

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

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# Dean's message



**The past year** has been one of outstanding achievements within the Faculty of Health Sciences. These accomplishments are a direct reflection of the excellence displayed by our faculty, staff and students. Collectively, we are helping to enhance health, education, research and care for all Canadians.

We celebrated numerous research successes in 2014, from shedding new light on the serious global threat of antibiotic resistance, to making important findings around the treatment of asthma and ground-breaking work that has the potential to

improve transplants using human stem cell sources.

Our team also led developments in educational innovation. For example, this year we designed a cutting-edge new Biomedical Discovery and Commercialization program that will offer students the opportunity to train in biomedical science and business concurrently.

At the same time, many members of our hard-working team were recognized for their efforts.

These accomplishments are enabled through the generous gifts of our benefactors, including one of Canada's trailblazing philanthropists, Michael G. DeGroote. Mr. DeGroote once again placed his confidence in McMaster's Faculty of Health Sciences when he made another extraordinary gift of \$50 million to support the Michael G. DeGroote School of Medicine this spring.

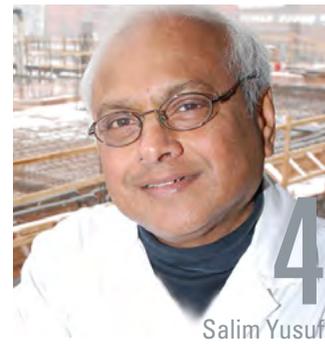
The successes of 2014 are almost incalculable when measured on their dramatic and far-reaching impacts on Canada's cultural, societal and healthcare fabric. This report provides a mere snapshot of these triumphs but I encourage you to visit our website at [fhs.mcmaster.ca](http://fhs.mcmaster.ca) to read about all of the ways we continue to excel. Moving forward, I anticipate even greater prospects for the year ahead.

Kind Regards,

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



McMaster's CanChild Centre for Childhood Disability Research celebrated its 25th anniversary in 2014 with staff, family and friends.



Salim Yusuf



Gerry Wright sheds light on the rise of antibiotic resistance.

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

# Making the news



▲ Pictured, from left, are researchers Waliul Khan, associate professor of pathology and molecular medicine, Gregory Steinberg, professor of medicine, and Justin Crane, a post-doctoral fellow.

■ Scientists of the McMaster Stem Cell and Cancer Research Institute made headlines with a study in the scientific journal *Nature Communications* showing that human stem cells made from adult donor cells “remember” where they came from and that’s what they prefer to become again.

■ Gerry Wright, director of McMaster’s Michael G. DeGroote Institute for Infectious Disease Research, and his team of researchers, discovered a fungus-derived molecule, known as AMA. This molecule is able to disarm one of the most dangerous antibiotic-resistance genes, identified by the World Health Organization as a global public health threat. The study was published online in the journal *Nature*.

■ Researchers identified an important hormone that when elevated, contributes to obesity and diabetes by inhibiting brown fat activity. The study, published in *Nature Medicine*, is the first to show that blocking the production of peripheral serotonin makes the brown fat more active. The study was led by Gregory Steinberg, professor of medicine.

■ Researchers found that giving a mild allergic asthma patient an antibody, which blocks a specific protein in the lungs, significantly improved symptoms such as wheezing, breathlessness, chest tightness and cough after patients had inhaled an environmental allergen. The study, by

professors of medicine Paul O’Byrne and Gail Gauvreau, was published in the *New England Journal of Medicine*.

■ Kinga Eliaz, a PhD candidate in kinesiology, finished second in the 2014 AUTO21 TestDRIVE competition. She was recognized for her work to help develop an in-car recording system that uses GPS-technology to capture driving patterns and HD cameras to capture actual behaviour behind the wheel. It is the first study in the world that objectively quantifies driving behaviour in a comprehensive way to understand the older driver.

■ McMaster researchers say the sweaty secret to keeping skin young – and maybe even reversing skin aging – can be found in exercise. Mark Tarnopolsky, a professor of pediatrics and exercise science, led a team of researchers who found that people over the age of 40 who exercise regularly have healthier skin. The study was presented at the annual general meeting of the American Medical Society for Sports Medicine.

■ Research by Moin Khan, a research fellow in orthopedic surgery and Mohit Bhandari, professor of surgery, found middle-aged or older patients with mild or no osteoarthritis of the knee may not benefit from the common procedure of arthroscopic knee surgery. The study was published in the *Canadian Medical Association Journal*.

## With distinction

McMaster consistently ranks highly among Canadian and worldwide universities



One of only four Canadian universities in the top 100 in the world Shanghai Jiaotong University Academic Ranking of World Universities 2014



One of only four Canadian institutions in the top 100 worldwide for post-secondary institutions offering clinical, pre-clinical and health programs Times Higher Education World University Rankings 2014



McMaster ranked one of four Canadian universities for medicine in the top 50 in the world QS World University Rankings 2014



Among the top 100 universities worldwide in a ranking measuring how universities perform on graduate employability Times Higher Education Global Employability University Survey 2014



McMaster is sixth in Canada and 116th in the world, as ranked for research productivity, impact and excellence National Taiwan University: Performance Ranking of Scientific Papers for World Universities 2014



Ranked among the top four Canadian universities for biomedical and healthcare research funding for the past seven years Association of Faculties of Medicine of Canada



Rated seventh out of Canada’s top 50 research universities Research Infosource 2014

# Research, innovation & collaboration

## HONOURS

■ Salim Yusuf, professor of medicine, was named to the esteemed list of the world's leading scientific researchers by ScienceWatch for the second year in a row. He was also inducted into the Hamilton Gallery of Distinction, Canadian Medical Hall of Fame and awarded the Canada Gairdner Wightman Award.

■ Faculty of Health Sciences professors Mary Law and Gordon Guyatt took home two of the top awards at McMaster University's Innovation Showcase. Mary Law, a professor of rehabilitation science and co-founder of McMaster's CanChild Centre for Childhood Disability Research, was named Innovator of the Year by the McMaster Industry Liaison Office. Gordon



Guyatt, a Distinguished University Professor of clinical epidemiology and biostatistics, received the Lifetime Innovator Award



for his pioneering work in evidence-based medicine.

■ Gregory Steinberg, a professor of medicine, was named to the Royal Society of Canada's College of New Scholars, a national group that recognizes the country's emerging academic leaders.

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■ JoAnn Corey, director of the Psychiatry Residency Program in McMaster's Department of Psychiatry and Behavioural Neurosciences was the 2014 recipient of the John C. Sibley Award for Excellence in Education for Part-Time Faculty.

■ Mark Loeb, professor in the departments of Pathology and Molecular Medicine and Clinical Epidemiology and Biostatistics, received the Jonas Salk Award, a lifetime achievement award from the March of Dimes of Canada.

■ Jean Chamberlain Froese, an associate professor in the Department of Obstetrics and Gynecology and Deborah Cook, a professor in the departments of Medicine and Clinical Epidemiology and Biostatistics were appointed to the Order of Canada, one of the country's highest honours.

■ Laurie Doering, professor of pathology and molecular medicine, received a Passion in Science Award from New England Biolabs. He was the only Canadian winner recognized in the inaugural competition.

## GRANTS & COLLABORATIONS

■ McMaster stem cell researcher Mick Bhatia will lead one of three teams in tackling the province's highest-priority diseases, with funding from the new Ontario Institute for Regenerative Medicine (OIRM). The Government of Ontario awarded \$3.1 million to



▲ Stem cell researchers, from left, Karun Singh, Eva Szabo and Mick Bhatia.

the Ontario Stem Cell Initiative and the Centre for Commercialization of Regenerative Medicine to form the OIRM, a research, development and commercialization institute dedicated to the translation of stem cell research into curative therapies for major degenerative diseases.

■ Researchers Brian Lichty, Yonghong Wan and Jonathan Bramson, from the McMaster Immunology Research Centre, are taking key roles in a new



Network of Centres of Excellence devoted to cancer research. They are involved in the Biotherapeutics for Cancer Treatment project

## Accolades



Pictured, at left, nursing professors Maureen Markle-Reid, left, and Jenny Ploeg. The co-scientific directors of McMaster's Aging, Community and Health Research Unit (ACHRU) were conferred as Distinguished Fellows-Adjunct Professors at Mohawk College's Spring 2014 Convocation for their contributions to the college's faculty, students and staff as active members of research teams affiliated with the ACHRU.



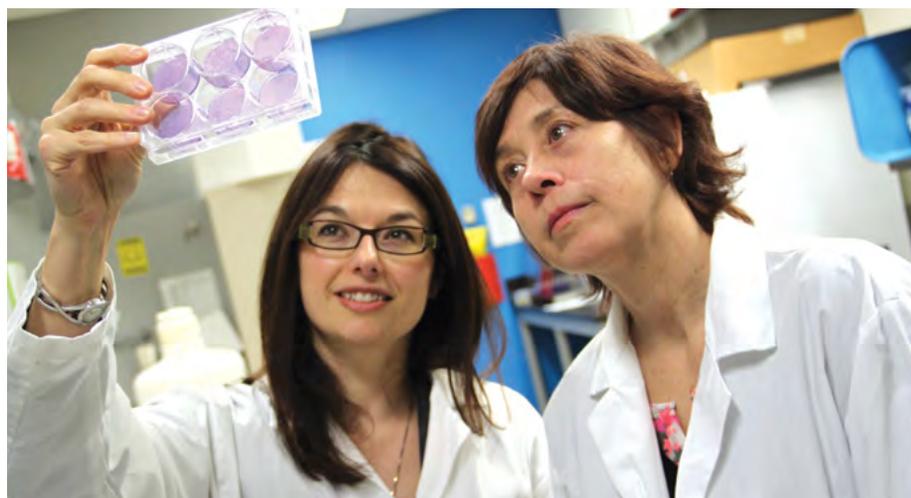
Frank Baillie, associate professor of surgery and Lawrence Kobetz (pictured), clinical professor of ophthalmology, received Life Membership Awards from the Ontario Medical Association and Wes Oczkowski, associate clinical professor, Division of Neurology, received the Glenn Sawyer Service Award.

that will receive \$25 million from the federal government and an additional \$35 million from partners to investigate biotherapeutics which hold potential to completely eliminate even advanced cancers with fewer side effects than current treatments.

■ A \$4-million commitment from the Province of Ontario to the McMaster-Fraunhofer Project Centre for Biomedical Engineering and Advanced Manufacturing is expected to create up to 100 jobs and attract top scientists and industry researchers from around the world.

■ McMaster professor Laurie Doering received \$2.5 million to lead a team researching new treatments for social disability disorders. The Brain Canada Foundation, the Azrieli Foundation and the Chagnon Family are funding research projects to discover new treatments and prevention strategies for autism spectrum disorders, Fragile X syndrome, Alzheimer's disease and related disorders.

■ Three emerging health networks at McMaster will examine the heart, the lungs and the blood. Announced by the Canadian Institutes of Health Research, they are: the Canadian Stroke Prevention Intervention Network (C-SPIN), led by Jeff Healey, associate professor of cardiology; the Canadian Respiratory Research Network, which includes Paul O'Byrne, chair of the McMaster's Department of Medicine, Parameswaran Nair, associate professor of respirology, and Martin Stämpfli, professor of pathology and molecular medicine; and a Canadian Vascular Network, which includes Sonia Anand, professor of medicine.



▲ Pathologist Dawn Bowdish, left, is collaborating with Corinne Lobe, right, founder and CEO of the biotechnology firm Miami Mice, to develop a new diagnostic for lung cancer, the leading cause of cancer death among men and women.

### RESEARCH CHAIRS

■ Mohit Bhandari, pictured, professor of orthopaedic surgery, Jonathan Bramson, professor of pathology and molecular medicine, and Eric Brown, professor of biochemistry and biomedical sciences, were named Tier 1 Canada Research Chairs. Each will receive \$1.4 million over seven years to help further their research efforts.

■ Dawn Bowdish, associate professor of pathology and molecular medicine, and Sarah McDonald, associate professor of obstetrics and gynecology, were named Tier 2 Canada Research Chairs. Each receives \$500,000 over a five-year term for their research.

■ Cisco Canada provided \$2.1 million to McMaster, including \$1.6 million over eight years to establish a Professorship in Integrated Health Biosystems and \$500,000 over five years to establish a Research Chair in Bioinformatics. The Professorship is held by Guillaume Paré, associate professor, Department of Pathology and Molecular Medicine (pictured) and the Chair is held by Andrew McArthur, associate professor, Department of Biochemistry and Biomedical Sciences. The positions will allow the University to increase its research capacity and capture the value of the exponentially increasing volumes of data generated by its researchers.



The Ontario Medical Association awarded Mark Walton (pictured), assistant dean of McMaster's Postgraduate Medical Education, the Advocate for Students and Residents Award and medical oncology resident Lacey Pitre a Resident Achievement Award.



Three professors whose careers raised the profile and reputation of the Michael G. DeGroot School of Medicine were honoured with induction into the Community of Distinction by the Faculty of Health Sciences. Pictured are the 2014 inductees, from left, Jonathan Lomas, a father of knowledge translation, Raelene Rathbone, a driver of the creation of a city-wide research ethics board and John Bienenstock, a developer of the Faculty's research infrastructure.



# Sparking innovation



▲ Michael G. DeGroot announced an additional \$50 million gift to the Michael G. DeGroot School of Medicine at the school's oath ceremony in May.

■ Philanthropist and businessman Michael G. DeGroot announced a \$50 million gift to the Michael G. DeGroot School of Medicine at the oath ceremony for the graduating class in May. His latest gift will support increased focus on national and international health leadership, including developing stronger ties and alignment with McMaster's DeGroot School of Business; partnerships that focus on biomedical advances, and the creation of a new fund to seed the very best medical research within the Faculty of Health Sciences.

■ Andrew Costa, an assistant professor of clinical epidemiology and biostatistics, was named the Schlegel Chair in Clinical Epidemiology and Aging at McMaster University. Created through a partnership of Ron Schlegel and his family with the University, the focus of the chair is on improving healthcare for seniors. Costa is also the research lead at the Waterloo Regional Campus of the Michael G. DeGroot School of Medicine.

■ World-renowned addictions researcher James MacKillop was appointed the inaugural holder of the Peter Boris Chair in Addictions Research at McMaster University. MacKillop is also the director of the Peter Boris Centre for Addictions Research and a professor

in the Department of Psychiatry and Behavioural Neurosciences.

■ Clive Kearon, a professor of medicine and program director of the Clinical Investigator Program, was appointed inaugural holder of the Jack Hirsh Professorship in Thrombosis. Named after Dr. Jack Hirsh, professor emeritus in the Department of Medicine, the prestigious position is endowed with funding from the Department of Medicine as well as annual matching funds from the Thrombosis & Atherosclerosis Research Institute.

■ Ellen Amster, an historian of Middle East medicine, was appointed the Hannah Chair in the History of Medicine. The purpose of the chair is to develop scholarship in the history of medicine and encourage McMaster students, including medical students, to be interested in the history of the discipline and to be a resource to them.

■ The Labarge Optimal Aging Initiative, funded through a donation from Chancellor Suzanne Labarge, awarded funding to six new projects for the coming year. The initiative, which started in 2012, has now funded 13 research projects in addition to the creation of the McMaster Optimal Aging Portal, which was launched on October 1. The six new projects are about maintaining mobility, fighting

## Learning



The new Biomedical Discovery and Commercialization Bachelor/Masters program offered by the Department of Biochemistry and Biomedical Sciences (with contributions by the DeGroot School of Business) is a one-of-a-kind program that offers students the opportunity to train in biomedical science and business at the same time.



McMaster's School of Nursing, along with its college collaborators, Mohawk and Conestoga, received a seven-year accreditation from the Canadian Association of Schools of Nursing for its undergraduate BScN program, the highest accreditation level attainable.



Jean Clinton of McMaster University has been appointed as one of four renowned experts to advise the Ontario government on bold reforms to the province's publicly funded education system. The associate clinical professor of psychiatry and behavioural neurosciences is a specialist in child psychiatry and is recognized internationally as an advocate for children's issues.

infection, managing chronic disease, and supporting the translation of research and clinical guidelines into citizen-friendly language.

■ McMaster University's Department of Family Medicine and the University of British Columbia Faculty of Pharmaceutical Sciences are working together to create a new module within the open-source OSCAR Electronic Medical Record (EMR) to support pharmacists working in care teams. This new module will allow for both pharmacist and physician functionality in the same made-in-Canada EMR, for the first time.

# Engaging the community

■ With a flourish of ribbon cutting and applause, officials opened the new Halton McMaster Family Health Centre on Lakeshore Road in Burlington. The primary care clinic and education centre for future physicians and other allied health professionals is run by the Department of Family Medicine of the Michael G. DeGroot School of Medicine. The centre is sited on Lakeshore Road, on the southwest corner of Joseph Brant Hospital.

■ CanChild, a pioneer and global leader in childhood disability research, celebrated its 25th anniversary in 2014 with an event for the families, researchers and campus leaders who helped make the program a success. The centre also re-launched a user-friendly website, premiered a special anniversary video, and transitioned some of their resources to a pay-for-service model.

■ The first phase of The Boris Clinic, a new outpatient clinic that provides innovative care for adults by placing several medical specialties under one roof within a clinical teaching unit, has been opened by McMaster's Faculty of Health Sciences and Hamilton Health Sciences. Located in the McMaster University Medical Centre, the clinic is named for the Boris family, who provided funding as part of their \$30 million gift to McMaster in 2012.

■ People living with persistent forms of cardiac pain now have a new multimedia resource of information to ease the discomfort. Dubbed the Canadian Journal of Cardiology Persistent Pain Resource Centre, the online resource is led by Michael McGillion, an assistant professor of nursing.

■ A McMaster-led pilot project dubbed TAPESTRY (Teams Advancing Patient Experience: Strengthening Quality), sends community volunteers into the homes of seniors to pinpoint whether they need additional help, connect them to services such as Meals on Wheels or, if there's an emerging health problem, connects them with their family doctor. The project, which received \$6.5 million from Health Canada, is led by professor



▲ Cutting the ribbon to open the Halton McMaster Family Health Centre in Burlington were, from left: Eric Vandewall, president and CEO, Joseph Brant Hospital; John Kelton, dean and vice-president, Faculty of Health Sciences; Patrick Deane, president and vice-chancellor, McMaster University; Gary Carr, chair, Halton Region; Eleanor McMahon, MPP for Burlington; Rick Goldring, mayor of Burlington; Sue Borden, alumna of the Michael G. DeGroot School of Medicine and physician at the HMFHC; Wes Stephen, chief of staff of Joseph Brant Hospital and David Price, chair, Department of Family Medicine.

Lisa Dolovich and associate professor Doug Oliver of the Department of Family Medicine.

■ Researchers are following a pilot project launched in Hamilton's Jackson Square shopping mall to make epinephrine auto-injectors available to the public. The research team, led by Susan Waserman, professor of medicine, is looking at the efficacy of the training, use of stock epinephrine auto-injectors during the pilot project, and the knowledge of both consumers at risk of anaphylaxis and foodservice staff.



▲ Dr. Susan Waserman



▲ Pictured from left, Dr. Khalid Azzam demonstrates the Harvey patient simulator, located in the new Boris clinic, to Nick and Conrad Boris.

