and timely manner, and to ensure area residents maintain access from side streets.

Abraham also hopes to move permit-holders currently parked on the grass baseball diamonds behind Zone 7 to the paved areas of 6 and 7 before the weather becomes too wet. A recently leased site near Main Street West and Leland Street will soon be available to provide parking for campus construction workers and some employees on the parking waiting list. That lot will be covered in a gravel surface until Spring when further landscaping can begin.

“In a banner year with more people to accommodate on campus, we’re pleased with the progress that we’re making and appreciate the patience of everyone involved,” says Abraham. He adds that McMaster’s ACT Office continues to implement programs and initiatives to reduce the number of vehicles on campus. They encourage people to walk, cycle, rollerblade, carpool and use student bus passes. All of these efforts help the environment and improve the campus parking situation significantly.

For more information about driving alternatives, contact the Alternative Commuting and Transportation (ACT) Office at ext. 24772 or ACT@mcmaster.ca.

Commonwealth Games bid rounds the final turn

It’s the last leg of the race. The finish line is in sight and thousands are waiting anxiously to see who the winner will be.

Steeltown is up against New Delhi, India for the sports showcase. The vote by Commonwealth Games delegates Nov. 13 is approaching fast and supporters at a 2010 Commonwealth Games news conference at McMaster University during the summer have their money on Hamilton.

Welcomed by about 250 cheering children taking part in McMaster’s summer camp program, members of the Commonwealth

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Volume 2, Number 8 • October 6, 2003

Published by:
Office of Public Relations
Room 111, Chester New Hall
McMaster University
1280 Main St., W.
Hamilton, Ontario L8S 4L9

Fax: 905-521-1504
E-mail: review@mcmaster.ca

The **Review** is published monthly (except July) for faculty, staff and students at McMaster University.

The editor reserves the right to limit, select, edit and position submitted copy and advertisements. Views expressed in the **Review** do not necessarily reflect University policy.

Comments and letters should be sent to:
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Letters to the editor must include name, department or address and phone number.

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Advertising: Pat Miladin

Deadlines: All art and ads are due on the first Friday of every month in the month preceding publication. **Publication dates:** Nov. 3, Dec. 8

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She found a new path along the way

New dean of humanities Nasrin Rahimieh lands her dream job

BY CHANTALL VAN RAAJ

The year 1977 was monumental for Nasrin Rahimieh. It was two years before a major revolution in her country of origin, Iran, when she packed her bags for Canada. She had spent the two previous years in the United States and Switzerland completing her secondary education. Now, she was leaving behind family to start a post-secondary life that 26 years later would lead her to the role of dean of humanities at McMaster University.

When she started her education at Dalhousie University in 1977, her career path ahead was entirely different. Her intention, as it had been for years, was to be a chemist. But she was finding her courses in biology, chemistry and calculus didn't evoke the same passion in her as her humanities courses did. It was her history, language, and literature courses that allowed her to make sense of what was happening in her world.

"The revolution and the war that followed separated me from my parents and home, and I felt a need to understand my experiences; to understand what was happening in my life and in the world. The humanities courses helped me grapple with my sense of loss and isolation."

Subsequently, Rahimieh switched her major and did her BA Honours in French and German and MA in German literature at Dalhousie. After that, she says, the most natural thing for her was to study comparative literature. She enrolled at the University of Alberta for her PhD and studied the literary and cultural relationships and interactions between Iran and Europe and North America.

With a post-doc and a Canada Research fellowship in hand, in 1989 Rahimieh was appointed an assistant professor of comparative literatures at the University of Alberta. She taught courses on modern Iranian fiction, literature of exile and displacement, feminism, and one of her own passions, writing by Iranian and Middle Eastern women. In 2000, the same year she became a full professor, she won an undergraduate teaching award.

She has published on post-revolutionary Iranian cinema and how it reflects political upheavals, social change, and cultural change in Iran after the revolution. "One of the things that intrigues me about contemporary Iranian cinema is the prominence of women filmmakers in a country associated with the constant curtailing of women's rights. How are such paradoxes possible? How do we study them and integrate them into a more complex understanding of Iran?"

Rahimieh also served as associate dean of the



"FIRST AND FOREMOST I WANT TO CONVEY A SENSE OF THE IMPORTANCE OF HUMANITIES AND THE CRUCIAL ROLE WE PLAY IN UNIVERSITY EDUCATION."

Faculty of Arts for Humanities and was extensively involved in graduate research supervision at the University of Alberta. She continues to supervise some PhD students at the University of Alberta. She also was co-ordinator for the undergraduate program in comparative literature, and a graduate advisor.

Rahimieh loves being part of the humanities field and feels strongly about its importance in post-secondary education. At the University of Alberta, questions about the need for humanities in university education, and what kind of funding it should receive, tweaked her interest.

"In Alberta, there were a lot of questions about

whether the University needed humanities training," she says. "The debate generated by these questions was very healthy and made me realize how much I cared about communicating the nature of the teaching and research we do in the humanities."

She wants to continue to be part of this debate, and feels in a dean's position, she'll have a good opportunity for that. "First and foremost I want to convey a sense of the importance of humanities and the crucial role we play in university education."

One of her first priorities is to talk to every department to find out what their goals are. "I want to hear from them to see how we can best identify common ground and how we will focus our energy."

Rahimieh has been busy since she started her new position Aug. 1. Not just with settling into a new job, but also a new life.

She's certainly in step with what's going on, thanks in part to her other passion: step aerobics. In fact, one of the first things she did upon arriving in Hamilton was finding a place where she could join a step aerobics class.

Her goal is to go straight to the club after work and then to her Ancaster home where she'll partake in her other two passions in life: reading and hanging out with her three cats.

She's slowly getting used to living in a new place. "It took me a long time to accept that I had actually moved. Even though I was here and my possessions were around me and settled in the house, I would wake up in the morning thinking my real life was elsewhere and I would be going back to Alberta."

You can't blame her. She left some important things behind, including her husband who will visit her on holidays and during the summer months when he's not teaching French at the University of Alberta. But she is surrounded by family in Toronto and Waterloo and has received a lot of visitors since arriving.

"The best part about moving here is that so many of my friends have already come to visit. In that sense, I feel like I'm home. This was meant to be."

Rahimieh replaces Daniel Woolf who moved to the University of Alberta last year to become dean of arts. She is delighted that she is the first woman dean of humanities at McMaster. But she suspects she's not the last. "These are the kinds of changes we have been talking about and teaching about," she says. "To be a part of those changes is very exciting. This is the future."

Big things come in small packages

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The technology takes the microchip and adds moving parts so that it can interact physically with the world around it. These micro marvels promise to change the way the world works by being placed in everything from telecom lines to blood pressure monitors.

“Usually when we think about this technology we think about transistors which are used for logic circuitry and analog circuitry as well. But there is a much larger world of small things than just transistors, and MEMS technology fills that space,” explains Kleiman.

The Winnipeg native says that in a sense he’s providing transistors with the “arms, legs and senses” that can allow them to become a fully functioning entity. And while this may all sound like the subject for a science fiction novel, the fact is that millions of MEMS devices are already out in the world today.

Anyone who has been in a car accident and was saved from serious injury by an air bag has these chips to thank. The system sensors that deploy the air bag a fraction of a second after impact are actually MEMS devices. These devices can even be found in most inkjet printers. There, they work their magic to direct millions of ink droplets to fall in perfect precision on a page to create a photo-realistic image.

While these examples give you some idea of the capabilities of MEMS devices, the real impact from this tiny technology will be in how it will allow us “to extend our senses beyond where they are,” predicts Kleiman.

At Bell Laboratories, Kleiman used MEMS technology to create telecommunications solutions.

“We used MEMS technology to build a giant optical switchboard that lets you route one of a thousand optical fibers to any one of another thousand optical fibers,” says Kleiman. The new technology will give networks the flexibility to reconfigure resources in real time if it detects any potential problems.

In time, MEMS technology will even allow physicians to perform delicate robotic surgeries while still allowing the surgeon “to feel what’s going on,” by giving the surgeon tactile feedback from an array of sensors.

At McMaster, Kleiman plans to work closely with the University’s health sciences department to look into biomedical applications for MEMS. One of his projects will involve using MEMS devices for sensors on patients to perform tests in real time of critical biochemical levels. “Being able to constantly monitor results without sending samples to a lab would lead to a real breakthrough in patient care,” says Kleiman.

Since the MEMS universe is still largely uncharted territory, Kleiman will also be studying how MEMS devices interact with each other and their environment.

“As we start to miniaturize everything, we need to understand how the forces behave on a small scale. Things work differently as we make them smaller, and because of that we need to understand how they work so we can exploit them fully.”

There are few MEMS researchers in the world with a better understanding of this tiny technology than Kleiman who began his undergraduate degree at the

University of Manitoba, but after two years moved to the U.S. to study at MIT. From there he went on to Cornell to complete his PhD.

The decision to return to Canada this past summer was influenced by what Kleiman saw as a renewed commitment by government and universities here to increase support of scientific research.

“Twenty years ago universities were very isolated, and now there is constant interaction with industry, with other universities, and with venture capital, It’s a much more dynamic environment,” he says.

Kleiman observed that in the U.S. a large component of research funding is channeled through military agencies that have their own research agendas. In contrast, he says Canadian funding agencies are much more focused on Canadian economic development, training highly skilled people for the workforce, and on scientific issues. While there is not more research funding here, he adds that it’s easier to obtain sustainable funding for research. Since he’s now spending far less time worrying about funding, he can spend more time on teaching and research.

“It’s very refreshing here because people talk about-

“THERE IS A MUCH LARGER WORLD OF SMALL THINGS THAN JUST TRANSISTORS, AND MEMS TECHNOLOGY FILLS THAT SPACE.”

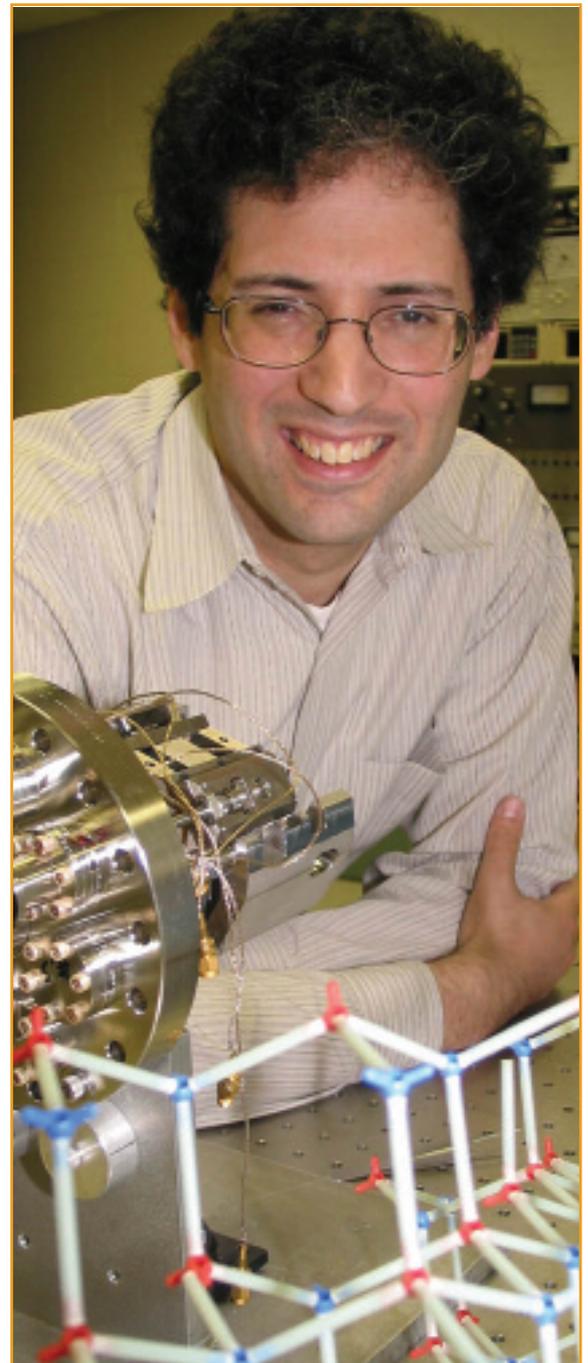
what they are doing and what they are interested in doing. When you talk to American professors they are almost always just talking about money. They end up spending a majority of their time raising money.”

When given the opportunity to create McMaster’s first MEMS research laboratory, he decided it was time to come back to Canada with his wife and two-year-old daughter. His decision to choose McMaster was based on its “tremendous resources in science and engineering” which he says meant that much of the infrastructure to set up a successful MEMS research lab was already in place.

Kleiman was also attracted to the highly interdisciplinary environment on campus, which is essential to his research. MEMS technology requires expertise from many disciplines, and the envisioned applications cross many traditional disciplinary lines. Kleiman has found that the research environment at McMaster has fewer barriers to making real advances in implementing MEMS technology in a variety of new fields.

His immediate goal is to have a full MEMS process running on campus that will allow for the machines to be designed and manufactured here.

And just how big – or small – can the world of MEMS grow? The answer lies in the imagination of researchers and scientists who will be investigating the possibilities of these miniature marvels in the coming years, says Kleiman.



Kleiman plans to build a fully functioning MEMS laboratory on campus.

“I don’t think there are serious technical hurdles associated with MEMS. I think the hurdles are more to do with our own creativity and building the needed interdisciplinary bridges. There is going to be ongoing development in the technology, but the bigger issue is the people side of it. The ingredients are all there to be able to do a tremendous number of things. It’s just a matter of trying to figure out which ones to do first.”

There’s little doubt that there is a huge market out there for the devices. Some industry observers estimate that the entire market for MEMS – including manufacturing, marketing, research and development, and joint ventures – could be worth as much as \$14 billion by 2010. Well before then, Kleiman hopes to prove that great things come in very small packages.

DNA, SARS, water, stars: McMaster researchers bring Science to the City

BY DANELLE D'ALVISE

Whether they are unlocking the secrets of DNA to solve crimes, investigating infectious diseases for the public good, exploring the mysteries of space or examining ways to make our water safer, McMaster University researchers are involved in exciting science.

The second season of the popular Science in the City public lecture series kicked off on Tuesday September 16 with John Waye, professor, department of pathology and molecular medicine, presenting his lecture DNA: From Crime Scene to Courtroom to a packed house of more than 250 people.

Waye traced the history of DNA profiling from the first cases more than 15 years ago to today's use of DNA as a routine investigative tool in criminal investigations. The audience was treated to an insider's view of local crime scene investigations and Waye's consultations on the high-profile Guy Paul Morin murder case.

First launched in January 2003, the series was presented on a pilot basis and based on its success – more than 1000 attended the first six lectures offered – continues with free monthly public lectures on the second Tuesday of every month, from now until June 2004.

The series is sponsored jointly by the Hamilton Spectator and the Office of the Vice-President, Research and International Affairs.

Mamdouh Shoukri, vice-president, research and international affairs, notes that the community's interest in the work that's going on at McMaster is remarkable. "It's amazing to see how many people – from high school students to senior citizens – have come out lecture after lecture. Our researchers are exceptional and their commitment to science outreach is what makes this such a popular series."

Upcoming lectures:

October 14 – SARS and the West Nile Virus: Roadmaps for Emerging Infectious Diseases

Infectious disease specialist Dr. Mark Loeb has been on the frontlines, providing information and reassurance to the public about the latest threats to our public health system – Severe Acute Respiratory Syndrome (SARS) and the West Nile virus. He will confront the many questions about these mysterious diseases and discuss the challenges of diagnosis, risk assessment, containment and vaccine development.



November 11 – Moving Beyond the Visible Universe: Dark Clouds, Galaxy Collisions and the Origin of Stars

Astronomer Christine Wilson will illustrate the promise and potential of the latest techniques that will help us understand the origins of planets, stars, galaxies, and even the universe itself. She will discuss her own work on a spectacular collision between two spiral galaxies and present recent results from the James Clerk Maxwell Telescope, which have provided a unique view into the regions where stars form in our own Milky Way Galaxy.



December 9 – The Future of Ontario's Drinking Water: Lessons Learned from Walkerton

Civil engineering professor Sarah Dickson will offer an overview of the physical causes of the events of May 2000 in Walkerton, examine the changes in Ontario's legislation resulting from the Walkerton inquiry, and explore the potential vulnerabilities that still exist in Ontario's drinking water systems.



All of the talks will be held in the Spec Auditorium, located in the Hamilton Spectator, 44 Frid Street. The lectures are free of charge and all are welcome.

To reserve a seat,

e-mail:

sciencecity@mcmaster.ca

or call:

905-525-9140

extension 24934

The 2004 schedule (from January to June) is still being finalized but will feature two lectures each from the faculties of engineering, science and health sciences.

For more information about the series and speakers visit:

www.mcmaster.ca/research/ScienceintheCity.htm

Commonwealth Games bid rounds the final turn

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Games news conference at McMaster University during the summer have their money on Hamilton.

Welcomed by about 250 cheering children taking part in McMaster's summer camp program, members of the Commonwealth Games Federation Evaluation Commission (CGF) arrived by bus at McMaster for the only news conference by the Commonwealth Games evaluation commission. Others in attendance included athletes, representatives from local, provincial and national sports organizations, sports enthusiasts and local and national media.

The CGF Evaluation Commission is comprised of six international members of the Commonwealth Games Federation. Delegates were in the Hamilton area for a four-day visit in late July to assess the technical components of the corporation's bid for the 2010 Commonwealth Games.

In recent weeks, McMaster has joined the other key partners involved in the Hamilton bid for the Commonwealth Games to develop a Multi-Party Agreement (MPA). Should Hamilton get the go-ahead to host the 2010 event, the MPA will clearly define the roles and responsibilities of each of the partners.

"The negotiations for the MPA have been a significant undertaking for all involved, but the document is a key management tool for moving ahead in a timely and organized manner if we get the vote on Nov. 13th," says Roger Trull, vice-president university advancement.

The Games, held every two years, involve two weeks of international sport. They started in Hamilton in 1930, and were called the British Empire Games. The first Games attracted 400 athletes from 11 countries, participating in six sports: track and field, boxing, lawn bowls, rowing, wrestling and swimming and diving.

"The Games have a special place in Hamilton's history. We're proud to be a bid partner because what's good for the city is good for the University," says McMaster President Peter George.

If Hamilton ends up hosting the nineteenth Commonwealth Games, it will

mean 6,000 athletes and officials from 72 countries around the world and approximately 250,000 visitors, and 2,500 media, will come to Hamilton. Many of the events will take place on McMaster's 300-acre campus, where the Games Village would be located.

In September delegates from Asia, Oceania and a mixed group of nations that were unable to attend their designated session visited the city. The committee members finalized their report on Sept. 10 for discussion ahead of the Nov. 13 voting at the 72-country federation's general assembly in Jamaica.

— CHANTALL VAN RAAY
& LISA CAINES

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In search of cost-effective health care

Funding helps researcher assess new technologies in health

BY CHANTALL VAN RAAV

While newer is often perceived as better, when it comes to Canada's health care system the question of what cutting edge medical technologies to invest in poses significant challenges.

Providing those answers will be the new job of McMaster health economist Bernard (Bernie) O'Brien who recently received a \$3-million grant from the Ministry of Health and Long-Term Care to evaluate what he calls the latest medical "toys."

O'Brien, who is the director of the Program for Assessment of Technology in Health (PATH), and associate director, centre for evaluation of medicines, St. Joseph's Health care, will over the next three years through a series of research studies assess the economic benefit of new medical technologies, providing evidence to support government reimbursement decisions.

"Evaluation research is about trying to gather the evidence so the decision makers can make sensible decisions," says the professor in the Department of Clinical Epidemiology and Biostatistics at McMaster. "They're tough choices because they involve trade-offs between different disease areas."

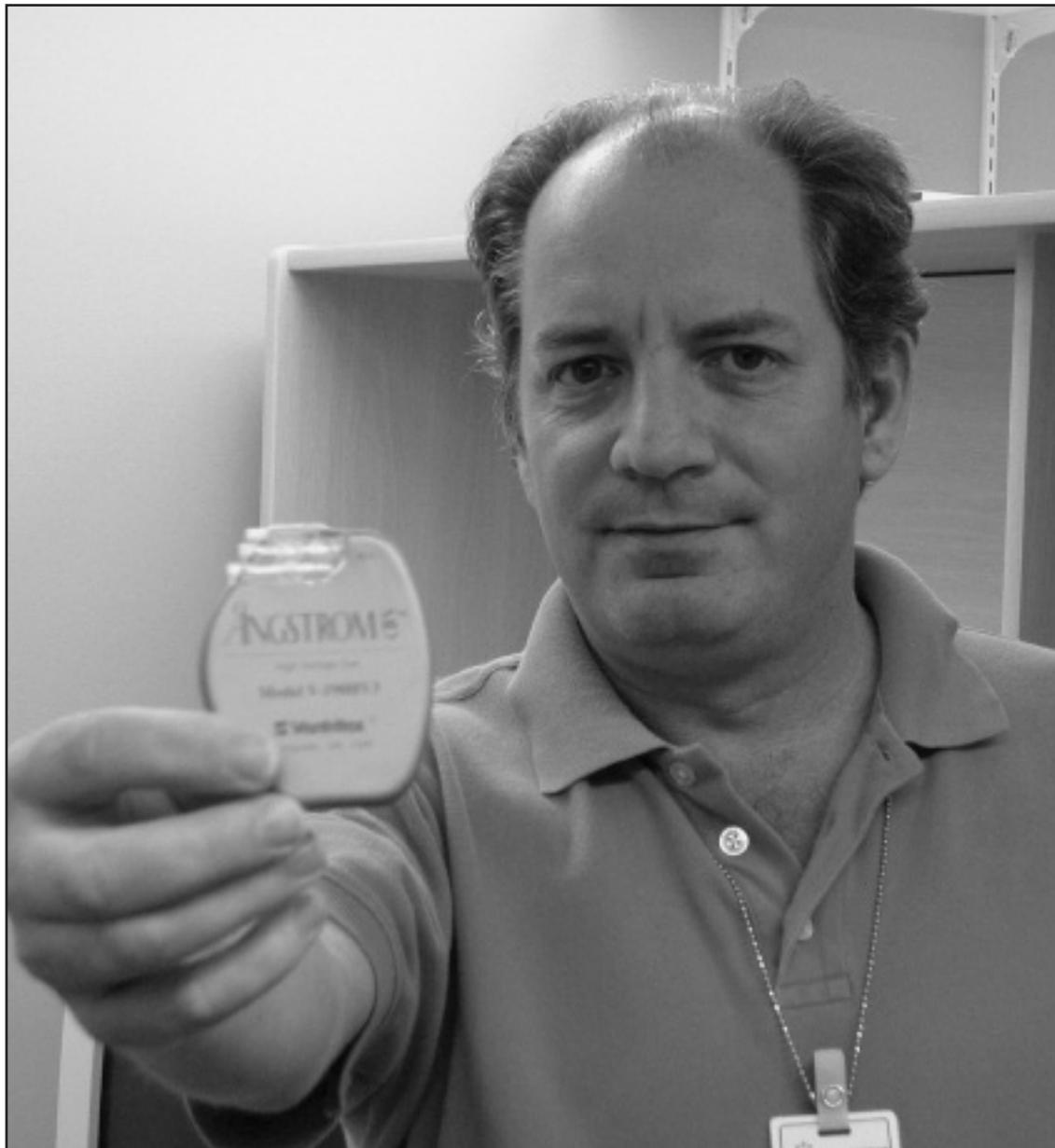
O'Brien and his team of researchers will assess new therapeutic interventions, including the use of drug-eluting stents and positron emission tomography (PET) scanning.

With the new drug-coated stents, used for angioplasty procedures to open clogged coronary arteries, O'Brien is determining if it is worth paying for more of the new apparatus. Normally, a stent is left permanently in the artery to keep the vessel open after angioplasty. Unlike regular stents, the new stent slowly releases a drug into the artery. An advantage of the new stents is that they may reduce the need for repeat angioplasty.

"There is a lot of excitement about these new stents," says O'Brien, "but there is an interesting economic question embedded in this. By using these drug-coated stents, how many people are coming back to have redoes? How many of these am I avoiding by using the more expensive stent compared to the less expensive stent?"

The Ministry has provided doctors and hospitals with \$12 million for the new drug-eluting stents on the proviso that they agree to participate in O'Brien's research study on the economic benefits of them. "Research is a key ingredient to evidence-based policy, it helps the Ministry of Health make a more informed decision."

O'Brien is also studying the economics of PET scanners, a technology that allows physicians to examine the heart, brain, liver, tumors



Bernie O'Brien holds an implantable cardioverter-defibrillator which monitors a patient's heartbeat and is powered by a battery.

"BUT PART OF OUR JOB IS TO QUESTION, 'SHOULD WE ALWAYS BE PAYING FOR THE LATEST TWIST IN THE TECHNOLOGY?'"

and muscle tissue in detail while the patient is alert. The traditional computed tomography (CT) scan shows only structural details within the brain.

"One of the questions we need to ask is if PET scanning in diagnostic work results in better decisions and better patient outcomes,"

explains O'Brien. "It does provide a better image and it may be more sensitive and specific, but does it change outcomes for patients?" He says the evidence that this is cost-effective is absent. As a result, the Ministry has launched a roll out of PET scanners, and will fund at least two randomized controlled trials.

He explains that many of these new technologies are like new toys. "Hospitals and doctors will always want the brightest and the best," says O'Brien, "but part of our job is to question, 'should we always be paying for the latest twist in the technology?'" It's like buying the latest DVD player. Compared to the basic model of a DVD is it really worth paying more?"

Double cohort support

For first-year students, learning about available resources is half the battle

BY LISA CAINES

The students are younger, about half of first year students have fewer years of high school under their belt, and like the generations before them, they have their moments of feeling overwhelmed by university life. But the 5,300 first-year students who have come to McMaster in the year of the double cohort are attending a University that has been preparing for their arrival for many years, carefully implementing student support programs to see them through the social, emotional, and academic transition into university life.

Danielle Stayzer, first-year experience co-ordinator in the new First-Year Experience Office, says that this is not the first year for younger students to arrive on campus. Many fast-tracked through high school to get ahead of the double cohort class, some arriving on campus as young as 16 years old.

“As students become younger when arriving at University, it has become even more important that those of us who are programming for them meet the needs of the majority,” says Stayzer. “That means the majority of the programming doesn’t involve alcohol, and we also try to follow other trends that occur in this group, such as increased parental involvement and concerns over achieving academic success.”

This year, by Welcome Week, approximately 56 per cent of first-year students were under the age of 19, and that’s only up marginally from last year’s total. As a result, programming focuses on issues such as alcohol and drug abuse, stress management, overall wellness, and academic success.

Cathy Mackenzie, student advisor in the faculty of science, says academic success has been a major concern over the past few years, and it’s one that her faculty has already begun to address. She’s the administrator of University Survival, a web-based course that all general science students are expected to complete before or during their first semester.

“In the past we often didn’t realize students were struggling academically until after midterm grades were in,” says Mackenzie. “By educating students about the resources available to them, those who do develop difficulties will have the necessary tools to get the help they need.”

The course assists students in developing a basic understanding of academic integrity, using the libraries, time management, stress management, career services, and the importance of getting to know professors. It’s similar to courses offered in other universities in the United States, and other faculties and other Canadian universities have expressed interest in developing their own version of University Survival.

But even if students learn those basic survival skills early on, it’s still easy to slip under the wire in large first year classes. With six sections of first-year math classes, comprising 1,650 students alone, there’s little time or opportunity for professors to get to know their students one-on-one, says Dr. Miroslav Lovric, associate professor in the department



McMaster students gather for Welcome Week festivities.

“SOMETIMES THE BEST RESOURCE WHEN STUDENTS ARE FEELING OVERWHELMED IS THEIR TEACHING ASSISTANTS.” - DR. LOVRIC

of mathematics and statistics.

For the past three years he’s been surveying his first-year math class by giving them a variety of problems to work through on the first day. The papers aren’t marked and they’re handed in at the end of the first class anonymously, but they provide a valuable indication of where students stand in their knowledge of key concepts and formulas. This year, with the double-cohort he’s also polling students to learn whether they’ve come from OAC or the new grade 12 curriculums.

“These surveys are a snapshot of where the double cohort stands academically, at least in math,” he says.

To ensure everyone is on the same page, first year-math instructors are teaching their regular and revisited

first-year curriculum, but they’re encouraging students who feel like they need more focus to attend the newly-organized math drop-in centre, which is available daily. In addition, the first-year math course pack provides students with a detailed calendar of homework they should complete each week, and makes sure they’re aware of academic resources including the web site that is set up for homework help.

“Sometimes the best resource when students are feeling overwhelmed is their teaching assistants (TAs), because they’re undergraduates who went through this same course themselves a couple of years ago and survived it” says Lovric. “It helps when first-year students realize their TAs are well-adjusted undergrads, not geniuses.”

And once first-year students take advantage of the people resources in place, it’s Stayzer’s hope they’ll have a better experience at university. “Making life easier during the transition helps our students be more successful socially and academically, in school and in the work force. I think establishing the First Year Experience Office is a great step forward for McMaster and our students.”