

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

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# Dean's message



**We have seen** many accomplishments at the Faculty of Health Sciences during 2013.

From a wider perspective, the Faculty contributed to McMaster University continuing to be ranked among the top 100 universities of the world and the top few research universities of our country.

These accolades are a reflection of the continuing achievements of all of our outstanding faculty and staff members who are dedicated to improving health education, research and care. This is not just for our main catchment area of South Central Ontario, but for the province, the country and the world.

I am pleased to add that for their commitment, our faculty members are frequently recognized both within their disciplines and also with Canada's top honours.

This past year has seen growth and development in all aspects of the Faculty's endeavors.

Our Faculty scientists oversaw a research mandate totalling \$241 million a year. Our research discoveries in 2013 ranged from identifying the best location of stem cells for bone marrow transplants to publishing new guidelines for parents of children with concussions.

In education, we continue to attract the best students and post-graduate learners whose education is enriched through involvement in our communities.

As examples, our School of Rehabilitation Science opened a clinic with the YMCA to offer free rehabilitation services to disadvantaged people in downtown Hamilton and the School of Nursing partnered to set up a clinic for refugees to Canada.

This reflection on the Faculty of Health Sciences' activities hits only a few of the many high points of this dynamic institution during the past year. Please enjoy the read.

Kind Regards,

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



School of Nursing leads community Think Tank



Honours



Researchers win support

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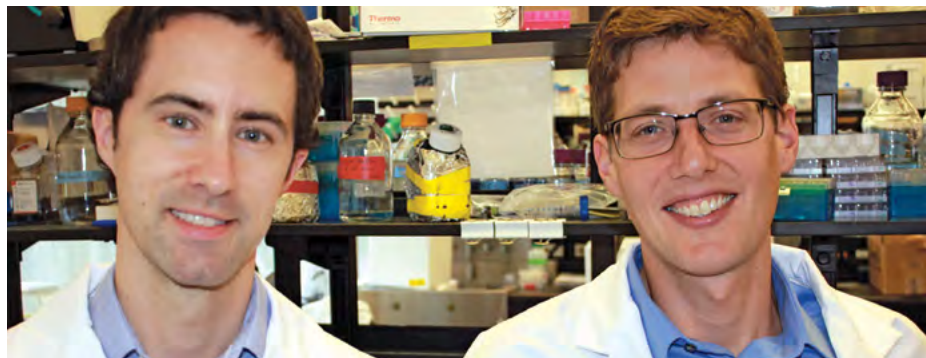
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Cover/Back: Images of faculty, researchers, students and friends.

# Making the news



▲ Researchers Morgan Fullerton (left) and Greg Steinberg unlock drug mystery.

■ McMaster University research was widely publicized when no evidence was found that impaired blood flow or blockage in the veins of the neck or head is involved in multiple sclerosis. Results of the research, headed by professor emeritus of medicine Ian Rodger, contradicted a theory of Italian researcher Paolo Zamboni that the neurodegenerative disease is tied to abnormalities in the drainage of blood from the brain.

■ Mark Larché, professor of medicine, has been in the news for successful trials of allergy treatments against cats, dust mites and grass pollen. The treatments are from a new class of therapy known as synthetic peptide immuno-regulatory epitopes. They are being developed by Adiga Life Sciences, a joint business venture between McMaster and Circassia Ltd., a UK-based biotech company.

■ Research by Nathan Magarvey, assistant professor of biochemistry and biomedical science, discovered that gold resistant bacterium *Delftia acidovorans* can turn toxic water-soluble gold into a solid gold form, the first demonstration that gold-resistant microbe secretes a metabolite that can protect against toxic gold. His research, published in *Nature Chemical Biology*, caught media interest worldwide.

■ Mick Bhatia, professor and scientific director of the McMaster Stem Cell and Cancer Research Institute, made headlines with research showing the optimal location of human blood stem cells to improve bone marrow transplants is at the ends of the bone. The paper was published by the journal *Cell Stem Cell*.

■ It may be that people can't help themselves from taking health advice from celebrities because they are hardwired to want to be like people they admire, researcher Steven Hoffman has found. The research was published in the *British Medical Journal* by the assistant professor of clinical epidemiology and biostatistics.

■ A McMaster-led pilot project that found weekly visits by paramedics to a seniors' home to talk about health issues cut emergency calls by a third. The successful program was led by Gina Agarwal, associate professor of family medicine.

■ The speed of surgery after a hip fracture may have a significant impact on outcomes for older patients, and faster may be better. P.J. Devereau, associate professor of medicine, and Mohit Bhandari, professor of surgery, found delays of 24 hours or longer led to more complications. The research appeared in the *Canadian Medical Association Journal*.

■ Researchers at McMaster University are the first to unlock the mystery of how the drug metformin controls diabetes. The research, led by associate professor of medicine Greg Steinberg and Morgan Fullerton, found the drug acts on fat in the liver, allowing insulin to work better. The research was published in the journal *Nature Medicine*.

■ Research led by Sheila Singh, associate professor of surgery and a pediatric neurosurgeon, has been named one of 2013's most promising studies by the Canadian Cancer Society. Her work looks at how to stop cancer from spreading to the brain.

## With distinction

McMaster ranks well among the 98 Canadian and thousands of world-wide universities



One of only four Canadian universities in top 100 in the world  
Shanghai Jiaotong University  
Academic Ranking of World  
Universities 2013



Ranked 68th in the world in life sciences and medicine, one of only six Canadian universities in top 150  
QS World University Rankings 2013



Third in Canada and 26th in the world for post-secondary institutions offering clinical, pre-clinical and health programs. Overall, one of only four Canadian universities in top 100 in the world  
Times Higher Education World  
University Rankings 2013



McMaster is 6th in Canada, 118th in the world as ranked for research productivity, impact and excellence  
National Taiwan University:  
Performance Ranking of Scientific  
Papers for World Universities 2013



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



Sixth of Canada's top 50 research universities for six years in a row  
Research Infosource 2013



Third in Canada for most innovative campuses, and sixth university in the medical-doctoral category for four years in a row  
Maclean's 2013 University Rankings

# Research, innovation & collaboration



▲ Gordon Guyatt is named 2013 Canada Health Researcher of the Year by Governor General David Johnston.

## HONOURS

■ Gordon Guyatt is the 2013 Canada Health Researcher of the Year. The Distinguished University Professor of medicine and clinical epidemiology and biostatistics received the top national award from the Canadian Institutes of Health Research for his instrumental role in changing how doctors practice through the development of evidence-based medicine.



■ Salim Yusuf, professor of medicine and executive director of the Population Health Research Institute, was named an officer of the Order of Canada

for his contributions to establishing effective treatments for heart disorders internationally.

■ Professor emeritus of medicine Murray Enkin became a member of the Order of Canada for his contributions to maternal care and the development of midwifery as a recognized profession in Canada.

■ Stephen Collins, professor of medicine and associate dean, research for the Faculty, and Stephen Walter, professor of clinical epidemiology and biostatistics, have been elected as fellows of the

Royal Society of Canada. Collins is recognized internationally for his work demonstrating interactions between the gut, the immune system and the brain. Walter has an international reputation for his work developing and applying statistical methods in biomedical research.

■ Professor emeritus of medicine Michael T. Newhouse received the Forrest M. Bird Lifetime Scientific Achievement Award, the top career prize of the American Respiratory Care Foundation.

■ For his long history of outstanding contributions to medical education over more than 30 years, urologist Michael Greenspan received the 2013 John C. Sibley Award for part-time faculty.



■ Nancy Heddle, a professor of medicine and director of the McMaster Transfusion Research Program, was the first Canadian to win

a prestigious award in Germany when she received the Emil von Behring Lecture Award from the German Society of Transfusion Medicine and Immunohematology.

## GRANTS & COLLABORATIONS

■ A team of School of Nursing professors was a magnet for \$5.8 million for research into optimal aging. Professor Jenny Ploeg and associate professor Maureen Markle-Reid were awarded \$2.5 million by the Canadian Institutes for Health Research to evaluate innovative activities to help older adults with multiple chronic conditions and their caregivers. They also received \$3.3 million from Ontario's Ministry of Health and Long-Term Care to reduce the burden of chronic disease on seniors and their family caregivers.

■ A grant of \$5.7 million will fund a study on how to make the use of drugs more effective for patients and health-care professionals. The funding from the provincial health ministry will allow

researchers of the Michael G. DeGroot School of Medicine and the University of Waterloo to study the effectiveness of provincial pharmacist-led medication programs. Lisa Dolovich, associate professor of family medicine, is the principal investigator for McMaster.

■ Professors Michael Boyle and Katholiki Georgiades are leading the Ontario Child Health Study Sequel with \$3 million from the Ontario Ministry of Health and Long Term Care. Their study will provide up-to-date information on the levels of child mental health need. It follows a major McMaster study 30 years ago which identified initiatives and programs to support children at risk.

■ The Canadian Cancer Society awarded a \$1.2 million Impact Grant to Dr. Anand Swaminath, associate professor of oncology, to lead a Canadian clinical trial comparing two different types of radiation therapy for early-stage lung cancer.

■ John Lavis, professor of the Department of Clinical Epidemiology and Biostatistics received \$5 million from the Ontario Ministry of Health and Long-Term Care to tackle the challenge of integrating research evidence with values information, to ensure provincial health policies are more effective and responsive.



▲ Maureen Markle-Reid (centre) and Jenny Ploeg head study on optimal aging.

## RESEARCH CHAIRS



■ Walter Reinisch, a professor of medicine and clinician scientist, is the first holder of Audrey Campbell Chair in Ulcerative Colitis

Research. His research focus is on individualized treatment approaches and finding a common language of inflammatory bowel disease to improve communications with patients.



■ Maureen Markle-Reid, associate professor in the School of Nursing, will use her new Canada Research Chair in Aging, Chronic Disease

and Health Promotion Interventions to develop and evaluate innovative interventions to reduce the burden of chronic disease on the population of older adults living in the community and on their caregivers.



■ As the Canada Research Chair in Natural Product Drug Discovery, Nathan Magarvey will use a number of integrated

tools and technologies — from genomics to small molecules — to target drugs from nature. He is an assistant professor in the Department of Biochemistry and Biomedical Sciences and the Department of Chemistry and Chemical Biology and a member of the Michael G. DeGroot Institute for Infectious Disease Research.



■ Exercise and the intensive care patient is the heart of research by Michelle Kho, who has received the Canada Research

Chair in Critical Care Rehabilitation and Knowledge Translation. The assistant professor in the School of Rehabilitation Science helps patients not only survive their life threatening

illness or injury, but improve their recovery time and continue health improvements.



■ Eva Szabo, a researcher with the McMaster Stem Cell and Cancer Research Institute, was awarded a Canada Research

Chair in Metabolism in Human Stem Cells and Cancer Development. Her research program aims to dissect the role of human adipocyte during development of metabolic disorders, including obesity and type II diabetes, as well as cancers, and working towards new treatments.



■ Joy MacDermid has been awarded a chair by the Canadian Institutes of Health Research (CIHR). The assistant dean and professor of

the School of Rehabilitation Science holds the CIHR Chair in Gender, Work and Health — Implementation Systems. She is researching how the roles of men and women at work, home and within society are reflected in musculoskeletal problems.

## Learning



The Michael G. DeGroot School of Medicine and the Brant Community Healthcare System opened a clinical education campus for medical residents and other health care learners at the Brantford General Hospital. The 10,000-square-foot Grand Erie Six Nations Clinical Education Campus — Brantford Centre includes classrooms, offices, lounges and “call rooms” or living space for medical residents on duty.



**Understanding Anesthesia: A Learners Guide** is an interactive ebook created by Karen Raymer, a clinical professor of anesthesia, to teach medical students. The free book has been downloaded thousands of times in more than 40 countries.



The McMaster School of Nursing, in partnership with the Refuge: Hamilton Centre for Newcomer Health and Homestead Christian Care, opened a new clinical teaching facility at the Perkins Centre in east Hamilton to provide health care for newcomers to Canada.



▲ Canada Research Chair Eva Szabo and senior research technician Monica Graham work in the McMaster Stem Cell and Cancer Research Institute.

## Accolades



The founder of McMaster's School of Rehabilitation Science and an internationally renowned neurophysiologist, both now professor emeritus, were inducted into the Faculty's Community of Distinction in November for their impact on the Faculty's development.



Barbara Cooper was the first associate dean and director of the School of Rehabilitation Science, and her leadership provided a strong foundation for its current excellence and international stature.



Alan McComas, a professor of biochemistry, was a proud ambassador for the university as he became recognized internationally for his pioneering research on the neurophysiology of muscle.



Canadian midwifery pioneer



Elaine Carty accepted an honorary degree of science from McMaster at the Faculty of Health

Sciences convocation in May. The founding director of the University of British Columbia's midwifery program helped introduce midwifery into the health care system.



Nathan Magarvey, assistant



professor of biochemistry and biomedical sciences, was named McMaster's Innovator of the Year for 2013.

## Sparking innovation



▲ Susan Grange, Gaye Farncombe and Walter Reinisch at the announcement of the Audrey Campbell Chair in Ulcerative Colitis Research.

■ In March, a \$3 million endowed award in tribute to research excellence, the Dr. John G. Kelton Academic Award, was announced by philanthropist Michael G. DeGroote, Hamilton Health Sciences and St. Joseph's Healthcare Hamilton and McMaster University. The award honoured the dean and vice-president of the Faculty of Health Sciences.

■ In May, a \$3.5 million endowed chair was established at McMaster University to further research in the inflammatory bowel disease of ulcerative colitis, and an international scholar has been recruited as the inaugural chair holder. The Audrey Campbell Chair in Ulcerative Colitis Research at McMaster University was established by the philanthropist's three daughters Linda Campbell, Gaye Farncombe and Susan Grange through the Crohn's and Colitis Foundation of Canada. Walter Reinisch, a renowned clinical scientist and gastroenterologist, moved from his native Austria to take the position.

■ Also in May, Cisco Canada and McMaster University announced they will establish a university-wide research cloud computing environment and infrastructure that will see the University increase research in integrated health biosystems and bioinformatics. As part of the agreement Cisco is providing \$2.1 million for a Professorship in Integrated Health Biosystems and a Research Chair in Bioinformatics.



▲ From left, Patrick Deane and Nitin Kawale, president of Cisco Canada.

■ In November, Hamilton philanthropists Charles and Margaret Juravinski received the Lifelong Achievement Award from the Division of Geriatric Medicine of the Michael G. DeGroote School of Medicine and the Regional Geriatric Program Central. The longtime supporters of health care in the city are considered outstanding role models for their commitment to building caring communities.

■ In December, the Samuel Family Foundation gave \$500,000 to support research in immunotherapy therapy for cancer. One of the most encouraging developments in cancer treatment in decades, it promises to give patients the ability to use their own immune cells to control and fight off cancer, thus avoiding long-term chemotherapy side effects. Lead researchers are professors Jonathan Bramson, Jack Gaudie and associate professor Ronan Foley.

# Engaging the community

■ The Infant and Children Health (INCH) laboratory, a colourful 2,000-square-foot facility, opened at the McMaster Innovation Park. The lab, set up by the Department of Family Medicine, is committed to better understand the health and development of children from newborn to six years old.

■ McMaster University and the University of Waterloo expanded their collaboration with the sharing of a new anatomy laboratory. This was part of McMaster's \$1.3-million construction including classrooms at the Waterloo Regional Campus of the Michael G. DeGroot School of Medicine, located at the Kitchener Health Sciences Campus of the University of Waterloo. Medical students and residents and students of Waterloo's School of Pharmacy are using the lab.

■ Community Organizations Reaching Everyone (CORE), an innovative Hamilton program for struggling youth that helps them link with existing learning opportunities, discover their passions in the arts and develop job skills, was launched by nursing professor Gina Brown at the McMaster Innovation Park.

■ A community-based health promotion program developed at McMaster University won the Canadian Institutes of Health Research and the Canadian Medical Association Journal Top Canadian Achievements in Health Research Awards. The Cardiovascular Health Awareness Program is designed to support the prevention of cardiovascular disease and stroke by providing free, risk assessment sessions to the public. The program is now expanding to other provinces.

■ As part of its community engagement initiative, the School of Nursing held a three-day Think Tank on Campus-Community Engaged Scholarship in east Hamilton to explore current community engagement activities, discuss priority issues in neighbourhoods, and to develop guiding principles by which the University and the community can work together effectively.



▲ The ribbon is cut to officially open the Infant and Children Health laboratory by Logan Cairney (middle), with associate professors Jean Clinton and Brian Timmons.

■ Students of the Niagara Regional Campus of the Michael G. DeGroot School of Medicine, along with Brock University health science students and Niagara College students, are working with the Niagara Health System to identify best practices currently in place at the hospital system and explore ways to improve upon them. The joint initiative is called I-EQUIP for Interprofessional Education for Quality Improvement program.

■ Students of the Waterloo Regional Campus of the Michael G. DeGroot School of Medicine have welcomed Grade 5 students in Kitchener-Waterloo to learn about medical school. The MACgic School Bus program has the children rotating through different

interactive activities to learn about the human body.

■ A topping off ceremony for the construction of the Halton McMaster Family Health Centre was held with officials signing a beam that will be part of a new joint building with Joseph Brant Hospital. The Lakeshore Road building is the first part of the hospital's redevelopment project.

■ Construction of the \$84.6 million McMaster Health Campus in downtown Hamilton has continued on time and on budget. The new home for the Department of Family Medicine of the Michael G. DeGroot School of Medicine, the Public Health Department of the City of Hamilton and other health services will open in late 2014.



▲ The southwest view of construction of the McMaster Health Campus in downtown Hamilton.

