

Annual report of the Dean and Vice-President, Faculty of Health Sciences



Dean's message



It is with great pleasure that I offer this report on the 2011 activities of the Faculty of Health Sciences. It's been an exciting year for us, and certainly one that has underscored our achievements in advancing research, education and health care.

Once again, McMaster University has ranked among the top academic institutions in Canada and the world. I am particularly humbled by our place among international health universities. This year, McMaster was ranked 16th in the world for its clinical programs by the Times Higher Education World University Rankings.

But we can not rest on our laurels. As you will see in the pages of this report, our faculty, staff and students continue to bring distinction to McMaster through groundbreaking research, innovation in education and commitment to service, beginning here in Hamilton and our campuses in Kitchener Waterloo and Niagara regions. But, increasingly, our impact extends around the globe.

By putting people first, we are training the next generation of scientists to ask questions that will ultimately solve world's most catastrophic health problems. By putting people first, we are recognizing that health education must teach students to see the individual and then the health issue. By putting people first, we are making sure that our ultimate commitment is to improving the health and well-being of others.

Our greatest investment has always been in people because we believe more can be achieved when we work together with integrity and a shared purpose.

Kind Regards,

John G. Kelton, MD
Dean and Vice-President
Faculty of Health Sciences, McMaster University



Mick Bhatia's discovery named top scientific leap



Learning



Alfred Cividino named Abbott Chair

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The cover includes images of our faculty, researchers and students.

The newsmakers

■ Two of the top six achievements in Canadian health research this past year were the work of research teams in the Faculty of Health Sciences. The Canadian Institutes of Health Research and the *Canadian Medical Association Journal* announced the winners in March. One was for associate professor P.J. Devereaux and professors Gordon Guyatt and Salim Yusuf, investigators in a clinical trial to evaluate perioperative beta-blockers. The other, led by associate professor Mohit Bhandari and professors Gordon Guyatt and Stephen Walter, was the largest trial of fracture care.

■ Mick Bhatia, scientific director of the McMaster Stem Cell and Cancer Research Institute, and his research team made headlines around the world after showing, for the first time, how human adult skin cells can be converted directly into blood

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stem cells. The discovery, published in the prestigious journal *Nature*, was named the top scientific leap of 2010 by the Toronto Star and one of the top 10 research stories of 2010 by the Canadian Cancer Society.

■ Professor Tim Whelan, working with the Ontario Clinical Oncology Group, led another McMaster study that topped the Canadian Cancer Society list. His research showed that a shorter, three-week course of higher-dose radiation may be just as effective as the standard five-week course for women with early-stage breast cancer. The study, published in the *New England Journal of Medicine*, was also named one of the top clinical cancer advances of 2010 by the American Society of Clinical Oncology.

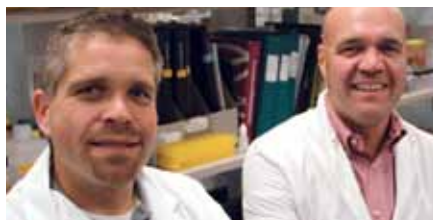
■ A McMaster study showing the community benefit of vaccinating children and adolescents against influenza was

selected as the 2010 research paper of the year by the prestigious medical journal *The Lancet*. Mark Loeb, a professor in the Michael G. DeGroot School of Medicine, originally published the research in the *Journal of the American Medical Association (JAMA)*.

■ Separate studies led by Stuart Connolly, Shamir Mehta and Hertz Gerstein of the Michael G. DeGroot School of Medicine resulted in McMaster research being named three of the top 10 cardiovascular research advancements in 2010 by the American Heart Association. Another study, led by Salim Yusuf and Martin O'Donnell, was cited among the top 10 research advancements in stroke treatment for 2010 by the American Stroke Association.

■ Scientists at McMaster University have found that antibiotic resistance is not a new phenomenon, but has been around for at least 30,000 years. Research findings published in *Nature* show antibiotic resistance

is a natural phenomenon that predates modern clinical antibiotic use. Gerry Wright (below right), scientific director of the Michael G. DeGroot Institute for Infectious Disease Research, and Hendrik Poinar (below left), McMaster



evolutionary geneticist, were the principal investigators of the study.

■ An international team of scientists, led by researchers at McMaster and McGill universities, has discovered the gene that is the strongest marker for heart disease can actually be modified by eating generous amounts of fruit

With distinction



Second in Canada – and 16th in the world – for post-secondary institutions offering clinical, pre-clinical and health programs
The Times Higher Education World University Rankings 2011-12



Third in Canada – and 46th in the world – in the clinical medicine and pharmacy category
Academic Ranking of World Universities 2011



First among Canadian universities in instructors' teaching style, student-faculty interaction and research opportunities
The Globe and Mail's Canadian University Report 2012



Ranked in the top three Canadian universities for biomedical and health-care research funding for the past seven years
The Association of Faculties of Medicine of Canada



Sixth in Canada among universities in the medical/doctoral category
Maclean's 2011 University Rankings

and raw vegetables. The results of the study are published in *PLoS Medicine*. Sonia Anand, a professor of medicine, clinical epidemiology and biostatistics at McMaster, was a co-principal investigator.

Research, innovation & collaboration



▲ Brian Haynes (left) receives the Order of Canada from Governor-General David Johnston.

HONOURS

■ Brian Haynes, a professor of medicine and clinical epidemiology and biostatistics, became an officer of the Order of Canada in recognition of his contributions in medical information research and advancing evidence-based clinical medicine in Canada and worldwide. Haynes was also the recipient of the 2010 Roger A. Côté Medal for Excellence in Health Informatics, awarded annually by the National Institutes of Health Informatics (NIHI).

■ Holger Schünemann, professor and chair of the Department of Clinical Epidemiology and Biostatistics, has been appointed for a four-year term on the WHO's Global Advisory Committee on Health Research. As part of the 18-person committee, he is advising the director-general of the World Health Organization on global health research, monitoring research activities and evaluating research from a scientific and technical policy point of view.

■ Gerry Wright, scientific director of the Michael G. DeGroote Institute for Infectious Disease Research, was awarded a prestigious Killam Research Fellowship. The fellowship honours established scholars of exceptional ability who are engaged in research projects of broad significance and

widespread interest. Wright is a Canadian leader in the study of antibiotic resistance.

■ Lori Letts, associate professor in the School of Rehabilitation Science and assistant dean of the Occupational Therapy Program, has been named the 2011 Muriel Driver Memorial Lecturer by the Canadian Association of Occupational Therapists (CAOT). The award is given to a CAOT member who has made an outstanding contribution to the profession through research, education and the practice of occupational therapy.

RESEARCH CHAIRS

■ Alfred Cividino, clinical professor of medicine, was named to the Abbott Chair in Education in Rheumatology. As inaugural chairholder, Cividino will focus on teaching the next generation of rheumatologists for the growing number of Canadians living with arthritis. The endowed chair is supported through a gift from Abbott, a global, broad-based health-care company.

■ Mark Crowther, a professor of medicine, pathology and molecular medicine, has been appointed the inaugural holder of the LEO Pharma Chair in Thromboembolism. As director

of the Division of Hematology and Thromboembolism, Crowther's research focuses on finding ways to improve diagnosis and management of deep-vein thrombosis, or potentially fatal blood clots that form in the deep veins of the pelvis, leg or arm. The chair is supported through an investment from the Canadian division of Leo Pharma.

■ Sonia Anand, a professor of medicine, clinical epidemiology and biostatistics, was named the Canada Research Chair in Ethnic Diversity and Cardiovascular Disease. She will use the opportunity to examine high-risk populations to provide greater insight into the causes and risk factors of cardiovascular disease. Her research could eventually lead to the development of prevention strategies to stem the leading cause of premature deaths in ethnic populations.

■ Brian Coombes, an associate professor of biochemistry and biomedical sciences, has been awarded a Canada Research Chair in Infectious Disease Pathogenesis to investigate how major enteric pathogens – the organisms that enter our bodies and cause serious problems with our gastrointestinal systems – infect humans, and how human and environmental activities influence the evolution of these infectious diseases.

■ Tim Whelan, a professor of oncology, has received an advancement of his Canada Research Chair to senior status. As the Canada Research Chair in Breast Cancer Research, he will forge new paths in the study of the biomarkers that indicate the presence of a cancerous tumour to determine if they can be used to help individualize the treatment of early breast cancer to lessen the toxicity and cost of unnecessary treatment. He will also continue to conduct clinical trials to optimize radiation therapy for women with breast cancer and evaluate new technologies in radiation therapy.

GRANTS & COLLABORATIONS

■ A distinguished team of cancer researchers has joined forces to create the Escarpment Cancer Research Institute (ECRI) based at Hamilton Health Sciences. The 16 scientists from McMaster University and Hamilton Health Sciences include some of the most distinguished cancer researchers in Canada. ECRI scientists will work to speed up the application of research results and improve patient care by focusing on clinical trials, quality health care and knowledge translation



▲ Mark Levine (at the podium) and his scientific team celebrate the official launch of the Escarpment Cancer Research Institute (ECRI) in September. The collaboration between McMaster University and Hamilton Health Sciences brings together 16 of the most distinguished cancer researchers in Canada. Levine, professor and chair of the Department of Oncology, leads the ECRI as scientific director.

countries over five years to determine the long-term benefits of aliskiren, the first of a unique new class of blood-pressure-lowering agents.

■ The National Collaborating Centre for Methods and Tools (NCCMT), based in the School of Nursing, has received a \$7.5-million funding renewal from the Public Health Agency of Canada. The centre, led by nursing professor Donna Ciliska, supports the use of evidence to inform public health practice and policy.

■ Michael Surette, a professor of professor of medicine, biochemistry and biomedical sciences, was awarded a \$2.5-million Canadian Institutes of Health Research (CIHR) Emerging Team Grant. The project will investigate the role of bacteria in the respiratory tract in order to better understand how bacteria interact with each other

and the immune system. McMaster collaborators include Dawn Bowdish, an assistant professor of pathology and molecular medicine, and Jennie Johnstone, an assistant professor of medicine.

■ David Koff, an associate professor and chair of the Department of Radiology, has been awarded \$1.4 million from the Ontario Research Fund - Research Excellence (ORF-RE) program to lead a team to develop technologies that will accelerate how large data sets – diagnostic and medical images such as x-rays, ultrasounds and MRIs – are shared among health-care providers. The research will ensure that the images associated with a patient's medical history are shared seamlessly and securely within the electronic health record system.

In 2010-11, the Faculty of Health Sciences administered \$119 million in medical research funding. When combined with research by faculty members at Hamilton Health Sciences and St. Joseph's Healthcare Hamilton, the total was more than \$237 million.

research, and bench-to-bedside research. In the past three years, the institute's scientists have been awarded more than \$45 million in research funding and they have 120 employees as associated research staff.

■ The Population Health Research Institute (PHRI) of Hamilton Health Sciences and McMaster University is leading a major international study of 11,000 elderly persons with high blood pressure, thanks to a \$40-million investment by Novartis Pharmaceuticals Canada Inc. The study, called APOLLO (Aliskiren Prevention of Later Life Outcomes), is one of the largest ever to be conducted out of Canada. It is being led by Salim Yusuf, executive director of the PHRI and a professor of medicine. APOLLO will follow patients in 20



▲ University and government officials came together in July to announce the recipients of the Ontario Research Fund - Research Excellence program. David Koff (third from left), associate professor and chair of radiology, received \$1.4 million from the province to lead a team to develop technologies that will accelerate how diagnostic and medical images are shared among health-care providers.

Learning



The Bachelor of Health Sciences (Honours) program has launched a new global health specialization. The specialization provides undergraduate students with an opportunity to combine traditional academic fields of anthropology, philosophy, ethics and law with the Faculty of Health Sciences domains of biostatistics and epidemiology, health economics and policy, molecular medicine and pathology and health research methodology. A core component of the specialization revolves around a four-month experiential learning experience with partners and institutions abroad and within Canada.



The Michael G. DeGroot School of Medicine graduated its first class of 15 medical students from the Niagara Regional Campus in May. In 2012, the Niagara campus will move from the St. Catharines General Hospital to the new Cairns Family Health and Bioscience Complex on the Brock University campus.



The Faculty of Health Sciences graduated its first class of 25 students from the Master of Science Global Health program in November. The full-time, 12-month global health program is unique, offered collaboratively by McMaster and Maastricht University in The Netherlands. As part of the program, all students have the opportunity to spend their second semester at the partner university and the third semester in India.

Cultivating human potential

► Carolina Alba (centre), a 2011 Vanier scholar, speaks with Prime Minister Stephen Harper (left) and McMaster University President Patrick Deane (right).



ACCOLADES

■ Carolina Alba, a cardiologist and PhD student in the Health Research Methodology program, and Jonathan Lai, a PhD student in neuroscience, were among six McMaster recipients to receive prestigious Vanier Canada Graduate Scholarships for 2011. The announcement was made at McMaster University in August by Prime Minister Stephen Harper. The federal government established the awards in 2009 to attract and retain world-class doctoral students from across Canada and abroad.

■ Recent PhD graduate Catherine Kreatsoulas has received a Fulbright Student Award to conduct research in epidemiology at Harvard University. The McMaster alumna is researching the discrepancies in cardiovascular disease and health that exist among population groups. The Fulbright program has long been regarded as the world's premiere academic exchange.

■ Brian Coombes, an associate professor in the Department of Biochemistry and Biomedical Sciences, was recognized by



▲ Brian Coombes is recognized as one of Canada's Top 40 Under 40.

The Globe and Mail as one of Canada's Top 40 Under 40, an annual honour given to Canadians under the age of 40 who are considered outstanding leaders in their fields. The biochemist completed his undergraduate and PhD studies at McMaster before joining the faculty in 2006.

■ Karen Finlay, an associate professor of radiology, received the McMaster President's Award for Educational Leadership. Since 2001, she has held the position of residency program director for diagnostic radiology and she is actively involved in teaching and clinical training for residents and clinical fellows. Under her leadership, the program is now recognized as one of the top Canadian radiology training programs.

■ Patangi (Chari) Rangachari was named the recipient of the 2011 Claude Bernard Distinguished Lectureship by the American Physiological Society. The award is presented to an educator who is making outstanding contributions to teaching and learning as it relates to physiology education.

■ Joseph Ferencz, an associate clinical professor of psychiatry and behavioural neurosciences, has been honoured with the 2011 John C. Sibley Award. The award is presented annually to a part-time faculty member in the Faculty of Health Sciences who has made outstanding contributions to the education of health professionals. A McMaster medical alumnus, Ferencz has been involved in the teaching and supervision of medical students and residents since 1993.

Engaging the community

The Faculty of Health Sciences is committed to improving the health and well-being of people in Hamilton and beyond through innovative partnerships at the local, national and international levels.

SERVING THE PUBLIC GOOD

■ McMaster's plan for its downtown health campus took a significant step forward when Hamilton councillors approved a \$20-million investment in the project and agreed to locate some of the city's public health services and clinics at the site. The McMaster Health Campus will be built at the corner of Main and Bay streets in downtown Hamilton. The 152,000-square-foot, LEED-certified building will be a hub of learning, caring and research, with the Department of Family Medicine and its family residency training program located there. The campus will also include a state-of-the-art family health clinic that would see 54,000 patient visits from across Hamilton each year, and other services such as the Hamilton Maternity Centre and the Shelter Health Network.

■ In November, Anita Fisher, an associate professor of nursing, chaired the inaugural conference of the Haitian Nurses Association in Port-au-Prince, Haiti. The focus of the conference was to discuss issues related to equity and access to health care, as well as the partnerships that could be formed to strengthen nursing in Haiti. The gathering built, in part, on the workshop that the McMaster School of Nursing hosted in June for a group of senior nursing officials from Haiti.

■ Midwives in the Hamilton and Burlington area – including many with strong ties to McMaster University – came together on Mother's Day to raise awareness and funds in support of maternal health. More than 600 women and their families, local midwives and community partners attended Footsteps for Change, the first reunion and fundraising walk for maternal health to be held in the city. McMaster midwifery students were involved in organizing the event, which benefited Save the Mothers, a not-for-profit established by Jean Chamberlain Froese, an associate professor of obstetrics and gynecology.

■ The School of Nursing – partnering with planning teams from three local neighbourhoods, Wesley Urban Ministries and Homestead Christian Care – launched Health in the Hubs this year. Resident coordinators and nursing students went door-to-door in January to discuss barriers to good health.

Results from over 700 surveys were analyzed and consultations were held with residents to identify the top three areas of concern. With funding from the Hamilton Community Foundation, the next phase will combine existing research evidence around the health issues with residents' views to come up with potential solutions.

■ Third- and fourth-year Bachelor of Health Sciences (Honours) students are reaching beyond McMaster borders

through an innovative course called Engaging the City. The first cohort of students was welcomed into the 18-month course in January 2009. The students work with local agencies on research projects in which they explore ways of improving the quality of life through the lens of poverty, economy, environment, ethics, housing and disability.

■ The Midwifery Education Program is undertaking a pilot project that will bring midwifery services to the McQuesten neighbourhood in Hamilton. Funded through the Hamilton Community Foundation, the project will evaluate the introduction of group prenatal care and will involve both midwifery and nursing students in the provision of care.

■ A grand opening celebration was held in September for Homestead Christian Care's Dr. John M. Perkins Centre, a community development centre now home to 46 affordable apartments and the new School of Nursing community site. The formal partnership with Homestead, a first of its kind for the School of Nursing, means the school will have office, classroom and clinic space at the site for student learning within the community.



▲ An early artist's depiction of the McMaster Health Campus, located downtown Hamilton. A state-of-the-art family health clinic, the Department of Family Medicine and its residency program will be located at the site, as will the headquarters of the city's Public Health Services, the Hamilton Maternity Centre and the Shelter Health Network.

