

Canadian Institutes of Health Research

Institute of Musculoskeletal Health and Arthritis

SCIENCE IN MOTION: A SYMPOSIUM ON STRATEGIC PRIORITIES CONFERENCE REPORT

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Executive Summary

The CIHR Institute of Musculoskeletal Health and Arthritis organized its Science in Motion (SIM) symposium as a platform upon which to launch its Strategic Plan for 2014 – 2018, to get input from its community of stakeholders, and to introduce stakeholders to new directions at CIHR including a movement toward developing networks and partnerships as well as secure alternate funding from sources beyond government institutions.

Background

IMHA's strategic plan was finalized following a lengthy consultation and review process, and was developed to be aligned with CIHR's Strategic Plan 2014-15 – 2018-19, *Health Research Roadmap II: Capturing Innovation to Produce Better Health and Health Care for Canadians* (Roadmap II). Throughout, IMHA involved its stakeholder community, including representatives from all its areas of research focus related to bones, joints, muscles, connective tissue, skin and teeth. In the finalized plan, IMHA selected three overarching themes to guide and inform its selected strategic priority areas: Capacity Building, Innovation, and Translation. The strategic priority areas on which IMHA will focus over the next five years are: Chronic Pain and Fatigue, Inflammation and Tissue Repair and Disability, Mobility and Health. When the plan was officially launched on October 30, 2014 in Toronto, the Institute continued to involve its stakeholder community by inviting representatives from each area of research focus to discuss how they thought the plan could be implemented, and to learn about new developments happening at CIHR.

Methods

Symposium participants included representatives from all facets of IMHA's stakeholder community. After being first introduced to the three strategic priority areas through presentations delivered by expert researchers in those areas, participants addressed three questions in small groups divided according to area of research focus. Questions were regarding allocation of IMHA-specific strategic funding, identifying cross-cutting themes within the three new strategic priorities that would allow collaboration with other Institutes, and best ways to engage ongoing stakeholder input.

A presentation on networks and partnerships set the stage for the afternoon's discussion panel where panel members from backgrounds of research and partner organizations addressed specific questions involving: how to identify and engage new partners, recognize the strengths and risks of working within a funded research network; and how to best engage in these network and partnership opportunities.

Discussion Summaries

Main points arising from small group discussions included the following:

- Priorities for allocating funds should include: support for new investigator training programs, smaller funding opportunities to develop research ideas, and support for network development to stimulate collaboration; identifying gaps and duplication in research; supporting translational research to bridge gaps “from bench to bedside.”
- Cross-cutting themes to further inter-Institute collaboration include: new treatments, better management, inflammation, oral health in vulnerable communities, specific or genetic-based muscular and neuromuscular conditions and diseases; health promotion and disease prevention, rehabilitation, improvement of regenerative medicine technologies and techniques; knowledge translation, research for conditions of unknown cause; mental health and personalized medicine, especially in chronic (such as inflammatory) conditions;
- Recommendations for engaging ongoing stakeholder input included: conferences and workshops; in-person meetings, which were deemed the best investment, being relatively inexpensive and most helpful in strategic planning; surveys; and development of appropriate knowledge translation methods.

Key points identified during the networks and partnerships discussion included the following:

- IMHA should take the lead in bringing stakeholders together and develop partnerships to move toward increased capacity and sustainability;
- Successful partnerships consist of partners with complementary backgrounds and experience, common agendas and shared values, goals, and objectives;
- A common language should be used when communicating with partners hailing from different sectors, and communication should be open throughout the process;
- In the current CIHR funding environment, proposals submitted by multidisciplinary teams as opposed to sole investigators, tend to have improved opportunities for approval;
- Patient voices are important in helping to determine what research questions get asked, which would lead to further engagement with interested partners;

Conclusion

IMHA Scientific Director Dr. Hani El-Gabalawy concluded the discussion by emphasizing the importance of the three strategic priorities, and advising of IMHA’s existing and upcoming developmental activity including: providing support for relevant networks, hosting collaborative workshops and developing appropriate signature initiatives.

Introduction

The CIHR Institute of Musculoskeletal Health and Arthritis (IMHA) developed its 2014-2018 strategic plan through a lengthy consultation and review process, and with intent to align it with CIHR's Strategic Plan 2014-15 – 2018-19, *Health Research Roadmap II: Capturing Innovation to Produce Better Health and Health Care for Canadians* (Roadmap II). The strategic plan encompasses IMHA's three strategic priorities, Chronic Pain and Fatigue, Inflammation and Tissue Repair and Disability, Mobility and Health.

IMHA organized the Science in Motion (SIM) symposium to present its Strategic Plan to stakeholders and give them an understanding of the benefits of working in networks and engaging partners, both in terms of broadening the scope of research and its outcomes, and as a way to secure funding at a time when it is becoming more difficult to do so.

This report includes the symposium objectives and format, the key matters (specifically, IMHA's strategic priorities), and finally a summary of recommendations made by participants.

OBJECTIVES

SIM was held on Thursday, October 30, 2014, in Toronto, Ontario. This event was an opportunity for IMHA to seek input regarding the implementation of its strategic plan, to encourage multidisciplinary networking, and set the stage for ongoing stakeholder engagement. It also provided IMHA with a backdrop for discussing changes within the Canadian Institutes for Health Research (CIHR), including restructuring the framework for funding research.

Stakeholders provided meaningful input from their individual backgrounds and perspectives, identifying new opportunities for partnerships for IMHA, and CIHR as a whole, as well as ways in which researchers can collaborate to address IMHA's strategic priorities going forward.

PARTICIPANTS

Participants invited to the conference represented IMHA's three priorities and six focus areas, and were chosen based on their work, previous involvement with IMHA, and recommendations from IMHA's Scientific Director, Institute Advisory Board (IAB) members, partners, and other researchers.

The 110 Conference attendees included:

- researchers in arthritis, bone, muscle, musculoskeletal rehabilitation, oral health, and skin, including young investigators in these areas;
- allied health professionals, such as dentists, physiotherapists, specialists, and clinicians;
- citizen representatives/patients who have first-hand experience living with MSK or skin and oral health-related conditions, or caring for someone with these conditions;
- representatives from charities, non-governmental organizations, and other partner organizations;
- IMHA’s IAB members and staff.

A profile of participants is found in Table 1, and a final list of participants is included as Appendix A.

Table 1: Profile of Science in Motion participants		
	Science in Motion participants (N=102)*	
	N	%
Type of participant		
Researchers	76	75%
Institute Advisory Board member	12	12%
Patients/partners	14	14%
Area of focus		
Arthritis	27	26%
Bone	21	21%
Pain/mobility/skin/muscle	20	20%
Musculoskeletal rehabilitation	15	15%
Oral	13	13%
Other	6	6%
Note: Totals may not sum to 100% due to rounding. * This number excludes IMHA staff.		

AGENDA AND SYMPOSIUM FORMAT

The format for the day consisted of two main components, the first addressing strategic priorities, and the second addressing networks and partnerships. The full agenda is found in Appendix B. Participants were provided with a copy of IMHA’s new [Strategic Plan](#)¹ at the beginning of the day, which was the foundation document for the day’s discussion.

Session 1 – Strategic Priorities

The first session focused on IMHA's strategic priorities, each introduced with a presentation given by nationally and internationally recognized researchers specializing in each area: Chronic Pain and Fatigue, Inflammation and Tissue Repair and Disability, Mobility and Health. Small group discussions on each strategic priority area followed, allowing participants one hour to address three questions (Appendix C).

Participants had an opportunity to provide input into the implementation of IMHA's strategic plan, with one group discussing Chronic Pain and Fatigue, three groups discussing Inflammation and Tissue Repair, and two groups discussing Disability, Mobility and Health. The six groups consisted of 18 to 20 participants in each, who spent 15 minutes per question on the first two questions and 10 minutes on the third. Two co-chairs assigned to each group gave introductions, background information, and discussion objectives, with one co-chair writing main points arising from the discussion on a flip chart and the other facilitating. Members of IMHA's Institute Advisory Board were assigned to each group as rapporteurs to record the discussion's key points on a presentation slide which they used to report back to the plenary.

Participants were specifically assigned to groups to ensure a cross-section of the sectors attending the symposium were represented including someone from each of IMHA's six areas of research focus, as well as:

- Patient, citizen and partner groups,
- experienced researchers,
- young investigators, and
- representatives of different regions and genders.

Group co-chairs and participants were not necessarily content experts in the particular strategic priority area of the group they chaired, so as not to influence the discussion or the outcomes.

Session 2 – Networks and Partnerships

The second session focused on the use of networks and partnerships including a presentation on opportunities and challenges, and a panel discussion regarding these areas. The panel, which lasted the afternoon, consisted of a moderator and five panelists, where the moderator posed three questions (Appendix C) for the panelists to discuss in turn and then field questions from the plenary.

IMHA'S STRATEGIC PRIORITIES

IMHA's strategic priorities were specifically developed to align with CIHR's Roadmap II, outlined by guest speaker Dr. Jane E. Aubin, CIHR's Chief Scientific Officer and Vice President Research and Knowledge Translation.² She advised of the need to be cognizant of societal changes and trends, and the evolving health needs of Canadians, while addressing IMHA's strategic priorities. Changes and trends as noted by Dr. Aubin included:

- the importance of collaboration in carrying out research,
- the increasing use of technology and subsequent growth of information available,
- rising expectations of Canadians who have a substantial amount of information and are aware of options available to manage their health requirements, and
- making decisions and balancing potentially competing interests to take full advantage of possible opportunities.

Dr. Aubin noted that the strengths of Signature Initiatives are that they are designed to have a transformative impact, address complex problems, and deliver on the CIHR Roadmap strategic priorities. Further, they are co-designed by CIHR institutes, and are typically large initiatives with long-term vision and investments. Weaknesses noted are that Signature Initiatives are not yet being measured in the same way, they depend on partner engagement, and CIHR does not have a process for sun-setting or transitioning them. Dr. Aubin spoke at length about the CIHR's Strategy for Patient-Oriented Research (SPOR), and the development of the Canadian Clinical Trials Coordinating Centre (CCTCC).

Chronic Pain and Fatigue

Because pain, disability and chronic disease have been priorities of IMHA since its inception, supporting research in this area is of great interest to the Institute going forward. Being prominent features of multiple inflammatory and non-inflammatory MSK disorders, chronic pain and fatigue are major drivers of health care costs. Supporting research in this area will develop a better understanding of the complex causes, clinical manifestations, impact and consequences of chronic pain and fatigue, and will define optimal strategies for improving models of care.

Guest speaker Dr. Gary J. Macfarlane³ provided an overview of current research needs in this strategic priority area in his presentation, "*Chronic Pain and Fatigue: What research is needed in order to really make a difference.*" He advised that using both evidence-informed research and priorities determined by clinicians, patients, and researchers, as is done in the example of James Lind Alliance priority-setting partnership exercises might yield accurate and relevant evidence to help make informed decisions. He also identified some challenges in pain and fatigue research as being the complexity and management of the research, determination of outcomes and the ability to identify patient subgroups.

Inflammation and Tissue Repair

IMHA is committed to supporting research that seeks to define the mechanisms of tissue damage, develop effective strategies to prevent this damage and promote tissue repair in muscles, bones, joints, skin, and the oral cavity. Part of this strategic priority includes supporting the development of personalized medicine strategies that achieve the best outcomes for chronic inflammatory and non-inflammatory disorders.

Dr. Katherine Siminovitch⁴ discussed inflammation, tissue repair, and personalized medicine in her presentation, *“What will genetics tell you about autoimmune diseases.”* Understanding genetics could provide insight into disease pathogenesis, and help determine more effective treatments. Ultimately, genetics must be viewed as part of the overall process of personalizing healthcare rather than a stand-alone solution. Combining genetics and informatics can help identify cell-types that are most critical to disease onset and progression. Further research into this area can assist patients with inflammatory conditions, and provide a framework for personalizing the management of autoimmune diseases.

Disability, Mobility and Health

IMHA plans to identify scientific opportunities and knowledge translation gaps to explore issues related to gender differences, geographic, socio-economic and racial disparities as factors in this strategic priority area. The Institute understands that identifying and managing common risk factors can assist in preventing chronic musculoskeletal, skin, and oral health disorders. Improving the health of vulnerable populations including reducing musculoskeletal, skin, and oral/dental health disparities is of major importance. Reducing injury and managing disability in the workplace are also key aspects of this strategic priority.

In her presentation, *“Disability, Mobility and Health: A road forward”*, Dr. Joy MacDermid defined disability as an umbrella term for impairments, activity, limitations, and participation restrictions.⁵ She indicated that mobility is the movement of structures, joints, joint complexes, limbs, and persons. Addressing mobility issues both helps the individuals experiencing these chronic conditions, and speaks to disability management in the workplace. Dr. MacDermid explained IMHA’s current work in developing a new Signature Initiative in the area of work and health and advised that many opportunities exist in this area for collaborative research, technology innovation, and patient engagement.

NETWORKS AND PARTNERSHIP OPPORTUNITIES

Keynote Speaker

Dr. Pierre Boyle, in his presentation “*Health Research Networks and Partnerships*,” emphasized that partners and stakeholders are an integral part of networks, and that national research networks are necessary given the changing context of health research and the funding preference shift from single investigator to multi-investigator models.⁶ Bringing health researchers together in national research networks, will help to identify research and knowledge gaps, deal with complex problems, and respond with appropriate solutions, much faster and with greater impact. Also, national research networks will have capacity to engage major national and international stakeholders and partnerships. This would also mean more opportunities for trainees and investigators at the beginning of their careers.

Speaking from experience, Dr. Boyle advised seeking partners with common goals early in research development, ensuring there is an understanding of the partner’s priorities, sharing in the decision-making process, and recognizing each partner’s contributions. Nurturing each relationship and maintaining clear communication with partners is also essential. He stressed the need to move away from the old model of engaging partners at the end of research and take the risk of getting them involved at the conceptual stage of research instead. Dr. Boyle cautioned about a limited number of national health research partners available, the large number of initiatives seeking partners, difficult financial times and constant changing leadership in some partner organizations.

Panel Discussion

Five panelists spoke to network and partnership opportunities, and focused on the questions listed below.⁷ Conference participants were invited to ask questions and provide input.

Question 1. How can IMHA identify and engage new partners, and enhance interactions among its partners, researchers, trainees and consumers?

Question 2. From the perspective of researchers, trainees, consumers, and partners, what are the strengths and risks of working within a funded research network? In fostering future networks, how can IMHA help to build the strengths and mitigate the risks?

Question 3. How can IMHA’s stakeholder communities best engage in these network and partnership opportunities?

Key Networking and Partnership Discussion Points Raised

Building on Dr. Boyle's presentation, panelists agreed that to create successful partnerships, it is important to choose partners with complimentary backgrounds and experience, common agendas and shared values, goals, and objectives. Panelists observed that given its role and mandate, IMHA has the opportunity to take the lead in bringing stakeholders together in open dialogue and to be a catalyst behind the development of partnerships that could move forward toward increased capacity and sustainability. At the same time, panelists noted that because partnerships are general and dynamic in nature, partners need to be adaptable and flexible to be able to continue to work together in constantly changing environments. It was recommended that a full complement of partners should include policy makers, patients and individuals who work in health care delivery. Partners should maintain a focus on collaboration and partnership as opposed to ownership throughout the process. A common language should be used when communicating with partners hailing from different sectors, and communication should be open, commencing at the outset of the process and continuing throughout.

Panelists observed that in the current CIHR funding environment, proposals submitted by multidisciplinary teams as opposed to sole investigators, tend to have improved opportunities for approval, demonstrating that networks help to bring researchers together to share ideas and form potential teams.

They advised that the networking process requires creating a culture that acknowledges and accepts the importance and benefits of research networks, and the need for team building. The discussion included a focus on academia, where the necessity of collaborating with colleagues is in contrast with the competitive nature of the tenure process. At the same time, patient voices were acknowledged as important in helping to determine what research questions get asked, which would lead to further engagement with interested partners. Use of plain language to engage patients and partners is another important consideration.

Dr. Hani El-Gabalawy concluded the discussion by anchoring the areas of the three strategic priorities, and advising of IMHA's existing and upcoming developmental activity including: providing support for a Chronic Pain and Fatigue network; hosting a collaborative workshop for nine research teams supported by the Health Challenges in Chronic Inflammation Initiative Team Grants; developing a Signature Initiative in the area of work and health with networks being one goal for this part of the Disability, Mobility and Health strategic priority.

Summary of Recommendations

Small group participants were asked the following three questions:

1. *What are your suggestions for how the IMHA-specific strategic funding should be allocated within your assigned strategic priority area of _____ (i.e., Chronic Pain and Fatigue, Inflammation and Tissue Repair, or Disability, Mobility and Health)? Which program/tools should be used?*
2. *What are the cross-cutting themes within IMHA’s strategic priority area of _____ (i.e., Chronic Pain and Fatigue, Inflammation and Tissue Repair, or Disability, Mobility and Health) that would allow IMHA to align itself with other multi-Institute initiatives?*
3. *What would be the best way(s) for IMHA’s stakeholder communities to have on-going input into shaping both the IMHA-specific and the CIHR multi-Institute strategic initiatives?*

The feedback from each of the six groups is presented as synthesized under each question. As is to be expected, not all groups were uniform in their discussion, therefore the following summaries strive to capture the most key points raised.

Allocation of Institute Strategic Funding

Several themes were apparent across the three strategic priorities for how IMHA-specific strategic funding should be allocated within the priority areas. Some were common across all three priorities while others were specific to a particular priority. Table 1 presents a summary of the key themes by strategic priority.

Table 1: Themes by strategic priority	
Strategic Priority	Theme
Chronic pain and fatigue Inflammation and tissue repair Disability, mobility and health	Capacity building
	Specific funding opportunities
	Identification of gaps and duplications
	Knowledge translation activities
	Technology, platforms, and innovation
	Specific research topics
Inflammation and tissue repair	Translational research

Disability, mobility and health	Use of multi-disciplinary teams and networks
Chronic pain and fatigue Inflammation and tissue repair	Longitudinal studies/life span approaches
Chronic pain and fatigue	Development of models of care

Multiple stakeholders mentioned Capacity Building as an important focus for IMHA across the three strategic priorities. Stakeholders strongly emphasized the need for more support of new investigators, suggesting the development or funding of training programs and fellowships. There was some consensus among the groups that areas such as rheumatology, pain biology and research of other less understood chronic diseases need to be targeted to assist with increasing clinical and research capacity. There was also concern among stakeholders that the mid-career researchers need more opportunities to help advance their careers as they are often overlooked.

All groups, regardless of the strategic priority, also recommended the need for more specific funding opportunities for research and innovation. Although there was not one overarching theme in terms of the types of funding opportunities, several stakeholders mentioned that IMHA needs to offer small catalyst grants ranging from \$30,000 to \$100,000. These grants could be used for pilot studies and other high risk research projects; they could have few restrictions to make it easier for researchers to explore ideas.

In addition to the small catalyst grants, groups also discussed the need for network catalyst grants which would encourage the development of networks by collaboration, resource sharing, capacity building, and dissemination. Others recommended the need for more team grant opportunities to support interdisciplinary and intersectoral teams of researchers and knowledge users who are committed to the pursuit of a focused collaborative approach to research. Finally, stakeholders indicated that having bridge grants available to assist with research continuity was vital.

Another common theme across the priorities was the idea of identifying gaps and duplication, including looking beyond the borders of Canada. Stakeholders indicated that this is important to ensure that strategic funding is spent wisely and that it may open collaboration opportunities with other initiatives or partners that have similar interests and research priorities. Stakeholders agreed that doing this would ensure that IMHA continues to support its strategic priorities without spending money on initiatives and funding opportunities that are already being explored elsewhere. One of the groups discussed the use of the James Lind Alliance Priority Setting Partnerships to assist in this process.

There was some discussion among stakeholders in the groups that discussed Chronic Pain and Fatigue (CPF) and Inflammation and Tissue Repair (ITR) around technology, platforms, and innovation development. Stakeholders agreed that IMHA should support the development and sharing of existing tools such as patient registries, bio-banks and databases, and electronic medical records. The common belief is that supporting these types of tools will allow for more collaboration and networking among researchers as well as help bridge the gap between scientists and clinicians.

Two of the strategic priorities groups (ITR and Disability, Mobility and Health (DMH)) spoke about the need for more translational research; focusing on the concept of “from bench-to-bedside” concluding that IMHA needs to ensure that advancements in basic sciences are integrated into clinical settings. Additionally, they strongly supported the use of multidisciplinary teams and networks in research to assist with translational research and collaboration.

Not surprisingly, all groups agreed that each of the priorities should have specific topics of research that stakeholders mentioned. This reiterates the need for IMHA to continue providing targeted funding in each of the strategic priority areas.

Cross-Cutting Themes

Many cross-cutting themes within IMHA’s strategic priorities were discussed during the breakout group sessions. Groups identified some links in these themes to other CIHR Institutes that share similar interests in these areas and suggested opportunities for IMHA to consider for multi-Institute initiatives. Although the groups were each focused on a particular strategic priority area, the themes they raised have potential to span across all three priorities. Table X provides a summary of the discussed cross-cutting themes.

Table 2: Cross-cutting themes
Priority 1: Chronic pain and fatigue
New treatments
Better management
Priority 2: Inflammation and tissue repair
Community based primary health care
Genetic-based diseases
Inflammation
Mental health
Muscle atrophy
Neuromuscular diseases
Oral health
Personalized medicine

Regenerative medicine
Priority 3: Disability, mobility, and health
Connective tissue disorders
Mental health
Mobility
Personalized medicine
Prevention of disability

Chronic Pain and Fatigue

According to stakeholders, over the past several years, a greater understanding has emerged in the area of chronic pain and fatigue. The group discussing this priority concentrated on two main cross-cutting themes: new treatments and better management. Participants recognized the importance of these advancements to motivate researchers to continue to investigate new treatments and technology that will improve patients' quality of life. A multi-institute initiative around this theme could involve the Institute of Neuroscience, Mental Health, and Addiction (INMHA), the Institute of Infection and Immunity (III), Institute of Gender and Health (IGH), Human Development, Child and Youth Health (IHDCYH) and Institute of Genetics (IG).

The second theme raised was better management of chronic pain and fatigue. As many of these conditions are complex, they require a team of health professionals working in collaboration to assist disease management. Stakeholders indicated that an initiative that focuses on building a network of health professionals who care for patients affected by chronic pain or fatigue may ultimately assist with improved management of their care. The Institute of Population and Public Health (IPPH), INMHA, and III were proposed as potential partners in a multi-institute initiative.

Inflammation and Tissue Repair

Two of the cross-cutting themes suggested by the groups discussing Inflammation and Tissue Repair included inflammation and oral health in the Aboriginal and aging population, which IMHA currently supports under the Signature Initiatives, Pathways to Health Equity in Aboriginal Peoples (Pathways) and Inflammation in Chronic Diseases. The discussion around these two themes demonstrated that stakeholders agree with IMHA's already ongoing investment in these areas. That said, Pathways specifically supports research in the area of Aboriginal oral health, not taking into account the aging population of the general Canadian public.

Participants discussed themes around specific conditions such as muscle atrophy, genetic-based diseases, and neuromuscular diseases, suggesting that multi-institute initiatives in these areas could be beneficial for further exploring disease pathology and the advancement of treatments. Institutes suggested as potential partners included IG, INMHA, and the Institutes of Cancer Research (ICR).

Two of the inflammation and tissue repair groups also discussed the need for IMHA to participate in an initiative that focuses on community based primary health care. Such an

initiative could target health promotion and disease prevention, as well as chronic disease diagnosis and treatment, and the management of rehabilitation support. In addition, there was some dialogue around improving the link between primary care providers and specialists. Stakeholders indicated that the Institute of Health Services and Policy Research (IHSPR) as well as the IPPH would be natural fits for an initiative in this area.

Discussion around the theme of regenerative medicine focused on the importance of exploring the science behind the process of replacing, engineering or regenerating human cells and tissues. This type of initiative could target the development of new technologies and imaging techniques. Collaboration with other institutes such as the Institute of Cardiovascular and Respiratory Health (ICRH), Institute of Nutrition, Metabolism, and Diabetes (INMD), IG, and ICR could be beneficial to this area.

Disability, Mobility and Health

Mobility was a central theme discussed by the two groups that focused on IMHA's third priority of Disability, Mobility and Health. Many stakeholders agreed that an initiative in this area that looks at mobility across the lifespan is important, and that health promotion and disease prevention could be key elements of such an initiative. Continued support of research into conditions that affect mobility such as strokes, spinal cord injury, and neuromuscular disorders is crucial to assist with furthering treatment to enhance mobility.

Stakeholders also identified a theme around the prevention of disability. They suggested a multi-institute initiative in this area could be developed with institutes such as the Institute of Human Development, Child and Youth Health (IHDCYH) and Institute of Aboriginal Peoples' Health (IAPH) and should emphasize the importance of educating the population. It could also tie in research on ways to improve outcomes of those living with a disability.

One group mentioned the area of connective tissue disorders and diseases. Although researchers know that in some cases genetics, environmental factors, and injuries are common causes of these types of conditions, in other cases the causes are still unknown. As a result, stakeholders agreed that continuing to support research in this area is imperative. They also conveyed the importance of supporting the development of new treatments for connective tissue disorders for advancements in the areas of musculoskeletal, cardiovascular health and cancer research. A multi-institute initiative could be supported by IMHA, ICR, and ICRH.

Multi-priority themes

Two cross-cutting themes, mental health and personalized medicine, were discussed by groups focusing on both the priorities of Inflammation and Tissue Repair and Disability, Mobility and Health. Stakeholders spoke about the link between chronic conditions and mental health. They believed that a multi-institute initiative in this area would assist with further exploration of this link. Another key area to explore would be the psychosocial impacts of chronic conditions on patients as a result of pain and mobility issues. Although stakeholders did not suggest potential institutes to partner with, INMHA would be a natural fit for this type of initiative.

Stakeholders recommended that a multi-institute initiative in personalized medicine would be very beneficial to IMHA. There was some suggestion that being able to immediately find the right treatment for individuals based on their genomic information has both patient care benefits and economic value. Inflammatory diseases such as rheumatoid arthritis, diabetes, and multiple sclerosis could benefit from an initiative in this area, with IG being a key partner in such an initiative.

Stakeholder Consultation

Participants started the discussion of the third question by identifying the types of stakeholders that IMHA and CIHR should consult to solicit ongoing input into shaping strategic initiatives both for IMHA-specific and multi-institute initiatives. They spoke to the importance of consulting with a diverse group of people to ensure all stakeholders are represented. Most mentioned that engaging with patients and industry representatives besides researchers and clinicians was vital. Participants agreed that involving patients is key to ensuring their concerns are taken into account. Table 3 provides a summary of suggested stakeholders that arose from this discussion.

Table 3: Suggested types of stakeholders to consult
Government
Other CIHR Institutes
Other federal government departments and agencies
Provincial government
Other
Industry representatives
International agencies
Non-profit organizations
Patients
Primary care professionals

Participants identified a variety of methods by which IMHA and CIHR can allow stakeholder communities to have on-going input into initiatives. Table 4 provides a summary of the suggestions.

Table 4: Suggested methods to consult with stakeholders
Annual stakeholder meetings
Consensus conferences
James Lind Alliance Priority Setting Partnerships
National database of researchers

Partnerships
Review panels
Social media
Steering committees
Surveys
Workshops

Various types of conferences and workshops were mentioned as ways for IMHA’s stakeholders to provide on-going input into shaping strategic initiatives. Participants felt that these types of in-person meetings are relatively inexpensive and very helpful in strategic planning. More informal workshops could be used to help with knowledge translation and discuss more challenging issues.

Several participants reported that the use of surveys is also a good way to get stakeholders’ input. In particular, this method could be used to help prioritize topics that can then later be discussed at a workshop or meeting. Several participants pointed out the importance of sending survey results back to respondents as they appreciate knowing the survey outcomes, and are often neglected in results distribution.

Other suggestions included the use of priority setting partnerships such as the James Lind Alliance, a national database of researchers, partnerships in general, review panels, social media, and steering committees. Regardless of stakeholder identity or type of consultation, participants agreed that stakeholders need to be involved in the process from the beginning of the initiatives. All groups raised the need to engage in knowledge translation, and the importance of communicating with stakeholders using appropriate language (i.e., lay language for non-scientist stakeholders such as patients or policy-makers).

Summary of Small Group Discussions

In discussing where to allocate funds for IMHA-specific initiatives, stakeholders made it clear that priorities should include support for new investigator training programs and fellowships, smaller, more specific funding opportunities to develop research ideas, and to develop the networks necessary to stimulate collaboration and idea exploration. Targeted funding of each of IMHA’s strategic priority areas was raised as an ongoing need. To ensure research dollars are spent wisely, stakeholders recommended identifying gaps and duplication in research including looking internationally, consulting with all stakeholders to determine areas of research priority, and supporting development and sharing of research tools like patient registries, bio-banks and databases. Finally, stakeholders emphasized the need for translational research to bridge gaps “from bench to bedside”: from researchers to clinicians to patients.

Cross-cutting themes yielding potential to collaborate with other institutes arising out of IMHA's three strategic priorities, include new treatments, better management, inflammation, oral health in vulnerable communities, specific or genetic-based muscular and neuromuscular conditions and diseases. Health promotion and disease prevention, treatment and rehabilitation, and regenerative medicine including development of new technologies and techniques were deemed important in yielding potential to collaborate with other Institutes. Health promotion and prevention, educating the public, and supporting research for conditions of unknown cause were also deemed important and possible to support with other institutes. Mental health and personalized medicine arose as themes for collaboration, especially that of chronic conditions and their impact on mental health. Partnering with multiple institutes on personalized medicine initiatives was recommended to benefit patients living with inflammatory diseases such as rheumatoid arthritis, diabetes and multiple sclerosis.

Engaging with stakeholders including patients, industry, government bodies, and other non-governmental organizations from the beginning of initiatives was deemed to be essential. Recommended methods of engagement included conferences and workshops but in-person meetings were considered to be the best investment, being relatively inexpensive and most helpful in strategic planning. Surveys were suggested as another means of gathering stakeholder input. Finally, engaging all stakeholders by way of appropriate knowledge translation methods was agreed upon by all groups.

REFERENCES

1. Institute of Musculoskeletal Health and Arthritis Strategic Plan 2014-2018: Enhancing Musculoskeletal Skin and Oral Health (CIHR, 2014) <http://www.cihr-irsc.gc.ca/e/48830.html>
2. Aubin JE. CIHR Today: a status update. Presented at Science in Motion. Toronto, 2014.
3. Macfarlane GJ. Chronic Pain and Fatigue: what research is needed in order to really make a difference. Presented at Science in Motion. Toronto, 2014.
4. Siminovitch K. New Understanding and Management of Autoimmune Disease. Presented at Science in Motion. Toronto, 2014.
5. MacDermid J. Disability, Mobility and Health: a road forward. Presented at Science in Motion. Toronto, 2014.
6. Boyle P. Health Research Networks and Partnerships. Presented at Science in Motion. Toronto, 2014.
7. Boyle P, Cruz T, Dixon J, Janus C, Lyall D, Yale J, Network and Partnership Opportunities. Panel Discussion at Science in Motion. Toronto, 2014.

APPENDIX A – SCIENCE IN MOTION PARTICIPANT LIST

Science
in Motion

Science en
mouvement



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APPENDIX A – Cont'd

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APPENDIX A – Cont'd

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APPENDIX B – SCIENCE IN MOTION AGENDA

Science in Motion



Program

Monique Gignac, Program Chair
Associate Scientific Director & Senior Scientist, Institute for Work and Health

7:15 a.m. Continental Breakfast
Trinity Ballroom Foyer

8:00 a.m. Welcome Address
Trinity Ballroom
Presenter: Hani El-Gabalawy, Scientific Director,, IMHA

Welcome to Participants
Presenter: Allan Stordy, President & CEO, Arete Human Resources Inc.

Session 1: IMHA Strategic Priorities

8:30 a.m. Strategic Priority: Chronic Pain and Fatigue
“Chronic pain and fatigue: What research is needed in order to really make a difference”
Presenter: Gary J. Macfarlane, Professor of Epidemiology
Aberdeen University, UK

9:00 a.m. Strategic Priority: inflammation and tissue repair “New understanding and management of autoimmune disease”
Presenter: Katherine Siminovitch, Director, MSH/uhn Clinical
Genomics Centre and Centre for Genetic Medicine, Toronto, ON

9:30 a.m. Strategic Priority: Disability, Mobility and Health “Disability, Mobility and Health: A road forward”
Presenter: Joy MacDermid, Professor, School of Rehabilitation Science
McMaster University, Hamilton, ON

10:00 a.m. Health Break
Trinity Ballroom Foyer

APPENDIX B – Cont’d

10:15 a.m.	Introduction and Objectives of Facilitated Small Groups Presenter: Monique Gignac
10:30 a.m.	Small Groups: Implementation of the Strategic Plan Rooms are indicated on participant name badges. A. CO-CHAIRS: Michael Doschak, Paul Fortin IAB RAPPOORTEUR: Deb Matthews B. CO-CHAIRS: Alice Aiken, Mike Buschmann IAB RAPPOORTEUR: Marc Pouliot C. CO-CHAIRS: Frank Beier, Mike Salter IAB RAPPOORTEUR: Alain Moreau D. CO-CHAIRS: Simon French, Michael Underhill IAB RAPPOORTEUR: Marc Grynepas E. CO-CHAIRS: Dorcas Beaton, Aileen Davis IAB RAPPOORTEUR: Steve Rabinovitch F. CO-CHAIRS: Paul Allison, Diane Lacaille IAB RAPPOORTEUR: Debbie Feldman
11:30 a.m.	Report Outs Trinity Ballroom
11:55 a.m.	Morning Wrap Up Presenter: Monique Gignac
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Session 2: Networks and Partnerships	
1:15 p.m.	Keynote Speaker Trinity Ballroom “Networking and Partnering: Lessons learned, opportunities and challenges” Pierre Boyle, Assistant Director CIHR Institute of Circulatory and Respiratory Health
1:40 p.m.	Panel: Network and Partnership Opportunities Moderator: Jeff Dixon, Professor Schulich School of Medicine and Dentistry Western University, London, ON Panelists: Pierre Boyle, Tony Cruz, Christine Janus, Drew Lyall, Janet Yale
2:50 p.m.	Wrap Up and Concluding Remarks Hani El-Gabalawy
3:00 p.m.	End

APPENDIX C – Small Group Breakout Questions



CIHR IRSC

IMHA: Science in Motion

October 30, 2014

10:30 – 11:30 am ET

Small Groups: Implementation of the Strategic Plan

10:30-10:40 am (IAB Rapporteur) Introductions, Background, Objective, hand over session to Co- Chairs.

As recently recommended by CIHR's Governing Council, IMHA's strategic funding (as with all 13 CIHR Institutes) will be allocated equally between large multi-Institute initiatives, such as the existing Signature Initiatives, and IMHA-specific strategic initiatives.

10:40 am Co-Chairs facilitate remainder of the session.

10:40-10:55 am Question 1:

What are your suggestions for how the IMHA-specific strategic funding should be allocated within your assigned strategic priority area of **Chronic Pain and Fatigue**? Which programs/tools should be used?

10:55-11:10 am Question 2:

What are the cross-cutting themes within IMHA's strategic priority area of **Chronic Pain and Fatigue** that would allow IMHA to align itself with other multi-Institute initiatives?

11:10-11:20 am Question 3:

What would be the best way(s) for IMHA's stakeholder communities to have on-going input into shaping both the IMHA-specific and the CIHR multi-Institute strategic initiatives?

11:20-11:25 am

Agree on report content & wrap up

11:25-11:30 am

Return to plenary for report outs

APPENDIX C – Cont'd



IMHA: Science in Motion

October 30, 2014

10:30 – 11:30 am ET

Small Groups: Implementation of the Strategic Plan

10:30-10:40 am (IAB Rapporteur) Introductions, Background, Objective, hand over session to Co- Chairs.

As recently recommended by CIHR's Governing Council, IMHA's strategic funding (as with all 13 CIHR Institutes) will be allocated equally between large multi-Institute initiatives, such as the existing Signature Initiatives, and IMHA-specific strategic initiatives.

10:40 am Co-Chairs facilitate remainder of the session.

10:40-10:55 am **Question 1:**

What are your suggestions for how the IMHA-specific strategic funding should be allocated within your assigned strategic priority area of **Disability, Mobility, and Health**? Which programs/tools should be used?

10:55-11:10 am **Question 2:**

What are the cross-cutting themes within IMHA's strategic priority area of **Disability, Mobility, and Health** that would allow IMHA to align itself with other multi-Institute initiatives?

11:10-11:20 am **Question 3:**

What would be the best way(s) for IMHA's stakeholder communities to have on-going input into shaping both the IMHA-specific and the CIHR multi-Institute strategic initiatives?

11:20-11:25 am

Agree on report content & wrap up

11:25-11:30 am

Return to plenary for report outs

APPENDIX C – Cont'd



CIHR IRSC

IMHA: Science in Motion

October 30, 2014

10:30 – 11:30 am ET

Small Groups: Implementation of the Strategic Plan

10:30-10:40 am (IAB Rapporteur) Introductions, Background, Objective, hand over session to Co- Chairs.

As recently recommended by CIHR's Governing Council, IMHA's strategic funding (as with all 13 CIHR Institutes) will be allocated equally between large multi-Institute initiatives, such as the existing Signature Initiatives, and IMHA-specific strategic initiatives.

10:40 am Co-Chairs facilitate remainder of the session.

10:40-10:55 am **Question 1:**

What are your suggestions for how the IMHA-specific strategic funding should be allocated within your assigned strategic priority area of **Inflammation and Tissue Repair**? Which programs/tools should be used?

10:55-11:10 am **Question 2:**

What are the cross-cutting themes within IMHA's strategic priority area of **Inflammation and Tissue Repair** that would allow IMHA to align itself with other multi-Institute initiatives?

11:10-11:20 am **Question 3:**

What would be the best way(s) for IMHA's stakeholder communities to have on-going input into shaping both the IMHA-specific and the CIHR multi-Institute strategic initiatives?

11:20-11:25 am

Agree on report content & wrap up

11:25-11:30 am

Return to plenary for report outs

APPENDIX D – Panel Discussion: Network and Partnership Opportunities



IMHA: Science in Motion Conference

October 30, 2014

1:40 – 2:50 pm ET

Panel Discussion: Network and Partnership Opportunities

1:45-1:55 pm

Question 1

How can IMHA identify and engage new partners, and enhance interactions among its partners, researchers, trainees and consumers?

1:55-2:05 pm

Question 2

From the perspective of researchers, trainees, consumers, and partners, what are the strengths and risks of working within a funded research network? In fostering future networks, how can IMHA help to build the strengths and mitigate the risks?

2:05-2:10 pm

Dr. El-Gabalawy (Single slide)

IMHA Networks in Development

1. Chronic Pain and Fatigue

- network funding approved for 2015-2016
- partnership with TAS, others
- between \$3.5-5M over five years

2. Inflammation and Tissue Repair

- networking of the 9 Inflammation in CD teams

- SPOR network in Chronic disease; AAC spearheading
- personalized medicine in inflammatory disease; international collaboration with the Netherlands

3. Disability, Mobility, and Health

- emerging Work and Health Signature Initiative

2:10-2:50 pm

Question 3

How can IMHA's stakeholder communities best engage in these network and partnership opportunities?