

2023 Major Science Initiatives Fund workshop: Key messages and outcomes

The 2023 Major Science Initiatives Fund (MSIF) workshop, held on November 2 to 3, 2023 in Saskatoon, was the first in-person meeting of the 19 research facilities of national importance funded through the 2023 MSIF. The workshop provided a forum in which to discuss challenges and opportunities these facilities are facing in governing, managing and operating these national assets.

The workshop was held over one and a half days and consisted of five panels presented by members of the MSIF community, a plenary session presenting reflections from the chairs of the facilities' Boards of Directors, and two technical sessions led by CFI staff (on finance and performance measurement). Nigel Smith, Executive Director and CEO of TRIUMF, gave the keynote address.

The key themes discussed during the five panel sessions, along with the keynote address and the plenary session, are summarized below. (For further details, [see the recorded sessions and PowerPoint decks.](#))

Diversifying and expanding the facility user base to optimize benefits for Canada

Discussions in this panel focused on strategies for broadening the user base, identifying potential obstacles and formulating solutions to enhance user access. Panelists shared how their facilities optimized resource utilization and revamped approaches to bolster user engagement and support, all while emphasizing the widespread benefits for both Canadians and the global community.

One key message was to emphasize identifying and overcoming barriers to accessing facilities, which encompass issues such as pricing and geographic location. Effective outreach activities help to improve awareness of facility resources and attract new users.

Also, panelists emphasized the importance of fostering diversity across various dimensions — including staff, researchers, technicians and collaborators — and underscored the necessity for a broad range of perspectives in achieving and maintaining research excellence.

Panel: Community outreach and engagement

The significance of building meaningful relationships with First Nations communities was a key theme of this panel. Panelists discussed the Government of Canada's duty to consult and accommodate. They also presented good practices for meaningful engagement characterized by a profound understanding of histories, claims, agreements, assertions and self-determination objectives. Among the good practices are that engagement initiatives should be specifically designed to be respectful and tailored to the unique cultures of First Nations, Inuit, Métis. Implementation should occur in a timely, responsive and transparent manner, ensuring accessibility, flexibility and

adherence to principles of good faith, which may include providing translation services. Local engagement should be emphasized, utilizing relevant tools and, where feasible, providing training and employment opportunities. These practices recognize the value of Indigenous knowledge systems, appreciating the richness they bring to the conversation.

Acknowledging and addressing systemic racism and bias is integral to fostering an inclusive environment.

A commitment to acknowledging one's mandate and continuously enhancing cultural competency levels is central to the success of meaningful engagement efforts.

Panelists shared examples of collaborations with their Indigenous communities and the reciprocal benefits collaborations had for the facilities and local and regional communities.

Panel: Keeping Canadian facilities at the global forefront as technology rapidly changes and new opportunities and challenges arise

This panel explored the challenges and opportunities arising from rapidly evolving technology. Issues mentioned included the frequent need for equipment renewal to remain at the cutting edge, challenges hiring staff who can adapt to technological changes and increased expectations from the user community. Panelists highlighted the importance of attracting and retaining skilled personnel, recognizing that the capabilities of MSIF-funded research facilities are contingent on the expertise and dedication of their human capital. The rapid pace of technological change undeniably propels scientific advancements or alters methodologies, leading to cost reductions in certain services like gene or DNA sequencing but also to challenges, particularly in data management.

Keynote: Developing Canadian research facilities – Lessons learnt and future directions

In his keynote address, Nigel Smith, the Executive Director and CEO of TRIUMF, Canada's particle accelerator centre, delivered a message about the critical role of Canadian research facilities in shaping the country's future.

Emphasizing the importance of these facilities as national assets with international reach, Smith highlighted their often overlooked but pivotal role in the broader research ecosystem. He stressed the development of expertise in key strategic areas, such as accelerator-based technology, and advocated for attracting, training and retaining diverse world-class talent to create a national pipeline. He underscored the socioeconomic returns of existing investments, citing examples like intellectual property creation, spinoffs and contributions to health outcomes, including cancer treatment and green mining. Moreover, he pointed out the resilience these facilities provide on a national scale, as demonstrated by the response to COVID-19 and advancements in technology, such as the use of ⁹⁹Tc, a valuable medical isotope.

Smith issued a call to action for all MSIF-funded research facilities to promote their status as national assets with international reach, in all their engagements with all levels of government.

He called for greater coordination among the facilities to secure additional support beyond existing funds, suggesting a potential approach through the major research facilities framework. He emphasized the need for engagement from all stakeholders and a coordinated messaging strategy, particularly in demonstrating the benefits of the major research facilities and MSIF ecosystem in Canada.

Plenary: Reflections from Board Chairs meeting

Challenges associated with governing research facilities of national importance were discussed by the facility Board Chairs during a plenary session. They reiterated the commitment to continued open and productive collaborations between CFI and research facilities. The Board Chairs came together as a high-level advocacy group to raise the profile of the MSIF and major research facilities with federal and provincial governments.

They discussed the Innovation, Science and Economic Development Canada-driven major research facilities framework as a potential approach to support facilities. They emphasized stakeholder engagement and coordinated messaging to demonstrate the benefits of the MSIF ecosystem. They also highlighted collaboration with universities and industry as critical for maximizing the substantial investment in facilities.

Panel: Research facilities in a data-intensive and open-science world

The panelists discussed the shift to a data-intensive and open-science world in the last decade, emphasizing the importance of attracting data experts to research facilities of national importance. They stated the importance of applying the principles of FAIR (findable, accessible, interoperable and reproduceable) and CARE (collective benefit, authority to control, responsibility and ethics), particularly when handling Indigenous data. Panelists also highlighted the democratization of knowledge and technology, coupled with the challenges and opportunities of handling vast amounts of data.

Panel: International collaborations of research facilities

The panelists emphasized that future scientific breakthroughs from MSIF-funded facilities will require increased international cooperation, interdisciplinary research and community engagement. They recognized research facilities as national assets contributing not only to Canada but also to global challenges, positioning them as drivers of open science.

Workshop follow-up actions

Soon after the workshop, on November 15, 2023, the Board Chairs for the 19 research facilities delivered a letter to the Honourable François-Philippe Champagne, Minister of Innovation, Science and Industry; the Honourable Mark Holland, Minister of Health; and the Honourable Chrystia Freeland, Deputy Prime Minister and Minister of Finance, advocating for a timely release in Budget 2024 of a policy framework for federal decision making on investments in major research facilities.

In January 2024, the Data Working Group - Major Science Initiatives Fund was formed with the objective of informing and advising the CFI on data management practices used by research facilities and on strategies and initiatives needed to support the creation and implementation of a robust data lifecycle model for research facilities.