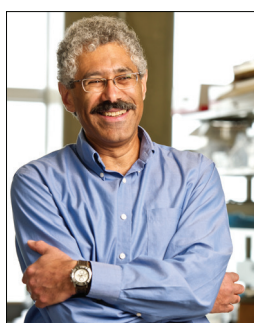


IMHA On the Move!

CIHR - Institute of Musculoskeletal Health and Arthritis

Winter 2014 Edition

Message from the Scientific Director



This fall has been full of activity for CIHR – IMHA. Besides unveiling our Strategic Plan for 2014 – 2018 (featured in a special edition of IMHA On the Move!), we have been hard at work launching new funding initiatives and supporting the members of our diverse research community.

FUNDING OPPORTUNITIES

Recently launched CIHR-IMHA Funding Opportunities include an [Undergraduate Summer Studentship Award](#) (Deadline January 15, 2015) a [Fellowship: Fall 2014 Priority Announcement in Myalgic Encephalomyelitis/ Chronic Fatigue Syndrome \(ME/CFS\) / Fibromyalgia \(FM\) and Chronic Pain](#), and Component 2 of the CIHR Signature Initiative Pathways to Health Equity for Aboriginal Peoples which was launched in October, for which IMHA is co-lead of the Oral Health exemplar.

SPOR NETWORK IN CHRONIC DISEASE

A major CIHR Signature Initiative with which IMHA is heavily involved is the Strategy for Patient-Oriented Research, or [SPOR Networks in Chronic Disease](#). This initiative was announced recently with important deadlines and updates noted on [ResearchNet here](#). [Erica Dobson](#) is the CIHR SPOR contact person. SPOR is important to IMHA's mandate as it is about putting research into practice. Generally speaking, it is a national coalition of federal, provincial and territorial partners (patient advocates, provincial health authorities, academic health centres, charities, pharmaceutical sector, etc.) dedicated to ensuring that the right patient receives the right treatment at the right time. The requirements of the applicants proposing projects for this initiative are such that applicants must be multidisciplinary research team composition, and that they be broad in scope with regards to what gaps in research they seek to address. Finally, the end result of these projects must be clear deliverables that can effect change in clinical practice to benefit patients directly by the end of the five-year SPOR funding.



IMHA FEATURED AREA OF FOCUS: SKIN HEALTH

Skin health is one of IMHA's research areas, and we are pleased to feature past, present and future aspects of skin research in Canada. October was remarkable for being both Lupus and Psoriasis Awareness months with [World Psoriasis Day](#) falling on October 29th. Former IMHA Institute Advisory Board member **Alan Stordy** was featured in an article in Canadian Skin Magazine's [Summer 2014 issue](#). Please read about recent successes in skin research in our publication [Celebrating the impact of health research](#). **Dr. Sarvesh Logsetty**, principal investigator of the Canadian Burn Network, provides an update on advances happening in that area. Members of the skin research community may already be aware that [The World Congress on Dermatology](#) is taking place in Vancouver June 8 to 13, 2015.

RESEARCH AMBASSADOR AWARD

Knowledge Translation is an essential but often overlooked part of the research process. After incredible amounts of money and effort go in to making discoveries, they must be translated to people who can benefit from them. Since 2009, CIHR-IMHA has provided an ["IMHA Research Ambassadors Knowledge Translation Award"](#) given to Principal Investigators who submit a superior plain language abstract. Included in this newsletter are summaries of the five most award-worthy abstracts. The awards were presented in September at IMHA's Research Ambassador meeting in Vancouver.

As always, I encourage you to continue to submit any questions or comments to IMHA@cihr-irsc.gc.ca. Please also follow me on Twitter [@HaniElGabalawy](https://twitter.com/HaniElGabalawy).

Sincerely,

Hani El-Gabalawy MD FRCP
Scientific Director
CIHR Institute of Musculoskeletal Health and Arthritis

CIHR-IMHA Undergraduate : Summer Studentship Award – Institute Community Support (2015)

Application Deadline January 15, 2015

The Institute of Musculoskeletal Health and Arthritis now welcomes applications for its Undergraduate: Summer Studentship Award – Institute Community Support (2015) program. The application deadline is January 15, 2015. Funding starts May 1, 2015.

Eligible students must:

- 1) be enrolled in an undergraduate degree or health professional program at a Canadian university at the time of application; and
- 2) must be a Canadian citizen or permanent resident of Canada at the time of application.
- 3) Students must have completed at least their first year of university study (or two academic terms) of a bachelor's degree by the funding start date.

SPOR Networks in Chronic Disease

Application Deadline (Letter of Intent): January 13, 2015

Application Deadline (Full Application): October 15, 2015

Funding Start Date: January 1, 2016

The primary objective of the opportunity will be to translate existing and new knowledge generated by basic biomedical, clinical, and population health research into testing of innovations that can improve clinical science and practice and foster policy changes, leading to transformative and measurable improvements in patient health outcomes, and in efficient and effective healthcare delivery within five years. Network applicants will be expected to show that the planned program of research and knowledge translation will have a significant impact on non-communicable chronic diseases and their co-morbidities by:

- Addressing patient-oriented research priorities and developing an interdisciplinary nation-wide agenda of outcomes-oriented research.
- Accelerating the translation of existing and new knowledge generated by basic biomedical, clinical, and population health research into clinical science and practice and policy applications.
- Strengthening the capacity to conduct patient-oriented research through an integrated multidisciplinary program that provides unique and innovative training and mentoring opportunities.
- Fostering the development and implementation of evidence-informed and gender-responsive practices, policies, services, products and programs to improve patient outcomes, access to care and quality, efficiency and effectiveness of health care.

eHealth Innovations Partnership Program (eHIPP)

Registration Deadline: April 1, 2015

Application Deadline: June 3, 2015

eHIPP will focus on development of inter-sectoral collaboration between health care innovation communities (researchers, clinicians, patients and decision makers) and industry to help realize the value of existing innovations. The expectation is for

collaborative teams ([health care innovation community](#) and [industry](#)) to address gaps and inefficiencies in the care of two priority populations:

- Early detection of and intervention for youth (11-25 years of age) with mental health conditions
- Seniors with complex care needs in their homes and communities

Science to Business (2015)

Application Deadline: February 2, 2015

The specific objectives of this funding opportunity are:

- Encourage and enable individuals who have obtained a health-related PhD to pursue an MBA;
- Develop a cadre of management-trained scientists;
- Train scientists to recognize and manage health research innovations;
- Build Canadian capacity in careers that support commercialization;
- Foster an entrepreneurial culture within and around the health research community in Canada;
- Promote economic development through health research in Canada;
- Support the application of health research results to improve the health of Canadians.

2015 Summer Program in Aging (SPA) Training Program

For 2015, the CIHR Institutes of Aging (IA), Gender and Health (IGH) and Musculoskeletal Health and Arthritis (IMHA) have partnered with the Institute for Work and Health to host this event. The Summer Program in Aging (SPA) 2015 partners have identified "Health, wellness and participation of older adults in the world of work" as the key theme for this year's SPA Training Program.

A complete listing of CIHR funding opportunities being launched this December is as follows:

Funding Opportunities:

1. [Knowledge Synthesis Grant: Spring 2015 Competition](#)
2. [Master's Award: Dr. James Rossiter MPH Practicum Awards Program \(Winter 2015 Competition\)](#)
3. [Operating Grant: Industry-Partnered Collaborative Research \(Winter 2015 Competition\)](#)
4. [Other: Planning and Dissemination Grants – Institute Community Support \(Winter 2015 Competition\)](#)
5. [Other: Travel Awards- Institute Community Support \(Winter 2015\)](#)
6. [Proof of Principle: Phase I \(Winter 2015 Competition\)](#)
7. [Proof of Principle: Phase II \(Winter 2015 Competition\)](#)

Priority Announcements:

1. [Operating Grant: Transitional Operating Grant: 2014-2015 Priority Announcement](#)

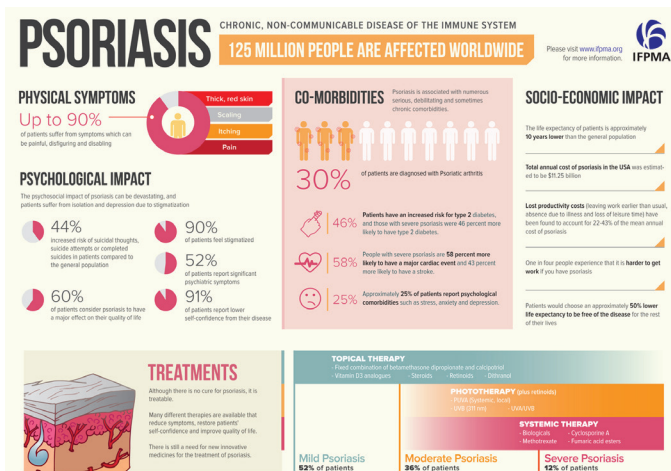
Featured Research: Skin

Even though the words 'skin' and 'oral health' are not part of IMHA's already long title, they are part and parcel of IMHA's focus areas of research. Please see our publication [Celebrating the Impact of Health Research](#) for examples of recent successes stories in skin health research.



Our Institute Advisory Board reflects our diverse community including researchers and patient advocates such as **Allan Stordy** who was featured in the Summer issue of Skin, the [Canadian Skin Patient Alliance Magazine](#).

For the record, October was Psoriasis Awareness Month, with World Psoriasis Day – October 29th – falling the day before the launch of IMHA's new strategic plan, with its guiding research themes of Capacity Building, Innovation, and Translation. One way to translate research is through use of infographics, a good example of which is this comprehensive illustration of psoriasis:



Capacity building and Innovation are IMHA's two other guiding research themes. Next summer's World Dermatology Congress in Vancouver will afford skin researchers an opportunity to network. Speakers and

delegates from six continents representing 157 official dermatology organizations will be in attendance. Taking place once every four years, the WCD dates back 125 years to the first congress held in Paris in 1889. In 2015 the Canadian Dermatology Association will also be celebrating its 90th anniversary. Please visit the [congress website](#) for more information.

IMHA recently awarded a Network Catalyst grant to support the development of the Advancement of Burn Care Network (ABCN). The network is now operating in full force and **Dr. Sarvesh Logsetty**, the Network's lead, reports in from the University of Manitoba, on the latest progress for burn care in Canada.

- The Network has started to develop a website for the public to turn to for information on burn care, with contacts for the regional burn units. The site is not yet up and running, but will be in the near future.

- Network members are currently collecting protocols on burn care from across the country to consolidate them and to identify where the various regional protocols vary to see if there is a role for clinical trials. Once published, the protocol compilation (to be included on the Network's website) will include a portion for the members of the public with answers to common questions, as well as a more protected area with more detailed protocols for researchers.

- The burn registry teams have started to meet to review the data dictionaries currently existing at the different burn centres located across Canada and to align them so that the Canadian Burn Network can start working on national data reporting.

- The Network has helped organize a Canadian Burn Symposium to provide ongoing education and support for research throughout the country. The 2015 meeting will be in Toronto, 2016 in Vancouver and 2017 in Winnipeg.

- The Network is starting to put together a disaster plan for management of mass casualty burn injuries for regional burn centres.

- Network members have been working together to address complex clinical issues. One of the results of these efforts has been a letter to Health Canada asking for help with approval for a topical antimicrobial for burn wounds. This letter was signed by the director of nearly every regional burn unit in Canada.

- Network members are participating in a national survey on dietary practices in Canada so that they can benchmark their work.

- As a unified effort, the Network will be applying for a multicentre grant to examine the inflammatory response to soft tissue injury (e.g. burns, necrotizing fasciitis, vasculitis, TENS, frostbite).

- The Network has started to collaborate with workers' compensation boards across the country to look at developing protocols and guidelines to help with informing how to get injured persons back to work safely and quickly.

- The next Canadian Burn symposium (Toronto, 2015), will include a half-day research training course to help frontline staff and trainees of burn units across Canada understand how research is conducted and why they should participate.

Research Ambassador News

Research Ambassadors Knowledge Translation Award 2014

The "IMHA Research Ambassadors Knowledge Translation Award" was introduced in 2009-2010 in order to encourage CIHR applicants to write plain language abstracts, as part of an overall goal of CIHR, to foster knowledge translation from scientific research into improved health for Canadians, more effective health services and products, and a strengthened health care system. This award is given to Principal Investigators who submit a superior abstract of this kind for an IMHA-funded grant or award. The 2014 awards were handed out in September at a Research Ambassadors meeting in Vancouver. Below are summaries of the five winning abstracts.

Biomedical - KIM, Hugh. Regulation of periodontal inflammation by the platelet cytoskeleton

Proper function of the immune system is essential for protection against infectious disease and maintaining human health. During the onset of infection, white blood cells and platelets release signaling molecules known as cytokines, which orchestrate a protective inflammatory response. When cytokine release is de-regulated, excessive inflammation results that causes cell and tissue death and loss of function. This is seen in periodontitis (gum disease), which is characterized by gingival (gum) inflammation and destruction of tooth-supporting connective tissues and bone. The purpose of this grant application is to study the mechanisms and identify the proteins responsible for maintaining the health of periodontal tissues. In addition to regulating blood coagulation (clotting), platelets are emerging as pivotal components of the host inflammatory response. We will study in human and mouse platelets, how infection causes cytokine release. The current project will focus on two major questions. First, we will identify the molecular signals that operate during periodontal infection and learn how these signals affect platelet function. We will also test the hypothesis that a group of proteins known as filamins mediate the release of cytokines from platelets. In this context, an improved understanding of platelet function could have important implications for rational treatment of inflammatory diseases, including periodontitis.

Biomedical - GHAHARY, Aziz. Skin cell therapy for the long term treatment of alopecia areata

Alopecia areata (AA), defined as a non-scarring autoimmune hair loss disease, has a serious impact on the quality of life for AA patients worldwide. It is well established that infiltrated immune cells, known as CD4+ and CD8+ lymphocytes, target the hair follicles of AA patients. Various therapeutic regimens are currently used for the treatment of AA; however, none of them can prevent or cure the disease. Our preliminary results generated from an AA mouse model revealed that none of the mice received skin cells producing an immunosuppressive factor known as IDO developed AA while 80% of control animals developed extensive AA within 8-16 weeks after transplantation of AA affected skin. Here we hypothesize that IDO expressing skin cell therapy can prevent the progression of AA by suppressing the CD4+ and CD8+ cells attacking hair follicles. To address this hypothesis, we will test 4 different objectives through which 1) The potential role of skin cell therapy not only in prevention but also in progression of AA in those patients who already suffer from this disease will be evaluated, 2) The factors that affect the capacity of IDO producing fibroblast therapy in reversing the autoimmune AA disease will be tested and finally 3) The

last 2 objectives will reveal the mechanism by which this cell therapy improves or even cures this disease. In conclusion, we strongly believe that, if it is proven to be true, our novel cell therapy approach would overcome the AA autoimmunity and prevent the progression of AA. Potentially this may be a long lasting, possibly permanent treatment for patients who suffer from this devastating skin disorder.

Clinical - MASANI, Kei . Development of novel tool to reduce muscle fatigue during rehabilitation using functional electrical stimulation

People with spinal cord injury have impaired movements of their arms and/or legs, due to paralyzed muscles. However, when we externally stimulate those muscles using electrical stimulation, muscles can be made to contract to generate different limb movements and physical activities such as walking, standing, and grasping. People with spinal cord injury can also use electrical muscle stimulation to train muscles and maintain muscle strength, which will in turn prevent other complications such as pressure sores, low-impact fractures, and deep vein thrombosis from occurring. Thus, rehabilitation using electrical muscle stimulation is very advantageous for this patient population. However, one aspect that often limits the use of electrical stimulation is the rapid onset of muscle fatigue. One can potentially explain the muscle fatigue following electrical stimulation by the fact that electrical stimulation contracts muscle fibers simultaneously and that electrical stimulation is unable to contract all the fibers within the muscle. We have proposed a new stimulation method that would activate most of the muscle fibers in a regulated cyclic pattern, and showed the effectiveness in our previous CIHR project for leg muscles. In this novel method, special electrodes and a stimulator are used to distribute the stimulation centre over a larger area of skin. In the current project, first, we will design a small electrical circuit with which one can use this method in actual therapy. Secondly, we will test the new method in muscle strength exercise. Thirdly, we will test the new method for arm muscles. We expect that we will translate our new method to a simple form that can be easily used in therapies. The tool may later be commercialized.

Health systems/services - GUYATT, Gordon H. Patient-centred interprofessional shared care model for low back pain management

It is estimated that 50-80% of the adult population will experience low back pain (LBP) in their lifetime. Although generally acknowledged as having a favourable outcome, growing evidence suggests that LBP is a chronic remitting and relapsing condition for many. It is this group that incurs the largest costs in terms of healthcare utilization and loss

(Continued from page 4)

of productivity within the LBP population. In Canada, medical expenditures for LBP are estimated between \$6 and \$12 billion annually. Canadian patients with LBP who seek care are faced with a choice of healthcare and provider options, with little or no collaboration between providers, often leading to fragmented patient care. Treatment results for patients with non-specific LBP in general, when managed as a single group, are suboptimal. Current research suggests that a more specific approach to the management of LBP could lead to tailored treatments and improved outcomes. The Ontario Ministry of Health and Long Term Care has recently approved a pilot study to explore the effect of a shared care model using standardized assessment of LBP patients by allied health professionals (physiotherapists and chiropractors). This model requires a formal evaluation to inform relevant stakeholders whether the model should be abandoned, revised, or implemented across Ontario. We propose to initiate two randomized controlled trials to establish if this patient-centred inter-professional shared care model for LBP is effective. One trial will recruit patients attending to primary care providers and the second trial will recruit patients referred to spine surgeons in Ontario. The primary outcome will be functional recovery; we will also capture quality of life, return to work, and complete cost-effectiveness analyses. If the use of inter-professional shared care is effective in improving LBP-related outcomes, our research proposal will provide essential evidence to support a fundamental change in the management of LBP in Canada.

Social/Cultural/Environmental/Population Health - WEBSTER, Fiona. Finding the complex patient in patient-centred care: an institutional ethnography of chronic pain management in family medicine

For people who suffer from chronic orthopedic (OA) pain, the family doctor often plays a key role in their education, care and access to other specialists such as orthopaedic surgeons or physiotherapists. Therefore, effective communication and teamwork among these various care providers is very important. The proposed study will study the coordination of these different standpoints using interviews and observations. Interviews will be conducted first with primary care physicians who are involved in the care of patients with chronic OA pain. Interviews will also be done with those who work directly or indirectly with these primary care doctors, including the specialist physicians, nurses, physiotherapists, provincial agency representatives, patients and their family members. The results from this study will be shared with a wide range of people who are involved in delivering care to OA patients in order to improve care delivery across the province. This approach has the potential to help us better understand how to improve clinical practice, with the ultimate goal of improving the health of patients and their families suffering from chronic OA pain.

Keep Up With The News

In this age of social media, it is important for members of a health research community to be knowledgeable about their health topics in the news. At IMHA, we have been collecting news clips relevant to our areas of research focus. If you would like to receive a bi-monthly mail-out of these "Google Alerts," please email christine.mazur@umanitoba.ca.

Research News



CIHR IRSC

CIHR Research News: Discover
Canada's largest research
platform on aging and health

The first major data release from the Canadian Longitudinal Study on Aging (CLSA) is underway. The study will follow 50,000 individuals aged 45 to 85 for 20 years, collecting information about their physical, emotional and social health through telephone interviews, in-home interviews and physical assessments.

The CLSA data provide opportunities for arthritis and musculoskeletal research in a variety of areas including mobility, functional status, falls and injuries, pain as well as health services and medication use. The longitudinal data will also enable researchers to investigate complex genetic, lifestyle and environmental factors and their role in the progression and management of chronic disease.

The June 2014 release includes the first data collected from 21,241 participants who completed 60-minute telephone interviews. The process for accessing biospecimens and physical assessment data from the 30,000 participants who are seen in person is currently being developed in anticipation of the first release of these data in 2016.

Researchers interested in accessing the CLSA platform are invited to visit the [DataPreview Portal](#) on the CLSA website for detailed information about the available data and the application process. Canadian and international public sector researchers are eligible to apply. Data will be available to researchers following submission and review of applications by the CLSA Data and Sample Access Committee.



The Bone and Joint Decade
Promoting musculoskeletal health
Keep people moving

The Bone and Joint Decade

is a global alliance to promote musculoskeletal health that is calling for explicit plans in all countries

and the WHO to address the large and growing burden of musculoskeletal conditions and injuries on individuals and society.

Musculoskeletal conditions are the 2nd greatest cause of disability, accounting for 21.3% of disability worldwide. They rank 4th globally in impact on the health of populations, considering both death and disability (DALYs).

The current resources for the prevention, management and research of musculoskeletal conditions do not reflect their impact. To change this, there is an urgent need for musculoskeletal health to be a public health priority.

Please support the Bone and Joint Decade's Call for Action by signing the [e-petition](#). Contact Bone and Joint Decade at bjd@cornwall.nhs.uk. For the latest news on Osteoporosis and bone health, please subscribe to the [Bone Blast Newsletter](#) [here](#).

(Continued on page 6...Western)



Western University positions itself among world leaders in bone and joint research

Western University recently announced a bold investment that will position it as a global leader in bone and joint research. The new Western Cluster of Research Excellence in Musculoskeletal Health is expected to drive high-impact interdisciplinary research with the goal of providing life-long mobility.

The university is investing \$5 million to support a team of all-star researchers from across five faculties to provide them with additional personnel, resources and infrastructure to attract, retain and mentor future leaders.

The cluster, which includes 70 researchers from the Schulich School of Medicine & Dentistry and the Faculties of Health Sciences, Engineering, Science and Social Science, will study conditions such as arthritis, osteoporosis, trauma, and work, sport and exercise-related injuries.

Discoveries will lead to new preventive, rehabilitative, medical and surgical therapies, diagnostic techniques, and medical and assistive devices. The Cluster will emphasize innovative health care policies, economic efficiency and the development and transfer of intellectual property to private sector partners, with the goal of developing local industries.



THE COCHRANE COLLABORATION®

Cochrane Corner

Cochrane Reviews are an important part of knowledge translation. [The Cochrane Collaboration](#) works to disseminate knowledge to health research communities so as to benefit patients and the health care system as a whole.

Shared here are highlights from the Oral Health Cochrane Group, collected May 2014 – October 2014.

Orthodontic and orthopaedic treatment for anterior open bite in children (new search for studies and content updated, no change to conclusions) September 2014

Interventions for the management of oral ulcers in Behçet's disease (new) September 2014

Dental auxiliaries for dental care traditionally provided by dentists (new) August 2014

Pulp treatment for extensive decay in primary teeth (new search for studies and content updated, conclusions changed) August 2014

Periodontal therapy for the management of cardiovascular disease in patients with chronic periodontitis (new) August 2014

Systemic antibiotics for symptomatic apical periodontitis and acute apical abscess in adults (new) June 2014

Powered versus manual toothbrushing for oral health (new search for studies and content updated, no change to conclusions) June 2014

Interventions for replacing missing teeth: augmentation procedures of the maxillary sinus (new) May 2014

Interventions for iatrogenic inferior alveolar and lingual nerve injury (new) April 2014

Arthritis Consumer Experts: Canada's Best Workplaces for Employees Living with Arthritis Program

In its drive to raise awareness, Arthritis Consumer Experts initiated



Canada's Best Workplaces for Employees Living with Arthritis

the Canada's Best Workplaces for Employees Living with Arthritis Program. To activate the Program, ACE is conducting the Canada's Best Workplaces for Employees Living with Arthritis Awards. Through a rigorous selection process using wide-ranging criteria, ACE will evaluate Canadian companies that apply best arthritis strategies and practices in the workplace.



Canadian Academy of Health Sciences
Académie canadienne des sciences de la santé

Dr. Paul Allison, Dean in the Faculty of Dentistry at McGill University and

chair of the CAHS panel on "Improving access to oral health care for vulnerable people living in Canada," spoke out to the public about this highly important subject in an [editorial published in The Globe and Mail](#), September 16, 2014. This report will be instrumental in guiding the CIHR [Pathways to Health Equity for Aboriginal Peoples Signature Initiative](#), for which IMHA is the oral health exemplar lead.



IMHA research community members **Dr. Steven Passmore** and **Dr. Simon French** attended

the Science in Motion symposium at which IMHA launched its 2014-2018 Strategic Plan. Please read their report of the event here in the [Journal of the Canadian Chiropractic Association](#).

Meetings of Interest

[The American Society for Bone and Mineral Research 2015 Conference on Musculoskeletal Development and Regeneration](#)
February 6-9, 2015 Cancun, Mexico

[Pacific Dental Conference](#)
March 5-7, 2015 Vancouver, BC

[World Congress on Osteoporosis, Osteoarthritis and Musculoskeletal Diseases](#)
March 26-29, 2015 Milan, Italy

[3rd World Congress on Controversies, Debates & Consensus in Bone, Muscle & Joint Diseases](#)
April 23-26, 2015 Montreal, QC (Abstracts: January 20, 2015)

[Canadian Association of Occupational Therapists \(CAOT/ACE\) Congress 2015](#)
May 27-30, 2015 Winnipeg, MB

[21st Canadian Connective Tissue Conference 2015](#)
May 28-30, 2015 Université Laval, Québec City, QC

[23rd World Congress of Dermatology](#)
June 8-13, 2015 Vancouver, BC

Contact Us

Be a part of the IMHA community! Please send news and information and subscribe to our newsletter mailing list by emailing christine.mazur@umanitoba.ca

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