



Institute of Musculoskeletal Health and Arthritis Newsletter: January 2014

IMHA - *On the Move!*

A Message from the Scientific Director



Welcome to the January 2014 edition of IMHA On The Move! I hope you all had an enjoyable holiday season. As many of you know, work is already well underway on a number of large scale initiatives that will continue into 2014 and beyond such as the [Inflammation in Chronic Disease](#)

Signature Initiative and our next Strategic Plan. In addition, we look forward to continuing the programs that directly support the IMHA community, and engaging with you during the coming year.

With regard to the CIHR reforms, a measured, multi-year approach is being implemented to support the transition to the [new Open Suite of Programs and peer review processes](#). A component of this approach includes the introduction of the Foundation Scheme through two "live pilot" competitions and the phasing out of the Open Operating Grant Program. More information about the pilots is now available on ResearchNet (see "Funding Opportunities" on page two).

Among other things, this month's newsletter includes the details of several new funding opportunities, a good news story about a new target that has been identified by Western University researchers for preventing bone

destruction in diseases such as arthritis and cancer, and a number of partner updates.

I would like to conclude my message by congratulating the winners of the 2013 [Research Ambassador Knowledge Translation Award](#), Drs. Debora Matthews and Roman Krawetz. This award is given to Principal Investigators who submit a superior lay abstract for an IMHA-funded grant or award. It is intended to encourage IMHA-funded researchers to write excellent lay abstracts and to foster knowledge translation. The winners' abstracts are published on the [IMHA webpage](#).

As always, I encourage you to continue to submit any questions or comments to IMHA@cihr-irsc.gc.ca.

Once again, my warmest wishes for your health, happiness, and success in 2014!

Sincerely,

Hani El-Gabalawy MD FRCPC

Scientific Director
CIHR Institute of
Musculoskeletal Health and Arthritis

IMHA FUNDING OPPORTUNITIES

For information on current funding opportunities, please visit [IMHA's Funding Opportunities online](#).

[CIHR-IA SPA 2014 Travel Grant competitions](#)

The CIHR-IA is providing funding (travel grants) to participants to travel to the 2014 Summer Program in Aging and to present their research in the form of a poster. IMHA is a partner with this summer program and will support the meeting and participants.

Application deadline: January 27, 2014

Operating Grant: Priority Announcement

[Musculoskeletal, Skin and Oral Health: New Investigators \(Bridge Funding\)](#)

Priority Announcements offer additional sources of funding for highly rated applications that are relevant to specific research priority areas. The CIHR Institute of Musculoskeletal Health and Arthritis (CIHR-IMHA) will fund applications that are determined to be relevant to the research priority areas of IMHA.

Registration deadline: February 3, 2014

[Call for Expressions of Interest: Pathways Implementation Research Teams](#)

[Pathways to Health Equity for Aboriginal Peoples](#) (Pathways) is a CIHR Signature Initiative with an overall goal to develop a better understanding of how to design, implement and scale up population health interventions that will improve Aboriginal health in four exemplars – Suicide, Diabetes/Obesity, Tuberculosis, and Oral Health.

EOI submission deadline: February 4, 2014

[IHSPR Article of the Year and Rising Star Awards \(Presented at CAHSPR 2014 Conference\)](#)

The Article of the Year Award recognizes published research that has significantly contributed to the advancement of the field of health services and policy research in Canada while the Rising Star Award recognizes the research excellence and knowledge translation initiatives of graduate students and post-doctoral fellows.

Application deadlines: February 14, 2014

[CIHR - Institute of Aging \(IA\) Summer Program in Aging](#)

For 2014, 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) 2014 partners have identified "Work and Health: The Aging Perspective" as the key theme for this year's SPA Training Program.

Application deadline: February 17, 2014

[Planning and Dissemination Grants](#)

Planning and Dissemination Grants are intended to provide support for planning and/or dissemination activities consistent with the mandate of CIHR and relevant to CIHR Institutes, Initiatives, or the Chief Scientific Officer (CSO) Community Outreach Fund.

Application deadline: February 18, 2014

[Science to Business](#)

CIHR's Science to Business (S2B) program is designed to encourage individuals with PhDs in a health related field to pursue an MBA. For more information please contact Senior Knowledge Translation Specialist, Meghan Baker at Meghan.Baker@cihr-irsc.gc.ca or (613) 960-6213.

Application deadline: February 19, 2014

[Knowledge Translation Prize](#) - Upcoming

The CIHR Knowledge Translation Prize honours and supports exemplary knowledge translation efforts and activities of an exceptional individual, team, or organization that has made an outstanding contribution to increasing the application of research findings, improving the health of individuals, improving health services and products, or strengthening the health-care system. For more information contact Kiera Keown at kiera.keown@cihr-irsc.gc.ca or (613) 948-2725 or visit the [archived funding opportunity](#).

Reforms of Open Programs (Foundations Scheme)

To support the transition to the new Open Suite of Programs and peer review processes, a measured, multi-year approach is being implemented. A component of this approach includes the introduction of the Foundation Scheme through two "live pilot" competitions and the phasing out of the Open Operating Grant Program. We expect that this transition will take place between 2014 and 2016. However – as we have noted in other

communications - course corrections and adjustments may be required along the way as we learn from the results of the pilots; the community will be kept informed should changes be made. The funding opportunities for the [2014 Foundation Scheme "live pilot"](#) and the [2014-2015 Transitional OOGP](#) competitions have been published. If you have any questions regarding these funding opportunities, please visit the [CIHR website](#).

Institutes Model Review

As announced on July 25, 2013, CIHR's Governing Council will undertake an Institutes Model Review in August 2014. This Review will assess the model of the Institutes, including their roles and their alignment with CIHR's mandate. It will also assess the current slate of Institutes.

Members of the Institutes Model Review Coordinating Secretariat have been hard at work over the past few months planning the process which will lead up to the Review.

A message announcing the launch of the Institutes Model Review, along with supporting documents is posted on the

CIHR web at <http://cihr-irsc.gc.ca/e/47656.html>.

Please do not hesitate to contact the Secretariat at institutesmodelreview@cihr-irsc.gc.ca If you have any comments or questions about the exercise.

Congratulations to the 2013 recipients of the IMHA Research Ambassadors Knowledge Translation Award!

The "[IMHA Research Ambassadors Knowledge Translation Award](#)" was introduced in 2009-2010 in order to encourage CIHR applicants to write excellent lay abstracts. This award is given to Principal Investigators who submit a superior lay abstract for an IMHA-funded grant or award, and was created to assist with an overall goal of CIHR, which is to foster knowledge translation from scientific research into improved health for Canadians, more effective health services and products, and a strengthened health care system. IMHA hopes that this award will encourage success in this area, and looks forward to continuing to acknowledge excellent lay abstracts in the upcoming years. The winners for 2013 are Drs. Debora Matthews and Roman Krawetz.

Network for Canadian Oral Health Research

Debora C. Matthews
(Dalhousie University)



The oral health of Canadians has improved dramatically over the past 30 years; children are much less likely to

have tooth decay than in the past and older Canadians are keeping more of their natural teeth than their parents and grandparents did. This is good news - good oral health is essential for overall health and wellbeing. While a lot of progress has been made, many challenges remain: we now know that oral disease is linked to other conditions such as diabetes, pneumonia and cardiovascular disease; we know there is a growing issue around oral disease among the frail elderly; and we know that there are groups of Canadians who still have high rates of oral disease and little access to oral

care. We can attribute much of the improvement in oral health to research into the causes, treatment and prevention of oral disease. Canada is home to a number of internationally known oral health researchers. Until now, however, most have worked individually or in small groups. This Network for Canadian Oral Health Research will link oral health researchers from ten universities across Canada. The network will: create a registry of researchers, their interests and resources; gather researchers from varied backgrounds but with shared research interests at workshops to plan new research; and work to share the outcomes of research with policy makers, dental professionals and the public. This network will create ways for oral health researchers to share ideas and resources so they can work together to continue to improve the oral health of Canadians.

Cellular basis of endogenous cartilage repair in super-healer mice

Roman J. Krawetz (University of Calgary)



When most body tissues heal after an injury, they recruit specialized cell types known as

progenitors to assist in the process; these cells are thought to reside locally in the tissues and are activated when an injury occurs. Once activated, progenitors can turn into different types of cells to regenerate the tissue and heal the injury. In contrast, the cartilage in knee joints has poor healing capacity and patients with cartilage injuries are often left with chronic pain and disability. To create new treatments for cartilage injuries, scientists first need to understand how progenitor cells react when cartilage is damaged and how inflammation in response to the injury affects healing. We have developed methods to

study progenitor cells in the knee joints of mice and track them after a cartilage injury to see how they react. A strain of mouse (the super-healer) is available that shows improved wound healing and regeneration of its cartilage after injury. We will look for differences in progenitor cells from regularly healing mice and from the super-healer that might explain its ability to better regenerate cartilage. In a second set of experiments, we will determine if the super-healer progenitors can regenerate cartilage in regular mice by transplanting the cells into injured knees of regular healers. We will also study the capacity of progenitor cells to heal cartilage in a third type of mouse that has no inflammatory response to injury. This work will find out how local progenitor cells contribute to cartilage healing, with the eventual goal of developing new, less expensive treatments for patients with cartilage injuries.

Partner Corner

The Canadian Arthritis Network's Legacy Video The Impact of Arthritis Research in Canada

The Canadian Arthritis Network (CAN) is in its sun-setting stages as a Network of Centres of Excellence. Since its inception in 1998, CAN has been bringing the arthritis research community together to accelerate innovation. In addition, CAN has been instrumental in implementing programs to support the development of the next generation of researcher.

This video was created to show the impact of arthritis research in Canada and highlight CAN's contribution. In this [3 minute video](#), researchers, consumers and people living with arthritis tell their story. The video aims to increase awareness that arthritis affects people of all ages and gives a message of hope—hope for the future, hope because of the important research that is being done.



Canadian Connective Tissue Conference (CCTC)

The annual Canadian Connective Tissue Conference (CCTC) serves as a vehicle to integrate a basic science and clinical understanding of connective tissues in health and disease, with an emphasis on bone, cartilage, musculoskeletal tissue and skin. The objectives of this conference are to provide and share new knowledge to improve connective tissue health through research, facilitate interactions and collaborations among scientists across multiple fields, and to provide networking opportunities to junior scientists, post-doctoral fellows and graduate students. The 20th CCTC conference will take place at the Delta Armories in London, Ontario from June 9th-10th, 2014. For details, see <http://connective-tissue-canada.com/cctc-2014/>

Good News Story

New target identified for preventing bone destruction in diseases such as arthritis and cancer

The skeleton is constantly being remodelled by the breakdown of old bone by cells called osteoclasts and the formation of new bone by cells called osteoblasts. This coordinated activity is essential for maintaining healthy bone. However, excessive osteoclast activity leads to bone destruction in skeletal diseases such as osteoporosis, rheumatoid arthritis and cancer metastases in bone. A family of signaling enzymes known as phosphatidylinositol 3-kinases (PI3Ks) control diverse cell functions but, up until now, little was known about the function of specific PI3K isoforms in osteoclasts.

A paper published in the December 6 issue of *The Journal of Biological Chemistry* announces the characterization of a new potent and selective PI3K δ (delta) inhibitor, GS-9820. The discovery was made by members of Western University's Bone and Joint Initiative with collaborators from Nihon University, the University of Calgary and Gilead Sciences, Inc.

Graduate student Ryan Shugg, working under the supervision of Stephen Sims, PhD, and Jeff Dixon, PhD, of Western's Department of Physiology and Pharmacology, used a panel of isoform-selective inhibitors and found that one isoform in particular, PI3K δ , regulates osteoclast shape and resorptive activity.

Sims says, "These findings suggest that selective inhibition of PI3K isoforms offers a new approach for the treatment of inflammatory bone diseases and skeletal metastases."

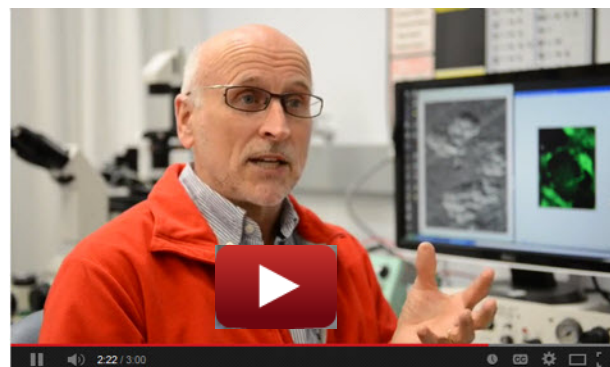
Video of Sims explaining the research can be found at <http://youtu.be/UuRu76kkJRQ>

The studies were carried out by an interdisciplinary team, which included undergraduate student Ashley Thomson, visiting professor Natsuko Tanabe, research scientist Alexey Pereverzev, investigator Frank Jirik at the McCaig Institute for Bone and Joint Health (University of Calgary), along with researchers Adam Kashishian, Bart Steiner, Kamal Puri, and Brian Lannutti from Gilead Sciences.

"Collaboration among researchers at Gilead Sciences, Western, Calgary and Nihon Universities was critical for accessing and testing this novel inhibitor" says Sims. "Such partnerships are essential for translating progress in fundamental cell biology into therapeutic advances."

These studies were funded in part by grants from the Canadian Institutes of Health Research (CIHR) and the Alberta Cancer Foundation. Shugg is the recipient of a Frederick Banting and Charles Best

Canada Graduate Scholarship from the CIHR. Link to the paper on PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/24133210>



Meetings of Interest

[Canadian Rheumatology Association Annual Scientific Meeting](#)

February 26-March 1, 2014
Whistler, BC

[American Association for Dental Research \(AADR\)/Canadian Association for Dental Research \(CADR\)](#)

March 19-22, 2014
Charlotte, North Carolina

[Biomarkers Summit 2014](#)

March 19-21, 2014
San Diego, CA

[Canadian Association of Occupational Therapists \(CAOT\)](#)

May 7-10, 2014
Fredericton, NB

[Outcome Measures in Rheumatology OMERACT](#)

May 7-11, 2014
Budapest, Hungary

[Global Summit on the Physical Activity of Children](#)

May 19-22, 2014
Toronto, ON

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Cochrane Corner

Cochrane Webinars

[An introduction to rapid reviews](#)

January 30, 2014, 12-1PM EST (Toronto); conducted in English

A rapid review (RR) is a type of literature review produced using accelerated and streamlined systematic review (SR) methods. Presented by Adrienne Stevens and David Moher of the OHRI.