



UNIVERSITY
SECRETARIAT
• Board of Governors
• Senate

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**Board of Governors
9:00 AM, Thursday, March 2, 2023
Gilmour Hall, Council Room (Room 111)**

AGENDA

NOTE: Members who wish to have items moved from the Consent to the Regular Agenda should contact the University Secretariat before the Board meeting. Members may also request to have items moved when the Agenda is presented for approval at the Board meeting.

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- 2. NOTICE OF MEETING**
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CONSENT (9:05 a.m.)

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- Name: Dr. Ali Emadi*
 Title: Comeback of The Electric City
13. **OTHER BUSINESS**

REPORT TO THE BOARD OF GOVERNORS
from the
SENATE

At its meeting on February 8, 2023, Senate approved the following item, and now recommends it to the Board of Governors for approval:

For Approval

i. Closure of the Institute for Multi-Hazard Systemic Risk Studies (INTERFACE)

INTERFACE was established as a McMaster Senate approved Research Institute in March of 2015 reporting to the Office of the Vice-President, Research. In Spring of 2021, as per the policy Guidelines for the Governance and Review of Research Institute, Centres and Groups, INTERFACE underwent a five-year external review. In Spring of 2022 following up on the implementation of the ERB recommendations, the INTERFACE Governing Board assessed that the Institute had not achieved any increase in faculty engagement, nor demonstrated the ability to build towards operation without significant and continuing university funding support. The Director was informed in June 2022 that the Governing Board would be recommending that INTERFACE transition to a Research Group with effect from December 31st, 2022 (providing a six month ramping down period).

It is now recommended,

That the Board of Governors approve the closure of the Institute for Multi-Hazard Systemic Risk Studies.

ii. New Program Proposal – Master of Biomedical Innovation

The Master of Biomedical Innovation (MBI) program will be a multidisciplinary, project oriented graduate program focused on bridging the gap between device and health system technology development and its transfer into local, national, and international biomedical markets. The MBI will be a one-year program requiring three terms to complete.

It is now recommended,

That the Board of Governors approve the establishment of the Master of Biomedical Innovation (MBI) program.

Board of Governors: FOR APPROVAL
March 2, 2023

MEMO

DATE: January 10, 2023

TO: University Planning Committee

FROM: Dr. Karen Mossman, Vice-President, Research



RE: Closure of Institute for Multi-Hazard Systemic Risk Studies (INTERFACE)

On behalf of the Institute for Multi-Hazard Systemic Risk Studies (INTERFACE) Governing Board, I request the formal closure of INTERFACE as a Senate approved Research Institute and its transition to a Research Group.

INTERFACE was established as a McMaster Senate approved Research Institute in March of 2015 reporting to the Office of the Vice-President, Research. In Spring of 2021, as per the policy [Guidelines for the Governance and Review of Research Institute, Centres and Groups](#), INTERFACE underwent a five-year external review. The External Review Board (ERB) met with various stakeholders (faculty members, external organizations, students and staff) and provided their report to the INTERFACE Governing Board. The report addressed both areas of strengths and weaknesses. The ERB recommended that the Institute look to a) increase faculty membership and external engagement to truly constitute a multi-disciplinary and collaborative Research Institute as defined in RCI policy and b) become more independent and financially sustainable from central funding support. The Governing Board then tasked the Director to develop and administer a new plan to fulfil those recommendations.

In Spring of 2022 following up on the implementation of the ERB recommendations, the INTERFACE Governing Board assessed that the Institute had not achieved any increase in faculty engagement, nor demonstrated the ability to build towards operation without significant and continuing university funding support. Deliberations resulted in the Governing Board unanimously voting to transition INTERFACE from an Institute to a Research Group. The Director was informed in June 2022 that the Governing Board would be recommending that INTERFACE transition to a Research Group with effect from December 31st 2022 (providing a six month ramping down period).

The five-year ERB report is attached for information.

KM:jt

External Review of the McMaster Multi-Hazard Institute: INTERFACE

Submitted March 15th, 2021

External Review Board Members:

Chair: Mr. Jerry Hopwood, President, University Network of Excellence in Nuclear Engineering
Ms. Marlene Lenarduzzi, Head, Counterparty Credit Risk and Market Risk Strategic Initiatives, BMO Financial Group
Dr. Miroslav Nastev, Research Geo-Scientist, Environment and Energy of Natural Resources Canada

Mandate:

The External Review Board (ERB) has been constituted to provide an external review of the McMaster “Interface” multi-hazard institute. The ERB looked at status and the progress over the initial five years, and assessed the institute according to the Terms of Reference provided by McMaster (attached). The ERB reviewed the supporting documentation, and met the institute team and stakeholders on February 24th. We were able to carry out sufficient review, to complete our evaluation and recommendations.

ERB View -- the Context:

The vision of the institute as a multi-disciplinary platform that focuses on systemic risk assessment, analysis, and management is timely. The ERB recognizes that society and systems are greatly interconnected, thus the Institute’s multi Hazard approach to assessing and managing risks offers a unique value proposition. This value is somewhat evidenced by the Institutes success in attracting grants, broad membership and numerous publications.

Institute Performance

The institute has completed its first five years of operation. It has successfully progressed towards the goals of its establishment proposal. There is still some way to go to fully achieve these goals and to take its place as a self-standing entity. In the context of McMaster’s portfolio of institutes, this does not seem unreasonable. The institute is one of the smallest at McMaster, but is executing research of significance, and with a broad, and increasingly multi-disciplinary coverage, and this is consistent with McMaster institute expectations. So far, the institute has been driven largely by the energy, entrepreneurship and enthusiasm of its director. The institute has gathered a significant number of funded projects, and has delivered on publication, but needs to do more to connect with the stakeholders who can gain value from the work. The institute has broadened somewhat from a starting point focused on civil engineering, but there is much more scope for broader studies.

Strengths:

- Energetic and passionate leader in Wael El Dakhkni. Wael is viewed as an excellent researcher who is able to attract a “dream team” of top talent and supporters to the institute.
- Faculty and membership feel the work is meaningful, and are highly complementary of the Institute’s accomplishments and the quality of the Director.
- Students are highly satisfied with their studies for the Institute; view the experience as unique and providing unique benefits via opportunities to collaborate across faculties and with industry.

- Institute has already achieved significant project results that “show the way” forward

Weaknesses:

- Wael is overwhelmed with too much work and lack of stable support.
- Lack of stable funding envelop makes it difficult to hire and provide employees with stability
- The institute has no dedicated space for members to meet, collaborate, and benefit from colocation. The institute seems be caught in a bureaucratic ‘no-man’s land’ where it is not eligible for faculty space due to its tie to the VP of Research.
- Lack of clear business plan that articulates how the vision will be achieved concretely
- Lack of outreach and promotion to bring visibility and build relationships with stakeholders
- External stakeholders were not able to articulate specific benefits they achieved from their involvement with the institute
- The institute has not built a senior leadership, and does not have natural successor at this point.

Opportunities:

- Complex problems such as Climate change, global pandemics provide demand for the institutes multi-disciplinary approach to risk assessments – the recent multi-sectoral emergency in Texas is a prominent example.
- Tremendous opportunities to expand cross faculty engagement – particularly with social sciences, health sciences, the Climate Change institutes, and others
- The university has resources to support promotion, webinars... that could provide a cost-effective way to increase external awareness of the Institute

Threats:

- Wael may become frustrated by the lack of support and leave to join a university that is more supportive or perhaps join the private sector or let the institute collapse.
- The institute’s unique value proposition may be overtaken by initiatives elsewhere

Recommendations:

The Director has got the institute going well through the initial challenging phase. We recommend he continue in his role. We do recommend that he needs senior assistance with day to day organizing capabilities to complement Wael’s strengths—a “COO” role.

The institute governance should be adjusted as seen fit by McMaster, to:

- Provide a stable funding mode, sufficient to provide support to the Director
- Provide a stable home for the Institute, (a single host faculty), with a dedicated space, while encouraging and enabling a broader set of multi-disciplinary projects
- Creating a clear governance relationship with Wael to a single representative individual, who represents McMaster but can also provide a sponsor role and act as a mentor
- Set up a regular reporting process to give an appropriate level of structure and guidance, consistent with other McMaster Institute processes; for instance providing progress against

goals, a scorecard or dashboard of status, and the opportunity to record challenges or obstacles to progress.

- Encourage the Director to achieve key goals for the next period:
 - o Develop a well-structured business plan
 - o Outreach and promotion of the institute
 - o Stronger relationships with external stakeholders

Report prepared by External Review Board:

Jerry Hopwood

Marlene Lenarduzzi

Miroslav Nastev



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To : University Planning Committee

From : Christina Bryce
Assistant Graduate Secretary

Attached is a new program proposal for the Master of Biomedical Innovation for UPC consideration. Please note that this submission is subject to approval at Graduate Council on Jan. 17, 2023.

Attachment



**NEW PROGRAM PROPOSAL FOR:
Master of Biomedical Innovation (MBI)**

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1. Program

1.1 Program Description

The Master of Biomedical Innovation (MBI) program will be a multidisciplinary, project-oriented graduate program focused on bridging the gap between device and health system technology development and its transfer into local, national, and international biomedical markets. By linking the theory and practice of the biomedical innovation process, it will deliver a systematic but responsive approach to the critical, emerging discipline of entrepreneurship. Graduates with the MBI degree will have the knowledge and skills needed to seamlessly foster innovative biomedical approaches to current and future health challenges from the earliest stages (identification of real-life healthcare problems/needs, prototype development and testing) into practical, market-ready ventures. This integrated program will leverage existing partnerships and agreements between the Faculty of Health Sciences, the Hamilton hospital networks, local innovation hubs, and industry partners. MBI graduates will contribute to the growing biomedical and health technology sector, thereby attracting and retaining entrepreneurial talent that leads to the creation of not only improved health care but new jobs, economic growth, and community benefits.

The MBI will be a one-year program requiring three terms to complete. Administratively, the MBI will be housed in the Department of Surgery and will be the cornerstone of the new Marnix E. Heersink School of Biomedical Innovation and Entrepreneurship. The project and course-based curriculum will be anchored by opportunities for immersive experiences and a series of intensive bootcamps that will guide learners through the biomedical innovation and entrepreneurship process.

Learners will apply the theories and entrepreneurship competencies acquired throughout the curriculum to a program-long, venture-oriented project course. The MBI will provide opportunities to identify a biomedical problem to work on and support for those who already have a project in mind. Working in either a clinical or non-clinical environment, depending on the nature of the project, learners will complete a series of milestones that guide the creation of a novel biomedical solution and the formation of an early-stage biomedical venture. At the end of the program, new ventures will be presented at a Final Pitch Bootcamp, where teams will seek support and funding from investors, incubators, and accelerators.

Team projects may include innovations in:

- Medical devices (e.g., implants, surgical tools, diagnostics)
- Therapeutics and diagnostics (e.g., wheelchairs, exoskeletons)
- Digital technologies (e.g., wearable devices, artificial intelligence, mobile applications)
- Drug delivery platforms (e.g., nanoparticles, hydrogels, biomimetics)
- Health systems and processes (e.g., healthcare software, apps, bioinformatics, quality improvement)

The structure and delivery of the program will allow for maximum flexibility, and will include in-person events (e.g., intensive bootcamps) with virtual and online components; as such it will enable learners to balance their various commitments. Housed within the new Heersink School and with a partnership to The Clinic @ Mac (<https://healthinnovation.mcmaster.ca/visit-the-clinic>), a campus-linked health sciences incubator located in the Health Sciences Library, MBI students will have access to collaborations and learning space to drive their innovations forward. Learners will also have access to entrepreneurs, coaches, and mentors, as well as an on-demand resource portal to support ventures at all development stages.

The central goal of the program is to produce graduates equipped with the theory, experience, and skillset to create innovative biomedical solutions, bridging the gap between academia and biomedical

entrepreneurship and innovation. By the end of the program, graduates will have gone through the full life cycle of creating a business and product. With the personalized support of coaches and mentors, they will have learned the skills, and acquired the network and expertise in the healthcare space with our clinicians to be a successful innovator and disruptor in the healthcare arena. Overall, the delivery and experiences outlined for the proposed MBI will be unique within health sciences education and would constitute the first graduate program of its kind in Canada. This document presents a proposal for this program with the goal of an initial offering of the MBI in September 2023.

1.2 Proposal Preparation and Consultation Process

When the demand for a graduate level program in health and biomedical innovation became evident, we began an investigation into the current landscape of existing programs in North America. A competitor analysis and in-depth literature review were conducted to identify the current landscape of health and biomedical innovation education across North America. Surveys and interviews of prospective students, health professionals, faculty, entrepreneurs, and researchers were conducted to gauge interest in biomedical innovation programming, and to identify gaps in the current health entrepreneurship landscape.

Health Sciences and Engineering faculty members involved in the Integrated Biomedical Engineering and Health Sciences undergraduate program (IBEHS), the Michael G. DeGroot Health Innovation, Commercialization and Entrepreneurship (MGD Health ICE) Initiative and the Department of Surgery have collaborated internally on this effort across a three-year period.

The individuals who have contributed to the preparation of this proposal are:

- Mohit Bhandari, Professor and Chair, Department of Surgery
- Katrina Cordovado, MBDC graduate, Program Administrator, The Clinic @ Mac
- John Kelton, Professor, Department of Medicine and Pathology and Molecular Medicine, and Executive Director, Michael G. DeGroot Initiative for Innovation in Healthcare
- Anna Korol, Assistant Professor, Department of Medicine
- Liane Ladouceur, Research Associate, School of Biomedical Engineering
- Sarrah Lal, Assistant Professor, Department of Medicine
- Frances Lasowski, Adjunct Assistant Professor, W Booth School of Engineering Practice and Technology
- Michelle MacDonald, Associate Professor, Department of Biochemistry and Biomedical Sciences, and Co-Director, Integrated Biomedical Engineering and Health Sciences program
- Alan Neville, Professor Emeritus, Department of Oncology
- Gregory Wohl, Associate Professor, Mechanical Engineering, and Co-Director, Integrated Biomedical Engineering and Health Sciences program
- Julian Yabut, former PhD student in the Medical Sciences Graduate Program, and currently a medical student at the University of Toronto

Consultations included:

- Dina Brooks, Professor, Vice-Dean, Faculty of Health Sciences and Executive Director, School of Rehabilitation Sciences
- Sandra Carroll, Vice-Dean, Faculty of Health Sciences and Executive Director, School of Nursing
- Nancy Carter, Associate Professor, Assistant Dean, Graduate Nursing Programs
- Andrew Cheung, Assistant Professor, Medicine
- Michael Hartmann, Professor, DeGroot School of Business, and Executive Director, Executive MBA in Digital Transformation

- Dave Mammoliti, Director, Directors College, EMBA, Executive Education, DeGroote School of Business
- Kenneth Owen, Assistant Professor, Department of Medicine
- Sean Park, Assistant Professor, Department of Medicine
- Heather Sheardown, Professor, Department of Chemical Engineering, and Dean, Faculty of Engineering
- Jonathan Stokes, Assistant Professor, Department of Biochemistry and Biomedical Sciences, and Co-Founder, Phare Bio
- Bill Wang, Assistant Professor, Neurosurgery, and Interventional Neuroradiology, and Founder and Chief Scientific Officer, iMIRGE Medical Inc.
- Leigh Wilson, Business Development Manager, McMaster Industry Liaison Office
- Survey and focus groups of 10 students registered in the Integrated Biomedical Engineering and Health Sciences program's Health, Engineering Science and Entrepreneurship Specialization
- Survey of 28 faculty members from the Faculty of Health Sciences, the Faculty of Engineering and the Faculty of Science who have entrepreneurial enterprises in the biomedical arena
- Members of the Department of Surgery who attended a consultation session on March 31st, 2022

1.3 Consistency with McMaster's Mission and Academic Plan

McMaster's Strategic Mandate Agreement

In the Times Higher Education Impact Rankings of 2022, McMaster University ranked first in Canada and sixth globally for impact on health and well-being, due in part to the Faculty of Health Sciences being positioned at the leading edge of medical education and research in Canada. Some of the Faculty's education offerings include, but are not limited to: Medicine, Nursing, Rehabilitation Sciences, Midwifery, Physician Assistant, a multidisciplinary Biomedical Discovery and Commercialization (BDC) program, and most recently the Integrated Biomedical Engineering and Health Sciences (IBEHS) program with a specialization in Health, Engineering Science and Entrepreneurship (HESE). The Faculty of Health Sciences utilizes a unique interdisciplinary and problem-based approach to the study of health, wellness, and disease. Inquiry-based learning approaches emphasize transferable skills in the biomedical sciences, including oral and written communication, problem-solving, critical thinking, and the acquisition of practical laboratory and research skills. With a strong infrastructure and faculty experience in place for interdisciplinary learning, the MBI program and its graduates will advance the overall McMaster University agenda in the Health Sciences area of growth and will be able to bolster the efforts of the University's most recent initiative: Canada's Global Nexus for Pandemics and Biological Threats (<https://globalnexus.mcmaster.ca/>).

The 2020-2025 Strategic Mandate Agreement (SMA) (<https://www.ontario.ca/page/2020-2025-strategic-mandate-agreement-mcmaster-university>) indicates several priority areas for the Ontario government that we are confident the MBI program would fulfill. As a unique program that aims to attract and develop future health-focused innovators and entrepreneurs, this program will provide students with key skills to not only be skilled graduates, but also new employers that create new jobs and enhance Hamilton-McMaster economic growth. Further, we anticipate our graduates will create exciting new inventions that will attract multiple sources of internal (i.e., institutional) and external funding (i.e., federal, private sector) to provide the necessary capital to scale their inventions and impact communities in Ontario. It is also our intention to maintain complete transparency of salary and ensure accountability of the faculty and staff associated with the new program. Outlined in Section 7 of this proposal, the program will track key performance indicators that measure its priority areas.

McMaster's Current Priorities

The Faculty of Health Sciences has a history of innovation, excellence, and equity through their existing educational and research programs. For example, it has created two unique and successful undergraduate innovation programs: the Integrated Biomedical Engineering and Health Sciences (IBEHS) program (jointly created and offered by the Faculty of Engineering and the Faculty of Health Sciences) and the Biomedical Discovery and Commercialization (BDC) program (housed in the Department of Biochemistry and Biomedical Sciences). We plan to build upon this spirit of innovation with the MBI program by investing in students that have the potential to be the next generation of biomedical entrepreneurs and innovators. This will be accomplished within the institution-wide objectives to promote equity, diversity, and inclusion (EDI) following the Action Plan currently being enacted at McMaster University (<https://equity.mcmaster.ca/strategy/towards-inclusive-excellence/edi-action-plan/>). Specifically, the MBI program will align with these values by cultivating a community of students that (1) uphold EDI commitments in relation to admissions, curricula, and program delivery, (2) innovate in their academic activities, (3) engage with community partners, and (4) respect diversity on and off campus. This overall vision for the program will align with all five of the Priority Areas of the Institutional Priorities and Strategic Framework 2021-2024 (https://president.mcmaster.ca/app/uploads/2021/05/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf) and its Vision Statement: “Impact, Ambition and Transformation through Excellence, Inclusion and Community: Advancing Human and Societal Health and Well-being”. The connection of the MBI Program to these Priority Areas is explained briefly below:

- 1) **Inclusive Excellence:** The MBI Program will facilitate inclusivity and interdisciplinarity in its curriculum and student experience by admitting students from a wide variety of educational and health professional backgrounds who will be given the opportunity to work in teams on biomedical innovation projects. The curriculum will reinforce universal design, and importance of consideration of accessibility, diversity and equity of end-users.
- 2) **Teaching and Learning:** In addition to workshops and bootcamp-style course offerings, the MBI program will incorporate experiential learning, allowing students to access biomedical and/or healthcare settings. The objective of the program is to initiate and advance ideas, products, or systems with the greatest potential to get to market. Through placements and interdisciplinary learning, students will develop insights into new ideas within the program and for the years and decades that follow. MGD Health ICE educational programming and The Clinic @ Mac networking opportunities, for example, will be available even after graduation, ensuring continuity of support and services to enable success.
- 3) **Research and Scholarship:** The MBI program aims to develop future innovators who can develop novel avenues of research and care and contribute to McMaster’s commitment to high quality research. MBI courses will focus on challenge-based, self-directed learning and engagement with a cross-disciplinary group of faculty, clinicians, researchers, and fellow peers who have demonstrated academic success and strong roots in both industry and the community.
- 4) **Engaging Local, National, Indigenous and Global Communities:** The MBI program will contribute to the growing culture of innovation, commercialization, and entrepreneurship in the Hamilton innovation ecosystem. MBI students and graduates will build and strengthen their partnerships with clinical practices, businesses, start-ups, and industry in Hamilton. The MBI program is the seed needed for (1) value creation and implementation, (2) economic development of Hamilton including creation of new jobs and industries, and (3) building companies with regional and global socioeconomic benefits. The MBI program will liaise between student and community partners to aid in the commercialization process and ultimately, attract and retain talent needed for Hamilton economic development.
- 5) **Operational Excellence:** The recruitment of a diverse community of mentors for the MBI Program from industry with experience in the entrepreneurship sector can support leadership training and opportunities for inclusive learning and growth and, over time, support the attraction of high calibre faculty, staff and students.

1.4 Program Learning Outcomes

The Master of Biomedical Innovation program emphasizes innovation, translational design and research, experiential learning, and multi-disciplinary entrepreneurship teamwork. Graduates will be equipped to bridge the gap between academia and biomedical entrepreneurship and innovation.

Graduates of the program will be able to:

- Become a founder of a health-focused startup company
- Spin out a new health technology from their academic research or clinical area
- Advance the innovation agenda of an existing health-focused company or organization
- Work for an emerging health or medical technology company
- Leverage the entrepreneurial knowledge and skills acquired in the MBI that are required to transition into a leadership position in various industries

To this end, the overarching learning outcome that will be used to achieve this central goal is:

Graduates of the program will have the skillset and entrepreneurship competencies to bring innovative biomedical solutions to solve healthcare challenges from research and design stages into practical, market-ready use.

The MGD Health ICE group has developed a series of core and enabling competencies that reflect the skills required for a successful entrepreneur (See full list, Appendix A1). These form the basis of the program learning outcomes. Upon completion of the graduate program, all graduates of the MBI program will be able to:

- A1: Identify opportunities for new value creation in biomedical and life sciences sectors
- A2: Describe a current and future market landscape
- A3: Design a solution and articulate a value proposition
- A4: Identify and protect intellectual property
- A5: Address regulatory requirements
- A6: Create a team and network
- A7: Acquire necessary resources and funding
- A8: Develop and adapt a business strategy
- A9: Develop and sell key messages for various audiences

1.5 Consistency with Graduate Degree Level Expectations

The learning outcomes and competencies identified for this program were specifically developed to align with the guidelines set out by the Ontario Universities Council on Quality Assurance (the Quality Council) for the Graduate Degree Level Expectations (GDLE). Table 1 maps each of the Program Learning Outcomes to the appropriate Quality Council expectation.

Table 1: Program Learning Outcomes and Associated Graduate Degree Level Expectation

Program Learning Outcome	Associated Degree Level Expectation
A1	1,3,4a,4b,5,6

A2	1,2,3,4a,4d
A3	1,2,3,4a,4d,6
A4	1,2,3,4c,5
A5	1,2,3,4b,4c,4d,6
A6	4a,4b,4c,5
A7	1,2,4a,5,
A8	1,2,3,4a,4d,5
A9	3,4a,5

Program learning outcomes outlined in Section 1.4 meet expectations outlined in McMaster's GDLE found here: <https://cill.mcmaster.ca/COU/degree/graduate.html>. If all program outcomes are fulfilled, it is expected the student will receive the MBI degree at the end of the program during November convocation.

1.6 Demand for Program

i. Evidence of Societal/Labour Market Need

The Canadian healthcare system is often regarded as an unreceptive and challenging arena for innovation. There is therefore a strong need to be agile and nimble in identifying unmet needs within the healthcare system that will benefit the overall health of Canadians from the perspective of the patients and the healthcare providers. These challenges require innovators that will understand all aspects of the healthcare system and its stakeholders, who will be able to innovate, communicate and implement novel healthcare solutions.

Based on findings from an in-depth literature review and competitor analysis (briefly explained in Appendix A2), the past 10-15 years have seen a rapid increase in the number of programs that teach innovation within academia. The Stanford Biodesign program was one of the first to offer a graduate-level course in biomedical technology innovation in 2003. A recent paper from this group ([Denend et al. 2021](#)) found a significant increase in commitment to careers in biomedical technology and innovation after completing the course, with 82% involved in innovation roles. In a [Frontier Economics report](#) (2014), the Impact of investment in science and innovation in higher education was measured and demonstrated a 37% rate of social returns, which includes an increase in profit for the private and public sector who can make use of the innovations, as well as greater societal gains to health, well-being, security, and efficiency.

Considering the future of education is moving towards a heavy focus on [problem solving, system change, innovation and entrepreneurship](#), it is not surprising that the United States currently boasts programs and courses devoted to innovation in fields such as digital, healthcare, biomedical, design and engineering. Although smaller in comparison, a similar trend is emerging within Canada; as of 2020, there were 13 graduate programs devoted to innovation and/or entrepreneurship. This surge suggests a shift in the approach to business models and the desire for pedagogical support to advance both entrepreneurship and intrapreneurship. Importantly, this lack of accessibility to biomedically-focused innovation programming pushes students to enroll in general business programs that lack the required health-focused expertise or resources needed to become biomedical entrepreneurs. As a result, based on the competitor scan, **none of the existing graduate-level innovation and/or entrepreneurship programs in Canada are devoted to biomedical innovation, nor do any of the programs involve health-focused experiential learning like that which will be provided by the MBI program.**

The recent growth of Canada's biomedical field reported by [The Globe and Mail](#) in November 2019 (e.g., the revenue estimate by IBIS World of \$5 billion in revenues for the medical device industry) captures the growth of Canadian opportunities in this industry. Paired with the [notable growth of Toronto's tech sector](#) (outpacing San Francisco and New York in creating jobs), and the recent launch of the Southern Ontario Pharmaceutical and Health Innovation Ecosystem (SOPHIE) program out of the Innovation Factory located at Innovation Park in Hamilton, McMaster University is set as a prime candidate to provide education in biomedical education. By bringing innovative minds and entrepreneurs from clinical and health science backgrounds (national and international) to grow the Hamilton-McMaster innovation landscape, the MBI program would also address the need to increase economic development in Ontario and meet current and future societal and labour needs, as set out in the 2020-2025 SMA. Similarly, the Ministry of Labour, Training and Skills Development currently projects a growing job market in the financial, communications and business services (National Occupational Classification, NOC 0013) for the GTA from 2020 onwards.

In 2007, the Centres of Excellence for Commercialization and Research (CECR) program was launched by the Canadian government to support the innovation to commercialization continuum, with many of their centres in the health sector. Their most recent program evaluation from September 2017 reports that Canada's strengths in academic research have not fully transferred to the realm of innovation and commercialization, noting that innovators continue to face substantial challenges in accessing funding/investment for earlier, riskier stages of commercialization. The MBI program is designed to equip graduates with the skills necessary to meet and overcome such challenges. With its legacy of innovation and interdisciplinary collaboration, McMaster is uniquely positioned to become a leading (if not the leading) actor in the healthcare innovation space.

ii. Evidence of Demand for the MBI

Evidence for interest in graduate education in health innovation and commercialization is provided by two programs currently operating at McMaster as well as feedback from Researchers, Engineers, and Clinicians (a summary of data collected is included in Appendices A3 and A4):

1. Biomedical Discovery and Commercialization (BDC)

This limited-enrollment four-year undergraduate program, housed in the Department of Biochemistry and Biomedical Sciences at McMaster, is also associated with a 1-year Master's degree in Biomedical Discovery and Commercialization (MBDC) that is focussed on development and commercialization of pharmaceuticals and therapeutics. Approximately 60% of the undergraduate BDC students stay on to pursue the MBDC. The MBDC program has also seen an overall increase in applications in recent years due to an increase in the number of external applicants.

We anticipate that a similar proportion of undergraduate IBEHS Health, Engineering Science and Entrepreneurship Specialization students (described below) will be interested in pursuing the MBI which will focus more broadly on innovation and entrepreneurship in medical technology, health information technology and medical devices.

2. Integrated Biomedical Engineering and Health Science (IBEHS)

McMaster's interdisciplinary (Engineering and Health Sciences) undergraduate IBEHS program is expected to be a key target market for the graduate-level MBI program. Currently, the IBEHS program enrolls approximately 140-180 new students each year who complete an interdisciplinary degree in biomedical engineering and health sciences. To date students have produced multiple innovative and noteworthy projects and commercial devices. One example is [Guided Hands™ from ImaginAble](#)

[Solutions](#), an assistive device that enables people with limited fine motor skills to write, draw, and use a tablet. This device was first conceived in an IBEHS course and supported through Health ICE coaching and mentorship leading to multiple national and international awards, including the National Canadian winner of the 2021 James Dyson Award. Despite success stories such as these, IBEHS student feedback and collected data found that, due to time and accreditation constraints, students reported only little opportunity for entrepreneurship and product/company creation. The MBI would fill this gap and support the structured and guided creation and validation of health technology with a focus on accelerating its development and commercial viability. There was strong interest and agreement from this cohort of students that we surveyed to pursue a Master's degree, one year in length with emphasis on the attributes being proposed in the MBI (see Appendix A3).

3. Basic Science Researchers in FHS and Faculty of Engineering

Draft copies of the MBI proposal and a survey were sent to 28 basic science PhD researchers and health professionals. There was unanimous agreement that more education about entrepreneurship and the challenges of commercialization of basic science research was needed within FHS and the MBI should be an option for interested graduate level researchers. Consultations with the Faculty of Engineering have also demonstrated that there is interest from Biomedical Engineering as well as Engineering graduates in a graduate degree in Biomedical Innovation (see Appendix A4).

4. Health Professionals

Consultations with health professionals from several clinical departments, the School of Rehabilitation Sciences, and the School of Nursing have shown considerable interest in the development of the MBI. Practicing health professionals from hospitals and private industry were suggested to be good candidates to recruit to this graduate program.

iii. Justifiable Duplication

A comprehensive competitor analysis and in-depth literature review was conducted at the outset of this program proposal to scan all graduate level programs in health and biomedical innovation, entrepreneurship, commercialization and/or design with findings summarized in the appendix (Appendix A5). Based on this scan, we can state with confidence that the MBI program does not duplicate any graduate programs in Ontario and will be the first to offer clinical immersion as an option within the program. Of the 13 current programs in Canada, only 1 of the programs is focused on health innovation—University of Toronto's Master of System Leadership, and Innovation—however, this program differs in its focus on health systems science, health policy and organizational behaviour, and is designed only for emerging physician leaders. None of the other 12 programs are devoted to biomedical innovation, nor do any of the programs involve health-focused experiential learning akin to the proposed MBI program.

The MBI program addresses three key opportunities that make it unique and unlike similar, existing programs:

- A biomedical innovation-specific graduate program in Canada
- The only graduate program in Canada to offer a clinical immersion opportunity
- An entrepreneurship program uniquely rooted in the Faculty of Health Sciences. Comparative innovation and entrepreneurship programs are predominantly housed within the School of Business or Faculty of Engineering. These programs provide broad, overarching education for entrepreneurship across all fields, but do not have the distinct expertise needed to navigate the complexities of biomedical technology and health-focused innovation.

Informal feedback collected from graduates of McMaster’s MBDC program reported a lack of knowledge in medical technology regulation and reimbursement. With this insight in mind, a primary goal of this program will be to overcome healthcare system resistance by creating biomedical innovators who are deeply familiar with the nuances of the medical regulatory and reimbursement environment in Canada and the U.S. and thus prepared to navigate them.

An important goal of the MBI program is to foster health innovation within the Hamilton community surrounding McMaster University. The Faculty of Health Sciences has existing collaborations with community partners to foster innovation, including connections with The Forge, Innovation Factory, the Michael G. DeGroot Initiative for Innovation and McMaster Industry Liaison Office. The MBI program will draw on these connections and their resources as we cultivate world-class talent.

1.7 Degree Nomenclature

A study in *Design Management Review* from 2017 highlights the importance of consistency of program names between academic institutions. It compared the recognizability and stature that is afforded to MBA programs to the more recent development of programs in Design Management. With the variety of names and lack of consistent curricula, challenges are presented in defining value for potential employers. We believe that the *Master of Biomedical Innovation (MBI)* clearly delineates the focus and training that will be provided to students.

2. Admission & Enrolment

2.1 Admission Requirements

The minimum admission criteria are as follows:

- Completion of an undergraduate honours degree
- A minimum B+ average in the last two years of study of an honours degree
- Introductory level innovation and entrepreneurship education or demonstrated involvement in innovation and entrepreneurship projects. This experience can be through education or self-directed means (e.g., invention, product or service design, start-up company creation)

The following application material is required from all applicants:

- Statement of Intent
- CV/Resume
- Undergraduate and graduate (if applicable) transcripts
- One-way video essay
- Interview of finalists

Based on the number of applications, selected candidates that meet all the above criteria will be invited for rounds of virtual and/or in-person interviews. We plan to admit 20 new net students for the first cohort of this program, increasing enrolment across 5 years as indicated by the table below. Many programs in the Faculty of Health Sciences have separate admission streams for Indigenous applicants and Black applicants. There are currently discussions within the Faculty and across the University to extend these admission streams to other programs.

Academic Year	2023-2024	2024-2025	2025-2026	2026-2027	2027-2028
Full-time	20	25	30	35	40
Total Enrolment	20	25	30	35	40

The MBI program aims to attract high-calibre students that have the motivation to innovate in the health and biomedical fields. With a rapidly growing innovation sector and infrastructure (e.g., Health ICE, The Forge, Synapse Consortium) in the McMaster-Hamilton space, we anticipate MBI graduates to add to this growing culture of innovation. By attracting and retaining talent into the overall Ontario innovation ecosystem, this program strives to create new jobs that result in future economic and community impact, thereby contributing to Ontario's 2020-2025 SMA mandates.

2.2 Alternative Requirements

N/A

3. Structure

3.1 Administrative, Governance and Communication

The MBI program will be administered by the Faculty of Health Sciences with an administrative home in the Department of Surgery. Key elements include:

- A **Program Director** will coordinate the program, oversee curriculum development, implementation and quality improvement. This individual will liaise and coordinate with faculty members, as well as external experts, both of whom will teach within the curriculum and serve as mentors on multidisciplinary group projects. The Program Director will sit on the Faculty of Health Sciences Graduate Policy and Curriculum Council and will report to the Vice-Dean Graduate Studies and the Chair of the Department of Surgery. The Vice-Dean Graduate Studies sits on Graduate Council and reports to the Vice-Provost and Dean, Graduate Studies. A new Program Director will be selected every 5 years. All communications related to the program will originate from the Program Coordinator or Program Director.
- A **Program Coordinator** will be hired to support the administration of the program, serve as the primary contact for student inquiries, admissions, calendar changes, and degree audits, and support teaching faculty as needed (i.e., assisting faculty members with oversight and coordination of coaches and mentors).
- The **Program Operating Committee** will be chaired by the Program Director. Members of the Operating Committee will include four MBI-affiliated faculty members and two students registered in the Program. The function of the Operating Committee will be to review and develop curriculum and policy recommendations for the MBI program. When required, proposed changes to the program and curriculum will be presented for approval to the Graduate Curriculum and Policy Committee of the Faculty of Health Sciences with subsequent approval from Faculty Executive.
- An **Advisory Committee** will be assembled for the program which will consist of representatives from each of the major areas of study for this degree, including Health Sciences, Engineering and Business. Representation from academia, healthcare and industry will be included in this group. The function of the Advisory Committee will be to provide feedback on the MBI program's objectives and activities as they relate to the current needs of the biomedical field; provide updates on technological advances as well as economic, societal, and cultural shifts; and secure connections to the engineering and health professions, industry, and government.

3.2 Structure and Regulation

Ensuring Achievement of Program Learning Outcomes

As described above, the Program Director will be primarily responsible for overseeing all academic components of the MBI program. This individual will work closely in collaboration with the Vice Dean, Graduate Education (Faculty of Health Sciences), who chairs the Faculty of Health Science Graduate Curriculum and Policy Committee to assess programs, courses, and enrollment. The Program Director, with assistance from the Program Coordinator, will be responsible for collecting data, surveys, and feedback for the preparation of the documentation required for the cyclic IQAP reviews.

To ensure students can meet the specified Program Learning Outcomes, student progress will be reviewed at the end of each term by the Program Director. Instructors of 700 level courses will inform the Program Director of students who are at risk during the duration of the course. This will enable the Program Director to take action to ensure students who are at risk get the help and support needed to successfully finish the degree on-time (i.e., a meeting to talk about struggles and to decide on next steps). If a student fails to achieve a mark higher than a B- in any of the required courses, the student will be subject to remediation in a similar manner that is done in the DeGroot School of Medicine if students fail to meet expectations. Remediation may include repeating an assignment with coaching and guidance provided by a faculty member assigned from the MBI program (not the course instructor). If the student fails to remediate, the student will fail the course and will be required to repeat it the following year. In this case, the student will be able to continue with other courses. Attendance and participation at the bootcamps is mandatory.

The course instructor for the Project Courses (MBI 701, 702 and 703, described below) plays an important integrative role in the program. The instructor for the Project Courses will ensure that students/teams have been matched with an appropriate coach and project, and will also collect reflections from students at the end of each term to track progress. The instructor will check in regularly with coaches to monitor progress (at least monthly), or sooner if issues arise, to ensure that individuals and teams are healthy, functioning and progressing well with their project. The instructor will also be responsible for organising and coordinating Bootcamps and the parallel embedded curriculum for Personalized Coaching and Leadership.

The progress of all students in the program is reviewed each term by the Program Director with support from the Program Coordinator. Students who must be absent for a required bootcamp or assessment under extenuating circumstances must contact the Program Coordinator and Course Instructor right away for accommodation. Students who request a leave of absence from the program due to extenuating circumstances will receive credit for courses that were completed and graded. These students may need to repeat MBI 701, 702 and 703 upon return to the program due to the changing nature of the teams and projects.

3.3 Program Length

The MBI will require a one-year commitment. The one year of study in the proposed MBI provides students the opportunity to take a solution from observed need through solution iteration, and for some solutions, to implementation and market-readiness. We have seen success with the one-year Master's program at McMaster with the MBDC (Master of Biomedical Discovery and Commercialization). The one-year timeframe remains competitive with other course-based Master level programs and comparable programs in biomedical innovation (i.e., the Master of Entrepreneurship and Innovation (MEI) at Queen's University, Master of Management of Innovation (MMI) at the University of Toronto, and Master of

Science in Bioengineering Innovation and Design at Johns Hopkins University) and was also the preferred duration indicated by our student surveys.

4. Curriculum and Teaching

4.1 Program Content

A key aspect of biomedical innovation and entrepreneurship education is the integration of experiential and immersive educational models that simulate the complexities of technology development and transfer. Individuals or teams of learners will work on a biomedical innovation project in partnership with a clinical department, research lab or relevant stakeholder group. Learners will identify and/or validate a biomedical need by engaging with their partner (e.g., clinicians, researchers, administrators, end users) and gain an understanding of the system-level barriers unique to biomedical technology implementation in their project-focus area. Importantly, the partnerships developed within the MBI will form the foundation for innovation and, concurrently, provide the infrastructure and personnel required for technology testing and pilot studies, and potential for future funding and support. All learners, whether working on a clinical or lab-based innovation, will be linked to mentors with up-to-date experience in healthcare technology entrepreneurship. Regular meetings between teams and their coaches and entrepreneurship mentors will ensure that students feel supported and innovation projects are monitored and adjusted as necessary.

Overview of the Program

Students enrolled in the MBI program will focus on the theory and application of biomedical innovation and entrepreneurship, integrating content from the fields of Health Sciences, Business, and Engineering. The following is a list of the proposed courses and bootcamps for students with a schematic overview of curriculum implementation and timeline (Figure 1).

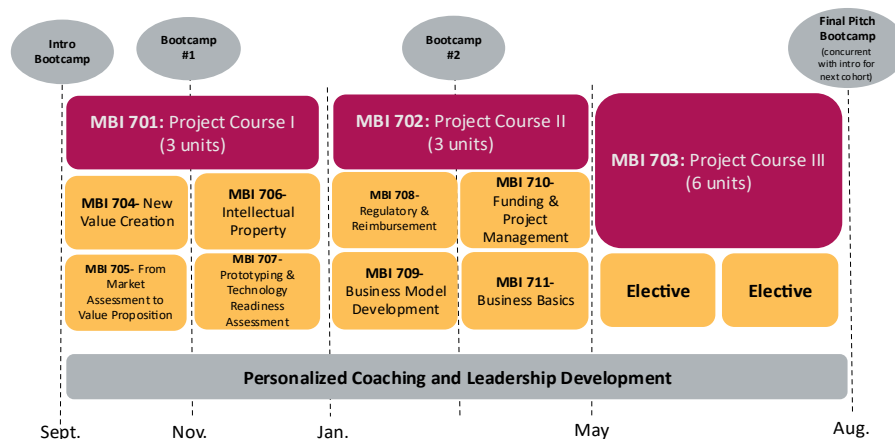


Figure 1: A proposed phase timeline and proposed MBI courses and bootcamps. Depicted are 1.5-unit courses (gold), project courses (maroon), and mandatory bootcamps (grey) in the degree timeline.

The MBI program will accommodate learners who enter the program with or without an existing idea for an innovation project. For all learners, the experiential, project-based courses (MBI 701, 702, 703) will give students the opportunity to apply concepts from courses and bootcamps to their innovation project, over the 12-month program. Within these project courses, students will be evaluated on the completion of a set of milestones that focus on establishing the desirability, feasibility and viability of their innovation. All learners will have access to personalized coaching, mentorship and leadership development throughout the entirety of the project to ensure milestone completion and project progress, and to facilitate project scope modifications where necessary to meet these requirements. The required milestones will demonstrate the application of MBI program learning objectives and entrepreneurship competencies, and will be required as follows:

- Milestone 1: Identify and validate the biomedical need
- Milestone 2: Assess the existing and emerging market landscape
- Milestone 3: Develop and test prototype
- Milestone 4: Outline IP and regulatory strategy of proposed solution
- Milestone 5: Determine necessary resources and funding strategy
- Milestone 6: Develop a business model for your proposed solution/company
- Milestone 7: Pitch your final innovation

In the MBI 701 Project Course, there will be the following options for learners to define the health or biomedical problem that they will be focusing on developing an innovative solution to for the duration of the program. All students in the program will experience the same academic rigour and entrepreneurship mentorship and support, and these options provide maximum flexibility:

1. Select your own problem through clinical immersion experience: students can participate in a clinical immersion experience to identify and validate a biomedical problem to work on during the remainder of the project courses, following a structured needs finding method first developed by [Stanford Biodesign](#).
2. Those without an existing project will have the option to select and validate a problem from a provided database consisting of problems identified by healthcare providers, with opportunities provided to validate the problem through conversations with HCPs or visits to a clinical environment.
3. Validate your own idea (defined before starting the program through lab-based research, previous educational projects, or other means)

All learners will be required to participate in one-day clinical immersion experiences in each bootcamp (defined below), which will provide experiential value to them as well as opportunity to gain greater insights into how their own projects may fit into the clinical environment.

Project Courses and Bootcamps:

701, 702, 703: Project Course I, II, III, Delivered Sept-August (3, 3, 6 units)

Students will be encouraged but not mandated to undertake the Project Course as members of a team, which will each be assigned a coach who will meet regularly with the team to assess both project progress and how concepts delivered in the online courses are being applied to the project. Students will also have the option to individually progress through these courses with their own identified project innovation. Progress in the projects will also be assessed at the Bootcamps throughout the year. Teams will present updates on their projects as part of the Bootcamp activities. During the third semester Project Course

(703) there will be no other core courses scheduled to allow teams to complete their business and commercialization plans and take two elective courses.

Bootcamps:

Each of the 4 Bootcamps will be 3-5 days in duration and attendance is mandatory. The first is introductory, for program orientation, team formation, networking, planning for clinical immersions (if applicable to a learner) and project discussions. There will also be short talks to introduce students to the course work of the curriculum block that follows. At the subsequent Bootcamps, curricular material from the previous curriculum block will be reviewed along with introductions to the next block of courses, project updates given, opportunities for networking provided and guest speakers invited. There will also be exercises where learners will be expected to apply knowledge from the courses through case studies, group discussions, or other assignments. Each bootcamp will include a one-day clinical immersion experience, where learners will be spread across various clinical areas within local hospitals, followed by a discussion period the next day where they will share experiences with others who were immersed in a different clinical environment. This element of the bootcamps will provide value to all learners by providing an understanding of the clinical environment and a new perspective that they can then apply to their team/individual projects. The final Bootcamp will take the form of a “Pitch” competition, where each team will present the progress of their innovation project. Starting in the 2024 academic year, the introductory bootcamp will overlap with the final pitch bootcamp for the graduating cohort, so incoming students will be exposed to this element at the start of the program.

Online Core Courses:

These 1.5-unit core courses will be delivered as online modules, but there will be bi-weekly check-ins with instructors and with coaches, either in-person or virtually to assess progress both in the project and the core course.

MBI 704. New Value Creation (1.5 units)

This initial course is designed to allow learners to identify unmet needs, identify potential root causes of observed problem(s), and validate them. Students will also learn how the healthcare system functions so that they can identify important stakeholders in the healthcare space. They will develop decision matrices for prioritizing observed needs.

MBI 705. From Market Assessment to Value Proposition (1.5 units)

In this course, students will learn to assess whether there are available alternatives already on the market that solve the identified problem and estimate market size, including dollar size and number of users. They will identify potential barriers to market entry and strategies to overcome them. They will validate the product-market fit for the proposed problem solution (innovation), identify risks and risk mitigation strategies in alignment with industry standards, and learn how to articulate a competitive advantage for their proposed solution.

MBI 706. Intellectual Property (1.5 units)

This course will cover how to conduct patent searches and how IP can be protected in a variety of innovation domains e.g., device, pharma, digital or diagnostic. Students will learn how to maintain confidentiality in external-facing communications e.g., NDA's and collaborate with entities such as MILO to execute an IP strategy.

MBI 707. Prototyping and Technology Readiness Assessment (1.5 units)

Starting at the point where basic research activities have been conducted and/or published, this course will take students through topics such as design thinking, proof of concept, and pilot scale prototypes in both simulated and operational environments to the stage of full-scale prototypes and final configuration, successfully tested in a real-world environment.

MBI 708. Regulatory and Reimbursement (1.5 units)

Processes for technology testing and market approval are controlled by regulatory standards that are specific to the type of innovation e.g., drug, device, diagnostic or digital domain. This course provides an overview of the requirements and industry standards across the different innovation domains in relation to regulatory guidelines for ventures as well as the opportunities and challenges for reimbursement. Elective courses will be available to take a deeper dive into regulatory requirements for specific venture domains.

MBI 709. Business Model Development (1.5 units)

In this course students will learn how to evaluate and determine the most appropriate business model for viability and revenue generation within the healthcare space, how to create a go-to-market strategy and determine the costs and benefits of potential exit options.

MBI 710. Funding and Project Management (1.5 units)

This course reviews various innovation ecosystems within the healthcare sector, emphasizing the importance of building relationships and coalitions to acquire necessary resources. Students will learn how to use project management platforms to manage resources.

MBI 711. Business Basics (1.5 units)

This course provides students with an overview of concepts related to financial accounting, incorporation, partnerships, HR, payroll, etc., that are essential to the management of a successful business.

Electives:

Students will take two 1.5-unit electives in the spring/summer term. One will be chosen from the regulation and reimbursement selection based on project focus and one will be chosen from the list of electives below.

- Regulation and Reimbursement (choose one from the following)
 - o Therapeutics
 - o Devices
 - o Diagnostics
 - o Digital Health
- Special Topics in Biomedical Innovation
- Complexity Science and Adaptive Systems

Personalized Coaching and Leadership Development:

Personalized coaching and leadership development will be incorporated longitudinally into the project courses (MBI 701, MBI 702, and MBI 703) and bootcamps. Coaches will come from the partnership with

The Clinic @ Mac and their extensive network of faculty members with experience in business development and commercialization. These experts will meet with teams and individuals at regular check points throughout the program to ensure that the project and teamwork are progressing well while considering areas of strength and weakness. They may also identify a need for intervention or remediation for an individual or a team. Coaches will work under the supervision of the course instructor for MBI 701, 702 and 703, with regular progress reports. The course instructor will respond to areas of need identified by the coaches, as appropriate, to support the learner or group. Each bootcamp will also provide professional development programming by faculty members, which may include expert guest speakers.

Mentors:

The Clinic @ Mac also has an extensive network of members from industry who will be brought in to serve as mentors throughout the program, so that students can engage in informal coffee chats, or more formal panel discussions. The instructor for the project courses (MBI 701, MBI 702, and MBI 703) will coordinate and liaise with mentors to schedule these sessions throughout the year. Mentors will not be responsible for grading students. Only McMaster faculty members will be permitted to assess students.

The curriculum described above aims to introduce students to the fundamentals needed to innovate in healthcare and biomedical fields. These fields will be explored within MBI courses, providing students with new perspectives to innovation in Canada and the rest of the world. These insights will assist students in developing their own business and marketing plans for funding and reimbursing their solutions and building profitable, sustainable ventures.

4.2 Program Innovation

Unique aspects of the MBI program include the following:

- An immersion experience will be a unique opportunity provided to students in this program, taking an experiential learning approach that diverges from the traditional theory-based programming found in many course-based master's degrees. Through their immersion, students will be expected to validate existing unmet needs in the healthcare or biomedical spaces and to propose an evidence-based solution.
- Aspects of the Biodesign Fellowship program at Stanford University have been adopted to provide MBI students with a unique and effective program. In the MBI program, students will be paired with a faculty coach as well as one or more mentors.
- The program will be anchored by a total of four 3–5-day intensive bootcamps. During these mandatory bootcamps, learners will come together for guest lectures, case-based interactive workshops and design sessions that introduce the next phase of the biomedical innovation process and create an innovation community and network. In-person events or bootcamps will be planned to allow for learners to balance with their other commitments. Bootcamps will be hosted at The Clinic @ Mac facility.
- At the end of the program (i.e., at the final bootcamp), students will present their innovation in a pitch competition to a diverse audience consisting of industry, faculty, members of the McMaster Innovation ecosystem, investors, and incubators/accelerators. This event will provide students with valuable experience in an environment closely resembling venture capital pitches. The final pitch bootcamp will also help to demonstrate achievement of the program learning objectives (as

outlined in Section 1.4) and provide an opportunity for overlap between the outgoing and incoming cohort.

The program will use a blended and flexible learning approach (e.g., virtual, in-person, immersion experiences), so that students living in the Greater Toronto and Hamilton area and beyond can be fully immersed in the MBI curriculum. Any student requiring accommodations will be supported by the Program Director. In addition, Student Accessibility Services (SAS) will be contacted to brainstorm solutions to foreseeable barriers and develop appropriate accommodation plans.

Ultimately, it is our goal to prepare graduates for successful careers. By providing a multidisciplinary program that challenges students to push the boundaries of their own education and, in turn, the boundaries within healthcare, we hope to stimulate creativity, inventiveness and progress. The MBI program will enable students to develop a combination of intrapreneurial and entrepreneurial skills that will permit a range of career directions upon graduation.

4.3 Mode(s) of Delivery

The outline below highlights the proposed modes of delivery:

- 12-month experiential program
- 12-month innovation project course (team or individual based)
 - Project support through MBI faculty and The Clinic @ Mac coaches and mentors
- In-person and distance learning:
 - In-person:
 - Immersion experiences
 - Four 3-5-day bootcamps
 - Learning at a distance
 - Online courses

By combining in-person immersion and bootcamps with online formats for courses, the blended model will provide the flexibility and autonomy needed to complete the program learning outcomes. For all lectures delivered in this course, closed captioning will be available. Courseware will primarily comprise of peer-reviewed papers that are available using McMaster's Library access to archives (e.g., Google Scholar, PubMed etc.). Courses will be hosted primarily through McMaster University's learning management system, *Avenue to Learn*. Synchronous sessions with online video conferences will be scheduled using various available platforms such as Microsoft Teams or Zoom at the discretion of the instructors. These precautions will be taken to ensure that students have access to all materials at any time to accommodate schedule and life conflicts.

4.4 Experiential Learning

Experiential learning will be an integral part of the MBI program. For those choosing a clinical immersion experience connections have been established with innovative health care practitioners in Hamilton Health Sciences, St. Joseph's Healthcare Hamilton, and Joseph Brant hospitals. The MBI will leverage this network to provide opportunities for MBI students to shadow clinicians or their healthcare teams to conduct needs-finding investigations. The experiential learning components and personalized coaching will be overseen by the instructor for the Project Courses (MBI 701, 702 and 703).

Additional opportunities for experiential learning will be provided through mini-projects and other activities during bootcamps. Bootcamps will be the main touch point for in-person learning throughout this program

and will include team activities that will allow students to iterate and fail quickly. Failure is an important part of venture creation, and it is our goal to allow students to fail first in a safe space that will maximize learning opportunities.

4.5 Accessibility

The Faculty of Health Sciences strives to meet the needs of its students, staff, and faculty in terms of accessibility. Every effort will be made to ensure that the program meets the expectations of the university in terms of accessibility. The program will be prepared to provide equitable learning opportunities for all students and will be prepared to accommodate individuals with disabilities to allow clinical immersion for all students.

Courses will be designed and delivered with a diversity of learning styles and Universal Design in mind to create an inclusive and accessible classroom environment. For each course, a course syllabus including a statement regarding the duty to accommodate students with disabilities, and a complete course reading list will be provided prior to the beginning of the term. As the program will be delivered primarily through online resources, all lecture material as well as other course content (e.g., assignments, supplementary materials, etc.) will be made available electronically, and appropriate practices will be followed to ensure accessibility (please refer to <http://accessibility.mcmaster.ca>). To ensure principles of Universal Design are followed, alternative formats to online content will be provided as needed.

The Faculty of Health Sciences recognizes that individuals may require some adjustments to support their performance throughout the bootcamps. The Master of Biomedical Innovation program will work with the individual seeking accommodation to ensure the university's goal of accommodation is maintained, understanding that the nature of the accommodation is specific to the individual and will be determined on a case-by-case basis. A Faith and Spirituality Day Calendar will be consulted to ensure the proposed dates of bootcamps will not conflict with observance days that could affect participation.

4.6 Research Requirements

As a course-based Master's degree, the MBI program will not include any mandatory research components and therefore, no research requirements.

5. Assessment of Learning

5.1 Methods of Assessing Students

Students will be assessed using methods that will accurately assess program learning objectives. We envision students working in small teams throughout the 12-month program that will leverage their skills and project development experiences to develop new solutions to current health and/or biomedical issues under the supervision of a coach. Courses may use but are not limited to:

- Coach evaluations
- Oral presentations/seminars
- Written evidence-based opinion/position papers
- Written self-reflections on skills development and skill acquisition
- Final Pitch Bootcamp presentation

Through these main assessment types, we can assess MBI student knowledge, communication, problem-solving, critical thinking, solution identification, and personal reflection skills. Further, the

assessments are also used in other course-based Master's programs at McMaster (MBDC, MSc Global Health, MEEI/MTEI) and externally (Queens University MMIE). These assessments will address and assess all the program learning outcomes listed in Section 1 of this proposal. Students will receive a final grade for each course. Students will be assessed for group work, but the majority of the assessment will be based on individual work. No more than 50% of the grade in a course will be based on group work.

Students will apply knowledge learned in the classroom and bootcamps in their 12-month project course, where the application of the program learning outcomes will be assessed. Assessments will have added flexibility to be done or handed in through virtual or in-person formats to accommodate any challenges that may arise and prevent students from completing important assessments to satisfy program learning outcomes. If additional barriers do arise, MBI faculty will take these into account on a case-by-case basis but will always prioritize student learning and educational integrity with respect to alternative accommodations.

In addition to the measures outlined in section 7.1 to monitor program quality on a course-by-course basis for the first five years of the program, the Program Director will conduct a random sample of Final Bootcamp Pitch presentations bi-annually and will analyze the presentations to determine how well all of the program learning outcomes and competencies are being achieved by students in a way akin to the way that Graduate Attributes are measured for engineering programs accredited by the Canadian Engineering Accreditation Board. This assessment coupled with alumni surveys will be used to make improvements and enhancements to the program to ensure the quality of the student learning experience. The Program Director will also provide a sample of the Final Bootcamp Pitch presentations and a qualitative and quantitative (based on grades) summary report of learning outcome indicators to the Advisory Committee for feedback. This assessment plan and outcomes will be reviewed during the cyclical program review every 7 years.

5.2 Curriculum Map

Below is a curriculum map created for MBI students that indicates the teaching activities and learning opportunities, and how the MBI program intends to assess for evidence of program learning outcome completion.

Program Learning Outcome	Master's Degree Level Expectations (DLEs)	Course Alignment	Teaching Activities & Learning Opportunities	Assessments and Evidence
Identify opportunities for new value creation	1,3,4a,4b,5,6	MBI 701 MBI 704	Teaching: PC, OP, WR, OC Learn Opp: PC	Coach evaluations on application of DLE's to individual or team Project, from both oral presentation and written reports. Oral presentation of project development at Bootcamps
Describe a current and future market landscape	1,2,3,4a,4d	MBI 701 MBI 705	Teaching: WR, OC Learn Opp: PC	Coach evaluation of the application of the DLE's to the Project in both written reports and oral presentation
Design a solution and articulate a value proposition	1,2,3,4a,4d,6	MBI 701 MBI 705 MBI 707	Teaching: OP, OC Learn Opp: PC, BC	Oral presentation to Coaches at the first bootcamp, with a written report on the application of the DLE's of MBI 704 and 705 to the project
Identify and protect intellectual property	1,2,3,4c,5	MBI 701 MBI 706	Teaching: OP, WR, OC Learn Opp: PC, BC	Provide a written report on the application of the relevant Intellectual Property issues to the project
Address regulatory requirements	1,2,3,4b,4c,4d,6	MBI 702 MBI 708	Teaching: OP, WR, OC Learn Opp: BC	Oral presentation or seminar to Coaches and fellow students at the second bootcamp describing regulatory issues applicable both to the project and to written cases
Create a team and network	4a,4b,4c,5	MBI 702 MBI 709	Teaching: OP, WR Learn Opp: BC, PC	Assessment of team creation by coaches and written self-reflections by students on team skills development
Acquire necessary resources and funding	1,2,4a,5	MBI 702 MBI 703 MBI 710	Teaching: SR, OC Learn Opp: BC, PC	Oral presentation to Coaches on funding strategies and the use of project management platforms to manage resources
Develop and adapt a business strategy	1,2,3,4a,4d,5	MBI 702 MBI 703 MBI 709 MBI 710 MBI 711	Teaching: SR, OC Learn Opp: PC	Written report describing the business strategy for commercializing the project, go-to-market plan and provide an exit strategy
Develop and sell key messages for various audiences	3,4a, 5	MBI 702 MBI 703 MBI 709 MBI 711	Teaching: SR Learn Opp: PC, BC	Oral presentation to peers and Coaches at the Final Pitch Bootcamp

Curriculum Map of the MBI program outlining the Program Learning Outcomes (PLOs), how they align with Degree Level Expectations (DLEs) and map onto the MBI courses. For each PLO, the teaching activities and learning opportunities students will be exposed to are noted, as well the assessments and evidence that will be collected to determine that students have achieved the PLO before they graduate. Abbreviations: Project course (PC), Oral presentations (OP), Written evidence-based reports (WR), Online/virtual courses (OC), Bootcamps (BC), Self-reflection (SR).

5.3 Demonstrating Student Achievement

In the MBI program, success will be defined as graduates who are prepared to tackle the unstructured problems within the healthcare system. This preparedness will take on many forms and will be a challenging metric to quantify. The primary identifier of student success will be in the successful completion of the year-long project course. It will be here that students will demonstrate their understanding of many key concepts, out of necessity for their application to new solutions.

6. Resources

6.2 Graduate Programs

The Faculty of Health Sciences' Department of Surgery has a history of health innovation and a commitment to entrepreneurship. With this culture, the Department will serve as an appropriate administrative home for the MBI program. In collaboration with McMaster MGD Health ICE, the Department will ensure the MBI program launches with success and has access to faculty, networks, resources, and experienced support needed to enable the program's vision. This will be facilitated by the assistance of the Faculty of Health Sciences and FHS Graduate Studies Office. In tandem with new hires and staff, the resources forecasted will directly support the needs at program inception and future program expansion. This permanent home for the program and the necessary expertise in the Department of Surgery is an important opportunity for the MBI program.

6.2.1 Administrative, Physical and Financial Resources

Administrative Resources

A Program Director (0.4 FTE) in the Faculty of Health Sciences will preside over the program, ensuring the overall vision is enacted. The program will leverage the focused time of one other faculty member (0.5 FTE) to guide curriculum development and course delivery. Other McMaster faculty will be recruited to deliver the bootcamps, facilitate course curriculum and provide coaching, with involvement of external, experienced biomedical entrepreneurs to serve as mentors in the program. The program will be supported by a Program Coordinator (1.0 FTE) who will work collaboratively with the existing MGD Health ICE team to ensure deliverables are achieved and both faculty and learners are well-supported.

Physical Resources

The MBI program will have access to state-of-the-art working and meeting space within the recently established Marnix E. Heersink School of Biomedical Innovation and Entrepreneurship within MDCL. Learners will also be able to access The Clinic @ Mac, providing resources and co-working space in the Health Sciences Library. Classrooms can also be booked via FHS for rooms in HSC and MDCL. The MDCL space will have both teaching and administrative office space that will be used to accommodate future hires for launch and growth of the program.

Financial Resources

The Department of Surgery is research intensive with a strong track-record of funding from senior faculty members. Specifically, the department is home to three Canada Research Chairs: Dr. Mohit Bhandari in Musculoskeletal Trauma and Surgical Outcomes, Dr. Sheila Singh in Human

Cancer Stem Cell Biology and, most recently, Dr. Richard Whitlock in Cardiovascular Surgery. In recent years, this department has been increasing their research focus, increasing total research grant money from \$7.2 million for 2016-2017 to \$15.8 million for 2017-2018. Additionally, the department received a record-setting grant of more than \$14 million as part of the launch of a fracture management program. Publications are also increasing over time, moving from 286 to 315 between 2016-2017 to 2017-2018 and increasing to 371 in 2020.

Curriculum development and start up costs for the new program will be funded by Michael G. DeGroote Initiative for Innovation in Healthcare and the newly established Marnix E. Heersink School of Biomedical Innovation and Entrepreneurship.

6.2.2 Library, Technology and Laboratory Resources

Library Resources

MBI students will have complete access to the library resources across Campus. This includes the Health Sciences Library, which contains an extensive collection of books and journals. Students will also have access to online journals and the library's online collection using their MacID on and off campus. Further, a physical space within the Health Sciences Library is the home base for The Clinic @ Mac and a hub for content on health innovation, entrepreneurship and commercialization which will also be accessible to MBI students. Other libraries such as the H.G. Thode Building and Innis Library are other options for resources that focus on the natural sciences and business, respectively. Online collections of these libraries will also be available to MBI students. (See Exhibit A6 for letters of support.)

Technology and Laboratory Resources

MBI students will have access to Technology resources used for communication and remote accessibility. Students will have on-demand access to UTS services for any troubleshooting needs for communication. Programs that use virtual settings to access lectures (Zoom, Microsoft Teams, Webex), courseware (*Avenue to Learn*) and asynchronous video (MacVideo, Avenue to Learn) will also be made freely accessible to students. On Campus, students will have a MacID that can be used to access free internet campus-wide and at other McMaster campuses. The Centre for Simulation-Based Learning (CSBL) is also an available state-of-the-art facility that can be used by MBI students due to the clinical focus, especially students with disabilities that cannot go into active clinical environments. There is no laboratory setting in this program.

6.2.3 Faculty

Considering prior success with the Integrated Biomedical Engineering and Health Sciences program, MGD Health Innovation, Commercialization and Entrepreneurship initiative, the Health Leadership Academy and several other education programs, we have demonstrated the ability to draw on the large complement of existing faculty members within the Faculty of Health Sciences from across all departments to mount high quality educational programming. This includes research faculty and clinical faculty who are themselves entrepreneurs or consultants, many of whom also have a background in business or engineering.

Faculty Member	Credentials	Rank	Home Unit	Available for Coaching?
M. Anvari	MD, PhD	Full	Surgery	Y
M. Bhandari	MD, PhD	Full	Surgery	Y
V. Chaudhary	MD	Full	Surgery	Y

S. Galloway	BA, CPA, CMA	Staff	FHS Finance	Y
W. Hanna	MD	Full	Surgery	Y
J. Kelton	MD	Full	Medicine	Y
Y. Khan	MD, Executive Master in Digital Transformation and Innovation Leadership	Full	Surgery	Y
A. Korol	PhD (Biomedical Engineering), MSc (Medical Sciences)	Assistant	Medicine	Y
S. Lal	MBA, MEng, LLM	Assistant	Medicine	Y
F. Lasowski	PhD (Chemical Engineering)	Assistant	Booth School of Engineering Practice and Technology	Y
M. MacDonald	PhD (Medical Sciences)	Associate	Biochemistry	Y
J. McKillop	PhD	Full	Psychiatry	Y
A. Neville	MD	Emeritus	Oncology	Y
K. Owen	PhD (Information Systems)	Assistant	Medicine	Y
S. Park	PhD (Education)	Assistant	Medicine	Y
J. Stokes	PhD (Biochemistry)	Assistant	Biochemistry	Y

The Faculty of Health Sciences has an extensive complement of faculty members from ten clinical departments and two non-clinical departments that range from part-time and full-time clinical faculty to full-time PhD research faculty and full-time teaching professors. Education programs in the Faculty of Health Sciences traditionally draw from this pool of faculty members to deliver educational programming as faculty members are required to teach a minimum number of hours per year.

As the home department for the MBI program, the Department of Surgery has 100 full-time faculty members (clinical and non-clinical) among 11 divisions: cardiac surgery, general surgery, neurosurgery, ophthalmology, orthopaedic surgery, otolaryngology, pediatric surgery, plastic surgery, thoracic surgery, urology, and vascular surgery. Several faculty members from these divisions are also involved in our *Innovators in Scrubs* undergraduate course. (See Exhibit A6 for letters of support.)

The MBI program will also draw faculty members from The Clinic @ Mac where a network of coaches and mentors has been developed over the last two years. This network of faculty members from the Faculties of Engineering, Science and Health Sciences are entrepreneurs themselves who will be able to provide guidance to students in the MBI program. (See Exhibit A6 for letters of support.)

We also have commitments from industrial partners to contribute to the educational mission of the program by teaching courses, acting as coaches or acting as mentors. While we have a wide network through The Clinic @ Mac, we already have commitments in writing from some of these partners indicated in the table below.

Name	Credentials	Company	Position	Available for Coaching?
M. Antonakos	MBA	Allarta Life Sciences	Founder and COO	Y
A. Giovinzio	MBA	Red Granite Capital	Chairman and CEO	Y
H. Stover	PhD	Allarta Life Sciences	Founder and CEO	Y

6.2.4 Student Financial Support

As a course-based Master's degree, the primary source of financial support for students in the MBI program will be internal program-funded merit-based scholarships available to graduate students who qualify, as included in the program budget.

6.2.5 Faculty Research Funding

As a course-based Master's degree, the MBI program will not include any mandatory research components. Individuals will not be funded for research within their role as an MBI student.

6.2.6 Supervision

As the MBI program does not contain any mandatory research components, there is also no requirement for official faculty supervision. Faculty members teaching within the MBI program and faculty members/members from industry from The Clinic @ Mac will be engaged for coaching of the year-long project course in capacities that are relevant to student projects.

7. Quality and Other Indicators

7.1 Academic Quality of the Program

Measuring quality in the MBI program will be primarily driven by tracking program and student-specific key performance indicators (KPIs) annually over the first 5 years after program inception. In the short-term, we will focus on key performance indicators that track the growth of the program and the success of MBI alumni. Over time, we will begin to track our primary long-term indicator of the success of the MBI program: the number of biomedical innovations and inventions produced within the year-long project course. The Program Director will oversee measurement and monitoring of the key performance indicators with the Program Coordinator for each term. The data will be reviewed with the Operating Committee and Advisory Committee annually for feedback, planning and implementation of new measures as required.

The key performance indicators that we will track over the first 5 years will focus on the growth of the program and measures of student success after graduation:

Program-facing KPIs:

- Exit surveys completed by students upon completion or departure from the program
- Number of new affiliations made (Hamilton Health Sciences and St. Joseph's Healthcare hospital networks, etc.)
- Number of companies launched by students and alumni
- Number of patients impacted because of products of alumni
- Number of biomedical innovations created by MBI alumni

- Amount of IP generated for innovations
- Funding secured from external sources by MBI alumni (grants, venture, angel, etc.)

Student-facing KPIs:

- Student assessments
- Student reflections conducted at the end of each term
- Number of students who successfully create a start-up
- Number of students who are employed after the program
- Number of fellows and clinicians
- Number of students that enter The Clinic @ Mac health sciences incubator
- Success rate of acceptance into start-up education, accelerator, or incubator

Tracking these KPIs are pragmatic and realistic success measures that will demonstrate the quality of the MBI program. Specifically, these KPIs will demonstrate the program's impact on the Hamilton-McMaster Healthcare Innovation Landscape, a continuously growing sector that we intend MBI graduates to help accelerate. KPIs can also be used to increase new stakeholder buy-in (i.e., new faculty involvement, external and internal funding opportunities, new demographic of incoming MBI students). Lastly, these KPIs will provide vital information for the next 5 years of the program, identifying strengths and weaknesses to amplify and address, respectively, in the subsequent 5 years.

Students will also be encouraged to engage in McMaster and community events throughout their degree. Existing events such as Hacking Health, Delta Hacks, and Hack for Change will be promoted to these students, with the administration also working to cultivate more of these events which will focus specifically on biomedical innovation. Additionally, events held by the McMaster MGD Health ICE group and the Health Leadership Academy will be advantageous learning and networking opportunities for these students. The level of student engagement will be assessed using surveys such as the National Survey of Student Engagement (NSSE) or Classroom Survey of Student Engagement (CLASSE).

The Program Director and Program Coordinator will have an open-door policy when it comes to hearing student feedback and concerns. Programs will also often have a student society with a representative that will liaise with the Program Director to address areas of weakness/concern (or strength) of the program. Seeking anonymous formative feedback from students early on in each semester allows for change to be prompt, if appropriate. In the case where change is not an appropriate response to the feedback received, then a discussion will ensue to provide a rationale and explanation to students. Alternatively, or in addition, student focus groups or town halls with the program leadership has proven to be effective in ensuring a strong and positive student experience. Lastly, McMaster's MacPherson Institute for Leadership, Innovation and Excellence in Teaching provides a Course Refinement service where members from the MacPherson Institute visit a classroom in the absence of a faculty member to engage students in discussion about areas of strength and concern about a course or program which is then communicated in summary to the Program Director. A formal Course Refinement will be conducted within one month of the start of each term.

In response to the collected data, KPIs and feedback from all sources, an annual education retreat for all faculty members and coaches will ensure continuous quality improvement with respect to teaching and learning, and program delivery. Additionally, holding three or four monthly 'calibration meetings' during the summer months with all faculty members or course leads will ensure that courses within the program have been well integrated, that there are no gaps in the curricula, and that there are smooth transitions throughout the 12-month program.

7.2 Intellectual Quality of the Student Experience

The program will have mandatory touchpoints between students and faculty coaches to ensure students are keeping up with content and succeeding in the program. A 1:1 coaching structure will be put in place for students/teams as part of their year-long project course, providing student-faculty interactions through this course. Faculty members will be among the coaches that students will have access to for support on this project, which will allow for engagement and ongoing communication. These points of contact will be important to ensure student success. Acknowledging that students come from varying backgrounds, this just-in-time model could mean that students move through content at different times throughout the year. For this reason, faculty will stay in tune with the progress of each of the student groups.

The faculty that will be involved in the delivery of course content for the MBI program will inherently bring diversity and a breadth of knowledge to the program, as most will come from the Faculty of Health Sciences and have expertise directly pertinent to its program offerings. For example, all faculty involved in HESE's *Innovator's in Scrubs* course, MGD Health ICE, The Clinic @ Mac, and surgeons/clinicians from the Department of Surgery have the expertise required to execute a reimagined student experience in biomedical innovation. We predict the synergy that will be created by combining faculty from different disciplines will ensure the intellectual quality of the MBI program.

Beyond access to faculty mentorship, students will also be paired with mentors from industry through The Clinic @ Mac. These mentors will not only provide guidance to students for projects and coursework throughout the program but will allow for connections to the biomedical industry after graduation. This will be one of multiple ways that the program aims to ensure the success of graduates from the MBI program.

Appendix

Exhibit A1

List of major and enabling competencies that reflect the skills required for a successful entrepreneur, developed by the MGD Health ICE group

Identify opportunities for new value creation:

- Develop a decision matrix to help with prioritization of unmet needs
- Identify unmet needs and articulate as need statement
- Identify the potential root cause(s) of the observed problem(s)
- Identify and prioritize stakeholders in the healthcare space
- Map out the current workflow/infrastructure
- Validate the problem (through publications, hospitals, stakeholder interviews, etc.)
- Conduct background research into your area of interest

Assess the market landscape:

- Identify and research currently available alternatives to solve the identified problem
- Explain industry and trends to clarify current and future possibilities
- Present measurable market size including dollar values and expected number of users
- Segment the market using demographic, behavioural and psychographic characteristics
- Size the market based on TAM, SOM, TM and quantify using bottom-up or top-down approaches
- Compare and contrast competition including product features
- Identify potential market barriers and strategies to overcome them (ex. SWOT analysis)

Design a solution and articulate a value proposition:

- Create and implement an innovation development plan (concept, prototype, MVP) that progressively tests and de-risks your solution
- Validate the product-market fit for your proposed solution
- Develop elements of differentiation to offer sustainable competitive advantage
- Quantify impact on various processes (economics, outcomes, efficiencies, etc.) in the environment or market of interest
- Identify foreseeable risks and risk mitigation strategies in alignment with industry standards or best practices as applicable
- Develop a decision matrix to determine the best solution
- Understand and articulate solution's benefits and competitive advantage by outlining specific differentiating features

Identify and protect intellectual property:

- Conduct patent searches
- Evaluate IP protection mechanism and identify relevant requirements (novelty usefulness, non-obviousness)
- Determine confidential aspects of the novel solution and mechanisms for maintaining confidentiality in externally facing communications (ex. NDAs)
- Collaborate with relevant parties (e.g., legal support, MILO) to develop and execute an IP strategy

Address regulatory requirements:

- Determine solution's classification (ex. medical device, drug, biologic, wellness products, etc.)
- Identify specific requirements and industry standards, and develop a strategy based on FDA and Health Canada guidelines for venture (ex. clinical plan, QMS, safety tests, submissions, etc.)

Create a team and network:

- Develop a network that aligns with overall strategy
- Demonstrate entrepreneurial leadership, team building, and collaboration, utilizing project management and communication tools
- Articulate team skills and identify areas of gaps, strategize to fill gaps

Acquire necessary resources and funding:

- Describe innovation ecosystems
- Describe the healthcare sector to build strategic relationships and coalitions
- Use project management platforms (e.g., Jira, Trello, Asana) to manage resources
- Develop a funding strategy including relevant funding sources connected to development plan

Develop and adapt a business strategy:

- Evaluate and determine the most appropriate business model for viability and revenue generation within the healthcare space
- Create a go-to-market strategy
- Develop an exit-strategy by comparing the costs and benefits of potential exit options

Develop and sell key messages for various audiences

- Communicate to align with various audiences and/or business needs (e.g., funding, user acquisition, feedback, partnerships)
- Develop a non-confidential pitch deck that concisely communicates your innovation plan to various audiences
- Demonstrate effective visual communication by developing pitch decks to maximize clarity of message delivery
- Develop pitches of varying lengths for different audiences (e.g., elevator pitch)

Exhibit A2

Background research completed to understand the overall appetite of a program centred around biomedical innovation

1. **Competitor Analysis** – This was completed to gain a better understanding of the current landscape of graduate-level biomedical innovation programming in North America. This analysis was completed in December 2020. The general workflow for this analysis is provided below:
 - Programs that satisfied two criteria: 1. a graduate education and 2. provided programming related to innovation were categorized based on subject focus: Engineering, Design, Digital, Business, Leadership, and Innovation Management.
 - Programs were assessed for:
 - Level and length
 - Target Audience
 - Program Format
 - Course Topics
 - Projects or practicums
 - Noteworthy features
 - Created an *“Innovation Programming Scan”* deliverable that includes Canada, European Union and United States Programs that teach Innovation
2. **In-depth Literature Review and Systematic Analysis** – Completed June 2020
 - Written systematic review of innovation programming and pedagogical best-practices in the fields of health, bioengineering and design
 - Gap analysis
 - Report of qualitative and quantitative measures
 - Created an *“In-Depth Literature Review and Systematic Analysis”* deliverable that includes journal articles about Innovation Education within the last 15 years
3. **Continuous consultation with undergraduate and graduate students** from IBEHS, School of Biomedical Engineering and Medical Sciences using formal and informal methods (e.g., interviews, focus groups, surveys).
4. **Formation of ad-hoc Advisory Committee** including faculty from IBEHS, Health ICE, Health Leadership Academy (HLA), clinicians, entrepreneurs, and external industry consultants.
5. **Engaged with community partners in the Hamilton space** (i.e., doctors, innovators, Health ICE) to act as mentors for future students.

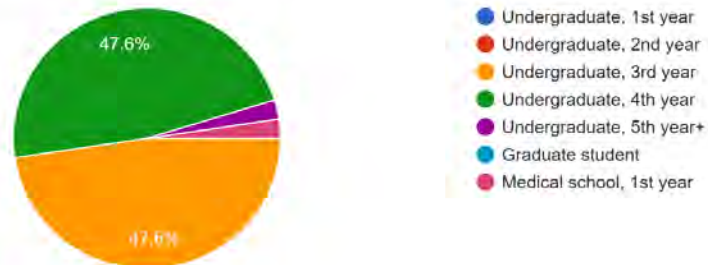
Exhibit A3

A survey of 3rd and 4th year IBEHS students suggesting interest in Graduate level training

Below are results of an informal survey conducted of upper year undergraduate students in IBEHS. 42 responses were received between February 2 and 11, 2021.

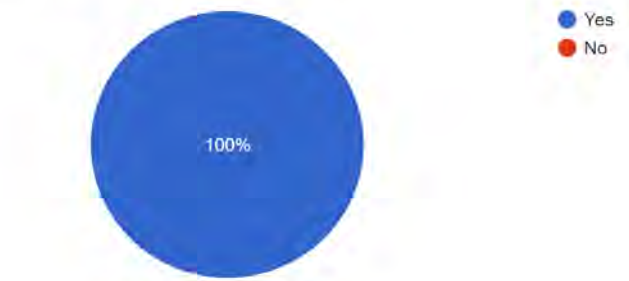
What level of education are you working on?

42 responses



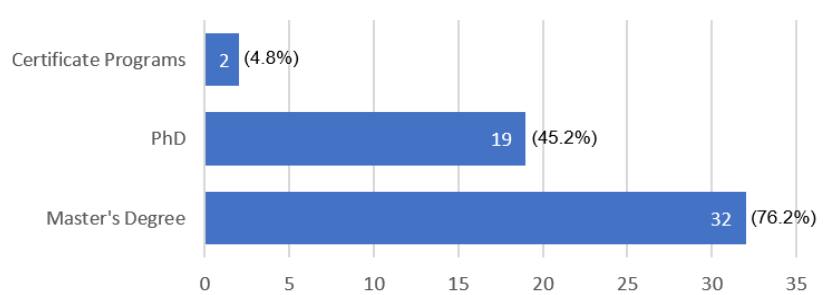
Have you considered additional studies?

42 responses



If yes, which of the following program options have you considered?

42 responses



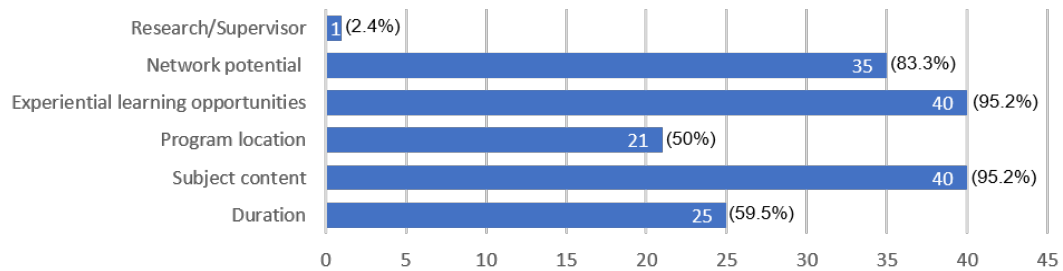
Please indicate the ideal length of a graduate program for you.

42 responses



Please list any components of a graduate studies program that would be critical for you to consider applying.

42 responses



Please indicate which program components would be most interesting to you.

42 responses

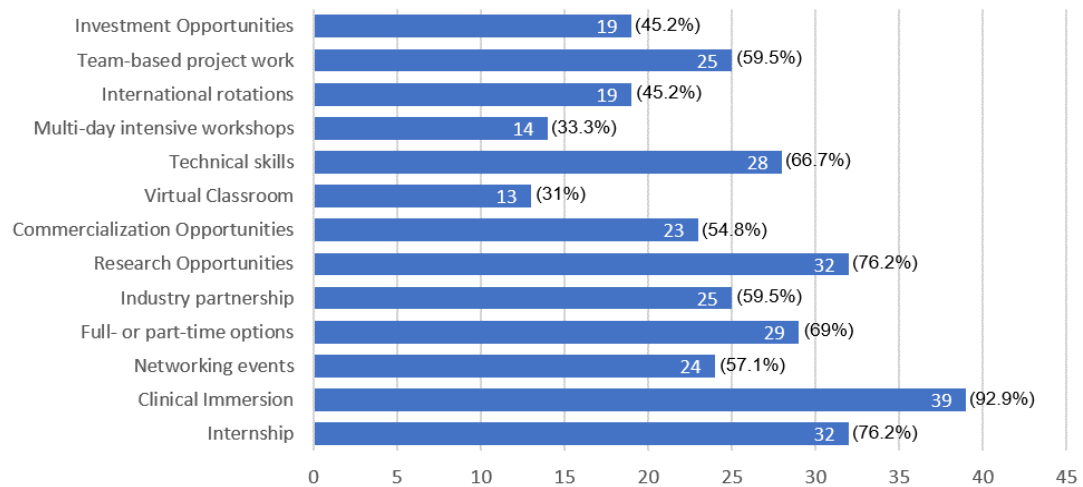


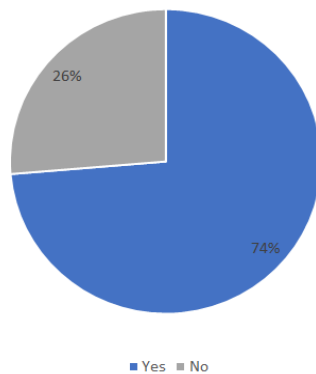
Exhibit A4

An informal survey of basic science researchers and clinicians at McMaster suggesting interest in Graduate level training focused on biomedical innovation

Below are results of an informal survey conducted of basic science and clinician researchers in the Faculty of Science, Faculty of Health Science, and Faculty of Engineering. 28 responses were received between November 5 and December 5, 2021.

Would this training program have been valuable to you or your colleagues had it been previously available?

21 responses



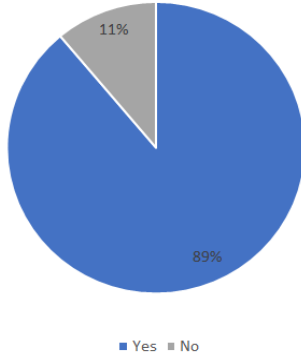
Summary of key themes from additional comments provided:

Why MBI would be valuable:

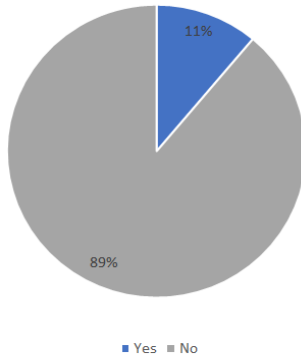


Would you recommend this training to individuals in your institution?

18 responses



Is there too much of a focus on innovation in the clinical setting?
18 responses



Does the program itself and its delivery appear to be innovative?
23 responses

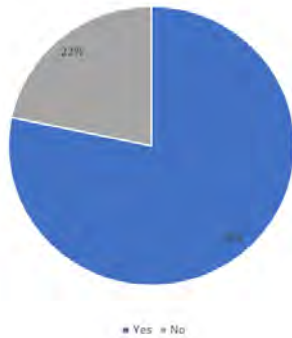


Exhibit A5

Competitor analysis in Canada of various Universities providing Innovation and Entrepreneurship Masters programs.

University	Faculty	Program Name	Duration
Queen's	Engineering and Smith School of Business	Master of Entrepreneurship and Innovation	12 months full-time
Toronto	Institute for Management and Innovation, (joint Administration, Business Management, Engineering Management)	Master of Management of Innovation	12 months full-time
McMaster	Engineering	Master of Engineering/ Technology Entrepreneurship and Innovation	20 months full-time
Ryerson	Engineering and Architectural Science	Master of Engineering Innovation and Entrepreneurship, Biomedical Engineering track	16 months full-time
Western	Engineering	Engineering in Medicine	12 months full-time, option for longer duration part-time
Ontario College of Art and Design (OCAD)	N/A	Design for Health	24 months full-time, 36 months part-time
McMaster	Health Sciences	Masters of Biomedical Discovery & Commercialization	12 months full-time
Guelph	Department of Molecular and Cellular Biology and Department of Business Management	Master of Biotechnology	12 months full-time, optional extension of research project to 16 months
Alberta	School of Business	MBA with Specialization in Innovation and Entrepreneurship	20 months full-time
McMaster	Social Science	Master of Public Policy in Digital Society	12 months full-time
Waterloo	School of Entrepreneurship and Business	Master of Business, Entrepreneurship, and Technology	12 months full-time, 36 months part-time
Toronto	Institute for Management and Innovation	Masters of Biotechnology	24 months full-time
Windsor	Science	Master of Science in Translational Health Science	12-months full-time

Exhibit A6

Letters of Support from Key Stakeholders of the Program

The following pages include four letters of support from:

- Dr. John G. Kelton, Executive Director, Michael G. DeGroot Initiative for Innovation in Healthcare
- Dr. Mohit Bhandari, Professor and Chair, Department of Surgery
- Jennifer McKinnell, Director, Health Sciences Library
- Dr. Heather Sheardown, Dean of Engineering



Dr. John G. Kelton
Executive Director
Michael G. DeGroot Initiative for Innovation in Healthcare

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Tel: 905.525.9140
Ext: 21706
Fax: 905.524.2983
Email: keltonj@mcmaster.ca

September 1, 2022

Dear Dr. Michelle MacDonald,

**Re: Letter of Support for the Master of
Biomedical Innovation Program**

It is with pleasure and enthusiasm that I can write a letter of support in consideration of the Master of Biomedical Innovation (MBI) Graduate Program within the Department of Surgery in the Michael G. DeGroot School of Medicine at McMaster University. A number of years ago, Dean Paul O'Byrne charged me with helping to develop a culture of innovation and entrepreneurial (I&E) activity within the Faculty of Health Sciences at McMaster. With funding provided by a generous gift from Mr. Michael G. DeGroot and subsequently Dr. Marnix E. Heersink, we have been developing a number of complementary initiatives. The Master of Biomedical Innovation will be the pinnacle of all of these initiatives. The program is unique in that it is project-based, using the problem-based learning approach of Health Sciences. The curriculum covers the key competencies of I&E. These competencies in turn were developed by educators and entrepreneurs under the guidance of Dr. Alan Neville.

When we looked for a home department for this master's program, Dr. Mohit Bhandari, Chair of Surgery, expressed his highest level of enthusiasm, and in meetings with members of the department a similar level of enthusiasm was apparent. The development of this MBI has followed a number of steps including a "competitor analysis" performed by an outside consultant, the development of core competencies, a number of pilot educational programs, and most recently, content development by key educators including yourself, Michelle. I anticipate this master's will be both important and highly sought after.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "John G. Kelton".

John G. Kelton, CM, MD, FRCP(C)
Executive Director, Michael G. DeGroot Initiative for

Innovation in Healthcare Distinguished University
Professor, McMaster University
Fellow, Royal Society of Canada
Emeritus Dean and Vice President, Michael G. DeGroote Medical School, Faculty of Health
Sciences



MOHIT BHANDARI, MD, PhD, FRCSC, O.Ont, C.M.
Professor and Chair | Department of Surgery
Canada Research Chair | Distinguished University Professor
McMaster University

Lakeview Lodge, 3rd Floor
Juravinski Hospital and Cancer Centre
711 Concession Street
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Tel: 905-521-2100 Ext. 73188
Email: bhandam@mcmaster.ca

July 20, 2022

Dr. Michelle MacDonald
Acting Director, MBI
Co-Director
Integrated Biomedical Engineering & Health Sciences
Via email: Macdonml@mcmaster.ca

Dear Michelle,

On behalf of the Department of Surgery, I am pleased to provide you with a letter of support for the Masters of Biomedical Innovation Graduate Program (MBI). The MBI will be unique in Canada as the only entrepreneurship education program that is biomedical-specific, matching healthcare-oriented student innovators with entrepreneurs whose mentorship will facilitate innovation project development. The one-year flexible curriculum delivery will be particularly attractive to members of my Department. Innovation and Entrepreneurship constitute one of the six pillars of the new C.R.E.A.T.E. strategic plan for the Department of Surgery and thus the opportunity to be the host Department for this new Program is completely in line with the direction in which the Department is moving.

To this end, we have been actively engaging members of our Department in discussions about the MBI. I remain confident that the Department will be able to provide a number of individuals who can be mentors and coaches for the MBI, and our trainees and junior members will certainly be encouraged to take this Program. I am also engaging surgical chairs from other institutions to discuss MBI as a potential stream of graduate study for their surgical trainees.

I look forward to collaborating with you and the other members of the Working Group who have been designing this very innovative graduate degree program.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Mohit Bhandari".

Mohit Bhandari O.Ont, C.M. MD, PhD, FRCSC
Distinguished University Professor
Chair, Department of Surgery
Senior Tier Canada Research Chair
McMaster University



Health Sciences
Library

Jennifer McKinnell,
Director, Health Sciences
Library Health Sciences
Centre 2B28 1280 Main
Street West Hamilton,
ON L8S 4K1

(905) 525-9140 x 24381
(905) 528-3733
mckinn@mcmaster.ca
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September 8, 2022

Michelle MacDonald, PhD
Co-Director, Integrated Biomedical Engineering & Health Sciences
Program Department of Biochemistry and Biomedical Sciences

Dear Dr. MacDonald,

I am writing in support of the new Master of Biomedical Innovation program. There are many areas where the Health Sciences Library (HSL) is well poised to support this new program. We have a history of working with experiential and evidence-based learning programs. The librarians and front-line staff are well versed in the processes necessary to teach learners the merits of finding, evaluating, and using the information to apply evidence-based practice and evidence-informed decision-making. However, when trying to understand the impact of any new program on the McMaster libraries, three aspects must be considered: collections, services, and space.

The HSL subscribes to and purchases a vast collection of journals, books, evidence-informed decision-making tools, and video content in subjects related to biomedical sciences, health care research, evidence-based practice, and the social determinants of health. The University Library (managed through Thode, Innis, and Mills Libraries) also provides extensive access to related information. Our interprofessional and interdisciplinary approach to licensing content means that, in most cases, we are already invoiced as a major research institution (meaning our subscription costs fall into the highest billing tier). As a result, adding new students and faculty will not bump us into a new payment category, nor will it force us to renegotiate the terms of our existing licenses.

In terms of providing comprehensive health industry information, there are content gaps. As outlined in the proposed budget, the allocation of additional resource funds will be necessary to address these gaps.

The HSL has unused capacity in some of its service areas. Given the program's proposed size and the study level, the HSL can more than support these students through walk-in help and interlibrary loan services. However, the HSL will struggle to meet demand when considering complex graduate research support. Over time, the impact of this new program, combined with the pressures generated from McMaster's larger health innovation community, may require additional staff to meet demand. Assuming funds to hire other employees are currently limited, I recommend that curriculum developers work closely with the HSL to ensure ample time to plan learner interventions and information management support activities. It may be necessary to develop self-paced modules and other asynchronous learning activities to ensure the students develop the advanced information evaluation, use, and management skills we normally expect from our graduate students. Eventually, additional librarian support will be required.

McMaster's libraries have been operating well beyond space capacity for many years. Students often report that they cannot find a place to study in the library. However, it is unlikely that the proposed additional students will create significant extra strain on existing library space.

I am intrigued and excited to learn of the newly proposed Master of Health Innovation program. I believe the HSL is ready and willing to support the new learners. Although there are some areas where creative problem-solving and careful planning are required, I am endorsing the program proposal. Please feel free to contact me if you require additional information.

Yours sincerely,



Jennifer McKinnell
Director, Health Sciences Library

BRIGHTER WORLD



ENGINEERING



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September 30, 2022

Dr. Michelle MacDonald
Acting Director, Master of Biomedical Innovation
Co-Director, Integrated Biomedical Engineering and Health Sciences

Dear Michelle,

On behalf of the Faculty of Engineering, I am pleased to provide you with a letter of support for the Master of Biomedical Innovation Graduate Program (MBI). We, in Engineering, are enthusiastic about this program, and we look forward to partnering with our colleagues in the Faculty Health Sciences.

To my knowledge, the proposed Master of Biomedical Innovation (MBI) will be unique in Canada because it is an entrepreneurial-focused health program training students who have interest in health innovation with regard to all aspects of innovation and entrepreneurship. The content ranges from evaluating areas of care for opportunities to innovate, to the creation of systems or devices that will enhance overall patient care in its broadest sense. Engineering students and faculty are typically skilled with regard to devices, systems analysis, and "making products". Health Science students have unique expertise in the provision of care. I personally believe that this partnership, along with other partners from across the university, will provide unique opportunities for all.

Over the past two years I, and other colleagues in Engineering, have been working with you Michelle, Dr. Neville, Dr. Kelton, among others, to create this program and I am pleased that it is now moving forward to the operational stage. I can commit that we in Engineering anticipate assistance with problem sourcing, problem development, coaching, mentoring, and potentially teaching. We will certainly be encouraging our students to participate in the Master of Biomedical Innovation Graduate Program (MBI).

Congratulations on taking the Master of Biomedical Innovation to this point, and I look forward to it being implemented

Sincerely,

Heather Sheardown
Dean of Engineering

McMaster University



MASTER OF BIOMEDICAL INNOVATION

Nov 11, 2022

Reviewer 1

Name: John Frampton

University Address: Dalhousie University

Reviewer 2

Name: Kieran Murphy

University Address: University of Toronto

Internal Reviewer

Name: Leonard Waverman

Department: McMaster

Executive summary:

The mission of the proposed McMaster University, Master of Biomedical Innovation (MBI) program will be to provide multidisciplinary, project-oriented graduate-level education and training to accelerate biomedical innovation. This program will serve to bridge an important gap between medical device design and health systems technology. It will also complement McMaster University's existing undergraduate and graduate programs in medical science and innovation. The content will be delivered in the form of 1.5 credit hour courses, bootcamps, and experiential learning activities over the course of 1 year. While similar in format to other graduate level programs in innovation, the fact that the program will be situated in the Department of Surgery, which has been internationally recognized for innovation in medical education and clinical research, will certainly provide a range of experiences that set this program apart from other programs in Ontario and across Canada focused on educating and training future inventors, innovators, and entrepreneurs.

Through remote interviews with faculty members who participated in developing the program and its curriculum and interested students, the reviewers were able to assess the suitability of the overall program structure, its fit within McMaster University's mission, academic plan, and strategic mandate, and its feasibility with respect to the planned resource allocation. The review team enthusiastically supports the mission of this new program. On the subsequent pages, we have provided comments and recommendations that we hope will facilitate the program approval process and the subsequent program launch.

Outline of the Visit

Was the site visit: In person: Virtual site visit: [Desk Review](#):

If the review was conducted either virtually or via desk review, was this format agreed to by both external reviewers? Yes No

Was sufficient rationale provided by the Provost/Provost's delegate for an off-site visit?

Yes No

For those reviews that included an in-person or virtual visit, please indicate the following (or insert the site visit schedule below):

- **Who was interviewed?**

- Vice-Provost and Dean of Graduate Studies (Dr. Steve Hranilovic)
- Acting Program Director (Dr. Michelle MacDonald) and Acting Administrator (Sarah Bouma)
- Curriculum Planning Group (Dr. Anna Korol, Dr. Fran Lasowski, Dr. Michelle MacDonald, Dave Mammoliti, Dr. Alan Neville, and Dr. Greg Wohl)
- Personalized Leadership (Karen Belaire, Dr. John Kelton, Rebecca Repa, and Dr. Kevin Smith)
- Faculty of Health Sciences Administration (Dr. Susan Denburg and Dr. Steven Hanna)
- External Experts (Fiona Bergin, Hugh Hoogendoorn, Dr. Renaud Jacquemart, Randy Peterson, Karen Scraba, and Dr. Leigh Wilson)
- Deputy Provost (Matheus Grasselli)
- Faculty Group (Dr. Wael Hanna, Dr. Michael Hartmann, Dr. Yasser Khan, Dr. Anna Korol, Dr. Michelle MacDonald, Dr. James MacKillop, Dr. Sean Park, and Dr. Bill Wang)
- Prospective Students (Deena Al-Sammak, Emnpreet Bahra, Daniel D'Souza, Lianna Genovese, Serenna Gerhard, Chris Griffiths, Jake Howran, Yuman Irfan, Tyler McKechnie, John Milkovich, and Sophini Supramanian)
- Senior Advisors (Dr. Mohit Bhandari, Dr. John Kelton, Dr. Alan Neville, and Dr. Heather Sheardown)

- **What facilities were seen?**

-None were seen in person. Video renderings were presented to show the planned departmental and learning spaces.

- **Comment on any other activities relevant to the appraisal.**

-The review was conducted via Zoom in the form of group interviews.

In order to continuously improve the effectiveness and efficiency of site visits/virtual site visits, please comment on the following:

- **How effective was the proposal brief in preparing you for the visit/virtual site visit?**

- The proposal did a good job of outlining the vision for the program and provided enough general information for the reviewers to understand the overall program structure and prepare questions about the details of the curriculum for the interviews.

- **How could the logistics of the visit/virtual site visit be improved?**

-Some of the sessions (those with 3 interviewees or fewer) could have been a bit shorter and other sessions (some with >9 interviewees) could have been slightly longer.

PROGRAM

- **Comment on if the program's objectives clearly described**

-The proposal provided an overview of the key program objectives that will serve as a framework to develop a detailed curriculum. Overall, the proposal was thoughtfully prepared. The Program Committee may wish to provide additional written details in the following areas.

1) The proposal refers to a gap between device and health systems technology that will be addressed by the MBI program. Outlining some specific problems that need to be addressed to fill this gap would help to motivate the objectives of the program and distinguish it from other graduate level programs in biomedical science and innovation.

2) A major strength of the program is its emphasis on project-oriented and experiential learning. Students entering the program will work on either an individual project or (more preferably) a group project. It would be helpful to prospective students, faculty members, and mentors/coaches to have additional information about appropriate subject areas and scope for these projects. Providing an example of an ideal project would be helpful for students considering the program. The mentors/coaches will be a key part of the student experience. The team has done an admirable job of recruiting mentors/coaches already and is encouraged to continue to do so as they approach the program launch so that students will have access to a diverse range of skillsets and perspectives. It is recommended that the team develops a strategy for vetting projects at the beginning of the program.

3) It is recommended to begin mapping program objectives to program participants, including identifying faculty members who will teach courses and bootcamps and working with them to develop detailed syllabi/activity schedules.

- **Comment on the appropriateness of the degree nomenclature, given the program's objectives**

-Master of Biomedical Innovation (MBI) seems appropriate.

- **Comment on the consistency of the program with McMaster's mission and academic plan; whether the program learning outcomes are clear, appropriate and aligned with the undergraduate or graduate Degree Level Expectations.**

-The program is in alignment with McMaster's mission and academic plan. The Department of Surgery, several other academic units, and prospective students are all clearly in support of the program. The plans presented will be strengthened by including additional details about the projects, courses, and bootcamps, some of which were discussed in the interviews.

- **McMaster's Current Priorities and Strategic Mandate Agreement should be at the forefront of program design. This information can be found in the links provided below:**
 - i. **McMaster's Strategic Mandate Agreement:**
<https://ira.mcmaster.ca/app/uploads/2020/11/McMaster-SMA3-Agreement-August-31-2020-SIGNED-FINAL.pdf>
 - ii. **McMaster's current priorities:**
https://president.mcmaster.ca/app/uploads/2021/05/Institutional-Priorities-and-Strategic-Framework_FINAL_5May21.pdf

Comments:

See above.

Specific Recommendations (where applicable):

As noted above, the Program Committee may wish to provide additional details in the program proposal. The Program Committee is also encouraged to begin drafting detailed syllabi and preparing learning materials.

ADMISSION & ENROLMENT

- **Comment on whether the admission requirements (including any alternative requirements) are appropriately aligned with the program learning outcomes (and/or Degree Level Expectations) established for completion of the program.**

-The admission requirements include completion of an undergraduate honours degree, with a minimum of a B+ average in the final two years of study. There is also a requirement for introductory level entrepreneurship and innovation education along with practical experiences, which the team may wish to soften so as not to exclude students who for many reasons may not be exposed to entrepreneurship and innovation prior to learning about the MBI program. Candidates who meet the minimum admissions criteria will be invited for interviews.

- Are there any applicable alternative admission requirements, including how the program recognizes prior work or learning experience, and if so, are they appropriate?

-None were presented.

Comments:

See above.

Specific Recommendations (where applicable):

The program committee may wish to soften the requirements around entrepreneurship education and practical experience.

STRUCTURE

- **Comment on how the program's structure and regulations meet the specified program learning outcomes.**

NOTE: The Quality Assurance Framework requires a clear distinction between program objectives, program-level learning outcomes, and [Degree Level Expectations](#). See the [Guidance on Program Objectives and Program-level Learning Outcomes for details on the distinction](#).

The program's structure mostly addresses learning outcomes A1-A9.

- **Is the program's structure and the requirements to meet the program objectives and program-level learning outcomes appropriate?**

Generally, yes. This should become clearer once detailed syllabi and course materials have been developed.

- Do the program's structure, requirements and program-level learning outcomes ensure students meet the institution's Undergraduate or Graduate Degree Level Expectations?

Generally, yes. This should become clearer once detailed syllabi and course materials have been developed.

- Does the (proposed) mode of delivery facilitate students' successful completion of the program-level learning outcomes?

Given the emphasis on group/experiential learning and projects, the mode of delivery seems appropriate.

- Does the curriculum address the current state of the discipline or area of study?

Yes, in a general sense. The structure of the curriculum is in line with other successful graduate level programs in innovation.

Comments:

See above.

Specific Recommendations (where applicable):

The Program Committee is advised to begin drafting detailed syllabi and course materials so that it is clear to everyone involved with the program how the program elements address specific learning outcomes and fulfill Degree Level Expectations.

CURRICULUM AND TEACHING

- **Comment on how the curriculum reflects the current state of the discipline or area of study; evidence of significant innovation or creativity in the content and/or delivery of the program; the appropriateness and effectiveness of the modes of delivery at meeting program learning outcomes; and how teaching in the program prioritizes areas of accessibility and removes barriers to learning.**

Comments:

The program curriculum and teaching will provide dedicated innovation and entrepreneurship education and training focused on medical innovation. The program will be situated in the Department of Surgery offering students access to mentorship from leaders in clinical research.

Specific Recommendations (where applicable):

Draft syllabi should be developed and included with the proposal as it moves forward. Syllabi should include example topics, assignments, etc., and evaluation metrics. By including syllabi and bootcamp details it will also be easier for the team to make an argument for the uniqueness of the program.

ASSESSMENT OF LEARNING

- Comment on the appropriateness and effectiveness of the proposed methods of assessment in demonstrating achievement of the program learning outcomes, as well as the extent to which the program(s) assess graduating student achievement of the program learning outcomes.
- Are the plans in place to monitor and assess the following, both appropriate and effective?
 - i. The overall quality of the program;
 - ii. Whether the program is achieving in practice its proposed objectives;
 - iii. Whether its students are achieving the program-level learning outcomes; and
 - iv. How the resulting information will be documented and subsequently used to inform continuous program improvement.

NOTE: Programs should ensure that the plans for monitoring and assessing student achievement provide an assessment of students currently enrolled as well as post-graduation metrics. Please see [Guidance on Assessment of Teaching and Learning](#) for further details and examples of measures for assessing teaching and learning that meet the requirements of the Quality Assurance Framework.

Comments:

These details were not presented in the program proposal.

Specific Recommendations (where applicable):

Details about assessment of learning should be included in the program proposal and in the syllabi to be developed. It will be important to identify a strategy for assessment of the bootcamps.

RESOURCES TO MEET PROGRAM REQUIREMENTS

- Comment on evidence that there are adequate human, physical and financial resources to sustain the quality of scholarship produced by undergraduate students.
- Given the program's class sizes and cohorts as well as its program-level learning outcomes:
 - a) Is the number and quality of core faculty who are competent to teach and/or supervise sufficient to achieve the goals of the program and foster the appropriate academic environment?
 - b) When adjunct/sessional faculty play a large role in the delivery of the program, is their role appropriate? Are plans in place to ensure the sustainability of the program and the quality of student experience and if so, are these suitable?
 - c) Is the provision of supervision of experiential learning opportunities adequate, if applicable?
 - d) Taking into consideration implications for other existing programs at the university, is the administrative unit's planned use of existing human, physical and financial resources appropriate?
 - e) Are there adequate resources available to sustain the quality of scholarship and research activities produced by students, including library support, information technology support, and laboratory access?

NOTE: External Reviewers are not expected to assess the financial viability of a program, and internal budgets are not under the purview of the External Review of a New Program Proposal. Provide a general assessment of the administrative unit's planned use of existing financial resources.

Comments:

The list of participants is impressive and collectively the number of participants and various areas of expertise are adequate to launch the program.

Specific Recommendations (where applicable):

Mapping program participants to specific curriculum elements (such as classes, bootcamps, project supervision) should help to demonstrate that resources and expertise are in place.

QUALITY AND OTHER INDICATORS

- Please provide commentary on the indicators the department will use over the first five years to document and to demonstrate the quality of the program.
- Comment on the quality of the faculty (e.g., qualifications, funding, honours, awards, research, innovation and scholarly record, appropriateness of collective faculty expertise to contribute substantively to the program and commitment to student mentoring).
- Comment on any other evidence that the program and faculty will ensure the intellectual quality of the student experience.
- Comment on any evidence of how faculty members will ensure the intellectual quality of the student experience.

-The reviewers did not have any specific comments related to quality and other indicators.

CONFIDENTIAL SECTION

Provide any commentary or recommendations on confidential areas.

Comments:

None.

Specific Recommendations (where applicable):

None.

SUMMARY & RECOMMENDATIONS

Provide a brief summary of the review. Please include commentary on any clearly innovative aspects of the proposed program together with recommendations on any essential or otherwise desirable modifications to it, as applicable.

Recommendations that are clear, concise, and actionable are the most helpful for universities as they prepare to launch new programs. Include specific steps to be taken on any essential or otherwise desirable modifications to the proposed program.

NOTE: The responsibility for arriving at a recommendation on the final classification of the program belongs to the Appraisal Committee. Individual reviewers are asked to refrain from making recommendations in this respect.

Recommendation 1:

Consider expanding the pool of clinical mentors, for example, by including additional mentors from anesthesia, ER, critical care, interventional radiology, interventional neuroradiology, vascular surgery, cardiology, and other tool using professions.

Recommendation 2:

At a high level, the program is exciting and has potential to accelerate innovation at McMaster among young innovators. To ensure that the program can be launched in the near future, the team should start developing detailed materials for courses, projects, and bootcamps.

Recommendation 3:

The projects are viewed as the most important program element. It is recommended that students be strongly encouraged to work on projects in groups. This will also make administration and management easier.

Recommendation 4:

Care should be taken in mentoring students to ensure that they appreciate that many business ventures fail, and that innovation often involves an element of risk. The Program Committee may wish to shift the emphasis towards learning how to think and work with an innovation mindset rather than starting a business.

Recommendation 5:

Each program element should have an instructor or team member mapped to it. Drafting detailed syllabi and course materials should help identify program responsibilities and areas where additional expertise is needed.

Recommendation 6:

Continue to review other similar programs around the world to avoid pitfalls and identify successful strategies to build a great program that can be adapted to meet student needs as the innovation landscape shifts.

Recommendation 7:

This is an ambitious program to be covered in three terms. The first year will give the Director and the faculty a very good indication of whether the time frame allowed is sufficient or should be increased by one term or more.

Recommendation 8:

Consider a formal committee structure to support student success.

Signature: **John Frampton** _____

Signature: _____


Date: _____
November 17, 2022

Signature: **Leonard Waverman** _____

Signature: _____

Date: _____

Signature: **Kieran Murphy** _____

Signature: _____


Date: _____
Nov 17 2022

Recommendation 7:

This is an ambitious program to be covered in three terms. The first year will give the Director and the faculty a very good indication of whether the time frame allowed is sufficient or should be increased by one term or more.

Recommendation 8:

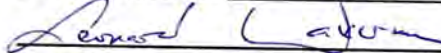
Consider a formal committee structure to support student success.

Signature: John Frampton _____

Signature: _____

Date: _____

Signature: Leonard Waverman _____

Signature:  _____

Date: 12/11/2022 _____

Signature: Kieran Murphy _____

Signature: _____

Date: _____

Master of Biomedical Innovation

External Review
Program Response

December 14, 2022

On behalf of the curriculum planning group for the Master of Biomedical Innovation (MBI) graduate degree, we are appreciative of the review panel's time and expert assessment of the program. It was encouraging to read that the panel, *"enthusiastically supports the mission of the new program"* and considers that, *"a major strength of the Program is its emphasis on project-oriented and experiential learning."*

The review panel provided eight recommendations for consideration by McMaster University to improve the program and guide it to a successful implementation. To best respond to the reviewer's feedback, supplemental planning material has been created by the planning group and added to this narrative response. The appendices provide examples of more detailed curricular information and planning documents cited by the reviewers as important to the review process to assess teaching activities and graduate-level expectations.

Response to Recommendations:

Recommendation 1: Consider expanding the pool of clinical mentors:

The MBI program is being developed in collaboration with the Michael G. DeGroot Health Innovation, Commercialization, and Entrepreneurship group that has created a health innovation incubator called, *The Clinic*. Through *The Clinic*, there is a growing number of mentors (currently ~20) with varied expertise, interested in advising McMaster health innovators. The Clinic is actively developing its network within the Faculty of Health Sciences and is leading events to introduce clinical faculty members, with biomedical innovation and entrepreneurship experience, to learn about opportunities to be a mentor in the MBI and other Clinic initiatives. For example, a recent 'innovation synergy' meeting brought together innovation-minded faculty from the Faculty of Health Sciences, Department of Medicine, and biomedical engineers from the Faculty of Engineering to network and discuss opportunities for collaborations in project development. From meetings such as these, we expect to recruit clinical and non-clinical project mentors for project teams in the MBI.

Recommendation 2: The team should start developing detailed materials for courses etc.

The program team is actively building curricular plans, program content, and bootcamp-based experiences. To demonstrate the progress of this work outlines for three courses are provided (Appendix A) and an overview of the first bootcamp is also attached (Appendix B). These outlines describe the course objectives, student activities, required readings and student

assessment. A course instructor has been identified for each of these courses. Planning for the remaining courses is underway with an expected completion of Spring 2023.

Recommendation 3: Students should be encouraged to work in groups.

The MBI Planning Group is aware of the importance of the “Co-Founder” factor in successful innovations and will strongly encourage students to work on a project in a team.

Recommendation 4: Promote innovation mindset over starting a business.

This is an important recommendation. The planning group heeds the feedback that the proposal over-emphasizes the value proposition that an MBI student will graduate the program as an entrepreneur with a marketable product. The planning group is in full agreement that the opportunity for students will be to develop expertise in biomedical entrepreneurship and gain an innovation mindset. Revisions to the proposal language will be made and emphasized in the recruitment strategy through marketing materials and promotion plans.

Recommendation 5: Each program element should have an instructor.

Course construction and faculty recruitment for course leadership is underway. A preliminary list of course instructors is attached (Appendix C). Recruitment is expected to be complete by Spring 2023.

Recommendation 6: Continue monitoring similar programs and strategize to meet student needs in a changing innovation landscape.

An environmental scan of Canadian comparator programs is provided (Appendix D). A scan of international programs has been completed and can be made available upon request. The MBI Planning Group will continue to monitor the entrepreneurship education environment, scanning university/college websites, social media announcements, meeting, and conference announcements, etc. Feedback from external mentors and collaborators, as well as international partners at the University of Alabama Birmingham, Marnix E. Heersink Institute for Biomedical Innovation and Entrepreneurship to ensure the program remains responsive to the evolving innovation learning landscape.

Recommendation 7: Monitor program time frame sufficiency.

The Program Director and the planning group will be carefully following the progress of the first cohort of MBI students to monitor objective achievement within the one-year timeframe. Given that production of a marketable innovation, the product is not required for degree completion, the planning team remains confident that the twelve-month timeframe will be appropriate.

Recommendation 8: Formal committee structure to support student success.

An Academic Progress Committee will be formed to review students struggling to achieve program objectives and will offer recommendations to support their success. Students will also be supported with a program faculty advisor who will help guide their learning journey in the MBI.

Response to Additional Report Commentary

1. Program Objectives:

The MBI will be the first biomedical innovation graduate degree program in Canada that will offer students the opportunity for students to innovate across the health innovation continuum from the design of new devices to health system solutions. The proposal provides examples of potential projects that have developed out of The Clinic. For example, the proposal describes a successful student-led innovation of an assistive device that enables people with limited fine motor skills to write and draw. Another student team has developed a modified “manipulable” endotracheal tube to combat the problem of difficult airway curvatures. Both projects have progressed along the innovation pathway; the former is now commercially available. Potential MBI students will be made aware of such projects and the supportive educational entrepreneurship ecosystem that has allowed these innovations to develop successfully.

2. Admission & Enrolment:

The review panel suggested that program prerequisites be broader. The planning team appreciated this feedback and will be revising the criteria to identify entrepreneurship and innovation education or experience as an asset but not a requirement for admission.

3. Structure:

Each course is based on one or more of the nine competencies and their associated enabling competencies as detailed in the MBI Proposal (Exhibit A1 page 30). Each learning outcome identified in the proposal relates to one of the competencies and is mapped to the corresponding graduate degree-level expectations (MBI Proposal, page 8).

Assessment of Learning:

As noted in the MBI Proposal, students will receive a final grade for each course. The format of assessment will be similar for each course and will be defined as the course curricula are further developed. Students will attend a case-based bi-weekly tutorial and will be assessed on their performance in the tutorial, via contribution to discussion, ability to apply the course concepts to the case, collaboration with fellow students, and professional behaviour. Assessment during bootcamps will include oral pitch presentations on the status of their projects to peers and team self-reflections on their performance in project development. Lastly, during each quarter course, students will undertake a written reflection on their application of the course concepts to their project as well as a written assignment commentary on an entrepreneurship case. For the project courses (MBI 701, 702, 703), each team of students will make an oral presentation and a written report to their coach that assess their attainment of milestones for their project that reflects the program learning outcomes/competencies.

Milestones are detailed below:

Milestone 1: Identify needs

- What is the health/biomedical need you have identified; what value can be gained through solving the identified need and to whom is this value brought

Milestone 2: Assess market landscape

- Prepare a 1-2 page depiction of the existing and emerging solution landscape (clinical, utilization, economic) for your identified area and relevant needs; prepare a gap analysis of the solution landscape (charts, graphs, visuals)

Milestone 3: Develop prototype

- Prepare a 1-2 page depiction of your ideation process and solution front-runners based on the need criteria, existing solution landscape and initial stakeholder feedback through prototype testing

Milestone 4: IP and Regulatory Strategy

- Create a spreadsheet outlining your analysis of relevant patents; consider the medical classification and regulatory pathway of your proposed solution; discuss the development process of your proposed solution

Milestone 5: Funding Strategy

- How will you acquire the necessary resources and funding to move your innovation forward; outline potential pitch competitions and incubators you can access; determine your customer/beneficiary and how you propose to acquire them

Milestone 6: Pitch product or process

- Prepare a 5-minute pitch of your proposed solution; What is your technology readiness level (TRL); outline the testing plan, proposed timeline and resources needed to progress this project.

Appendix A:
Course Outlines for MBI

The following pages include outlines of the following MBI courses:

Appendix A1: Course Outline for MBI 701- Clinical Immersion Stream Project	6-10
Appendix A2: Course Outline for MBI 704- New Value Creation	11-16
Appendix A3: Course Outline for MBI 706- Intellectual Property	17- 21

Appendix A1:
Masters of Biomedical Innovation (MBI)
MBI 701 – Clinical Immersion Stream Project
Fall 2023 Course Outline

COURSE DESCRIPTION

This is an experiential, project-based course that gives students the opportunity to apply concepts from courses and bootcamps to an innovation-driven project. Students will work in teams to identify and design solutions for unmet clinical needs based on exposure to real-world healthcare environments and clinical stakeholders. Students will be evaluated on the completion of a set of milestones that focus on the desirability, feasibility and viability of their innovation with access to personalized coaching, mentorship and leadership development. Emphasis will be placed on user-centred design, entrepreneurship competencies, and development of teamwork and communication skills.

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Anna Korol
korola3@mcmaster.ca

Office Hours: TBD

LEARNING OUTCOMES

Upon successful completion of the course, the student should be able to:

A1	Identify unmet clinical needs in a healthcare setting and prioritize using a decision matrix
A3	Evaluate the value proposition of a biomedical product or process
A9	Communicate with various stakeholders engaged in the healthcare system
A6	Engage in co-creation and collaboration when designing novel tools and services
A4	Outline the procedural and documentation requirements related to intellectual property and biomedical technology testing
A6	Implement strategies for effective leadership and conflict management when working in a team setting

COURSE REQUIREMENTS

Textbooks

There is *no required textbook* for the course. All required reading materials will be made available for free as online documents through the course management system (Avenue) and through use of peer-reviewed literature available online through the [McMaster library](#).

Hospital Placement Health and Safety Training Requirements

To enter hospitals, students require health and safety clearance from the Faculty of Health Sciences Health Screening Office and the Hamilton Health Sciences Student Affairs office.

Placements are located within a healthcare setting. The hospitals and healthcare facilities continue the requirement to wear a **medical mask** while indoors, therefore you will be required to wear a mask during placements and to follow all guidelines required by the hospital site. The university continues to monitor the situation closely and update the [covid19.mcmaster.ca](https://www.mcmaster.ca/covid19) website.

COURSE ACTIVITIES

This course will be delivered through roundtable coaching sessions, and on-site hospital placement. Students will initially be placed in small groups in one of four different clinical areas to identify opportunities for innovation (Interventional Radiology, Neurosurgery, Vascular Surgery, Cardiology). Through observation and discussion with clinicians in these clinical areas, students will begin to identify unmet needs (problem identification) On-going meetings with the clinicians and support from their coaches will allow students to prioritize unmet needs, develop needs statements, identify root causes of the observed problems and proceed to problem validation through literature searches and communication with potential stakeholders. The desirability, feasibility and viability of solving these needs will inform the clinical project focus for MBI 702.

COACHING SESSIONS: Two hours every other week

The purpose of the coaching time will be to:

- Introduce project milestone concepts through the Biomedical Innovation Roadmap
- Receive coaching and access to external mentors as project progresses
- Lead discussions with project teams to share project progress and placement experiences
- Seek feedback through team-team check-in meetings
- Protected time and space to collaborate and ideate as a team on completion of milestones
- Make oral presentations to coaches to allow for assessment of application of course concepts to your project.

HOSPITAL PLACEMENTS: After the first placement (approximately 4 hours), subsequent meetings with the clinician, either in the clinical setting or in an office setting will be determined by the need for further observations to clarify the unmet needs/problem identification and their prioritization.

The purpose of this block is to:

- Identify unmet clinical needs and opportunities for innovation in a healthcare setting
- Communicate with various stakeholders engaged in the healthcare system
- Test the desirability, feasibility and viability of a novel tool or service in a clinical setting

7

ASSIGNMENTS AND EVALUATION

Throughout the course, you will complete a set of milestones and oral presentations that reflect your ability to apply the concepts learned in MBI 704,705 and 706 to your project:

Individual Assessments	Weight
Oral Presentations(OP)	25%
OP 1 Clinical area background and the healthcare system	
OP 2 Needs finding and filtering process	
OP 3 Assess market landscape and existing/emerging solutions	
OP 4 IP and Regulatory Considerations	
Instructor and Coach impression mark	10%
Team-Based Assessments	
Biomedical Innovation Project-Milestone template completion	40%
Milestone 1 Problem Identification	
Milestone 2 Assess Market Landscape	
Milestone 4 IP and Regulatory Strategy	
Final Assessment	25%
Final Report and Application	

GRADE CONVERSION

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

LETTER GRADE	PERCENT	LETTER GRADE	PERCENT
A+	90 to 100	B+	75 to 79
A	85 to 89	B	70 to 74
A-	80 to 84	B-	60 to 69
F	0 to 59		

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity.

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university.

It is your responsibility to understand what constitutes academic dishonesty. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy, located at: www.mcmaster.ca/academicintegrity

The following illustrates only three forms of academic dishonesty:

1. Plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically via A2L so it can be checked for academic dishonesty. Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

All submitted work is subject to normal verification that standards of academic integrity have been upheld (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

LATE AND MISSED ACADEMIC WORK

Where students miss a scheduled deliverable or are absent for a required component for legitimate reasons as determined by the course instructor, the weight for that deliverable/component will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining the circumstances that resulted in missing the scheduled deliverable or assessment must be provided to the course instructor within five (5) working days of the missed deadline.

If you do not submit documentation for a missed deliverable or the course instructor determines that your reason is not legitimate, you will automatically lose 10% for each day your deliverable is late.

POTENTIAL COURSE MODIFICATIONS

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Appendix A2:
Masters of Biomedical Innovation – Fall 2023
MBI 704 – Opportunities for New Value Creation
Course Outline

COURSE DESCRIPTION

This initial course is designed to allow learners to identify unmet needs, identify potential root causes of observed problem(s), and validate them. Students will also learn how the healthcare system functions so that they can identify important stakeholders in the healthcare space. They will develop decision matrices for prioritizing observed needs.

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Professor Michael Hartman

Support Instructor: Sean Park

Email: mhartma@mcmaster.ca

LEARNING OUTCOMES

Upon completion of this course, MBI students will be able to:

- Develop a decision matrix to help with prioritization of unmet needs
- Identify unmet needs and articulate as need statement
- Identify the potential root cause(s) of the observed problem(s)
- Identify and prioritize stakeholders in the healthcare space
- Map out the current workflow/infrastructure
- Validate the problem (through publications, hospitals, stakeholder interviews, etc.)
- Conduct background research into your area of interest

REQUIRED READINGS

Barsoux J-L et al. Identifying Unmet Needs in a Digital Age. *Harvard Business Review*; July-August 2022.

Jacoby, A. (2017). Reframing the problem: Design thinking essentials. Reading: *Academic Conferences International Limited*.

MacFadyen, J. S. (2014). Design Thinking. *Holistic Nursing Practice*, 28 (1), 3-5. doi: 10.1097/HNP.000000000000008.

Roberts, J. P., Fisher, T. R., Trowbridge, M. J., Bent, C. (2016). A design thinking framework for Healthcare Management and Innovation. *Healthcare*, 4(1), 11–14. Doi: 10.1016/j.hjdsi.2015.12.002

Saidi, T., Mutswangwa, C. T., & Douglas, T. S. (2019). Design thinking as a complement to human factors engineering for enhancing medical device usability. *Engineering Studies*, 11(1), 34–50. Doi: 10.1080/19378629.2019.1567521

SUPPLEMENTARY READINGS

Liedtka J. Why Design Thinking Works. *Harvard Business Review*. September-October 2018

McCarthy et.al. Unmet needs: relevance to medical technology innovation. *J.Med. Eng. Technol*, 2015;39(7): 382-387

What is a decision matrix? ASQ. (n.d.). Retrieved November 11, 2022, from <https://asq.org/quality-resources/decision-matrix> .

COURSE ACTIVITIES

Introductory Bootcamp (In-Person)- Needs Finding & Problem Exploration

Day 1: Lecture with panel and a Q&A introducing the needs exploration, problem identification and prioritization, worked example with entrepreneurs

Day 2: Mini-Project focused on needs-finding with a team related to the clinical theme of the week (device, digital, pharma streams)

Day 3: Facilitated session bringing in: 2-4 clinicians, 2-4 patients, 2-4 researchers for students to identify unmet needs live

Day 4: Mini-Project group presentations

MBI- 704, New Value Creation, 2023-2024

12

Content Delivery (Online, asynchronous)

Each week there will be one 20 minute video of an entrepreneur explaining how they have applied the course learning objectives to their health start-up. These worked examples will feature medical devices, digital health, diagnostics, and pharmaceuticals across the duration of the course.

Tutorials (Online, synchronous)

Bi-weekly tutorials will be two hours in duration and focus on a group-based guided discussion of written case studies demonstrating application of course concepts to medical device, digital health, diagnostic, or pharmaceutical innovation projects. Students will be evaluated on participation and contributions to discussions at these sessions.

ASSIGNMENTS AND EVALUATION—MBI 704

Students' grades will be calculated as follows:

Deliverable	Evaluated by:	Weight
Written assignment, week1	Instructor	40%
Written assignment, week 3	Instructor	40%
Tutorial Evaluation	Tutor	20%
Total		100%

PLEASE NOTE: Any late submissions will incur a 10%, per day, late penalty.

GRADE CONVERSION

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

LETTER GRADE	PERCENT	LETTER GRADE	PERCENT
A+	90 to 100	B+	75 to 79
A	85 to 89	B	70 to 74
A-	80 to 84	B-	60 to 69
F	0 to 59		

ACADEMIC INTEGRITY

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2. Improper collaboration in group work.
3. Copying or using unauthorized aids in tests and examinations

AUTHENTICITY / PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically via A2L so it can be checked for academic dishonesty. Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software.

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LATE AND MISSED ACADEMIC WORK

Where students miss a scheduled deliverable or are absent for a required component for legitimate reasons as determined by the EMBA Academic Director, the weight for that deliverable/component will be distributed across other evaluative components of the course at the discretion of the instructor. Documentation explaining the circumstances that resulted in missing the scheduled deliverable or assessment must be provided to the EMBA Academic Director within five (5) working days of the missed deadline.

If you do not submit documentation for a missed deliverable or the EMBA Academic Director determines that your reason is not legitimate, you will automatically lose 10% for each day your deliverable is late.

POTENTIAL COURSE MODIFICATIONS

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

Appendix A3:
Masters of Biomedical Innovation – Fall 2023
MBI 706 – Intellectual Property
Course Outline

COURSE DESCRIPTION

Protecting one's invention is the most important aspect of creating a successful health innovation! Intellectual Property comes in many different shapes and forms: patent (protecting the function or design of your solution), trademark (protecting a specific name or phrase), copyright (protecting written framework) or a trade secret (the know how or secret recipe to your solution). All can act as a competitive advantage and allow the commercialization and monetization of ideas. This course is designed to allow learners to identify the types of IP and how they can create an IP strategy that supports their businesses. Students will be able to search IP literature and identify if their ideas are patentable and will have freedom to operate. Resources available at the Clinic and McMaster will be identified to assist with IP strategies and support.

INSTRUCTOR AND CONTACT INFORMATION

Instructor: Frances Lasowski
Email: Lasowsfj@mcmaster.ca

LEARNING OUTCOMES

Upon completion of this course, MBI students will be able to:

- Conduct patent searches
- Evaluate IP protection mechanism and identify relevant requirements (novelty usefulness, non-obviousness)
- Determine confidential aspects of the novel solution and mechanisms for maintaining confidentiality in externally-facing communications (ex. NDAs)
- Collaborate with relevant parties (e.g. legal support, MILO) to develop and execute an IP strategy

REQUIRED READINGS & RESOURCES

- MILO IP Handbook
- CIPO Intellectual Property: It's yours. Own it. Factsheet
- CIPO IP Foundations Series
- CIPO IP Management Series
- Kelly Holloway & Matthew Herder (2019) A responsibility to commercialize? Tracing academic researchers' evolving engagement with the commercialization of biomedical research, *Journal of Responsible Innovation*, 6:3, 263-283, DOI: [10.1080/23299460.2019.1608615](https://doi.org/10.1080/23299460.2019.1608615)
- Link, A. N., Danziger, R. S., & Scott, J. T. (2018). Is the bayh-dole act stifling biomedical innovation? *Issues in Science and Technology*, 34(2), 33-35.
- Other relevant IP readings to cases

COURSE ACTIVITIES

Bootcamp 1 (In-Person)

Day 1: IP searches and resources available through McMaster

Day 2: IP debate (teams will be given cases that went to court or are before the courts over patent infringement and compensation)

Content Delivery (Online, asynchronous)

Each week there will be one 20 minute video outlining the basics of IP or the nuances of IP for different health care areas (i.e. pharmaceuticals, medical devices, digital health solutions, etc). These will include case studies of specific companies that used creative IP strategies to secure their strategic advantage in the market place.

Tutorials (Online, synchronous)

Bi-weekly tutorials will be two hours in duration and focus on a group-based guided discussion of written case studies demonstrating application of course concepts to medical device, digital health, diagnostic, or pharmaceutical innovation projects. Students will be evaluated on participation and contributions to discussions at these sessions.

ASSIGNMENTS AND EVALUATION

Students' grades will be calculated as follows:

Deliverable	Evaluated by:	Weight
Bi-Weekly Assignments (3)	Instructor	36%
IP Debate	Instructor	10%
Final Report (In Residency)	Instructor / Capstone Faculty / Sponsor	30%
Tutorial Assessments	Instructor/Tutor	24%
Total		100%

PLEASE NOTE: Any late submissions will incur a 10%, per day, late penalty.

GRADE CONVERSION

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

LETTER GRADE	PERCENT	LETTER GRADE	PERCENT
A+	90 to 100	B+	75 to 79
A	85 to 89	B	70 to 74
A-	80 to 84	B-	60 to 69
F	0 to 59		

ACADEMIC INTEGRITY

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LATE AND MISSED ACADEMIC WORK

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POTENTIAL COURSE MODIFICATIONS

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Appendix B: Masters of Biomedical Innovation Fall 2023 Bootcamp

	Monday September 11	Tuesday September 12	Wednesday September 13	Thursday September 14	Friday September 15
MORNING 8:30 a.m. – 12 p.m.	Program Orientation Faculty and Student Introductions Icebreaker Activity	Reflection MBI 705 Market Assessment Activities, Guest Speakers TBD	Immersion Innovation Experiences Biointerfaces Institute Makerspace 3D Printing	Reflection MBI 704 New Value Creation Activities, Guest Speakers TBD	Reflection MBI 705 Pitch Fundamentals and Practice Pitch Activites
LUNCH Noon- 1:00 p.m.	Lunch Guest Speaker: Dr. Kevin Smith	Lunch	Lunch	Lunch Guest Speaker: Rebecca Repa	Lunch
AFTERNOON 1:00 – 4:30 p.m.	MBI 704 New Value Creation Activities, Guest Speakers TBD	MBI 704 New Value Creation Activities, Guest Speakers TBD	Immersion Innovation Experiences McMaster Hospital Network Locations TBD	MBI 705 Value Proposition Activities, Guest Speakers TBD	MBI 701 Pathways to Problem Identification and Validation
EVENING 5:00 – 8:30 p.m.	Opening Dinner Guest Speaker: Dr. Marnix Heersink	Dinner Coaching and Mentoring Activities		Innovation Synergy Networking Event	

Appendix C

Master of Biomedical Innovation

Preliminary Course Instructor Summary

	<i>Name</i>	<i>Title</i>	<i>Department</i>
701	Anna Korol	Assistant Professor	Medicine
702	Bill Wang	Assistant Professor	Surgery
703	Anna Korol	Assistant Professor	Medicine
704	Michael Hartmann	Professor	Medicine
705	t.b.d.		
706	Frances Lasowski	Adjunct Professor	Engineering
707	Sean Park	Assistant Professor	Medicine
708	t.b.d.		
709	Michael Hartmann	Professor	Medicine/Business
710	Jon Stokes	Assistant Professor	Biochemistry
711	t.b.d.		
Electives	Jon Stokes	Assistant Professor	Biochemistry
	Mehdi Moradi	Associate Professor	Engineering

**Appendix D:
MBI Comparison to Existing Masters Programs**

University	Faculty	Program	Unique Offerings
McMaster University	Health Sciences	Master of Biomedical Innovation (MBI)	<p>Learners will apply the theories and entrepreneurship competencies acquired throughout the curriculum to a program-long, venture-oriented project course, with opportunities to identify a biomedical problem to work on or start with a project idea the student already has in mind.</p> <p>Team projects may include innovations in medical devices, diagnostics, therapeutics, digital technologies, or drug delivery systems.</p> <p>By the end of the program, graduates will have gone through the full life-cycle of creating a business and product with the personalized support of coaches and mentors as well as leadership training.</p> <p>Students will have access to The Clinic @ Mac facility offering commercialization support, events, collaborative workspace, and access to resources.</p>
McMaster University	Engineering	Master of Engineering/Technology Entrepreneurship and Innovation (MEEI/MTEI)	<p>The Enterprise Project is at the heart of this program, spanning the entire study period. This project will result in both a business and a viable Proof-of-Concept.</p> <p>Evaluation for the project consists of three defence-like presentations to a 5-person Enterprise Advisory Committee to ensure students are effectively applying skills and competencies from the courses to this project.</p>
McMaster University	Health Sciences	Master in Biomedical Discovery & Commercialization (MBDC)	<p>Includes an internship in sectors related to the pharmaceutical or biotechnology industry.</p> <p>Biomedical consulting projects train students to create business plans, market assessments and a pitch deck for new ventures. Teams are paired with an entrepreneur or company to gain first-hand experience.</p>
University of Toronto	Institute for Management and Innovation	Master of Management Innovation (MMI)	<p>Designed for individuals interested in pursuing management careers in technology-focused organizations.</p> <p>The final 4 months of the 12-month program are dedicated to a mandatory internship.</p> <p>One-on-one coaching and mentorship opportunities are available as well as professional development workshops to assist in internship searching.</p>
Queens University	Smith School of Business	Master of Management Innovation and Entrepreneurship (MMIE)	<p>Provides students with business and design skills to succeed as entrepreneurs, including a year-long project opportunity for experiential learning.</p> <p>Three highly intensive, on-campus bootcamp style sessions spread throughout the program designed to develop business acumen.</p> <p>Access to pan-university incubator/accelerator, engineering labs and SparQ Maker space.</p>

December 21, 2022

Dr. Steven Hranilovic
Vice-Provost and Dean of Graduate Studies
Gilmour Hall, 212, McMaster University
1280 Main St. West
Hamilton, ON L8S 4K1

Re: Master of Biomedical Innovation (MBI) New Program Review - Faculty's Response

Dear Steve,

We thank Drs. Frampton, Murphy, and Waverman for their thoughtful review of the proposed Master of Biomedical Innovation program in the Faculty of Health Sciences. We agree with their assessment that a major strength of the proposed program is its project-oriented and experiential approach. In addition to overall commentary, the reviewers make a number of helpful suggestions for ensuring the success of the program. We have reviewed the program team's response to the review report, and we are confident that they are appropriately addressing the recommendations in the run-up to the program's launch.

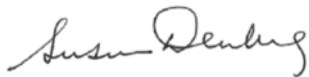
The reviewers prudently request that more detail be provided regarding the assessment of learning, draft course outlines, and teaching staff assignments. The program team has responded appropriately, with additional details. Although we recognize that curriculum details and staffing arrangements are necessarily tentative at this time, we agree that these details are helpful for appraising the scholarly weight and the required capacity for instruction, and we are reassured by the program team's response. The program has a good start in recruiting clinical mentors to work with students and we expect that the work of expanding and diversifying this pool will be continuous and ongoing.

We agree with the reviewers' suggestion to encourage students to work on their projects in groups. We recognize that individual assignments are the norm for graduate education, and so we encourage the program to search out the best practices for group-based assignments and evaluation. The reviewers also recommend that curriculum should emphasize an innovation mindset, rather than the expectation that the students will start a business arising from their work in the course. The program team notes the wisdom of this, generally, as well as appropriately emphasizing that this addresses the reviewers' question of whether the 12-month curriculum is realistic.

Once again, we thank the reviewers for their insightful report. We thank the program team for their well-crafted self-study and thorough response to the review. We are confident that this innovative program will be a successful and sustainable addition to the line-up of excellent graduate programs in

Health Sciences at McMaster University. Finally, we thank the staff in the School of Graduate Studies for their significant support in mounting a successful site visit.

Sincerely,



Susan Denburg
Executive Vice-Dean and
Associate Vice-President, Academic
Faculty of Health Sciences



Steven Hanna
Vice-Dean and
Associate Dean of Graduate Studies
Faculty of Health Sciences

cc: Christina Bryce, Assistant Graduate Secretary
Stephanie Baschiera, Associate Registrar and Graduate Secretary

New Graduate Program or Existing Program Undergoing Major Changes (more than 30%)

Details of Resource Implications and Financial Viability

Faculty: Health Sciences

Program Name:

Master of Biomedical Innovation

A. FINANCIAL SUSTAINABILITY OF PROGRAM

Complete New Graduate Program Budget template (appendix A1) which will populate table below:
 In the case of Interdisciplinary programs, also append the Draft MOU between faculties. (Appendix A2)
 In the case of Collaborative programs, also append the Draft MOU between institutions. (Appendix A3)

REVENUE	2023/24	2024/25	2025/26	2026/27	2027/28
Program Generated Gross Graduate Revenue	\$475,500	\$821,705	\$1,003,568	\$1,185,697	\$1,356,848
Other Revenue (Specify)	\$300,000	\$150,000	\$50,000	\$0	\$0
Total Gross Revenue	\$775,500	\$971,705	\$1,053,568	\$1,185,697	\$1,356,848
University Fund / Research Infrastructure Contribution	-\$22,476	-\$38,840	-\$47,436	-\$56,045	-\$64,135
Total Support Unit Allocations (Indirect Costs)	-\$226,690	-\$255,768	-\$285,212	-\$315,969	-\$346,811
NET REVENUE	\$526,335	\$677,097	\$720,920	\$813,683	\$945,902
Total Teaching Costs	-\$241,625	-\$255,656	-\$269,889	-\$284,334	-\$299,000
Total Admin Salaries & Benefits	-\$98,250	-\$101,198	-\$104,233	-\$107,360	-\$110,581
Total Student Support (From operating)	-\$50,000	-\$60,000	-\$70,000	-\$80,000	-\$100,000
Total Capital/Equipment Costs	-\$10,000	\$0	\$0	-\$10,000	\$0
Total Other Direct Expenses - Supplies/Services/Travel etc	-\$43,500	-\$43,500	-\$53,500	-\$53,500	-\$63,500
Total Share of Faculty's Central Expenses	-\$90,345	-\$156,124	-\$190,678	-\$225,282	-\$257,801
PROGRAM EXPENSES	-\$533,720	-\$616,478	-\$688,300	-\$760,476	-\$830,882
IN-YEAR (Surplus/ Deficit)	-\$7,385	\$60,620	\$32,620	\$53,207	\$115,019
Total Grad support per FT student (Scholarship, Taship) excluding RA	\$2,500	\$1,364	\$1,296	\$1,250	\$1,370

If the program is showing an ongoing going deficit please indicate whether it is truly incremental to the current faculty financial position. Provide a rationale for proceeding with ongoing negative returns.

B. NUMBER OF STUDENTS

	FT	PT	
Intended Steady-state annual intake	40		Year achieved: 2026
Intended Steady-state total enrolment	40		Year achieved: 2026
Number of International Students included in steady state	2	0	
Proposed number of additional students to University at steady state: (i.e. Are the program students additional (net new) or redistributed from other existing programs within the Faculty or in other Faculties.)			40

Will there be an impact to enrollments in Programs in other Faculties?

No

If yes, Please Describe:

C. FORMAT OF INSTRUCTION

	Fall	Winter	Summer (May-June)	Summer (July-August)	Annual program units?
During which terms will the program run?	X	X	X	X	30

Is there a co-op or internship as part of the program?

No Describe:

What percentage of instruction will be online?

What percentage of instruction will be off campus?

If either is greater than zero please provide information:

The new Master of Biomedical Innovation is designed to be maximally flexible. Course work will be primarily delivered online, with four short-duration, in-person bootcamps.

D1. PROPOSED TUITION FEE

reference: http://www.mcmaster.ca/bms/student/SAC_fees_grad.html

Is approval being sought for a Ministry-funded Program?

No Do Standard Tuition rates apply ? (If No, specify fees below) No

Proposed Tuition Fee:

	Domestic		International	
	Full Time	Part Time	Full Time	Part Time
Per Year :	\$ 34,500		\$ 60,000	
Per Term (if applicable):	\$ 11,500		\$ 20,000	
Per Course (if applicable):				

Rational for proposed fees (describe or append results of market assessment) and describe how they adhere to MTCU policy if seeking ministry funding :

See attached market comparison. Tuition Fee has been proposed to be in alignment with other comparator professional masters programs

D2. SUPPLEMENTARY FEES

reference: http://www.mcmaster.ca/bms/student/SAC_fees_grad.html

Will regular Mandatory Supplementary Fees apply?

Full Time Yes Part Time No Modified only No

If no, please contact [Dean of Grad Studies](#) for guidance and provide resulting proposed applicable fees and rationale:

Are there other mandatory costs for students? (Coop/Internship fees, supplies, books, uniform, equipment, field trips, professional exam fees, etc?)

NO Describe & Approximate amounts:

E. EXTERNAL RESOURCES: donations, special grants, research overhead, endowment funds, Space, etc.

Please provide information about any external funds or resources that will be available to the program.

	Onetime	Ongoing	Value \$	Details
<i>eg. Access to lab space</i>		x	\$ 1	CANMET - Longwood
The Marnix E. Heersink School of Biomedical Innovation and Entrepreneurship is providing program start-up funds until the program reaches steady-state enrollment and/or program solvency. Students will also access donor-funded scholarships and awards.	X		\$ 500,000	

F. FACULTY RESOURCES - Please append evidence of endorsement from other faculties affected if necessary.

If courses are also being taught in other faculties, please list

Faculty: Engineering Faculty: N/A Faculty: N/A

Incremental FTEs required:	Health Sciences	Engineering	N/A	N/A	Comments
Faculty - Tenure Track		X			Engineering Faculty with experience in Biomedical Innovation may teach in the program (roles of sessional, coach or tutor)

Faculty - Sessional and CLAs	1.7				In addition to teaching CLA and sessional faculty, CAWAR FHS faculty primarily within the Department of Surgery and across clinical departments will be recruited as tutors and coaches to support program delivery.
Staff	1				Existing staff within The Clinic will provide additional administrative support as needed (marketing, event coordination etc.). Finance and HR support via the Department of Surgery
Teaching Assistants					
<i>Additional Non-salary costs in other Faculties</i>					

Increases in FT faculty are for modeling purposes only and does not imply approval to hire. Normal approval processes apply.

G. OTHER RESOURCE IMPLICATIONS:

Unless otherwise defined in the categories below, please use these descriptions to define impact:

- No Impact:** Can be dealt with as part of normal, daily operations. No budgetary or resource impact.
- Minor:** Can be dealt with in a mutually agreed timeframe using existing personnel. Resources pre-approved or readily available. No disruption to other approved work priorities.
- Major:** Must be scheduled as a project (not able to deal with as part of regular operations). Budget not approved or readily available; source of funding to be determined. May require external resources. May require reprioritization of previously approved tasks.

1. PHYSICAL FACILITIES - Please contact [Coordinator, Design and Space Management x23898](#) for assistance in determining additional resource costs if needed.

Please indicate the likely space resource implications of the proposal	Impact	New Sq Ft Required	Approx Existing Sq Ft required	Comments (include location and for new space, plans to fund and acquire space)	If major new central budget req'd, estimate \$
Faculty space- Offices,Labs,seminar rooms, student space, etc	Minor	-	200.0	A space is being created for the Marnix E. Heersink School of Biomedical Innovation and Entrepreneurship, which will serve as the home for the MBI. This project is underway (in MDCL) with an expected completion of September 2023. This project (\$1.5M) is funded through the Heersink gift.	
Other space (excluding registrar controlled classrooms)	None				

Facilities
Facilities

2. TECHNOLOGY RESOURCES - Please contact [UTS Director, Technology x21888](#) for assistance in determining impact if needed.

Please indicate the likely impact on central technology resources for the proposal	Impact	Are additional resources required to support this program? If so, please list.	If Major, estimate \$
UTS Computer Labs and Software	None		
Network/Internet/Cloud services access & usage	Minor		
Audio-Visual / Telecommunications	Minor		
Wireless Connectivity	Minor		
Other (Please specify)	Minor		

UTS
UTS
UTS
UTS
UTS

3. LIBRARY SERVICES - Please contact [Associate University Librarian, Collections x26557](#) for assistance in determining impact if needed.

Please indicate the likely Library resource implications of the proposal	Impact	Are additional resources required to support this program? If so, please list.	If Major, estimate \$
Staffing (Add'l service desk staff, add'l librarians, new staff with skills/knowledge not currently present)	Minor	Discussions with HSL have begun around the shared recruitment (and funding) of a librarian with innovation and entrepreneurship resource expertise that could support The Clinic (FHS Incubator) and the MBI, among other initiatives within FHS.	
Collections, One Time Purchases (books, ebooks, purchased online resources)	Minor	no significant additions	

Libraries
Libraries

Collections, Ongoing Subscriptions/licenses (print or online journals)	Minor	no significant additions		Libraries
Technology and Computing (new or add'l hardware/software, increased digital storage capacity)	None			Libraries
Library Spaces (study space, new or specialized user or collection spaces)	None	students will have access to their own space and The Clinic (in the HSL library)		Libraries
Other (Please specify)	None			Libraries

4. OFFICE OF THE UNIVERSITY REGISTRAR - Please contact the Registrar for assistance in determining impact if needed.

Please indicate the likely resource implications of the proposal	Impact (Select)	Support required	Area Responsible	If Major, estimate \$
Admissions/Recruitment	Minor	Recruiting and Admissions aligned with current 101 processes	SGS	
Student Record Support (maintaining records, transcripts, grades, student card, etc)	Minor	Standard services for graduate program		
Class Scheduling Services	None	Managed by Dept/Faculty		
Classrooms	None	Scheduled into Faculty controlled classrooms or only summer term or off campus		

5. STUDENT SUPPORT - Please contact Assistant Dean, Student Services for assistance in determining impact if needed.

Please indicate any other possible resource impacts	Impact	Please Describe any impacts on the support areas	If Major, estimate \$
Student Services - International Student support	Minor		
Student Services - Athletics & Rec, Health/Counselling, Career	Minor		
Residences	None		
Grad Scholarships/Bursaries*	Minor	\$ - Avg. Annual Draw on Scholarship pool	\$ -

*If you are anticipating OSAP funding for these students please contact SFAS to provide additional information to activate approval from MTCU

6. MIETL- Please contact Educational Consultant for assistance in determining impact if needed.

Please indicate any other possible resource impacts	Impact	Please Describe any impacts on the support areas	If Major, estimate \$
Re/Development of blended or online courses	Minor	Course Development being managed through the Department (MGD HealthICE and Heersink School); liaising with MacPherson as required	
Learning Management System (Avenue to Learn)	Minor		
Training and development for TAs or faculty	Minor		
Research on teaching and learning initiatives	Minor		
Other (Please specify)	Minor		

7. OTHER

Please indicate any other possible resource impacts	Impact	Please Describe any impacts on the support areas	If Major, estimate \$
Financial Services	None		
Human Resources	Minor		
Advancement	None		
Research Services Office	None		
Other (Please specify)	None		

Please provide names below and check box to verify that approval has been obtained by each:

	Check box
Department Chair/ Area Director <u>Mo Bhandari, Chair, Department of Surgery</u>	<input checked="" type="checkbox"/>
Faculty Dean or Director of Administration <u>Sue Galloway, Executive Director Finance, FHS</u>	<input checked="" type="checkbox"/>
Associate Vice-President , Finance & Planning (Academic) <u>Susan Denburg, Executive Vice-Dean & AVP Academic, FHS</u>	<input checked="" type="checkbox"/>
Submitter <u>Sarah Bouma, Director, MGDII/Heersink School</u>	

Exhibit A5

Competitor analysis in Canada of various Universities providing Innovation and Entrepreneurship Masters programs.

University	Faculty	Program Name	Approximate Tuition	Duration
Queen's	Engineering and Smith School of Business	Master of Entrepreneurship and Innovation	Canadian: \$35,490 per year International: \$51,705 per year	12 months full-time
Toronto	Institute for Management and Innovation, (joint Administration, Business Management, Engineering Management)	Master of Management of Innovation	Canadian: \$32,500 per year International: \$61,200 per year	12 months full-time
McMaster	Engineering	Master of Engineering/Technology Entrepreneurship and Innovation	Canadian: \$9,720 per year International: \$45,045 per year	20 months full-time
Ryerson	Engineering and Architectural Science	Master of Engineering Innovation and Entrepreneurship, Biomedical Engineering track	Canadian: \$29,639 per year International: \$54,314 per year	16 months full-time
Western	Engineering	Engineering in Medicine	Canadian: \$13,761 per year International: \$43,500 per year	12 months full-time, option for longer duration part-time
Ontario College of Art and Design (OCAD)	N/A	Design for Health	Canadian: \$9,080 per year International: \$21,939 per year	24 months full-time, 36 months part-time
McMaster	Health Sciences	Masters of Biomedical Discovery & Commercialization	Canadian: \$19,845 per year International: \$68,307 per year	12 months full-time
Guelph	Department of Molecular and Cellular Biology and Department of Business Management	Master of Biotechnology	Canadian: \$9,909 per year International: \$23,331 per year	12 months full-time, optional extension of research project to 16 months
Alberta	School of Business	MBA with Specialization in Innovation and Entrepreneurship	Canadian: approx. \$15,500 per year International: approx. \$30,000 per year	20 months full-time
McMaster	Social Science	Master of Public Policy in Digital Society	Canadian: \$29,100 per year International: \$55,500 per year	12 months full-time
Waterloo	School of Entrepreneurship and Business	Master of Business, Entrepreneurship, and Technology	Canadian: \$34,254 per year International: \$64,701 per year	12 months full-time, 36 months part-time

Toronto	Institute for Management and Innovation	Masters of Biotechnology	Canadian: \$21,675 per year International: \$47,109 per year	24 months full-time
Windsor	Science	Master of Science in Translational Health Science	Canadian: \$9,877 per year International: \$26,433 per year	12-months full-time



UNIVERSITY SECRETARIAT

- Board of Governors
- Senate

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REPORT TO THE BOARD OF GOVERNORS
from the
PLANNING AND RESOURCES COMMITTEE

FOR APPROVAL

At its meeting on February 17, 2023, the Planning and Resources Committee approved, for recommendation to the Board of the Governors, the Hourly Pension Plan Actuarial Valuation.

It is now recommended,

that the Board of Governors approve the results of the Actuarial Valuation for Funding Purposes as at July 1, 2022 for the Contributory Pension Plan for Hourly-Rated Employees of McMaster University Including McMaster Divinity College and be filed with the Financial Services Regulatory Authority of Ontario and the Canada Revenue Agency.

Board of Governors: FOR APPROVAL
March 2, 2023



GOVERNANCE BODY	Planning and Resource Committee (PRC)
ITEM/SUBJECT	Hourly Pension Plan Actuarial Valuation as at July 1, 2022
DATE	February 16, 2023
LEAD	Deidre (Dee) Henne, AVP (Admin) & Chief Financial Officer Steven Moore, University Treasurer
GOVERNANCE PATH	Hourly Pension Plan Retirement Committee, Planning and Resources Committee, Board of Governors
FOR APPROVAL	That the Planning and Resources Committee approve, for recommendation to the Board of Governors, that the results of the Actuarial Valuation for Funding Purposes as at July 1, 2022 for the Contributory Pension Plan for Hourly-Rated Employees of McMaster University Including McMaster Divinity College and be filed with the Financial Services Regulatory Authority of Ontario and the Canada Revenue Agency
JURISDICTION	Board of Governors (Externally: Financial Services Regulatory Authority)
SUPPLEMENTAL MATERIALS	Mercer Presentation – Summary Actuarial Valuation – Hourly Pension Plan

EXECUTIVE SUMMARY

The draft valuation report for the Contributory Pension Plan for Hourly-Rated Employees of McMaster University Including Divinity College (“Hourly Plan”) and associated valuation assumptions have been reviewed and approved by the Hourly Pension Plan Retirement Committee at the January 19, 2023 meeting. The Hourly Plan funded status has improved, resulting in reduced employer contributions and Pension Benefit Guarantee Fund insurance premiums.

BACKGROUND

The Hourly Plan is a closed pension plan with a membership consisting of 457 members. In accordance with the requirements of the Ontario Pension Benefits Act and Regulations thereunder (the “Pension Rules”), as well as the Income Tax Act, McMaster University is required to file an actuarial valuation for the Hourly Plan no less frequently than every three years. McMaster has elected to file the valuation as at July 1, 2022, instead of January 1, 2023, to resume its normal filing cycle. The last valuation was filed on January 1, 2020 to incorporate extra employer contributions made into the plan to maintain certain funding levels negating the need for multi-year special payments.

The valuation was prepared by the plan Actuary (Mercer) in accordance with the Pension Rules. The timing of the next required valuation of the Hourly Plan shall be no later than July 1, 2025.

Funded Status

The updated valuation results in lower payment requirements for the University over the next three-year period due to an improved funded position, driven primarily by higher interest rates and a shrinking active membership. The primary valuation ratios that are monitored are the Going Concern Funded Ratio and Solvency Ratio. The table below summarizes the funded status compared to the liability status for the two measures. The Going Concern Funded Ratio takes a long-term view of the plan’s health as an ongoing entity. The Solvency Ratio reflects the amount of funding McMaster must pay to settle the obligation in an immediate wind-up scenario. Estimated funded status and ratios are monitored quarterly.

Measures:	July 1, 2022	January 1, 2020	Ontario Pension Funding Rules Thresholds:
Going Concern Funded Ratio[^]	131%	116%	100% or greater to avoid deficit payments (amortized over 10 years)
Solvency Ratio[*]	101%	90%	Greater than 85% - triennial filing and no solvency special payments

[^] The Going Concern Funded Ratio does not include the Provision for Adverse Deviations (“PfAD”) in the going concern liabilities. If the PfAD is included, the going concern ratio reduces to 118%. The University may not contribute to the Hourly Plan while the going concern ratio including PfAD exceeds 125%. ^{*}The Transfer Ratio is the same value as the Solvency Ratio for the Hourly Plan and is 100% or greater - No current restrictions lump sum commuted value payments.



STRATEGIC ALIGNMENT

Maintaining the Hourly Plan with stable funding ratios is important to minimize the variability of employer and employees’ pension contributions, and to ensure that the plan can meet its ongoing and future benefit obligations.

RISK AND RISK MITIGATION STRATEGIES

Risk: If the Hourly Plan valuation results are unfavourable, McMaster will be subject to special payment requirements. Unplanned contributions impact employer budgets and potentially affect future employee contribution negotiations.	Mitigation strategy: Risk is currently low. Future risk is managed by monitoring solvency and going concern ratios on a quarterly basis and managing the Hourly Plan benefits, benefit rates and investments to maintain a strong pension plan.
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

RECOMMENDATIONS AND NEXT STEPS: The Hourly Pension Plan Committee reviewed and discussed the valuation results on January 19, 2023, with its actuary, Mercer, and approved for recommendation to the Planning and Resources Committee that the July 1, 2022 Actuarial Valuation Report be filed with the Financial Services Regulatory Authority of Ontario and the Canada Revenue Agency.

Contributory Pension Plan for Hourly-Rated Employees of McMaster University including McMaster Divinity College

Report on the Actuarial Valuation for Funding Purposes as at July 1, 2022

DRAFT - January 2023

Financial Services Regulatory Authority of Ontario Registration Number: 0215418

Canada Revenue Agency Registration Number: 0215418

Note to reader regarding actuarial valuations:

This valuation report may not be relied upon for any purpose other than those explicitly noted in the Introduction, nor may it be relied upon by any party other than the parties noted in the Introduction. Mercer is not responsible for the consequences of any other use. A valuation report is a snapshot of a plan's estimated financial condition at a particular point in time; it does not predict a pension plan's future financial condition or its ability to pay benefits in the future. If maintained indefinitely, a plan's total cost will depend on a number of factors, including the amount of benefits the plan pays, the number of people paid benefits, the amount of plan expenses, and the amount earned on any assets invested to pay the benefits. These amounts and other variables are uncertain and unknowable at the valuation date. The content of the report may not be modified, incorporated into or used in other material, sold or otherwise provided, in whole or in part, to any other person or entity, without Mercer's permission. All parts of this report, including any documents incorporated by reference, are integral to understanding and explaining its contents; no part may be taken out of context, used, or relied upon without reference to the report as a whole.

To prepare the results in this report, actuarial assumptions are used to model a single scenario from a range of possibilities for each valuation basis. The results based on that single scenario are included in this report. However, the future is uncertain and the Plan's actual experience will differ from those assumptions; these differences may be significant or material. Different assumptions or scenarios within the range of possibilities may also be reasonable, and results based on those assumptions would be different. Furthermore, actuarial assumptions may be changed from one valuation to the next because of changes in regulatory and professional requirements, developments in case law, plan experience, changes in expectations about the future, and other factors.

The valuation results shown in this report also illustrate the sensitivity to one of the key actuarial assumptions, the discount rate, and the sensitivity to three adverse scenarios. We note that the results presented herein rely on many assumptions, all of which are subject to uncertainty, with a broad range of possible outcomes, and the results are sensitive to all the assumptions used in the valuation.

Should the Plan be wound up, the going concern funded status and solvency financial position, if different from the wind-up financial position, become irrelevant. The hypothetical wind-up financial position estimates the financial position of the Plan assuming it is wound up on the valuation date. Emerging experience will affect the wind-up financial position of the Plan assuming it is wound up in the future. In fact, even if the Plan were wound up on the valuation date, the financial position would continue to fluctuate until the benefits are fully settled.

Decisions about benefit changes, granting new benefits, investment policy, funding policy, benefit security, and/or benefit-related issues should not be made solely on the basis of this valuation, but only after careful consideration of alternative economic, financial, demographic, and societal factors, including financial scenarios that assume future sustained investment losses.

Funding calculations reflect our understanding of the requirements of the Pension Benefits Act of Ontario, the Income Tax Act, and related regulations that are effective as of the valuation date. Mercer is not a law firm, and the analysis presented in this report is not intended to be a legal opinion. You should consider securing the advice of legal counsel with respect to any legal matters related to this report.

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Section 1

Summary of results (\$000's)

	07.01.2022	01.01.2020
Going Concern Financial Status		
Smoothed value of assets	\$70,069	\$66,202
Going concern funding liabilities	\$53,660	\$57,202
Provision for adverse deviations in respect of the going concern liabilities	\$5,903	\$6,292
Funding excess (shortfall)	\$10,506	\$2,708
Hypothetical Wind-up Financial Position		
Wind-up assets	\$62,745	\$68,085
Wind-up liability	\$62,327	\$76,215
Wind-up excess (shortfall)	\$418	(\$8,130)
Transfer ratio	101%	90%
Solvency Financial Position		
Wind-up assets	\$62,745	\$68,085
Solvency asset adjustment	\$7,144	\$0
Smoothed solvency assets	\$69,889	\$68,085
Wind-up liability	\$62,327	\$76,215
Solvency liability adjustment	\$9,837	\$0
Smoothed solvency liabilities	\$72,164	\$76,215
Solvency surplus (shortfall)	(\$2,275)	(\$8,130)
Solvency ratio ¹	101%	90%

¹ Before smoothing impacts, per pension regulations

	07.01.2022	01.01.2020
Funding Requirements²		
Total current service cost	\$743	\$1,081
Provision for adverse deviations in respect of current service cost	\$82	\$119
Estimated members' required contributions	(\$314)	(\$479)
Estimated University's current service cost	\$511	\$721
University's current service cost and provision for adverse deviations in respect of the current service cost expressed as a percentage of members' required contributions	163%	151%
Minimum special payments	\$0	\$0
Estimated minimum University contribution		
Year 1	\$511	\$721
Year 2	\$544	\$719
Year 3	\$581	\$761
Estimated maximum eligible University contribution	\$511	\$8,851
Next required valuation date	July 1, 2025	Jan. 1, 2023

² Provided for reference purposes only. Contributions must be remitted to the Plan in accordance with the Minimum Funding Requirements and Maximum Eligible Contributions sections of this report.

Section 2

Introduction

To McMaster University

At the request of McMaster University, we have conducted an actuarial valuation of the Contributory Pension Plan for Hourly-Rated Employees of McMaster University including McMaster Divinity College (the “Plan”), sponsored by McMaster University (the “University”), as at the valuation date, July 1, 2022. We are pleased to present the results of the valuation.

Purpose

The purpose of this valuation is to determine:

- The funded status of the Plan as at July 1, 2022, on going concern, hypothetical wind-up, and solvency bases;
- The minimum required funding contributions from July 1, 2022, in accordance with the *Pension Benefits Act of Ontario* (the “Act”); and
- The maximum permissible funding contributions from July 1, 2022, in accordance with the *Income Tax Act*.

The information contained in this report was prepared for the internal use of the University, and for filing with the Financial Services Regulatory Authority of Ontario and with the Canada Revenue Agency, in connection with our actuarial valuation of the Plan. This report will be filed with the Financial Services Regulatory Authority of Ontario and with the Canada Revenue Agency. This report is not intended or suitable for any other purpose.

In accordance with pension benefits legislation, the next actuarial valuation of the Plan will be required as at a date not later than July 1, 2025 or as at the date of an earlier amendment to the Plan depending on any funding implications.

Terms of Engagement

In accordance with our terms of engagement with McMaster University, our actuarial valuation of the Plan is based on the following material terms:

- It has been prepared in accordance with applicable pension legislation and actuarial standards of practice in Canada.
- As instructed by the University, we have not reflected a margin for adverse deviations in the going concern valuation in excess of the provision for adverse deviations prescribed by the Act.

- We have reflected the University’s decisions for determining the solvency funding requirements, summarized as follows:
 - The same plan wind-up scenario was hypothesized for both hypothetical wind-up and solvency valuations.
 - Although permissible, no benefits were excluded from the solvency liabilities (see Section 5 for a listing of excludable benefits).
 - Solvency smoothing was used.

See the Valuation Results – Solvency section of the report for more information.

Events since the Last Valuation at January 1, 2020

Pension Plan

There have been no special events since the last valuation date.

This valuation reflects the provisions of the Plan as at July 1, 2022. The Plan has not been amended since the date of the previous valuation, and we are not aware of any pending definitive or virtually definitive amendments coming into effect during the period covered by this report. The Plan provisions are summarized in Appendix F.

Assumptions

We have used the same going concern valuation assumptions and methods as were used for the previous valuation, except for the following:

	Current valuation	Previous valuation
Discount rate:	5.55%	4.85%
Inflation:	2.25%	2.00%
ITA limit / YMPE increases:	3.25%	3.00%
Pensionable earnings increases:	3.50%	3.25%
Interest on employee contributions:	5.55%	4.85%

A summary of the going concern methods and assumptions is provided in Appendix C.

The hypothetical wind-up and solvency assumptions have been updated to reflect market conditions at the valuation date. A summary of the hypothetical wind-up and solvency methods and assumptions is provided in Appendix D.

Regulatory Environment and Actuarial Standards

There have been no changes to the Act or the relevant regulations that impact the funding of the Plan.

On July 2, 2020, the Minister of Finance of Canada released draft regulations that would permit sponsors of pension plans to recognize full pensionable service in 2020 for employees who are working reduced hours or who are receiving reduced earnings. The eligible period of reduced pay will be subject to the limit of five years of full-time equivalent compensation.

On July 23, 2020, the CIA published the final version of Section 3500 of the Standards of Practice on Pension Commuted Values and confirmed that the effective date of the new standards is December 1, 2020.

On September 21, 2020, the Ontario government filed Regulation 520/20, providing potential temporary funding relief for eligible single employer defined benefit pension plans registered in Ontario. The new regulation allows sponsors of eligible plans to defer required employer contributions starting with those contributions due in October 2020 and ending with contributions due in March 2021. Each deferred monthly contributions plus interest are due to be paid in 2 consecutive monthly payments ranging no later than April/May 2021 to February/March 2022. The University did not elect to defer any of its payments.

From the effective date, the revised standards affect the assumptions used to value the solvency and wind-up liabilities for benefits assumed to be settled through a lump sum transfer. The financial impact of those changes is reflected in this actuarial valuation on a solvency and hypothetical wind-up basis.

Subsequent Events

After checking with representatives of the University, to the best of our knowledge there have been no events subsequent to the valuation date that, in our opinion, would have a material impact on the results of the valuation as at July 1, 2022. Our valuation reflects the financial position of the Plan as of the valuation date and does not take into account any subsequent experience after the valuation date.

Impact of Case Law

This report has been prepared on the assumption that all claims on the Plan after the valuation date will be in respect of benefits payable to members of the Plan determined in accordance with the Plan terms and that all Plan assets are available to provide for these benefits. It is possible that court and regulatory decisions and changes in legislation could give rise to additional entitlements to benefits under the Plan and cause the results in this report to change. By way of example, we bring your attention to the following decisions:

- The Ontario Court of Appeal's 2003 decision in *Aegon Canada Inc. and Transamerica Life Canada versus ING Canada Inc.* restricted the use of original plan surplus where two or more pension plans were merged.

- The Supreme Court of Canada's 2004 decision in *Monsanto Canada Inc. versus Superintendent of Financial Services* upheld the requirement, with retroactive effect, to distribute surplus on partial plan wind-up under the *Pension Benefits Act (Ontario)*.

We are not in a position to assess the impact that such decisions or changes could have on the assumption that all plan assets on the valuation date are available to provide for benefits determined in accordance with the Plan terms. If such a claim arises subsequent to the date of this report, the consequences will be dealt with in a subsequent report. We are making no representation as to the likelihood of such a claim.

Section 3

Valuation results – Going concern

Financial Status

A going concern valuation compares the relationship between the value of Plan assets and the present value of expected future benefit cash flows in respect of accrued service, assuming the Plan will be maintained indefinitely.

The results of the current valuation, compared with those from the previous valuation, are summarized as follows:

(\$000's)	07.01.2022	01.01.2020
Assets		
Market value of assets	\$62,925	\$68,265
Asset smoothing adjustment	\$7,144	(\$2,063)
Smoothed value of assets	\$70,069	\$66,202
Going concern funding target		
Going concern liabilities:		
• Active and suspended members	\$16,852	\$23,344
• Pensioners and survivors	\$35,747	\$32,583
• Deferred pensioners	\$1,061	\$1,275
Subtotal	\$53,660	\$57,202
Provision for adverse deviations in respect of going concern liabilities as prescribed by the Act	\$5,903	\$6,292
Total	\$59,563	\$63,494
Funding excess (shortfall)	\$10,506	\$2,708

The going concern liabilities at July 1, 2022 do not include an additional margin for adverse deviations beyond the provision for adverse deviations prescribed by the Act.

Reconciliation of Financial Status (\$000's)

Funding excess (shortfall) as at previous valuation	\$2,708
Provision for Adverse Deviations (PfAD) at previous valuation	\$6,292
Funding excess (shortfall) before PfAD	\$9,000
Interest on funding excess (shortfall) before PfAD at 4.85% per year	\$1,131
University's special payments, with interest	\$1,328
Expected funding excess (shortfall)	\$11,459
Net experience gains (losses)	
• Net investment return	(\$8,315)
• Impact of asset smoothing	\$9,412
• Increases in pensionable earnings	\$1,109
• Increase in YMPE	\$85
• Indexation	(\$495)
• Mortality	\$65
• Retirement	(\$202)
• Termination	(\$100)
• Interest on employee contributions	(\$260)
• Impact of PfAD on current service cost	\$224
Total experience gains (losses)	\$1,523
Impact of changes in assumptions	\$3,344
Net impact of other elements of gains and losses	\$83
Funding excess (shortfall) before PfAD	\$16,409
Provision for Adverse Deviations at current valuation	(\$5,903)
Funding excess (shortfall) as at current valuation	\$10,506

Current Service Cost

The current service cost is an estimate of the present value of the additional expected future benefit cash flows in respect of pensionable service that will accrue after the valuation date, assuming the Plan will be maintained indefinitely. A provision for adverse deviations in respect of the current service cost is determined in accordance with the Act.

The current service cost and the provision for adverse deviations in respect of the current service cost, during the year following the valuation date, compared with the corresponding values determined in the previous valuation, is as follows:

(\$000's)	2022/2023	2020
Total current service cost ³ excluding the provision for adverse deviations	\$743	\$1,081
Estimated members' required contributions	(\$314)	(\$479)
Estimated University's current service cost	\$429	\$602
University's current service cost expressed as a percentage of members' required contributions	137%	126%
Provision for adverse deviations in respect of the current service cost (based on the percentage defined in Appendix A)		
• As a dollar amount per year	\$82	\$119
• As a percentage of members' required contributions	26%	25%
Total estimated University's current service cost		
• As a dollar amount per year	\$511	\$721
• As a percentage of members' required contributions	163%	151%

The key factors that have caused a change in the University's current service cost, excluding the provision for adverse deviations, since the previous valuation are summarized in the following table:

University's current service cost as at previous valuation	126%
Demographic changes	27%
Changes in assumptions	(16%)
University's current service cost as at current valuation	137%

³ The Total Current Service Cost includes no amount for escalated adjustments as defined in the Act.

Discount Rate Sensitivity (\$000's)

The following table summarizes the effect on the going concern liabilities and current service cost shown in this report of using a discount rate that is 1% lower than that used in the valuation. The effect of a change in the discount rate on the provision for adverse deviations is not reflected.

Scenario	Valuation Basis	Reduce Discount Rate by 1%
Going concern funding liabilities	\$53,660	\$58,831
Current service cost		
• Total current service cost	\$743	\$829
• Estimated members' required contributions	(\$314)	(\$314)
Estimated University's current service cost	\$429	\$515

Plausible Adverse Scenarios

The financial impact on the going concern results of plausible adverse scenarios that would pose threats to the Plan's future financial condition is presented in Appendix G.

Section 4

Valuation results – Hypothetical wind-up

Financial Position

When conducting a hypothetical wind-up valuation, we determine the relationship between the respective values of the Plan's assets and its liabilities assuming the Plan is wound up and settled on the valuation date, assuming benefits are settled in accordance with the Act and under circumstances consistent with the hypothesized scenario on the valuation date. More details on such scenario are provided in Appendix D.

The hypothetical wind-up financial position as of the valuation date, compared with that at the previous valuation, is as follows:

(\$000's)	07.01.2022	01.01.2020
Assets		
Market value of assets	\$62,925	\$68,265
Termination expense provision	(\$180)	(\$180)
Wind-up assets	\$62,745	\$68,085
Present value of accrued benefits for:		
• Active and suspended members	\$21,377	\$34,284
• Pensioners and survivors	\$39,679	\$40,007
• Deferred pensioners	\$1,271	\$1,924
Total wind-up liability	\$62,327	\$76,215
Wind-up excess (shortfall)	\$418	(\$8,130)
Transfer ratio	101%	90%

Wind-up Incremental Cost

The wind-up incremental cost is an estimate of the present value of the projected change in the hypothetical wind-up liabilities from the valuation date until the next scheduled valuation date, adjusted for the benefit payments expected to be made in that period.

The hypothetical wind-up incremental cost determined in this valuation, compared with the corresponding value determined in the previous valuation, is as follows:

(\$000's)	07.01.2022	01.01.2020
Number of years covered by report	3 years	3 years
Total hypothetical wind-up liabilities at the valuation date (A)	\$62,327	\$76,215
Present value at the valuation date of projected hypothetical wind-up liability at the next required valuation plus expected benefit payments until the next required valuation (B)	\$63,708	\$80,159
Hypothetical wind-up incremental cost (B – A)	\$1,381	\$3,944

The incremental cost is not an appropriate measure of the contributions that would be required to maintain the windup position of the Plan even if actual experience is exactly in accordance with the going concern valuation assumptions. For example, the expected return on plan assets (based on the going concern assumptions) is greater than the discount rate used to determine the hypothetical wind-up liabilities.

Discount Rate Sensitivity (\$000's)

The following table summarizes the effect on the hypothetical wind-up liabilities shown in this report of using a discount rate that is 1% lower than that used in the valuation:

Scenario	Valuation Basis	Reduce Discount Rate by 1%
Total hypothetical wind-up liability	\$62,327	\$69,177

Section 5

Valuation results – Solvency

Overview

The Act also requires the financial position of the Plan to be determined on a solvency basis. The financial position on a solvency basis is determined in a similar manner to the Hypothetical Wind-up Basis, except for the following:

Exceptions	Reflected in valuation based on the terms of engagement
The circumstance under which the Plan is assumed to be wound up could differ for the solvency and hypothetical wind-up valuations.	The same circumstances were assumed for the solvency valuation as were assumed for the hypothetical wind-up valuation.
Certain benefits can be excluded from the solvency financial position. These include: <ul style="list-style-type: none"> (a) any escalated adjustment (e.g. indexing), (b) certain plant closure benefits, (c) certain permanent layoff benefits, (d) special allowances other than funded special allowances, (e) consent benefits other than funded consent benefits, (f) prospective benefit increases, (g) potential early retirement window benefit values, and (h) pension benefits and ancillary benefits payable under a qualifying annuity contract. 	No benefits were excluded from the solvency liabilities shown in this valuation.
The financial position on the solvency basis needs to be adjusted for any Prior Year Credit Balance.	Not applicable.
The solvency financial position can be determined by smoothing assets and the solvency discount rate over a period of up to 5 years.	Solvency assets and liabilities were smoothed over 3 years.
The benefit rate increases coming into effect after the valuation date can be reflected in the solvency valuation.	Not applicable.

Financial Position

The financial position on a solvency basis, compared with the corresponding figures from the previous valuation, is as follows:

(\$000's)	07.01.2022	01.01.2020
Assets		
Market value of assets	\$62,925	\$68,265
Termination expense provision	(\$180)	(\$180)
Net assets	\$62,745	\$68,085
Liabilities		
Total hypothetical wind-up liabilities	\$62,327	\$76,215
Difference in circumstances of assumed wind-up	\$0	\$0
Value of excluded benefits	\$0	\$0
Liabilities on a solvency basis	\$62,327	\$76,215
Surplus (shortfall) on a market value basis	\$418	(\$8,130)
Solvency liability adjustment (smoothing)	(\$9,837)	\$0
Asset smoothing adjustment	\$7,144	\$0
Surplus (shortfall) on a solvency basis	(\$2,275)	(\$8,130)
Solvency ratio	101%	90%

Section 6

Minimum funding requirements

The Act prescribes the minimum contributions that the University must make to the Plan. The minimum contributions in respect of a defined benefit component of a pension plan are comprised of going concern current service cost, the provision for adverse deviations in respect of the current service cost, and special payments to fund any funding shortfall or solvency shortfall that exceeds the level set out under the Act.

On the basis of the assumptions and methods described in this report, no special payments are required. However, since the available actuarial surplus is zero, the Act requires the University to contribute the current service cost including the provision for adverse deviations. The determination of the provision for adverse deviations is shown in Appendix A. On the basis of the assumptions and methods described in this report, the rule for determining the minimum required University monthly contributions, as well as an estimate of the employee and University contributions, from the valuation date until the next required valuation are as follows:

Period beginning	Monthly Employee Contribution	Estimated University's contributions			
		Provision for adverse deviations related to monthly current service cost	Monthly current service cost and provision for adverse deviations	Available actuarial surplus applied ⁴	Minimum monthly contributions
July 1, 2022	\$26,167	\$6,833	\$42,583	\$0	\$42,583
July 1, 2023	\$27,167	\$7,167	\$45,333	\$0	\$45,333
July 1, 2024	\$28,167	\$7,583	\$48,417	\$0	\$48,417

Period beginning	University's contribution rule		
	Monthly current service cost ⁵	Provision for adverse deviations in respect of current service cost	Explicit monthly expense allowance
July 1, 2022	137%	26%	\$0
July 1, 2023	140%	26%	\$0
July 1, 2024	145%	27%	\$0

⁴ Notwithstanding the available actuarial surplus in the Plan, the terms of the Plan may require the University to make current service cost contributions.

⁵ Expressed as a percentage of members' required contributions.

The estimated contribution amounts above are based on projected members' required contributions. Therefore, the actual University's current service cost and provision for adverse deviations in respect of the current service cost may be different from the above estimates and, as such, the contribution requirements should be monitored closely to ensure contributions are made in accordance with the Act.

Appendix A includes details on the determination of the provision for adverse deviations.

Other Considerations

Differences between Valuation Bases

There is no provision in the minimum funding requirements to fund the difference between the hypothetical wind-up and reduced solvency shortfalls, if any.

In addition, although minimum funding requirements do include a requirement to fund the going concern current service cost and a provision for adverse deviations in respect of the current service cost, there is no requirement to fund the expected growth in the hypothetical wind-up or solvency liability after the valuation date, which could be greater.

Timing of Contributions

Funding contributions are due on a monthly basis. Contributions for current service cost and the provision for adverse deviations must be made within 30 days following the month to which they apply. Special payment contributions must be made in the month to which they apply.

Retroactive Contributions

The University must contribute the excess, if any, of the minimum contribution recommended in this report over contributions actually made in respect of the period following the valuation date. This contribution, along with an allowance for interest, is due no later than 60 days following the date this report is filed.

Payment of Benefits

The Act imposes certain restrictions on the payment of lump sums from the Plan when the transfer ratio revealed in an actuarial valuation is less than one. If the transfer ratio shown in this report is less than one, the plan administrator should ensure that the monthly special payments are sufficient to meet the requirements of the Act to allow for the full payment of benefits, and otherwise should take the prescribed actions. If the full payment of benefits does not occur, the residual amount plus interest within 5 years of the initial transfer.

Additional restrictions are imposed when:

- The transfer ratio revealed in the most recently filed actuarial valuation is less than one and the administrator knows or 'ought to know' that the transfer ratio of the Plan has declined by 10% or more since the date the last valuation was filed.

- The transfer ratio revealed in the most recently filed actuarial valuation is greater than or equal to one and the administrator knows or 'ought to know' that the transfer ratio of the Plan has declined to less than 0.9 since the date the last valuation was filed.

As such, the administrator should monitor the transfer ratio of the Plan and, if necessary, take the prescribed actions.

Letters of Credit

Minimum funding requirements in respect of required solvency special payments that otherwise require monthly contributions to the pension fund may be met, in the alternative, by establishing an irrevocable letter of credit subject to the conditions established by the Act. Required solvency special payments in excess of those met by a letter of credit must be met by monthly contributions to the pension fund.

Section 7

Maximum eligible contributions

The *Income Tax Act* (the “ITA”) limits the amount of employer contributions that can be remitted to the defined benefit component of a registered pension plan. For purposes of this section on maximum eligible contributions only, any reference to the current service cost includes the provision for adverse deviations in respect of the current service cost.

In accordance with Section 147.2 of the ITA and *Income Tax Regulation* 8516, for a plan that is underfunded on either a going concern or on a hypothetical wind-up basis, the maximum permitted contributions are equal to the employer’s current service cost, including the explicit expense allowance if applicable, plus the greater of the going concern funding shortfall and hypothetical wind-up shortfall.

For a plan that is fully funded on both going concern and hypothetical wind-up bases, the employer can remit a contribution equal to the employer’s current service cost, including the explicit expense allowance if applicable, as long as the surplus in the plan does not exceed a prescribed threshold. Specifically, in accordance with Section 147.2 of the ITA, for a plan that is fully funded on both going concern and hypothetical wind-up bases, the plan may not retain its registered status if the employer makes a contribution while the going concern funding excess exceeds 25% of the going concern funding target.

Notwithstanding the above, any contributions that are required to be made in accordance with pension benefits legislation are eligible contributions in accordance with Section 147.2 of the ITA and can be remitted.

Schedule of Maximum Contributions

Since the surplus does not exceed 25% of the going concern funding target, the University may make monthly contributions until the next valuation. The rule for determining the estimated maximum eligible annual contributions and an estimate of the maximum eligible contributions are as follows:

Year beginning	University’s contribution rule	Estimated University’s contributions	
	Monthly current service cost including provision for adverse deviations ⁶	Deficit Funding	Monthly current service cost including expense allowance
July 1, 2022	163%	n/a	\$42,583
July 1, 2023	166%	n/a	\$45,333
July 1, 2024	172%	n/a	\$48,417

⁶ Expressed as a percentage of members’ required contributions.
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Section 8

Actuarial opinion

In our opinion, for the purposes of the valuations,

- The membership data on which the valuation is based are sufficient and reliable;
- The assumptions are appropriate; and
- The methods employed in the valuation are appropriate.

This report has been prepared, and our opinions given, in accordance with accepted actuarial practice in Canada. It has also been prepared in accordance with the funding and solvency standards set by the *Pension Benefits Act* of Ontario.

DRAFT

Chad Spence

Fellow of the Society of Actuaries

Fellow of the Canadian Institute of Actuaries

Date

DRAFT

Bill Watson

Fellow of the Society of Actuaries

Fellow of the Canadian Institute of Actuaries

Date

Appendix A

Prescribed disclosure

Definitions

The Act defines a number of terms as follows:

Defined Term	Description	Result
Going Concern Assets	Total smoothed value of assets plus the sum of the following:	\$70,069,000
	(a) The present value of special payments in respect of any past service unfunded liability identified in a previously filed report	\$0
	(b) The present value of special payments in respect of any plan amendment that increases going concern liabilities	\$0
	(c) Present value of special payments in respect of going concern unfunded liabilities identified in a previously filed report that are scheduled for payment within one year of the date of this report	\$0
Going Concern Excess / (Unfunded Liability)	The Going Concern Assets minus the sum of the following:	\$10,506,000
	(a) The going concern liabilities	
	(i) liabilities excluding the value of escalated adjustments	\$53,660,000
	(ii) liabilities in respect of escalated adjustments	\$0

Defined Term	Description	Result
	(b) The provision for adverse deviations in respect of the going concern liabilities excluding the value of escalated adjustments	\$5,903,000
	(c) Prior Year Credit Balance	\$0
Going Concern Funded Ratio	The ratio of: (a) Total smoothed value of assets (excluding letters of credit) less the Prior Year Credit Balance; to (b) Going concern liabilities	1.31
Transfer Ratio	The ratio of: (a) Solvency Assets minus the lesser of the Prior Year Credit Balance and the minimum required University contributions including the provision for adverse deviations until the next required valuation; to (b) The sum of the Solvency Liabilities and liabilities for benefits, other than benefits payable under qualifying annuity contracts that were excluded in calculating the Solvency Liabilities.	1.01
Solvency Ratio	The ratio of: (a) Solvency Assets related to defined benefits and ancillary benefits plus the total amount of any letters of credit minus the Prior Year Credit Balance (b) The sum of the Solvency Liabilities related to defined benefits and ancillary benefits	1.01
Prior Year Credit Balance	Accumulated sum of contributions made to the pension plan in excess of the minimum required contributions (note: only applies if the University chooses to treat the excess contributions as a Prior Year Credit Balance).	\$0
Solvency Assets	Market value of assets including accrued or receivable income and excluding the value of any qualifying annuity contracts.	\$62,925,000

Defined Term	Description	Result
Solvency Asset Adjustment	The sum of:	
	(a) The difference between smoothed value of assets and the market value of assets	\$7,144,000
	(b) The present value of going concern special payments required to liquidate any past service unfunded liability	\$0
	(c) The present value of going concern special payments identified in January 1, 2020 valuation and scheduled for July 1, 2022 – June 30, 2023.	\$0
	(d) The present value of going concern special payments (identified in this report) that are scheduled for payment within 6 years following the valuation date	\$0
	(e) The present value of any previously scheduled solvency special payments (excluding those identified in this report)	\$0
	(f) The total value of all letters of credit in respect of the special payments due before the valuation date, subject to the limit of 15% of solvency liabilities	\$0
		\$7,144,000
Solvency Liabilities	Liabilities determined as if the plan had been wound up on the valuation date, including liabilities for plant closure benefits or permanent layoff benefits that would be immediately payable if the University's business were discontinued on the valuation date of the report, but, if elected by the plan sponsor, excluding liabilities for,	\$62,327,000
	(a) Any escalated adjustment,	
	(b) Excluded plant closure benefits,	
	(c) Excluded permanent layoff benefits,	
	(d) Special allowances other than funded special allowances,	
	(e) Consent benefits other than funded consent benefits	
	(f) Prospective benefit increases,	
	(g) Potential early retirement window benefit values, and	
	(h) Pension benefits and ancillary benefits payable under a qualifying annuity contract.	

Defined Term	Description	Result
Solvency Liability Adjustment	The amount by which Solvency Liabilities are adjusted as a result of using a solvency valuation interest rate that is the average of market interest rates calculated over the period of time used in the determination of the smoothed value of assets.	\$9,837,000
Solvency Deficiency	The amount, if any, by which the sum of:	
	(a) The Solvency Liabilities	\$62,327,000
	(b) The Solvency Liability Adjustment	\$9,837,000
	(c) The Prior Year Credit Balance	\$0
		<hr/>
		\$72,164,000
	Exceeds the sum of	
	(d) The Solvency Assets net of estimated termination expenses ⁷	\$62,745,000
	(e) The Solvency Asset Adjustment	\$7,144,000
		<hr/>
		\$69,889,000
		\$2,275,000
Reduced Solvency Deficiency / (Solvency Excess)	The sum of:	
	(a) 85% of the Solvency Liabilities	\$52,978,000
	(b) 85% of the Solvency Liability Adjustment	\$8,361,000
	(c) The Prior Year Credit Balance	\$0
		<hr/>
		\$61,339,000
	minus the sum of:	
	(d) The Solvency Assets net of estimated termination expenses ⁷	\$62,745,000
	(e) The Solvency Asset Adjustment	\$7,144,000
		<hr/>
		\$69,889,000
		(\$8,550,000)

⁷ In accordance with accepted actuarial practice, for purposes of determining the financial position, the market value of plan assets was reduced by a provision for estimated termination expenses payable from the Plan's assets that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Provision for Adverse Deviations

The provision for adverse deviations has been established in accordance with regulations taking into account the following parameters:

Defined Amount		Results						
Fixed Income Component (L)	The sum of the Plan's target allocation of assets (excluding those allocated to annuity contracts and meeting the minimum rating requirement) as described in the regulations according to the investment policy applicable at the valuation date:	45.0%						
	<table border="1"> <thead> <tr> <th>Investment</th> <th>Target</th> </tr> </thead> <tbody> <tr> <td>Universe bonds</td> <td>20.0%</td> </tr> <tr> <td>Long-term bonds</td> <td>25.0%</td> </tr> </tbody> </table>	Investment	Target	Universe bonds	20.0%	Long-term bonds	25.0%	
Investment	Target							
Universe bonds	20.0%							
Long-term bonds	25.0%							
Alternative Investment Component (M)	The sum of the Plan's target allocation of assets (excluding those allocated to annuity contracts) meeting requirements as described in the regulations according to the investment policy applicable at the valuation date	0.0%						
Investment Component (N)	Plan's target asset allocation for mutual, pooled or segregated funds	0.0%						
Investment Component Fixed Income % (P)	Portion of Investment Component (N) that is allocated to investment categories accounted for in Fixed Income Component (L)	N/A						
Investment Component Alternative Investment % (Q)	Portion of Investment Component (N) that is allocated to investment categories accounted for in Alternative Income Component (M)	N/A						
Annuity Contract Allocation (R)	Annuity contracts that have been purchased from an insurance company and excluded from the Fixed Income Component (L) and Alternative Investment Component (M)	0.0%						

Combined Target Asset Allocation for Fixed Income Assets (J)		
Sum of		
• Fixed Income Component (L)	45.0%	
• 0.5 × Alternative Investment Component (0.5 × M)	0.0%	
• Investment Component × Investment Component Fixed Income % (N × P)	0.0%	
• 0.5 × Investment Component × Investment Component Alternative Investment % (0.5 × N × Q)	0.0%	
	45.0%	
Divided by		
• 100% - Annuity Contract Allocation (100% - R)	100.0%	
Combined Target Asset Allocation for Fixed Income Assets		45.0%

Combined Target Asset Allocation for Non-Fixed Income Assets (K)	
100% – Combined Target Asset Allocation for Fixed Income Assets (100% - J)	55.0%
Duration of going concern liabilities at valuation date	
= $(F - G) / (G \times 0.01)$ where,	9.64
G = going concern liabilities at valuation date established using the discount rate determined for this valuation	\$53,660,000
F = going concern liabilities established using the discount rate minus 1%	\$58,831,000

Benchmark Discount Rate (E)	
Base rate	0.50%
Effective yield from CANSIM Series V39056 (H)	3.14%
1.5% x Combined Target Asset Allocation for Fixed Income Assets (1.5% × J)	0.68%
5.0% x Combined Target Asset Allocation for Non-Fixed Income Assets (5.0% × K)	2.75%
Benchmark Discount Rate	7.07%

Provision for Adverse Deviations			
i.	5.0% for a closed plan and 4.0% for a Plan that is not a closed plan		5.00%
ii.	Provision based on Combined Target Asset Allocation for Non-Fixed Income Assets		6.00%
iii.	Greater of zero and the		
	• Duration of going concern liabilities at valuation date	9.64	
Multiplied by:			
	– Going concern valuation gross discount rate net of active investment management fees (D), less	5.95%	
	– Benchmark Discount Rate (E)	7.07%	0.00%
Provision for Adverse Deviations (i. + ii. + iii.)			11.00%

The available actuarial surplus that may be used according to the Act is established as follows:

Available actuarial surplus			
Excess of			
	• Assets determined on basis of going concern valuation including accrued and receivable income but excluding the value of any letters of credit		\$70,069,000
Over			
	• Going concern liabilities	\$53,660,000	
	• Provision for adverse deviations in respect of the going concern liabilities	\$5,903,000	
	• Prior Year Credit Balance	\$0	
			\$59,563,000
			\$10,506,000 (a)
Excess of			
	• Solvency assets excluding the value of any letters of credits and lesser of Prior Year Credit Balance and minimum required University contributions, including the provision for adverse deviations until the next required valuation		\$62,925,000
Over			
	• Wind-up liabilities × 105%		\$65,443,000
			\$0 (b)
The available actuarial surplus = the lesser of a) and b) above			\$0

Timing of Next Required Valuation

In accordance with the Act the next valuation of the Plan would be required at an effective date within one year of the current valuation date if:

- The ratio of solvency assets to solvency liabilities is less than 85%.
- The University elected to exclude plant closure or permanent lay-off benefits under Section 5(18) of the regulations, and has not rescinded that election.

Otherwise, the next valuation of the Plan would be required at an effective date no later than three years after the current valuation date.

Accordingly, the next valuation of the Plan will be required as of July 1, 2025.

Special Payments

As the Plan does not have a funding shortfall and there is a solvency excess, no special payments are required.

Pension Benefits Guarantee Fund (PBGF) Assessment

The PBGF is a Financial Services Regulatory Authority of Ontario administered fund that employers must contribute to if they provide a defined benefit pension plan that is covered by the PBGF. The purpose is to provide a guaranteed payment of certain benefits for Ontario employees if the pension plan terminates due to the employer's bankruptcy.

A PBGF assessment is required to be paid under Section 37 of the Act. The PBGF assessment base and additional information required under Section 3 of the Regulation 909 under the Act is as follows:

Solvency assets	\$62,925,000 (a)
PBGF liabilities	\$62,327,000 (b)
Solvency liabilities	\$62,327,000 (c)
Ontario asset ratio	100.00% (d) = (b) ÷ (c)
Ontario portion of the fund	\$62,925,000 (e) = (a) × (d)
PBGF assessment base	\$0 (f) = max(0, (b) – (e))
Amount of additional liability for plant closure and/or permanent layoff benefits which is not funded and subject to the 2% (3% for years after 2018) assessment pursuant to s.37(4)	\$0 (g)
Modified PBGF liabilities	\$56,030,000
Number of Ontario Plan beneficiaries	459
Number of Ontario Plan beneficiaries receiving monthly pensions (including bridge benefit) of \$1,500 or less	261
Number of Ontario Plan beneficiaries who have accrued monthly pensions (including bridge benefit) of \$1,500 or less	125
Amount of largest monthly pension or monthly pension benefit (including bridge benefit) that has accrued under the plan to an Ontario beneficiary	\$3,854

Percentiles of amounts payable under Plan to Ontario beneficiaries (in reference to all accrued monthly pensions, including bridge benefits for actives, disabled, suspended, transfers and deferred pensioners)	Accrued monthly pension (including bridge benefit)	PBGF liabilities
90 th	\$1,700	\$16,344,000
80 th	\$1,524	\$11,873,000
70 th	\$1,055	\$8,453,000
60 th	\$894	\$5,992,000
50 th	\$815	\$3,690,000
40 th	\$578	\$1,849,000
30 th	\$401	\$810,000
20 th	\$87	\$160,000
10 th	\$21	\$12,000

Percentiles of amounts payable under Plan to Ontario beneficiaries (in reference to all monthly pensions in pay, including bridge benefits for pensioners and beneficiaries)	Accrued monthly pension (including bridge benefit)	PBGF liabilities
90 th	\$1,721	\$28,157,000
80 th	\$1,331	\$21,374,000
70 th	\$1,072	\$16,389,000
60 th	\$913	\$11,941,000
50 th	\$801	\$8,433,000
40 th	\$693	\$5,530,000
30 th	\$577	\$3,505,000
20 th	\$414	\$1,653,000
10 th	\$248	\$426,000

Appendix B

Plan assets

The pension fund is held in trust by CIBC Mellon. In preparing this report, we have relied upon the fund statements prepared by CIBC Mellon for the period from January 1, 2020 to June 30, 2020 and the auditors' reports for the period from July 1, 2020 to June 30, 2022 prepared by KPMG, without further audit. Customarily, this information would not be verified by a plan's actuary. We have reviewed the information for internal consistency and we have no reason to doubt its substantial accuracy.

Reconciliation of Market Value of Plan Assets

The pension fund transactions since the last valuation are summarized in the following table:

(\$000's)	January 1, 2020 – June 30, 2020	July 1, 2020 - June 30, 2021	July 1, 2021 – June 30, 2022
January 1 / July 1	\$63,381	\$68,036	\$76,165
PLUS			
Members' contributions	\$217	\$387	\$393
University's contributions			
• Current service	\$299	\$552	\$528
• Special payments	\$5,292	\$1,033	\$0
• Investment income	\$768	\$1,536	\$1,595
Net capital gains (losses)	\$211	\$8,346	(\$11,359)
	\$6,787	\$11,854	(\$8,843)
LESS			
Pensions paid	\$1,441	\$3,083	\$3,304
Lump-sums paid	\$397	\$175	\$272
Administration and investment fees	\$366	\$467	\$393
	\$2,204	\$3,725	\$3,969
Adjustment to audited statement	\$72		
June 30	\$68,036	\$76,165	\$63,353
Gross rate of return ⁸	1.61%	14.71%	-13.08%
Rate of return net of expenses ⁹	1.05%	13.97%	-13.57%

⁸ Assuming mid-period cash flows

The market value of assets shown in the above table is adjusted to reflect in-transit amounts as follows:

(\$000's)	Current Valuation	Previous Valuation
Market value of invested assets	\$63,353	\$63,381
In-transit amounts		
• Members' contributions	\$0	\$36
• University's contributions	\$0	\$4,848
• Expenses	\$0	\$0
• Benefit payments	(\$428)	\$0
Market value of assets adjusted for in-transit amounts	\$62,925	\$68,265

We have tested the pensions paid, the lump-sums paid, and the contributions for consistency with the membership data for the Plan members who have received benefits or made contributions. The results of these tests were satisfactory.

Investment Policy

The plan administrator has adopted a statement of investment policy and procedures. This policy is intended to provide guidelines for the manager(s) as to the level of risk that is consistent with the Plan's investment objectives. A significant component of this investment policy is the asset mix.

The plan administrator is solely responsible for selecting the Plan's investment policies, asset allocations, and individual investments.

The constraints on the asset mix and the actual asset mix at the valuation date are provided for information purposes:

	Investment policy			Actual asset mix as at July 1, 2022
	Minimum	Target	Maximum	
Canadian equities	10%	20%	30%	21.5%
US equities	8%	18%	28%	19.2%
Non-North American equities	7%	17%	27%	18.8%
Universe bonds	10%	20%	30%	19.2%
Long bonds	15%	25%	35%	20.7%
Cash and cash equivalents	0%	0%	10%	0.6%
		100%		100%

Because the Plan's assets (which are invested in accordance with the above investment policy) are not matched to the Plan's liabilities (which tend to behave like long bonds), the Plan's financial position will fluctuate over time. These fluctuations could be significant and could cause the Plan to become underfunded or overfunded even if the University contributes to the Plan based on the funding requirements presented in this report.

Appendix C

Methods and assumptions – Going concern

Valuation of Assets

For this valuation, we have continued to use an adjusted market-value method to determine the smoothed value of assets. Under this method, investment experience gains (losses) (actual versus the expected investment return on assets, net of expenses) arising during a given year are spread on a straight-line basis over 3 years.

The asset values produced by this method are related to the market value of the assets, with the advantage that, over time, the market-related asset values will tend to be more stable than market values. To the extent that more investment experience gains than losses will arise over the long term, the smoothed value will tend to be lower than the market value.

The smoothed value of the assets at July 1, 2022 was derived as follows:

(\$000's)	2020 / 2021	2021 / 2022
Market value of assets at July 1	\$68,036	\$76,165
Payments into Plan	\$1,973	\$922
Payments out of Plan ⁹	\$3,258	\$3,576
Expected interest	\$3,269	\$3,630
Investment experience gains (losses)	\$6,145	(\$13,788)
Market value of assets at December 31	\$76,165	\$63,353
Market value of assets		\$63,353
LESS		
Investment experience gains (losses)	2021/2022: (\$13,788) x 66.67% =	(\$9,192)
	2020/2021: \$6,145 x 33.33% =	\$2,048
		(\$7,144)
Smoothed value of assets		\$70,497

⁹ Other than administration fees.

The smoothed value of assets shown in the above table is adjusted to reflect in-transit amounts as follows:

(\$000's)	Current Valuation	Previous Valuation
Smoothed value of assets	\$70,497	\$61,318
In-transit amounts		
• Members' contributions	\$0	\$36
• University's contributions	\$0	\$4,848
• Expenses	\$0	\$0
• Benefit payments	(\$428)	\$0
Smoothed value of assets, adjusted for in-transit amounts	\$70,069	\$66,202

Going Concern Funding Target

Over time, the real cost to the University of a pension plan is the excess of benefits and expenses over member contributions, if any, and investment earnings. The actuarial cost method allocates this cost to annual time periods.

For purposes of the going concern valuation, we have continued to use the projected unit credit actuarial cost method. Under this method, we determine the present value of benefit cash flows expected to be paid in respect of service accrued prior to the valuation date, based on projected final average earnings. This is referred to as the funding target.

The funding excess or funding shortfall, as the case may be, is the difference between the market or smoothed value of assets and the funding target. A funding excess on a market value basis indicates that the current market value of assets and expected investment earnings are expected to be sufficient to meet the cash flows in respect of benefits accrued to the valuation date as well as expected expenses – assuming the plan is maintained indefinitely. A funding shortfall on a market value basis indicates the opposite – that the current market value of the assets is not expected to be sufficient to meet the plan's cash flow requirements in respect of accrued benefits, absent additional contributions.

As required under the Act, a funding shortfall (including the prior year credit balance) and the provision for adverse deviations must be amortized over no more than 10 years through special payments beginning one year after the valuation date. A funding excess may, from an actuarial standpoint, be applied immediately to reduce required University current service contributions unless precluded by the terms of the plan or by legislation.

The actuarial cost method used for the purposes of this valuation produces a reasonable matching of contributions with accruing benefits. Because benefits are recognized as they accrue, the actuarial cost method provides an effective funding target for a plan that is maintained indefinitely.

Current Service Cost

The current service cost is the present value of projected benefits to be paid under the plan with respect to service expected to accrue during the period until the next valuation.

The University's current service cost is the total current service cost reduced by the members' required contributions.

The University's current service cost has been expressed as a percentage of the members' required contributions to provide an automatic adjustment in the event of fluctuations in membership and/or pensionable earnings.

Under the projected unit credit actuarial cost method, the current service cost for an individual member will increase each year as the member approaches retirement. Therefore, the current service cost of the entire group, expressed as a percentage of the members' required contributions, can be expected to increase as long as the average age distribution of the closed active population increases.

Actuarial Assumptions – Going Concern Basis

The present value of future benefit payment cash flows is based on economic and demographic assumptions. At each valuation we determine whether, in our opinion, the actuarial assumptions are still appropriate for the purposes of the valuation, and we revise them, if necessary. Emerging experience will result in gains or losses that will be revealed and considered in future actuarial valuations.

The table below shows the various assumptions used in the current valuation in comparison with those used in the previous valuation.

Assumption	Current valuation	Previous valuation
Discount rate:	5.55%	4.85%
Inflation:	2.25%	2.00%
ITA limit / YMPE increases:	3.25%	3.00%
Pensionable earnings increases:	3.50%	3.25%
Post-retirement pension increases:	0.00%	0.00%
Interest on employee contributions:	5.55%	4.85%
Retirement rates:	20% where first eligible for an unreduced pension, remainder at age 64	20% where first eligible for an unreduced pension, remainder at age 64
Termination rates:	None	None
Mortality rates:	115% of the rates of the 2014 Public Sector Canadian Pensioners Mortality Table (CPM2014Publ)	115% of the rates of the 2014 Public Sector Canadian Pensioners Mortality Table (CPM2014Publ)
Mortality improvements:	Fully generational using CPM Improvement Scale B (CPM-B)	Fully generational using CPM Improvement Scale B (CPM-B)
Disability rates:	None	None

The assumptions are best estimate and do not include a margin for adverse deviations.

Pensionable Earnings

The benefits ultimately paid will depend on each member's final average earnings. To calculate the pension benefits payable upon retirement, death, or termination of employment, we have taken the rate of pay on July 1, 2022 and assumed that such pensionable earnings will increase at the assumed rate.

Rationale for Assumptions

A rationale for each of the assumptions used in the current valuation is provided below.

Discount Rate

We have discounted the expected benefit payment cash flows using the expected investment return on the market value of the fund net of fees. Other bases for discounting the expected benefit payment cash flows may be appropriate, particularly for purposes other than those specifically identified in this valuation report.

The discount rate is comprised of the following:

- An **assumed investment return** based on estimated returns for each major asset class that are consistent with market conditions on the valuation date modified to include a provision for increases in market interest rates to a level higher than current historically low levels, on the expected time horizon over which benefits are expected to be paid, and on the target asset mix specified in the Plan's investment policy. Consistent with market observable and available data, the assumed investment return is a gross return for all asset classes.
- An **assumed passive investment management expense provision** which represents the hypothetical fees for passive investment management of assets based on estimated fees charged by index managers for balanced mandates.
- An **active investment management expense provision**. We have assumed that these fees would be offset by an equivalent **additional return resulting from active investment management**.
- An **implicit non-investment management expense provision** determined as the average rate of non-investment expenses paid from the fund over the last 3 years. These would include all fees payable from the fund (administration, custodial, audit, consulting, etc.) except those payable to investment managers, to the extent that these fees are not covered in an explicit provision for expenses added to the current service cost.

The discount rate was developed as follows:

Assumed investment return	5.95%
Assumed passive investment management expense provision	(0.07%)
Implicit non-investment management expense provision	(0.32%)
Rounding to nearest 5 basis points	(0.01%)
Net discount rate	5.55%

Inflation

The inflation assumption has taken into consideration of the Bank of Canada's inflation target range of between 1% and 3%.

Income Tax Act Pension Limit and Year's Maximum Pensionable Earnings

The assumption is based on historical real economic growth and the underlying inflation assumption.

Pensionable Earnings

The assumption is based on general wage growth assumptions increased by our best estimate of future merit and promotional increases over general wage growth, considering the University's expectations.

Post-Retirement Pension Increases

The assumption is based on the Plan formula and inflation assumption above.

Retirement Rates

The assumption is based on the Plan provisions and our experience with similar plans and employee groups.

Termination Rates

Use of a different assumption would not have a material impact on the valuation.

Mortality Rates

The assumption for the mortality rates is based on the Canadian Pensioners' Mortality (CPM) study published by the Canadian Institute of Actuaries in February 2014.

Due to the size of the Plan, specific data on plan mortality experience is insufficient to determine the mortality rates. The CPM mortality rates from the public sector have been adjusted after considering plan-specific characteristics, such as the type of employment, the industry experience, the pension and employment income for the plan members, and data in the CPM study.

There is broad consensus among actuaries and other longevity experts that mortality improvement will continue in the future, but the degree of future mortality improvement is uncertain. Two mortality improvement scales published by the Canadian Institute of Actuaries (CIA) are generally adopted for Canadian pension valuations:

- The Canadian Pensioners Mortality (CPM) study published in February 2014 included CPM Improvement Scale B (CPM-B).
- A report released by the Task Force on Mortality Improvement on September 20, 2017 included an analysis of the rate of mortality improvement for the Canadian population and

Mortality Rates

provides for mortality improvement scale MI-2017 to be considered for the purpose of reflecting future mortality improvement in Canadian actuarial work, while acknowledging that it might be appropriate to use alternative mortality improvement assumptions to reflect the nature of the work.

The CIA Committee on Pension Plan Financial Reporting published a revised version of the Educational Note on the Selection of Mortality Assumptions for Pension Plan Valuations on December 21, 2017. The Educational Note indicated that given the recent publication of the CPM-B and MI-2017 improvement scales and the similar data sets used in their development, it may be appropriate to use either scale in the absence of credible information to the contrary, such as the publication of a successor scale by the CIA.

COVID-19 has impacted mortality rates globally. Statistics Canada reported excess mortality in 2020 and 2021 for the general Canadian population and other peer countries globally have also seen excess mortality over the course of the pandemic. Mortality experience for the plan has been reflected up to the date of the valuation. We have not adjusted the expected mortality rates for Plan members after the valuation date. The long-term implications of the pandemic on mortality rates is unclear as at the date of this report. Credible plan specific experience and relevant broader observed mortality trends after the report date will be reflected in future valuations.

For the current valuation, we have continued to use the CPM-B scale, which is a reasonable outlook for future mortality improvement.

Based on the assumption used, the life expectancy of a member age 65 at the valuation date is 22.1 years for males and 23.9 years for females.

Interest on Employee Contributions

The assumption is based on Plan terms and the underlying investment return assumption.

Disability Rates

Use of a different assumption would not have a material impact on the valuation.

Appendix D

Methods and assumptions – Hypothetical wind-up and solvency

Hypothetical Wind-up Basis

The Canadian Institute of Actuaries requires actuaries to report the financial position of a pension plan on the assumption that the plan is wound up on the effective date of the valuation, with benefits determined on the assumption that the pension plan has neither a surplus nor a deficit.

To determine the actuarial liability on the hypothetical wind-up basis, we have valued those benefits that would have been paid had the Plan been wound up on the valuation date, with all members fully vested in their accrued benefits.

The Standards of Practice of the Canadian Institute of Actuaries require that the scenario upon which the hypothetical wind-up valuation is based be postulated. However, there are no benefits under the Plan contingent upon the circumstances of the plan wind-up or contingent upon other factors. Therefore, it was not necessary to postulate a scenario upon which the hypothetical wind-up valuation is made. No benefits payable on plan wind-up were excluded from our calculations. The plan wind-up is assumed to occur in circumstances that maximize the actuarial liability.

Upon plan wind-up, members are given options for the method of settling their benefit entitlements. The options vary by eligibility and by province of employment, but in general, involve either a lump sum transfer or an immediate or deferred pension.

The value of benefits assumed to be settled through a lump sum transfer is based on the assumptions described in Section 3500 – *Pension Commuted Values* of the Canadian Institute of Actuaries' Standards of Practice applicable for July 1, 2022.

Benefits provided as an immediate or deferred pension are assumed to be settled through the purchase of annuities based on an estimate of the cost of purchasing annuities.

The Educational Note provides guidance on estimating the cost of annuity purchases assuming a typical group of annuitants. That is, no adjustments for sub- or super-standard mortality are considered. However, it is expected that insurers will consider plan experience and certain plan-specific characteristics when determining the mortality basis for a particular group. The Educational Note states that the actuary would be expected to make an adjustment to the regular annuity purchase assumptions where there is demonstrated substandard or super-standard mortality or where an insurer might be expected to assume so. In such cases, the actuary would be expected to make an adjustment to the mortality assumption in a manner consistent with the underlying annuity purchase basis. Given the uncertainty surrounding the actual mortality basis that would be typical of a group annuity purchase, it is reasonable to assume that there is a range of bases that can be expected not

to be materially different from the actual mortality basis. Therefore, an adjustment to the regular annuity purchase assumptions would be warranted when the plan's assumed basis falls outside that range. In this context, we have determined that no adjustment to the mortality rates used in the regular annuity purchase assumptions is required.

We have not included a margin for adverse deviations in the solvency and hypothetical wind-up valuations.

The assumptions are as follows:

Form of Benefit Settlement Elected by Member

Lump sum:	70% of active and deferred vested members under age 55, and 50% of active and deferred vested members over age 55, elect to receive their benefit entitlement in a lump sum
Annuity purchase:	All remaining members are assumed to elect to receive their benefit entitlement in the form of a deferred or immediate pension. These benefits are assumed to be settled through the purchase of deferred or immediate annuities from a life insurance company

Basis for Benefits Assumed to be Settled through a Lump Sum

Mortality rates:	100% of the rates of the 2014 Canadian Pensioners Mortality Table (CPM2014) with fully generational improvements using CPM Scale B blending 50% male mortality and 50% female mortality
Interest rate:	4.30% per year for 10 years, 4.6% per year thereafter (2.57% per year for 10 years, 3.53% per year thereafter, for solvency liability adjustment)

Basis for Benefits Assumed to be Settled through the Purchase of an Annuity

Mortality rates:	100% of the rates of the 2014 Canadian Pensioners Mortality Table (CPM2014) with fully generational improvements using CPM Scale B
Adjustment to mortality rates:	No adjustment
Interest rate:	4.62% (3.26% for solvency liability adjustment) per year based on a duration of 9.15 years determined for the liabilities assumed to be settled through the purchase of an annuity.

Retirement Age

Benefits assumed to be payable through a lump sum:	Members are assumed to retire with a 50% probability at the age that maximizes the value of their entitlement from the Plan and a 50% probability at the member's earliest unreduced age in accordance with applicable legislation and based on the eligibility requirements that have been met at the valuation date
Benefits assumed to be settled through the purchase of an annuity:	Members are assumed to retire at the age that maximizes the value of their entitlement from the Plan, based on the eligibility requirements that have been met at the valuation date

Grow-in:	The benefit entitlement and assumed retirement age of Ontario members whose age plus service equals at least 55 at the valuation date reflect their entitlement to grow into early retirement subsidies
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Other Assumptions

Final average earnings:	Based on actual pensionable earnings over the averaging period
Family composition:	Same as for going concern valuation
Maximum pension limit:	\$3,420.00
Termination expenses:	\$180,000

To determine the hypothetical wind-up position of the Plan, a provision has been made for estimated termination expenses payable from the Plan's assets in respect of actuarial and administration expenses that may reasonably be expected to be incurred in terminating the Plan and to be charged to the Plan.

Because the settlement of all benefits on wind-up is assumed to occur on the valuation date and is assumed to be uncontested, the provision for termination expenses does not include custodial, investment management, auditing, consulting, and legal expenses that would be incurred between the wind-up date and the settlement date or due to the terms of a wind-up being contested.

Expenses associated with the distribution of any surplus assets that might arise on an actual wind-up are also not included in the estimated termination expense provisions.

In determining the provision for termination expenses payable from the Plan's assets, we have assumed that the plan sponsor would be solvent on the wind-up date. We have also assumed, without analysis, that the Plan's terms as well as applicable legislation and court decisions would permit the relevant expenses to be paid from the Plan.

Although the termination expense assumption is a best estimate, actual fees incurred on an actual plan wind-up may differ materially from the estimates disclosed in this report.

Incremental Cost

In order to determine the incremental cost, we estimate the hypothetical wind-up liabilities at the next valuation date. We have assumed that the cost of settling benefits by way of a lump sum or purchasing annuities remains consistent with the assumptions described above. Since the projected hypothetical wind-up liabilities will depend on the membership in the Plan at the next valuation date, we must make assumptions about how the Plan membership will evolve over the period until the next valuation.

We have assumed that the Plan membership will evolve in a manner consistent with the going concern assumptions as follows:

- Members terminate, retire, and die consistent with the termination, retirement, and mortality rates used for the going concern valuation.

- Pensionable earnings, the Income Tax Act pension limit, and the Year's Maximum Pensionable Earnings increase in accordance with the related going concern assumptions.
- Active members accrue pensionable service in accordance with the terms of the Plan.
- Cost of living adjustments are consistent with the inflation assumption used for the going concern valuation.

Solvency Basis

In determining the financial position of the Plan on the solvency basis, we have used the same assumptions and methodology as were used for determining the financial position of the Plan on the hypothetical wind-up basis, except as noted in Section 5 of this report. Specifically, solvency assets and liabilities were smoothed over three years. The smoothed value of assets for solvency is equal to the smoothed value of assets used for the going concern valuation, as determined above. The solvency interest rates for determining the solvency liability adjustment were determined based on an average of the applicable hypothetical wind-up interest rates and the rates applicable at July 1, 2021 and July 1, 2020. These interest rates are specified in the table above in the Hypothetical Wind-up Basis.

The solvency position is determined in accordance with the requirements of the Act.

Appendix E

Membership data

Analysis of Membership Data

The actuarial valuation is based on membership data as at July 1, 2022, provided by the University.

We have applied tests for internal consistency, as well as for consistency with the data used for the previous valuation. These tests were applied to membership reconciliation, basic information (date of birth, date of hire, date of membership, gender, etc.), pensionable earnings, pensionable service, contributions accumulated with interest, and pensions to retirees and other members entitled to a deferred pension. Contributions, lump sum payments, and pensions to retirees were compared with corresponding amounts reported in financial statements. The results of these tests were satisfactory.

If the data supplied are not sufficient and reliable for its intended purpose, the results of our calculation may differ significantly from the results that would be obtained with such data. Although Mercer has reviewed the suitability of the data for its intended use in accordance with accepted actuarial practice in Canada, Mercer has not verified or audited any of the data or information provided.

Plan membership data are summarized below. For comparison, we have also summarized corresponding data from the previous valuation.

	07.01.2022	01.01.2020
Active Members		
Number	102	141
Total pensionable earnings	\$5,168,741	\$6,913,116
Average pensionable earnings	\$50,674	\$49,029
Average years of pensionable service	19.5	18.9
Average age	57.3	56.2
Suspended Members¹⁰		
Number	4	3
Total pensionable earnings	\$183,423	\$134,954
Average pensionable earnings	\$45,856	\$44,985
Average years of pensionable service	8.8	6.3
Average age	53.7	50.6
Deferred Pensioners¹¹		
Number	50	54
Total annual pension	\$123,576	\$136,978
Average annual pension	\$2,472	\$2,537
Average age	56.5	55.7
Pensioners and Survivors		
Number	301	292
Total annual lifetime pension	\$3,290,199	\$2,803,790
Average annual lifetime pension	\$10,931	\$9,602
Average age	75.1	74.8

¹⁰ Refers to members that have moved to salaried positions at McMaster but retain frozen pensions in the Plan.

¹¹ In addition to the deferred pensioners included here, there are 2 former members entitled to a refund of excess contributions with interest only. The cumulative amount of the excess contributions is \$498 at July 1, 2022 (3 members and \$629 at January 1, 2020).

The membership movement for all categories of membership since the previous actuarial valuation is as follows:

	Actives	Suspended Members	Deferred Pensioners	Pensioners and Survivors	Total
Total at 01.01.2020	141	3	54	292	490
Terminations:					
• Transfers/ refunds	(3)		(8)		(11)
• Deferred pensions	(2)		2		0
Suspended	(1)	1			0
Deaths	(1)			(27)	(28)
Retirements	(32)		(1)	33	0
Beneficiaries				3	3
Data corrections			3		3
Rehire					0
Total at 07.01.2022	102	4	50	301	457

The distribution of the active members by age and pensionable service as at the valuation date is summarized as follows:

Age	Years of Pensionable Service							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30 +	
Under 30								
30 to 34			1					1
			*					*
35 to 39		2						2
		40,125						40,125
40 to 44				2				2
				55,727				55,727
45 to 49			1	3	2			6
			*	57,730	40,490			49,545
50 to 54	1	1		15	2	2	3	24
	*	*		54,079	42,859	66,559	47,406	52,176
55 to 59		2	3	15	3	2	5	30
		41,743	41,117	52,868	40,630	60,423	42,194	48,452
60 to 64		4	3	12	4	1	4	28
		41,743	68,583	48,244	42,531	*	58,659	50,267
65 +		1	1	4	1	1	1	9
		*	*	59,003	*	*	*	53,055
Total	1	10	9	51	12	6	13	102
	*	41,392	55,884	53,015	41,565	63,814	48,300	50,674

* Not shown to protect member confidentiality

The distribution of the inactive members by age as at the valuation date is summarized as follows:

Age	Deferred Pensioners		Pensioners and Survivors	
	Number	Average Annual Pension	Number	Average Annual Pension
Under 40	2	41		
40 – 44	3	2,027		
45 – 49	6	6,108		
50 – 54	10	3,925	2	14,201
55 – 59	14	1,994	7	14,809
60 – 64	7	920	37	15,156
65 – 69	4	1,069	53	13,225
70 – 74	2	228	63	12,042
75 – 79	2	1,219	48	10,834
80 – 84			41	8,241
85 – 89			24	6,150
90 – 94			20	5,090
95 +			6	5,073
Total	50	2,472	301	10,931

Appendix F

Summary of plan provisions

Mercer has used and relied on the plan documents, including amendments and interpretations of plan provisions, supplied by the University. If any plan provisions supplied are not accurate and complete, the results of any calculation may differ significantly from the results that would be obtained with accurate and complete information. Moreover, plan documents may be susceptible to different interpretations, each of which could be reasonable, and the results of estimates under each of the different interpretations could vary.

This valuation is based on the plan provisions in effect on July 1, 2022. Since the previous valuation, the Plan has not been amended.

The following is a summary of the main provisions of the Plan in effect on July 1, 2022. This summary is not intended as a complete description of the Plan.

Background The Plan became effective July 1, 1962.
Benefits are based on a set formula and are partially paid for by the University.

Eligibility for Membership The Plan was completely closed to new entrants on March 15, 2010.

Employee Contributions	Class of Member	Period Beginning	Employee Contribution Rate on Annual Earnings	
			Up to YMPE	In Excess of YMPE
	Operations and Maintenance	July 15, 2018 November 29, 2020	7.00% 8.00%	10.00% 11.00%
	Hospitality Services	July 15, 2018 April 7, 2019	7.00% 8.00%	10.00% 11.00%
	Parking and Transit Services	July 15, 2018 July 14, 2019	7.00% 8.00%	10.00% 11.00%
	Machinists and Operating Engineers	July 15, 2018 May 14, 2023	7.00% 8.00%	10.00% 11.00%
	Special Constables	July 15, 2018 October 2, 2022	7.00% 8.00%	10.00% 11.00%

**Retirement
Dates**

Normal Retirement Date

- The normal retirement date is the first day of the month coincident with or next following the member's 65th birthday.

Special Early Retirement Date

- A member whose age plus Continuous Service equals or exceeds 80 points may retire early without any reduction for early retirement.

Early Retirement Date

- A member may retire early with a reduced pension at any time during the 10-year period preceding the member's normal retirement date. The pension payable will be reduced by 0.25% for each month between age 60 and 65 and 0.50% for each month prior to age.

Postponed Retirement Date

- A member may postpone the actual retirement and commencement of pension (with University consent prior to December 12, 2006), but in any event the member's pension shall commence no later than the 1st of December of the year of attainment of age 71. The member will continue to make contributions and benefits under the Plan and will continue to accrue benefits until such postponed retirement date.

**Normal
Retirement
Pension**

- a) Service prior to July 1, 1979, the greater of:
I. 1.0% of 1978 earnings multiplied by years of Plan membership, or
II. the benefit accrued to June 30, 1979
PLUS
- b) Service from July 1, 1979 to December 31, 1985, 40% of member contributions in each year
PLUS
- c) One-third of the benefits accrued under (a) and (b) above
PLUS
- d) 20% of the benefits accrued under (a), (b) and (c) above
PLUS
- e) 8% of the benefits accrued under (a), (b), (c) and (d) above
PLUS
- f) 20% of the benefits accrued under (a), (b), (c), (d) and (e) above
PLUS
- g) 1.5% of the benefits accrued under (a), (b), (c), (d), (e) and (f) above
PLUS
- h) Service after December 31, 1985, 1.4% of Final Five Year Average Earnings up to the Average Year's Maximum Pensionable Earnings and 2.0% of Final Five Year Average Earnings in excess of the Average Year's Maximum Pensionable Earnings multiplied by years of Credited Service earned after December 31, 1985.

Average Year's Maximum Pensionable Earnings is calculated using the average YMPE for the final three-year period of a member's participation in the Plan.

The amount by which the member's required contributions with interest exceed 50% of the commuted value of the member's benefit shall be paid to the member.

**Bridge
Benefits**

A member who retires early on or after July 1, 2001 is eligible to receive a bridge benefit equal to \$12.00 per month per year of credited service accrued to July 1, 2001. Such bridge benefit will be payable commencing on the member's early retirement date or age 60, if later. The bridge benefit ceases at age 65 or death, if earlier. Such bridge will be reduced by 0.25% per month for each month commencement occurs prior to 65. If the member has attained 80 points at the early retirement date, the bridge benefit will be unreduced.

All pensioners who retired prior to July 1, 2001 and who had not yet attained age 65 at July 1, 2001, will receive a bridge benefit of \$12.00 per month per year of credited service accrued to July 1, 1999. The bridge benefit ceases at age 65 or death, if earlier.

**Annual
Pension
Increase**

Pensions in payment are increased from January 1st each year on a pro-rated basis (using the number of months the pensioner has been retired in the twelve months) by the excess over 6% of the 5-year average rate of return earned on the market value of the fund, subject to a maximum of the previous calendar year's rate of increase in the Consumer Price Index.

Maximum Pension	<p>The total annual pension payable from the Plan upon retirement, death or termination of employment cannot exceed the lesser of:</p> <ul style="list-style-type: none">• 2% of the average of the best three consecutive years of total compensation paid to the member by the University, multiplied by total pensionable service; and• \$3,420 or such other maximum permitted under the Income Tax Act, multiplied by the member's total pensionable service.
Death Benefits	<p>Pre-retirement:</p> <ul style="list-style-type: none">• The death benefit payable is equal to the commuted value of benefits accrued under the Plan.• The amount by which twice the member's required contributions with interest exceeds the commuted value shall be paid to the member's spouse or if no spouse exists, to the member's designated beneficiary. <p>Post retirement:</p> <ul style="list-style-type: none">• The normal form of payment is a lifetime pension guaranteed for ten years. However, the member may elect to receive an optional form of pension on an actuarial equivalent basis.
Termination Benefits	<p>If a member terminates employment prior to retirement, the member may elect to receive one of the following:</p> <ol style="list-style-type: none">a) A refund of the member's required contributions, with Net Interest on the Fund if the member has not participated in the Plan for at least 2 years.b) A transfer of the commuted value of the member's pension.c) A deferred pension, payable at Normal Retirement Date, equal to the pension earned to the date of termination. <p>In addition to the benefit payable above, the amount by which twice the member's required contributions with interest exceeds the commuted value of the member's benefit shall be paid to the member.</p> <p>With respect to (b) and (c) above, the transfer must be made to another retirement arrangement or pension plan in the form and manner prescribed by the Canada Revenue Agency and the amounts so transferred must be locked-in to provide retirement benefits commencing no earlier than the member's early retirement date under the Plan.</p>
Disability Benefits	<p>If a member becomes totally and permanently disabled, the member shall continue to accrue benefits on the basis of their earnings in the twelve-month period preceding the onset of disability.</p> <p>A disabled member shall not be required to contribute to the Plan.</p>

Appendix G

Plausible adverse scenarios

In this Appendix, the financial impact on the Plan's going concern results (i.e., going concern financial position at the valuation date and current service cost from the valuation date to the next valuation date) of plausible adverse scenarios that would pose threats to the Plan's future financial condition is summarized in the following table for the following risks:

- Interest rate risk - an immediate parallel decrease in market interest rates of 100 basis points;
- Deterioration of asset values - an immediate decrease of 15% in the market value of non-fixed income assets; and
- Longevity risk - life expectancy from the valuation date at age 65 for a male and a female would increase by 1.6 years and 1.4 years, respectively.

(\$000s) Scenario	Going Concern Valuation Results as at 07.01.2022	Plausible Adverse Scenario Results as at 07.01.2022		
		Interest Rate Risk	Deterioration of Asset Values	Longevity Risk
Market value of assets	\$62,925	\$65,830	\$59,353	\$62,925
Going Concern Financial Status				
Smoothed value of assets	\$70,069	\$71,037	\$68,878	\$70,069
Going concern funding target	\$53,660	\$55,798	\$53,660	\$54,986
Provision for Adverse Deviations	\$5,903	\$6,138	\$5,903	\$6,048
Funding excess (shortfall)	\$10,506	\$9,101	\$9,315	\$9,035
Estimated University's Current Service Cost including Provision for Adverse Deviations				
July 1, 2022	\$511	\$547	\$511	\$530
July 1, 2023	\$544	\$580	\$544	\$564
July 1, 2024	\$581	\$614	\$581	\$602

The balance of this Appendix provides details of the plausible adverse scenarios selected and the determination of their impact on valuation results.

Interest Rate Risk

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to the potential that interest rates will be lower than expected. For this purpose, we have assumed an immediate parallel decrease in market interest rates underlying fixed income investments, where fixed income investments include the following categories as shown in the investment policy summarized in Appendix B:

- Universe bonds
- Long bonds

Using a methodology consistent with the one used to determine the going concern discount rate, we have determined that a parallel decrease in market interest rates of 100 basis points would have a non-trivial probability (between 1 in 10 and 1 in 20) of occurring within the year following the valuation date. For purpose of this scenario, we have assumed that such a decrease in market interest rates would occur immediately on the valuation date and would have the following impact on the value of assets and going concern assumptions:

Defined Term	Description
Market value of assets	The decrease in market interest rates has been assumed to affect only the market value of the fixed income investments. The decrease is assumed to have occurred immediately on the valuation date.
Smoothed value of assets	For purposes of determining the smoothed value of assets, 33% of the change in the market value of asset has been recognized in the smoothed value of assets.
Discount rate assumption	It was assumed that the decrease in market interest rates affects only the expected return on assets for the fixed income portion of assets. The discount rate assumption was therefore decreased from 5.55% to 5.10%.
Other assumptions	Except for the interest rate on member's contributions, all assumptions used were the same as those used for this valuation. In particular, the discount rate used to value benefits assumed to be settled through a lump sum was not changed.
Provision for Adverse Deviations	The above changes would not affect the calculation of the Provision for Adverse Deviations.

Deterioration of Asset Values

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to a deterioration of asset values. For this purpose, we assumed an immediate reduction in the market value of the Plan's non-fixed income assets, where non-fixed income investments include the following categories as shown in the investment policy summarized in Appendix B:

- Canadian equities
- US equities

- International equities

Using a methodology consistent with the one used to determine the going concern discount rate, we have determined that a decrease of 15% in the market value of value of non-fixed income assets would have a non-trivial probability (between 1 in 10 and 1 in 20) of occurring within the year following the valuation date. For purpose of this scenario, we have assumed that such a decrease would occur immediately on the valuation date and would have the following impact on the value of assets and valuation assumptions:

Market value of assets	The decrease in the market value of the non-fixed income portion of assets is assumed to have occurred immediately on the valuation date.
Smoothed value of assets	For purposes of determining the smoothed value of assets, 33% of the change in the market value of assets has been recognized in the smoothed value of assets.
Going concern assumptions	This scenario is assumed to have no impact on the assumptions used for this valuation.

Longevity Risk

The purpose of this scenario is to illustrate the sensitivity of the Plan's valuation results to the potential that pension plan members will live longer than expected. For this purpose, we have determined that a plausible adverse scenario would be to assume that future mortality improvements¹² will be in line with the average improvements experienced by the Canadian population¹³ over the most recent 15-year period available, with uniform improvement rates for all future years but varying by age¹⁴ and gender.

¹² i.e. starting one year after the valuation in this context

¹³ Based on Canadian population experience from the Human Mortality Database from 2002 to 2016

¹⁴ improvement rates below age 45 are set to those at age 45

Appendix H

University certification

With respect to the Report on the Actuarial Valuation for Funding Purposes as at July 1, 2022 of the Contributory Pension Plan for Hourly-Rated Employees of McMaster University including McMaster Divinity College, I hereby certify that, to the best of my knowledge and belief:

- The valuation reflects the terms of the University's engagement with the actuary described in Section 2 of this report, particularly the decision to not reflect a margin for adverse deviations in the going concern valuation and the University's decisions in regards to determining the going concern and solvency funding requirements.
- A copy of the official Plan documents and of all amendments made up to July 1, 2022 was provided to the actuary and is reflected appropriately in the summary of plan provisions contained herein.
- The determination of the fixed income component for purposes of establishing the provision for adverse deviations reflects the Plan's asset mix.
- The asset information summarized in Appendix B is reflective of the Plan's assets.
- The membership data provided to the actuary included a complete and accurate description of every person who is entitled to benefits under the terms of the Plan for service up to July 1, 2022.
- All events subsequent to July 1, 2022 that may have an impact on the Plan have been communicated to the actuary.

Date

Signed

Name



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REPORT TO THE BOARD OF GOVERNORS
from the
AUDIT AND RISK COMMITTEE

FOR INFORMATION

i. **Report on Health, Safety and Well-Being**

At its meeting on February 9, 2023, the Audit and Risk Committee received, for information, the attached Report on Health, Safety and Well-Being.

Board of Governors: INFORMATION
March 2, 2023

GOVERNANCE BODY	Board of Governors/Audit & Risk Committee
ITEM/SUBJECT	Health, Safety and Well-Being Report
DATE	February 2, 2023
LEAD(S)	Wanda McKenna, Assistant Vice-President & Chief Human Resources Officer Maggie Pooran, Executive Director, Health, Safety, Wellbeing & Labour Relations Dane DeMan, Associate Director, University Health & Safety
GOVERNANCE PATH	Board of Governors/Audit & Risk Committee
MOTION <i>(If this is for information only, please note here)</i>	For information
JURISDICTION <i>(If applicable) *include associated bylaw or policy</i>	RMM 100 – Workplace and Environmental Health and Safety Policy
SUPPLEMENTAL MATERIALS	N/A

EXECUTIVE SUMMARY

This report is presented as a regular update by the Health, Safety, Well-Being & Labour Relations portfolio of Human Resources Services. The focus of this newly aligned team is to *promote and contribute to a healthy and safe community at McMaster University in which every employee is accepted as a whole-person worthy of belonging, accountable to act in pursuit of institutional priorities, and supported in their overall well-being.* Highlights from the report include:

- The Environmental and Occupational Health Support Services (EOHSS) team will be renamed as **University Health & Safety**. Future reports will reflect this new name.
- The insurance management program has transitioned from EOHSS to the Enterprise Risk Department. As a result, the Enterprise Risk Department will be the primary contact for all insurance-related matters, including contract reviews, certificates of insurance, vehicle and driver updates, equipment shipments, claims adjudication, and other general insurance inquiries.
- The Return to Campus Operations group continued COVID-19 planning and monitoring throughout the Fall term. During that time, there were minimal disruptions to operations. The Return to Campus Operations group has paused regular meetings, and if required, will reconvene.
- EOHSS remains focused on prevention initiatives including slips, trips and falls, ergonomics, lab safety and mandatory training programming.
- There were two Inspection Orders issued to the Office of the President by the Hamilton Fire

Department during the reporting period.

- EOHSS reported two critical injuries to the Ministry of Labour, Immigration, Training and Skills Development during the reporting period.
- The current and projected WSIB rates for the University continue to be lower than the class rate for the Education Sector.

BACKGROUND

Update on the health, safety and well-being programming at the University provided at each of the four annual meetings.

STRATEGIC ALIGNMENT

The University health, safety and well-being programming promotes a healthy and safe environment where all members of the community can work towards the strategic priorities of inclusive excellence, teaching and learning, research and scholarship, engagement with community and operational excellence.

RISK AND RISK MITIGATION STRATEGIES

N/A

RECOMMENDATIONS AND NEXT STEPS

N/A

KEY TERMS

The Risk Management Manual (RMM) contains the programs and policies designed to implement and support the Risk Management System at the University.

https://hr.mcmaster.ca/employees/health_safety_well-being/our-safety/risk-management-manuals-rmms/

QUESTIONS AND ANSWERS

N/A

Health, Safety and Well-Being Report

Report 2023-1 for the period November 5, 2022 – January 31, 2023

This report is presented by the Health, Safety, Well-Being & Labour Relations portfolio of Human Resources Services. The focus of this newly aligned team is to *promote and contribute to a healthy and safe community at McMaster University in which every employee is accepted as a whole-person worthy of belonging, accountable to act in pursuit of institutional priorities, and supported in their overall well-being.* Within this portfolio are the following teams:

- Environmental and Occupational Health Support Services (EOHSS), which will be renamed as **University Health & Safety**. Future reports will reflect this new name.
- **Employee Health & Well-Being**, which includes both a focus on individual employee case management as well as workplace strategies relating to employee health & well-being.
- **Employee/Labour Relations & Dispute Resolution**, which leads positive union relations and provides strategic guidance and advice on complex employment matters, including intake and investigation of workplace complaints and alternative dispute resolution.

1. Training and Loss Prevention Initiatives

- EOHSS continues to support the University's response to the pandemic. Medical masks are available to all members of the community. COVID-19 rapid antigen tests have been widely distributed. EOHSS has handed out approximately 3700 boxes of tests on campus and at off-site locations in October and December 2022.
- The COVID-19 pandemic limited access to first aid training which resulted in expired certification for many first aiders. To make first aid training more accessible, EOHSS has coordinated a hybrid training option through an external provider, Action First Aid. The initial training sessions offered in January 2023 and February 2023 were filled immediately. Additional sessions will be made available.
- With the return to in-person learning and increased staff on campus, EOHSS has resumed all pre-pandemic programming. Key areas of focus include ergonomic assessments, workplace inspections, lab safety audits, and University related travel.
- EOHSS provides risk management review and support to recognized student clubs and societies conducting events on and off campus. There has been a notable increase in in-person events as students attended holiday activities and prepare for departmental formals.
- EOHSS is working with Media Production Services to enhance the University's mandatory

health and safety training. The initial health and safety training module to be developed is nearing completion and includes fire safety, asbestos awareness, slips/trips/falls, and ergonomics. The training video was filmed on campus and final edits are under way.

2. Government Relations and External Inspections/Audits

- The Office of the President received an Inspection Order from the Hamilton Fire Department on January 12, 2023. The fire alarm panel, located in E.T. Clarke, was indicating a trouble condition, requiring maintenance. The University complied with the Order.
- The Office of the President received an Inspection Order from the Hamilton Fire Department on January 20, 2023. A fire hydrant, located outside E.T. Clarke, was obstructed by construction hoarding. The University complied with the order.
- A critical injury was reported to the Ministry of Labour, Immigration, Training and Skills Development on January 27, 2023. While walking down the steps in a lecture theatre, Chester New Hall B107, a student slipped and fractured their ankle. The student is uncertain as to what caused them to slip. Due to weather conditions outdoors, the student's shoes may have been wet. Upon investigation, the area was clean and dry.
- A critical injury was reported to the Ministry of Labour, Immigration, Training and Skills Development on January 27, 2023. An employee stepped off a curb to cross the roadway outside the Campus Services Building and rolled their ankle, resulting in a fracture. The employee reported there was slush on the edge of the roadway. Following investigation, a recommendation was made to install a marked crosswalk.

3. Employee Health and Well-Being Summary

3.1 Critical Injuries

Two critical injuries were reported during this period as noted above.

3.2 WSIB Lost Time and Health Care Claims Update

The Employee Health & Well-Being Advocacy Team actively manages WSIB as well as salary continuance, sick leave, employee accommodation requests and long-term disability claims. This team collaborates on a regular basis with departments and faculties to develop and maintain proactive strategies with the goal of helping employees stay at work and reduce lost time.

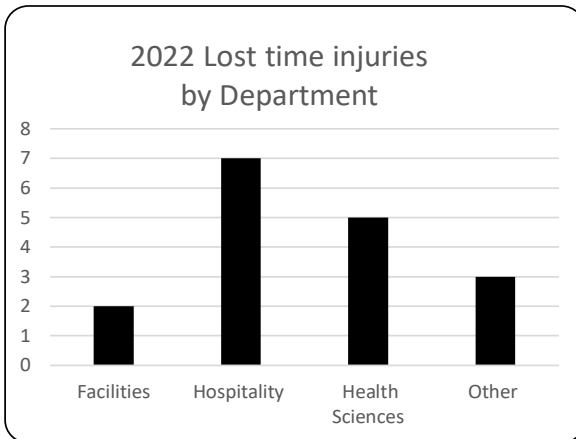
The chart below illustrates the number of incidents, the number of WSIB-approved and pending claims for health care and lost time days, for the past four years.

	2019	2020	2021	2022
Approved Lost Time Claims	34	3	11	18
Lost Time Days	862	44	113	303
Approved No Lost Time Claims	69	26	29	36
Average Lost Time Days	25.35	14.6	10.27	16.8

Lost Time Claim Summary

As the University transitioned back to in-person work, there has been a steady increase in workplace injuries resulting in WSIB claims. Early intervention and the focus of early and safe return to work has been important in reducing lost time days for lost time claims in 2022. Below is a summary of the duration of lost time claims.

- 9 lost time claims were less than 5 days.
- 7 lost time claims were between 5 – 15 days.
- 1 claim was 33 days.
- 1 claim was 200 days.



3.3 WSIB Rate Framework Summary

The WSIB has calculated McMaster’s rating and premiums for 2023. The following chart demonstrates McMaster’s rating details for the past 3 years based on the Education Sector and McMaster’s individual performance for the period of 2016 – 2022.

The rate listed below, and the total insurable earnings are the formula used to calculate McMaster’s early premiums. Since the rate has increased by \$0.02, we will see an increase in the premium rates for 2023.

McMaster's 2023 WSIB Rating Details					
Predominant Industry Class	Predictability Factor	Education Sector Class Rate	McMaster Rate 2021	McMaster Rate 2022	McMaster Rate 2023
D1 - Education	100%	\$0.34	\$0.24	\$0.23	\$0.25

4. Workplace Well-Being Initiatives

Organizational well-being is supported by addressing the thirteen psychosocial factors related to the National Standard of Canada for Psychological Health and Safety in the Workplace. McMaster regularly hosts a wide range of activities and initiatives to promote well-being. Recent activities include:

- COVID 19 monitoring, planning and support continues through the pause of the Policy. This included re-aligning protocols and systems to managing McMaster employees working in clinical settings with an exemption or who are not cleared, positive case monitoring in alignment with WSIB requirements, and providing support to individual community members with questions.
- Coordinated and managed the annual employee flu clinics on campus. 333 Flu vaccines were administered.
- Proposed and received approval for a mental health program which will address compassion fatigue. This program is intended for employees working with an increasing number of students presenting with mental health issues. This program will be developed and launched in Spring.
- Developed and presented strategic well-being information and education such as mental health resources, Shared Accountability Model and Workload Management to multiple community groups including the Strategic Leaders program, HR Network, and HR Forum.
- Developed a comprehensive website to address workload management, including resources, tools and education on psychological health and safety, role clarity, delegation, capacity building, balance, rethinking meetings and technology. The project is currently in the review phase.
- In partnership with Athletics and Recreation and Sun Life, launched the "Pulse at Pace Pilot" project, providing McMaster staff and faculty free access to an employee-only gym three days per week. 422 bookings have been received to date.
- In collaboration with The Healthy Workplace Committee, developed and launched monthly themed initiatives which included in-person and online workshops, online resources, tools and educational materials and special events. Themes included Financial Literacy Month (Nov), Compassion for Self and Others (Dec), Thrive and Employee Wellness Week (Jan).

- Collaborated with Okanagan Charter, Student Wellness Centre, and other groups to offer university-wide events during Thrive. Focused efforts on mental health, moving more, and improving eating habits.
- Developed and launched a financial education program in support of National Financial Literacy Month, including multiple workshops on topics ranging from retirement planning, retiring with a pension, information about our discount provider (WorkPerks), and saving strategies.
- The McMaster United Way Campaign contributes annually to support the health and well-being of our broader communities and continues to run through this time.
- In collaboration with the Children's Party Committee, hosted multiple holiday-themed family events throughout November and into December. 354 registrations were received for these events.
- Recognized and celebrated 44 employees who reached their 25-year anniversary at McMaster through the Quarter Century Club program.



Equity and Inclusion Office Annual Report

SEPTEMBER 1, 2021 – AUGUST 31, 2022

BRIGHTER WORLD

Equity and
Inclusion Office





Contents

3 Mandates & Highlights

5 Program Highlights

17 Statistical Report

Relevant Links

[Equity & Inclusion Office Website](#)

[Equity & Inclusion Facebook Page](#)

[Accessibility Hub Website](#)

[Sexual Violence Prevention and Response Office Website](#)

[Blue Folder: Discrimination and Harassment Guide](#)

[Gold Folder: Sexual Violence Prevention Response Guide](#)

<https://equity.mcmaster.ca/app/uploads/2021/03/Blue-Folder-McMasters-Discrimination-Harassment-Policy.pdf>

<https://svpro.mcmaster.ca/app/uploads/2020/11/Gold-Folder.pdf>

Mandates and Highlights

Equity and Inclusion Office Mandate

The **Equity and Inclusion Office (EIO)** has a broad three-pronged mandate:

- to provide leadership to advance institutional equity, diversity, and inclusion (EDI) priorities and inclusive excellence goals;
- to provide education, training, and resources related to accessibility, inclusion & anti-racism, human rights, and sexual violence;
- to provide harassment, discrimination, and sexual violence response services.

The EIO is a key partner and leader in advancing McMaster's commitment to establishing accessible, equitable, and inclusive learning and working environments that are barrier-free and free from harassment, discrimination, and sexual violence, per the university's [Accessibility Policy](#), [Discrimination and Harassment Policy](#), and [Sexual Violence Policy](#).

In June of 2019, McMaster launched its [EDI Strategy](#), which included an [EDI Framework for Strategic Action](#) and a [2019 – 2022 EDI Action Plan](#). Fifty-seven strategic actions were identified across six thematic objectives. Detailed [EDI Action Plan Progress Reports](#) are posted on the EIO website.

Annual Report Mandate

Under sections 52 of the [Discrimination and Harassment Policy](#) and section 53 of the [Sexual Violence Policy](#), the EIO is responsible for collecting and reporting annual anonymized, aggregate data on complaints, investigations, sanctions and outcomes, consultations, disclosures, and voluntary/dispute resolution to the Senate and the Board of Governors.

Annual Report Parameters

Unless stated otherwise, this report covers data collected from September 1, 2021, to August 31, 2022.

Data for the annual report is collected and maintained by the EIO and includes information from the Sexual Violence Prevention and Response Office, the Human Rights and Dispute Resolution Program, Employee & Labour Relations, the Student Case Management Office, and the Faculty of Health Sciences Professionalism Office.

In addition to highlighting policy-mandated, consolidated statistical data, the report provides narrative information and data on the activities of the four EIO portfolios: AccessMac Accessibility Program; Inclusion & Anti-Racism Education Program; Sexual Violence Prevention and Response Office (SVPRO); and Human Rights & Dispute Resolution Program (HRDR).

2021/2022 EIO Office Highlights

Training initiatives

- EIO staff team offered over 340 education-oriented sessions and events, to 29, 053 students, staff, and faculty on a host of EDI-related topics.

Staff changes

- Four individuals left the office during the reporting year and three joined. In April 2022, the office announced the addition of Lenore Lukasik-Foss, inaugural Director, SVPRO and Anti-Oppression Programs, and Natalie Lafleur, Sexual Violence Response Case Manager. In May 2022, the EIO announced the addition of Renata Hall, Manager, Inclusion and Anti-Racism Programs.
- The office initiated a search for a Director, Human Rights & Accessibility and is in the final stages of this hiring. Dr. Tighe, Provost & Vice-President (Academic) is leading the search for the permanent Associate Vice President Equity and Inclusion and the search committee will begin interviewing in the new year. In the interim, Dr. Sonia Anand, Professor of Medicine & Epidemiology, is the Acting Associate Vice President Equity and Inclusion.

Office review

- In the spirit of continuous improvement, in September 2022, the Provost initiated a review of the Equity & Inclusion Office.
- The review team was comprised of internal and external experts. The scope of the review included the activities of the EIO and the various units across the University that are supported and/or collaborate with the EIO to foster a culture of respect and inclusivity, oversee the development of equity initiatives, raise awareness of historically marginalized groups, and incorporate an anti-oppressive framework.
- The review commenced in the fall of 2022, with outcomes and recommendations expected before the end of fall term.
- A needs assessment of the Accessibility portfolio was initiated by the Provost and led by Senior Human Rights Officer, Marla Brown. This report has been submitted to Dr. Anand and Dr. Tighe for review.

Policy work

- Representatives from the Office have been actively involved in various policy review and update processes, including for the Faculty Code of Conduct, the University Accessibility Policy, the Sexual Violence Policy, and the Discrimination & Harassment Policy.

Data collection and reporting

- We continue to enhance systems to effectively collect and report data for all EIO portfolios. We are in the process of initiating a new case management software for the EIO and initiating a pilot project to track the work and impact of the EIO activities.



Program Highlights

2021 | 2022

AccessMac Accessibility Program



Highlights of Notable Successes and Opportunities

Institutional Accessibility Consultations and Projects

- Completed Phase One (1) of the University’s Web Accessibility Project providing consultation, in partnership with University Technology Services (UTS), documented more extensively in the [2021 Annual Accessibility Activity Report](#).
- Supported development and hiring of two inaugural Accessibility Educational Development positions in partnership with the MacPherson Institute.
- Joined the Digital Learning Steering Committee under the Partnered in Teaching and Learning Strategy, led by the Office of Provost under the Vice-Provost, Teaching and Learning.
- Provided consultation in support of the 2nd annual [IDEAS grant program](#) in partnership with the

Institutional Accessibility Training Development

- Launched *Creating Disability-Inclusive Work Culture through Accommodation and Accessibility Approaches* workshop for [Inclusive Excellence Leadership Program](#) with Human Resources Services.
- Supported development of accessibility and disability inclusion programming (3 workshops) for the *Faculty of Health Science 2022 Spring/ Summer EDI & Indigenous Health Equity Speaker Series Program* in partnership with the Faculties of Science and Health Science.

Publications (Community)

- Fourth annual publication of the [Accessibility and Disability Inclusion Update, 2021-2022](#) during National Accessibility Week 2022.

Accessibility and Disability Support-Related Consultations

AccessMac Accessibility Consultation: A consultation takes place when an individual or group seeks advice and/or guidance on a matter related to accessibility and disability inclusion as per the *Accessibility for Ontarians with Disabilities Act (AODA), 2005* or best practice.

AccessMac Accessibility Program Consultations

Type of Consultation	Number of Consultations
Accessibility and/or Disability Inclusion Consultations: Broad McMaster campus community	244
Accessibility and/ or Disability Inclusion Consultations: Provincial accessibility communities (other ON universities and / or municipalities)	12
Disclosure / Support-Related Consultations: Persons with lived experience of disability(ies)	68
Total Consultations	324

Top Themes for AccessMac Accessibility Program Consultations:

- Digital Accessibility
- Teaching and Learning Accessibility
- Student and Employee Accessibility / Accommodation Support
- Communication Accessibility
- Built Environment Accessibility
- AODA Requirements

AccessMac Accessibility Program Consultation Data Comparison – 2018-2022

Category	2018/19	2019/20	2020/21	2021/22
Disclosure / Support-Related Consultations	27	24	34	68
Accessibility and / or Disability Inclusion Consultations	82	141	227	256

Education: Workshops, Presentations, Events, and Training

AccessMac Accessibility Program Education Numbers

Type of Education Delivery	Number of Sessions	Number of Participants
Synchronous (online, live) workshops, presentations, and training	45	1,552
Asynchronous (online, self-paced) training	17	6,534*
Total	62	8,086

* Not inclusive of page views / visits for the asynchronous [Accessible Digital Content Training Pressbook](#):
Total Visits: 2841, Total Page Views: 6015

Most Popular Sessions Themes

- AODA and Human Rights Code
- Accessible Education / Accessibility in Teaching and Learning
- Digital and Web Accessibility
- Accessible and Inclusive Leadership (Students and Staff)
- Accessibility 101 – Core Theories and Concepts

AccessMac Community Development and Engagement

Type of Community Engagement	Engagement Highlights	Engagement Numbers
<u>Employee Accessibility Network</u>	<p>Hosted 2 professional development sessions by and for employees with disabilities:</p> <ol style="list-style-type: none"> 1. Designing an Accessible Resume 2. Navigating Chronic Illness at Work 	<p>6 meetings, Avg. 18 participants / meeting</p>
<u>International Day of Persons with Disabilities Commemorative Events (December 3, 2021)</u>	<p>December 1st: Flash Presentations: Critical Disability Research and Teaching Clusters 1&2</p> <p>December 2nd: The 3 Fs of Food (In) Accessibility</p> <p>December 3rd: Assistive Technology – Lived Experiences and Uses</p>	<p>183 participants across 3 days of programming</p>
<u>National Accessibility Week (First Week June, 2022)</u>	<p>Hosted 10 events, spanning topics of web accessibility, diversity in employment, reframing disability in health care, and relational access.</p>	<p>400+ participants across days of programming</p>





Inclusion and Anti-Racism Education Program

Highlights of Notable Successes and Opportunities

Institutional Educational Projects and Consultations

- Partnered with the Department of Science, Canadian Centre for Electron Microscopy, to discuss the intersection of race and science.
- New and developing partnerships with student led groups (DeGroot Women in Business and DeGroot Greensuits) regarding strategic planning and training for EDI recruitment and retention.
- New and developing partnership with DeGroot Strategic Initiatives and DeGroot Human Resources regarding staff-wide training and EDI managerial hire.
- Development of significant series-based cohort training for McMaster Students Union and Residence Life Community Advisors.
- Successful pilot of Inclusive Excellence Leadership Training Programming and development of new module for Anti-Racism.
- Consultation on department specific EDI training initiatives regarding Anti-Racism Training for Department of Psychiatry, Department of Communications and Media Arts, as well as Department of Engineering.

Institutional Community Events

- Co-facilitated a Black Student Check-in with Black Student Success Centre and Student Wellness Centre.
- Key collaborator in the Inaugural Black Graduation which was widely attended and well received.
- Presented at the *Anti-Racism Symposium* hosted by the Department of Athletics and Recreation, curated to assemble and engage student-athletes, coaches, support staff, and administrators from across Ontario University Athletics (OUA), University Sports institutions, and other sport-focused organizations for discussions about anti-racism within Athletics.
- Ongoing collaboration with the MacPherson Institute; bridging partnered work for teaching and learning.
- Partnered with McMaster Hillel, President's Advisory Committee on Building an Inclusive Community (PACBIC), and Mohawk College on Virtual webinar to Unpack Antisemitism on Campus, led by Yavilah McCoy.
- Successful and well attended collaborative event with Interfaith Working Group as well as Black History Month focusing on educational and social events regarding Islamophobia and Black Muslim Identity.

Inclusion and Anti-Racism Education Program Consultations

Inclusion and Anti-Racism Education Consultations: A consultations takes place when an individual or groups seeks advice, guidance, or collaborative discussions related to Equity, Diversity, and Inclusion (EDI), Anti-Racism (AR), and Anti-Oppression (AO) education or strategic planning.

Type of Consultation	Number of Consultations
Inclusion and Anti-Racism Consultations: Departmental or program specific EDI strategic planning	15
Inclusion and Anti-Racism Consultations: Teaching and Learning EDI, AR and AO education	84
Support Related Consultations: Persons with lived experience of racial identity	4
Safety, Initiative and Event Consultations	4
Total Consultations	107

Note: the above data does not reflect Indigenous-specific consultations; data is unavailable.

Inclusion and Anti-Racism Education Sessions

Sessions and Workshops: Educational sessions and workshops encapsulate both synchronous and asynchronous workshops, presentations, and trainings delivered. This includes student, faculty, and staff delivered sessions, including leadership groups, student-led groups, classroom level workshops and discussions, and departmental staff training. Of notable mention is the Human Rights, Equity, Accessibility, Anti-Racism Toolkit (H.E.A.A.R.T). series – offered twice a year.

Type of Program	# of Sessions	# of Participants
Educational	76	3,045
H.E.A.A.R.T. Workshops	14	307
Let's Talk About Race! Drop-In (As a part of PACBIC's Race, Racialization and Racism Working Group)	4 Total: Race & COVID (Sept) What is Latinx (Oct) Learning In Colour (Dec) Black History Month (Feb)	*
Total	94	3352

Note: the above numbers do not reflect Indigenous-specific education delivered by the Inclusion and Education Program. In addition, education numbers are estimated and do not fully encapsulate total education provided from September 2021-April 2022.

* Complete data was unavailable due to staffing changes.

Community Development and Engagement

Type of Community Engagement	Engagement Highlights	Engagement Numbers
Inaugural Black Graduation	In collaboration with Black Student Success Center, Office of the Registrar, the African Caribbean Faculty Association of McMaster, International Students Association, Black Student Association and McMaster Alumni Association, the Black Graduation highlighted the success and progression of Black students at McMaster	300 students (and family), faculty and staff at McMaster
MAC 101	Introductory Panel event in collaboration with Student Success Centre to introduce incoming McMaster students to key services and supports on campus	170
Black History Month	In collaboration with Black History Month Planning committee: 24 sessions and events were held throughout the course of February 2021 in addition to frequent social media engagement and education	823
Black Student Success Center Drop In Check In	In collaboration with the Wellness Centre and Black Student Success Center, the first Black Student Drop In Check In was held in response to mass violence against Black individuals over the summer of 2022. This was a mental health and community building check-in opportunity that sparked an ongoing partnership and check-in events for the 2022-2023 reporting year.	15
Total	27	1308



Faculty of Health Sciences - Family Medicine

Unique to the Inclusion and Anti-Racism program is a coordinator of EDI and Anti-Racism within the Faculty of Health Sciences' Department of Family Medicine. This dual-report position was created to ensure the Faculty of Family Medicine received thorough consultation and education in line with the principle of inclusive excellence and best practices as it relates to EDI and Anti-Racism (AR).

Highlights and Notable Successes of EDI and Anti-Racism within Family Medicine

Resources Created:

- Canadian Residence Matching Service (CaRMS) Implicit Bias Resource
- EDI online Newsletter
- Multicultural Calendar
- Socioeconomic Demographic Data Creation
- Black Excellence Committee
- Equity, Diversity, Inclusion & Indigenous Reconciliation Committee (EDIIRC)
- Anti-Racism Collaborative (ARC) Committee

Upcoming Programs, Creations, and Sessions:

- Mentoring for Inclusive Excellence Program
- EDI Toolkit
- Global Health PGME EDI Module
- Equity in Action Program
- Optical Clinical Learning Environment Module
- EDI Mini Moving Library

Family Medicine Education Sessions

Type of Program	Number of Sessions	Number of Participants (includes staff, students, faculty, and members of McMaster)
Education and Training	18	469
Wellness and Support	EDI/Anti-Racism Support Racialized Community of Support Cultural and Religious Holiday E-cards	2,623
Research to Drive EDI	Diversity & Climate Survey EDI Anti-Racism Initiative Survey	244
Events and Initiatives	Black History Month National Truth and Reconciliation 2021 and 2022	35
Total		3,694



Sexual Violence Prevention & Response Office

Highlights of Notable Successes and Opportunities

- Recruited and trained 13 new and five returning sexual violence prevention Peer Educators.
- Co-hosted events in collaboration with the Ontario University Sexual Violence Network, including the inaugural *Begin by Listening Student Symposium on Sexual Violence* and *Stories Spark Change* with Roxane Gay and Eternity Martis.
- In preparation for Welcome Week, SVPRO offered Responding to Disclosures and Bystander Intervention training to approximately 2,000 student leaders and student-facing staff members in August. Each team member received 4 hours of in-person training.
- Participated in and co-hosted numerous in-person Welcome Week events.
- Consent-educating drag queen, Unita Assk, hosted events in collaboration with Residence Life, McMaster Welcome (Welcome Week kick-off), and University of Guelph Student Wellness.
- Staff actively participated in many professional associations to keep abreast of evolving standards, best practices, and opportunities for collaboration; including the Canadian Association of College & University Student Services: Sexual Violence Community of Practice, and the Ontario University Sexual Violence Network.
- Tracked over 10,000 new website visitors and over 2,000 returning website visitors.
- Invested in building collaborative interdisciplinary and campus-wide networks to ensure effective response to a high volume of increasingly complex gender-based violence referrals.
- Continued and grew webinar series, “Blueprints for Change,” on practicing healthy masculinity featuring speakers from across the country. Topics included celebrating Black masculinities, brotherhood, and connection; challenging men’s rights activism, the incel movement, and the manosphere; men’s mental health and vulnerability; nonbinary identities and queerness—exploring our relationship to gender and masculinity; emotional literacy for guys in relationships; masculinity and athletics; everyday allyship.
- Wrote two blog posts for Courage to Act – a national project addressing and preventing gender-based violence at post-secondary institutions.
- Invited to speak at conferences and as guest lecturer in various courses.

Disclosures

Disclosures over the past academic year are highlighted below.

A disclosure is made when an individual informs someone in the University community about an experience of sexual violence because they wish to access support, accommodations and/or information about their options. A person may wish to disclose, seek support, and take no further action. This is an option for individuals under [McMaster’s Sexual Violence Response Protocol](#) and [Sexual Violence Policy](#).

Categories for reporting are based on provincial requirements, as set out in Common Institutional Metrics Reporting Guidelines document.

Sexual Violence Policy Disclosures

Between September 1, 2021, and August 31, 2022, there were a total of 61 Disclosures. The number that went on to the Complaints process is captured in the Statistical Report section.

Category	2017/18 Total # of Disclosures	2018/19 Total # of Disclosures	2019/20 Total # of Disclosures	2020/21 Total # of Disclosures	2021/22 Total # of Disclosures
Sexual Assault	60	83	100	12	40
Sexual Harassment	19	9	13	11	16
Stalking	1	4	2	2	
Indecent Exposure			1		
Voyeurism		1	1		
Sexual Exploitation		4	1		1
Intimate Partner / Domestic Violence	6		3	1	4
Total	86	101	121	26	61

Note: Disclosures are captured here and are also reflected in the Statistical Report which highlights consolidated data collected by EIO from all five Intake Offices on campus.

Sexual Violence Policy Consultations

Between September 1, 2021, and August 31, 2022, there were 61 *Sexual Violence Policy* consultations. These consultations are captured here and are also reflected in the statistical section of the report showcasing consolidated consultation data collected by EIO from all five Intake Offices on campus.

Year	2017/18	2018/19	2019/20	2020/21
Consultations	57	106	84	64



Sexual Violence Prevention Education

Type of Event	Number of Events	Number of Participants	Audience	Topics
Synchronous Trainings and Workshops (virtual, hybrid, and in-person)	89	4147	Students (undergraduate, graduate, continuing education), staff, faculty, community volunteer coaches	Responding to disclosures of sexual violence, preventing sexual harassment, building cultures of consent, building positive spaces, healthy masculinities, bystander intervention, safeTALK
Asynchronous Trainings	4	1903	Community Advisors, Residence Life Area Coordinator, Archway Mentors, Archway Coaches, Welcome Week Faculty Representatives, Teaching Assistants	Responding to disclosures of sexual violence
Events and Webinars	19	562		Blueprints for Change (healthy masculinity webinar series), Sexual Wellness Trivia, Begin by Listening Student Symposium on Sexual Violence, Instagram Lives
Total	111	12,012		



Human Rights and Dispute Resolution Program



Highlights of Notable Successes and Opportunities

- Vaccination Policy, consultations: As you may recall, September 2021, the beginning of the 2021/2022 academic year, coincided with the implementation of McMaster's Vaccination Policy. Under the Vaccination Policy, students, staff, and faculty were required to upload proof of vaccination. Those without proof of vaccination or without an approved human rights exemption were not permitted to attend McMaster's campus or any McMaster-affiliated site. Given the subject matter, it should not be surprising that the Human Rights & Dispute Resolution Program received multiple queries and consultations related to human rights exemptions, notably creed and disability. This team consulted on over 400 matters in the academic year specifically related to these ground-based exemption requests. When you read the statistical report, you will note that the number of consultations for these two grounds is higher than in previous years.
- Content development for the EDI Fundamentals, Human Rights & Equity Module: the team worked collaboratively with partners in Continuing Education to build the first module of the online EDI Training Program initiative for people managers.
- Contributed to the content development of Human Rights Fundamentals training for TA's in collaboration with the MacPherson Institute.
- Ongoing collaboration with Assistant Deans, Student Accessibility Services, and other partners to review McMaster's process for the intake and assessment of retroactive academic accommodation requests.
- Reviewed and updated internal tools and resources for use when processing complaints.
- Continued partnership with EIO colleagues and members of other Intake Offices to deliver customized training on human rights issues.

Consolidated numbers on complaints, consultations and alternative dispute resolution are listed in the statistical report section below.





Statistical Report

of Complaints & Consultations
under McMaster's Discrimination
& Harassment Policy
and Sexual Violence Policy

Definitions

Complaint: A complaint under McMaster University’s *Discrimination & Harassment Policy* or *Sexual Violence Policy* is made when an individual seeks to initiate the institution’s investigation and adjudication procedures by completing and submitting complaint forms to one of the five Intake Offices on campus. Upon receipt of a complaint, the Policy Response Team convenes to review the materials with a view to making recommendations to the respective Decision Maker. Complaints are either investigated or not investigated. If the complaint is not investigated, the complainant is informed of their right to make a written request for review of the decision to the appropriate Vice-President.

Investigations may also be initiated by the University, when the University becomes aware of situations where an investigation may be warranted, on the basis of both the circumstances and nature of the allegations¹.

Consultations: A consultation takes place when an individual seeks advice and/or guidance on a matter related to discrimination, harassment, and/or sexual violence from an Intake Office representative in one of the five Intake Offices on campus. Consultations are confidential, subject to limits of confidentiality, outlined in the Policies.

Dispute or Early Resolution: Dispute or early resolution is a voluntary service provided by Intake Office representatives to help facilitate the successful resolution of issues and concerns related to discrimination, harassment, and/or sexual violence. It is a voluntary process involving steps taken to resolve or remedy a Complaint, with which both the Complainant and Respondent have agreed.

Intake Offices: the five Intake Offices listed in McMaster University’s *Sexual Violence Policy* and *Discrimination & Harassment Policy* are the Sexual Violence Prevention & Response Office, Human Rights & Dispute Resolution Program, Employee and Labour Relations, Faculty of Health Sciences Professionalism Office, and Student Case Management Office.

Complaint Statistics

Overview of Complaint Data

1. Complaints: Overview of Complaint Numbers

Reporting Year	Total Number of Complaints	Open at Start of Year	New	Closed
September 1, 2017 – August 31, 2018	57	16	41	47
September 1, 2018 – August 31, 2019	44	10	34	32
September 1, 2019 – August 31, 2020	46	12	34	20
September 1, 2020 – August 31, 2021	58	26	32	40
September 2, 2021 – August 31, 2022	35	18	17	18

This year, we saw a reduction in the number of formal complaints.

There continues to be a noted increase in the complexity of the matters coming forward.

¹ For more information on University-initiated investigations, see section 92 of the *Discrimination & Harassment Policy* and/or section 99 of the *Sexual Violence Policy*.

2. Complaints by Policy

Reporting Year	Total Number of Complaints	Number of Complaints involving the Discrimination & Harassment Policy	Number of Complaints involving the Sexual Violence Policy	Number of Complaints involving both Policies
September 1, 2017 – August 31, 2018	57	39	20	2
September 1, 2018 – August 31, 2019	44	35	21	12
September 1, 2019 – August 31, 2020	46	35	25	14
September 1, 2020 – August 31, 2021	58	48	25	15
September 2, 2021 – August 31, 2022	35	30	10	5

3. Complaints Investigated

Reporting Year	Percent investigated	Percent resulting in policy violations	Mean Length of investigation process (months)
September 1, 2017 – August 31, 2018	51%	50%	6.1 (median 6)
September 1, 2018 – August 31, 2019	69%	50%	6.7 (median 6.5)
September 1, 2019 – August 31, 2020	75%	87%	5.4 (median 5)
September 1, 2020 – August 31, 2021	80%	59%	7.4 (median 7)
September 2, 2021 – August 31, 2022	66%	71%	8.4 (median 7.75)

Complaints not investigated

Complaints are not investigated for a variety of reasons, including: the complainant elects to withdraw the complaint; the parties reach a resolution; the complaint proceeds under another University process, such as Academic/Research Integrity, Student Appeal Procedures or Student Code of Rights & Responsibilities; the Assessment Team and Decision Maker decide not to investigate because, for example, there is no jurisdiction, the complaint is out of time, or there is no prima facie case.

In the past academic year, 34% of complaints did not proceed to investigation under the *Discrimination and Harassment Policy* or the *Sexual Violence Policy*.

Interim measures

Interim measures are temporary steps put in place while an investigation is in progress to safeguard the working, learning, and/or living environments of all individuals. Interim measures do not extend beyond the final resolution of a matter and are reviewed on an ongoing basis to ensure they remain appropriate in the circumstances.

Interim measures were necessary in 54 % of the cases investigated and closed this past academic year. Relevant staff and faculty are often asked to assist in discussions to explore options, and to support implementation and oversight of interim measures.

Outcomes

When policy violations are found to occur, outcomes vary, depending on the circumstances of each case. Examples of outcomes during the 2021/2022 academic year include: remedial educational initiatives; mandated training; professional coaching; instituting no contact orders between individuals; designating individuals as PNG (persona non grata) from campus; documented discussions; and termination of employment.

Disaggregated Complaint Data

1. Complaints: Protected Ground

Protected Ground	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Sex (includes sexual harassment and assault)	13	21	29	25	14
Personal Harassment (intimidation, bullying)	16	19	10	17	10
Ancestry, colour, race	4	6	7	13	8
Disability	5	2	5	7	4
Creed/religion	4	2	4	2	3
Family status	1	2	1	2	1
Total	43	52	56	66	40

Note: Some complaints involve more than one ground.

2. Complaints: Participant Type

	Complainant	Respondent
Undergraduate Student	9	7
Graduate Student	3	2
Staff	13	10
Faculty	8	18
Other (external, not identified)	6	0

Note: Some complaints involve more than one complainant and/or respondent

3. Complaints: Faculty/Area of the University

	Complainant	Respondent
Administrative Units* (*other than Hospitality and Facility Services)	13	3
DeGroot School of Business	0	0
Faculty of Engineering	4	3
Faculty of Health Sciences	16	16
Faculty of the Humanities	1	1
Faculty of Science	2	2
Faculty of Social Sciences	4	6
Athletics & Recreation	4	4
Facility Services	1	1
Hospitality Services	0	0

4. Complaints: Origin of the Concern

Origin of Concern	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Academic context	18	11	14	16	9
Employment context	7	24	17	26	19
Campus community (e.g., extracurriculars, events)	17	4	2	3	3
Off campus, with a nexus to the University	9	4	6	8	2
Residence	-	-	4	3	0
Athletics	-	-	3	4	3

Consultation Statistics

As set out above, a consultation takes place when an individual seeks advice and/or guidance on a matter related to discrimination, harassment, and/or sexual violence from an Intake Office representative in one of the five Intake Offices on campus. Consultations are confidential, subject to limits of confidentiality outlined in the Policies.

Numbers

For the 2021-22 academic year, the five Intake Offices recorded a total of 970 consultations.

Year over year, we are seeing a steady increase in the number of consultations being conducted by the five Intake Offices on campus. This past year, a notable trend is the increased number of consultations on issues involving Creed.

Themes

Most consults and disclosures pertained to academic matters. There was a notable increase in the number of consultations related to employment matters. Staff and Undergraduate students were the most common groups seeking consultation.

Over the past year, consultations on issues involving Creed increased significantly. This is related to McMaster's Vaccination Policy, put in place in the fall of 2021. Community members were provided an opportunity to submit a request for a human rights-based exemption to this policy. Most requests that were submitted to the University relied on the ground of Creed. The Intake Offices were consulted independently by community members in relation to their exemption requests. The Intake Offices were further involved in consulting with McMaster's Vaccination Validation Team around non-medical exemption requests including a significant number of creed-related requests.

Top three grounds- Consultations:

- Creed
- Disability
- Ancestry, colour, race

Disaggregated Consultation Data

1. Consultations: Issue

Issue	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Harassment - Personal	111	115	77	95	108
Sexual Violence	53	80	74	81	61
Discrimination	63	68	114	64	91
Accommodation**	84	74	73	80	618**
Grounds Based Harassment	24	43	125	43	69
Poisoned Environment	15	20	12	10	5
Accessibility*	5	5	2	17	3
Total	355	405	477	390	970

Note: some consultations involved more than one ground.

* Consultations related to accessibility under the Discrimination & Harassment Policy tend to focus on improving access to processes and services in a general overall sense, whereas consultations related to accommodation are focused on specific cases requiring resolution.

** Increase in Accommodation issues are a result of significant numbers of consultations related to McMaster's Vaccination Policy's exemption requests.

2. Consultations: Protected Ground

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Disability	85	108	92	90	119
Creed/religion	32	28	28	12	542*
Ancestry, colour, race	22	22	70	49	47
Ethnic origin	8	6	10	12	14
Family status	8	18	14	9	18
Gender identity/gender expression	9	6	5	5	9
Age	5	0	3	0	6
Place of origin	6	10	11	24	15
Sex	59	80	151	92	45
Sexual orientation	6	9	6	3	6
Citizenship	3	0	3	7	4
Marital status	2	2	1	0	0
Total	245	289	384	303	825

Note: Some consultations involve more than one ground.

** Increase in Creed is a result of significant consultation related to McMaster's Vaccination Policy exemption requests.*

3. Consultations: Participant Type

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Undergraduate Student	95	96	114	74	129
Graduate Student	41	46	92	43	43
Staff	110	120	115	106	173
Faculty	73	103	118	95	92
Medical Resident	23	25	27	5	6
Other (external, not identified)	13	15	11	21	527*

** Increase to "Other" category is a result of significant consultation related to McMaster's Vaccination Policy ground-based exemption requests where Participant Type was not fully tracked. Of these 496 exemption requests, 380 were submitted by students and 116 submitted by Staff and Faculty.*

4. Consultations: Faculty/Area of the University

	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Administrative Units	44	54	82	84	54
DeGroote School of Business	10	7	18	19	27
Faculty of Engineering	28	31	26	35	52
Faculty of Health Sciences	150	175	133	86	126
Faculty of the Humanities	26	14	24	23	28
Faculty of Science	30	29	35	32	47
Faculty of Social Sciences	34	33	46	40	25
Ath & Rec	NA	NA	NA	7	12
Unknown	33	45	113	34	599*

* Significant increase to "Unknown" category is a result of the review of 496 human rights ground-based exemption that did not track Faculty/Area of the University in which the request originated.

5. Consultations: Origin of the Concern

Origin of Concern	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Academic context	182	199	201	199	228
Employment Context	86	109	73	70	106
Campus community (e.g., extracurricular, events)	57	44	43	25	27
Off campus, with a nexus to the University	26	14	50	21	30
Off campus, with no nexus to the University	NA	NA	NA	7	14
Residence	NA	NA	7	13	13
Athletics & Recreation	NA	NA	18	15	9

Note: Consultation related to McMaster's Vaccination Policy ground-based exemptions did not report on origin of concern, but varied across academic & employment context, residence, and athletics & recreation. Those consultations are thus, not included in this chart.

Dispute Resolution

As indicated above, dispute resolution is a service provided by Intake Office representatives to facilitate the resolution of issues and concerns related to discrimination, harassment, and/or sexual violence.

Dispute resolution seeks to resolve matters in an efficient and amicable manner and, if successful, reduces the likelihood of a complaint being filed. Engagement in the process is voluntary, and parties may withdraw from the process at any point in time.

Situations involving human rights go to the core of people's identity; it is not surprising that addressing and assisting parties to work through such matters entails mediating emotionally charged, extremely sensitive, and multifaceted interpersonal conflicts. The Intake Offices draw upon their acquired expertise in conflict coaching, negotiation, and other Alternative Dispute Resolution (ADR) techniques.

2021-2022 Numbers

- For the 2021-2022 academic year, the Intake Offices recorded a total of 103 dispute resolution matters.

Reporting year	2017/2018	2018/2019	2019/2020	2020/2021	2021/2022
Number of resolutions facilitated by Intake Offices	87	110	122	145	103

- Discrimination/accommodation processes (related to disability, family status, creed, and retroactive academic accommodation requests) and non-grounds harassment (bullying, intimidation) are the most common matters where individuals requested dispute resolution.
- Undergraduate students and staff are the most common groups requesting assistance to resolve an issue, while staff and faculty are the most common groups asked to participate in a process to resolve an issue.
- Most matters pertain to academics, followed by employment.




Equity and Inclusion Office

Human Rights | Complaint Resolution
Education | Accessibility
Sexual Violence Support

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Equity and
Inclusion Office

McMaster
University 



President's Report to McMaster University's Board of Governors March 2, 2023

Spotlight on Operational Excellence

Operational Excellence is critical to enabling research and teaching excellence at McMaster by providing the best possible administrative support to our faculty, staff and students.

A key institutional priority, McMaster's goal with respect to Operational Excellence is "to enable the administrative operations of the University to most effectively support the institutional vision and aspirations of our community of researchers, scholars, teachers and learners." This means renewing our administrative processes across all areas of the University by adopting best practices, modernizing and streamlining our existing processes, and enhancing services. At the same time, we are supporting inclusive excellence and well-being, and advancing sustainability, environmental stewardship and accessibility on our campus.

Over the past two years, [we have made significant progress in the area of Operational Excellence](#) including the development of key operational policies, strategies and processes such as:

- The development of comprehensive COVID-19 safety protocols and implementation of the MacCheck vaccine verification system.
- The introduction of live chat software to facilitate online student service inquiries for both prospective and current students.
- The creation of a new governance structure for Human Resources to better integrate planning and align HR operations with McMaster's strategic priorities.
- The launch of McMaster's first university-wide sustainability strategy designed to advance McMaster's Net Zero Carbon Roadmap.

I would like to highlight further advances in this important priority area.

Renewal of Administrative processes

The development of McMaster's Administration Strategy

Saher Fazilat, Vice-President, Operations and Finance, is in the process of finalizing a refreshed operations and finance strategy that includes updated vision, mission and values statements.

The strategy will emphasize coordination and cooperation across all administrative and ancillary support services, recognizing that as a decentralized university, we need to share best practices and work together to achieve operational excellence. This strategy will provide a common direction and purpose for those who work in the Operations and Finance division and provide clarity to institutional stakeholders, including faculty, students and staff, about the role of Operations and Finance staff, how they do their work, the benefits of their services, and how

they are working collaboratively toward Operational Excellence. It will also identify the ways in which the Operations and Finance division will work to modernize and streamline systems and processes across McMaster and enable administrative areas of the university to be creative, innovative, and responsive to changing circumstances.

The development of this strategy has been informed by broad consultation with staff from within Operations and Finance, as well as through extensive discussion with academic counterparts across Faculties and areas to ensure their needs are understood.

I look forward to sharing the plan with Board members when it is finalized this spring.

Hire to Pay Task Force

A key initiative in advancing Operational Excellence is the “Hire to Pay Task Force.” Co-sponsored by Saher Fazilat and Provost, Susan Tighe, this group is tasked with identifying improvements to administrative processes across the university to ensure the accurate and timely processing of hiring and payroll for all Faculties, departments, and Human Resources Services.

The Hire to Pay Task Force brings together representatives from across departments, Faculties, and support units, including Human Resources, Financial Affairs and University Technology Services (UTS), to review Hire to Pay and related processes, which include tools, resources, supports, technology, and data. The goal of this task force is to identify processing issues and/or opportunities that impact staff, Faculties, departments, and support services. It will also make short and long-term recommendations to resolve existing processing complexity, as well as streamline processes and prevent errors.

The creation of the Task Force is an important step forward in developing innovative solutions to long-standing issues related to hiring and payroll across the University.

Pro-active use of UniForum data

Administrative areas across McMaster are also proactively using insights from UniForum to improve our processes and services. As Board members may know, UniForum@McMaster is a program that provides McMaster with data on how support services are delivered across the university and whether they are delivered as effectively and efficiently as possible. Universities from across Canada and the world participate in the UniForum program, submitting data on the same key services to allow institutions to compare their performance and benchmark their outcomes.

UniForum data has helped inform McMaster decision-making since 2017. Now, we are planning to work more closely with leaders from across the University to explore how to use UniForum data to find new ways of improving the efficiency and effectiveness of the services we provide.

I'm pleased to report that [results from the past five years](#) have shown that not only has satisfaction with McMaster services gone up in every measured service, but satisfaction scores

across many operational functions at the University are among the highest of the Canadian universities that submit data.

Sustainability

Funding from Parks Canada

McMaster and other members of the Cootes to Escarpment EcoPark System, including the Royal Botanical Gardens, recently received \$3.5 million from Parks Canada to support several projects aimed at restoring and protecting the wetlands, plants, and wildlife in the 2,200-hectare corridor that makes up the EcoPark System located, in part, on McMaster's campus. Projects include:

- **Private Landowner Engagement** – Many property owners along Wilson St. and Lower Lions Club Road have significant natural areas at the back of their properties within the Cootes-Dundas Valley Corridor. This project will engage landowners, on how their natural lands can be ecologically stewarded and improved while creating cooperative relationships with the landowners.
- **Cootes Drive Wetland Remediation** – This project aims to improve habitat in McMaster's west campus by enhancing and remediating existing degraded wetlands, removing invasive species, planting native species, creating new habitats, and improving connectivity for pollinators, fish and birds through increase in habitat and buffers along this land corridor.
- **Indigenous Relationship Building** – This initiative invites Indigenous communities and Knowledge Holders to share valuable insight about the land in the Cootes–Dundas Valley EcoCorridor and participate in its stewardship. The project will lead to the creation of a knowledge database and include extensive engagement and partnership with Indigenous communities.

I am pleased to see McMaster researchers receive funding for these and other projects that are addressing pressing ecological challenges and are transforming our campus into a living laboratory for sustainability.

Small Modular Reactor Feasibility Study

As Board members know, McMaster is recognized globally for our excellence in nuclear research and innovation. For more than 60 years, we have safely operated the McMaster Nuclear Reactor, and made critical advances in nuclear energy, materials and medicine – including medical isotopes used to treat a variety of cancers. Most recently, McMaster has also been developing training and education programs for the next generation of nuclear professionals that will design, build, operate and regulate Small Modular Reactor (SMR) technology in Canada.

SMRs are a new class of nuclear reactor, which are a fraction of the size of traditional power reactors, and provide low-carbon, safe and reliable energy generated by nuclear fission. Countries around the world, including Canada, are exploring the feasibility of constructing

SMRs as a crucial piece of power generation to significantly reduce carbon emissions and meet zero carbon targets

In order to advance net zero carbon goals at McMaster and in alignment with McMaster's contribution to the federal government's [Small Modular Reactor \(SMR\) Action plan](#), the university is conducting a feasibility study to investigate the potential of hosting an SMR at McMaster.

This feasibility study will look at a host of factors including possible site locations and will involve consultations with key stakeholders, including representatives from Indigenous communities. From March 14 –16, the University will welcome leaders from the [Indigenous Advisory Committee for Canada's SMR Action Plan](#) as part of this consultation process.

The feasibility study is expected to be completed this summer, and will provide data and analysis that will be used to determine if McMaster is an appropriate SMR host site. This approach is consistent with McMaster's strong commitment to evidence-based decision-making and our responsibility to find climate change solutions.

Information about McMaster's important contributions to nuclear research and education and the SMR feasibility study is part of a research-focused supplement on Canada's innovation leaders that is being distributed at the beginning of March by the rankings organization Research InfoSource. This report is being distributed in a number of publications, including the National Post.

I look forward to updating Board members once the feasibility study is complete.

Campus Master Plan

The University Master Plan is a vision for the future development of our campus and locations over the next decade and will provide a framework that will shape our buildings, outdoor spaces, infrastructure and the experience of being at McMaster. Many people from within the university and our broader community have participated in the Master Plan process. These consultations have helped to develop a bold and innovative vision for the future of our sites.

Over the past year, McMaster engaged with students, faculty, staff, partners and community members to gather feedback on what should be included in the University Master Plan. This consultation helped the focus the Plan around five themes including re-imagining key entrances to campus; safe and sustainable transportation; the importance of broader sustainability advancements; more housing options and green spaces; and the creation of spaces to innovate and collaborate.

In addition to an online survey, an event to invite feedback on the themes was held on January 11 in the McMaster University Student Centre where almost 500 students, staff, faculty and community members participated. A total of 1,100 voices participated in this final phase of public engagement, confirming that the plan's major themes are on the right track.

As the plan nears completion, it will be shaped by the Steering Committee members and reviewed by McMaster leaders, and then presented to the Board of Governors this spring. When it launches, the plan will act as a guide for the development of the buildings, outdoor spaces and infrastructure of our campus and locations for the next decade and form the experience of being at McMaster University well into the future.

Transformative IT Structure

Information Security Roadmap

In 2021, McMaster IT Governance endorsed the University's three-year [Information Security Roadmap](#). This plan was designed to strengthen McMaster's information security and build our resilience against ever-evolving cybersecurity threats, and it continues to be essential in ensuring that McMaster's data, systems, and information remain confidential, available and secure.

Over the past year, the University has made significant progress in building an information security culture by raising awareness among faculty, staff, and students about the importance of information security and their role in protecting university data. In addition, new tools, processes and technologies, including multi-factor authentication for Microsoft 365 and improved network security were introduced to enhance the security of McMaster's systems and data. New policies and standards were also developed and implemented to ensure that the University's information security practices are aligned with industry best-practices and comply with relevant regulations and laws.

Looking ahead, the University will continue to focus on enhancing our information security program by implementing the next phase of the roadmap in 2023. This will involve further strengthening of existing security measures and introducing new approaches to prevent, detect, and respond to cyber security threats. Additionally, the University will continue to build an information security culture and implement new policies and standards to ensure that McMaster's data, systems, and information remain confidential and secure.

Campus Relationship Management (CRM) Project

Launched in 2022, the Current Student CRM Digital Transformation Project is another key strategic IT deliverable aimed at transforming and strengthening Operational Excellence and transforming the student experience at McMaster.

A joint initiative between University Technology Services (UTS) and Student Affairs, this project will introduce a new digital platform technology that provides a more holistic online student experience. The technology will provide better access to the information, resources, and support students need – from enrollment through to graduation. This technology will also enhance the University's analytics capabilities to help us track performance and student success metrics. This will enable McMaster to continuously improve our support offerings to better serve our students and the broader community.

This project is nearing the end of the discovery, planning, and community engagement phases, with delivery and implementation targeted to take place over the next few semesters.

Multiple CRM projects and activities have already been completed and others are also underway. For example, McMaster Continuing Education implemented a fully integrated CRM in 2021, which included tools for enhanced marketing and learner support. In addition, the Faculties of Engineering, Humanities, Science, Social Science and some Faculty of Health Sciences (FHS) programs have partnered with the university's marketing project to utilize CRM for recruiting prospective international students. The work on discovery, requirements gathering, and solution design for HR is also expected to start in May. By implementing CRM for employees, Human Resources Services will substantially reduce waiting times, optimize service delivery, and provide a uniform "client" service experience.

This project is one of the many ways in which the University is working to improve automation and digital transformation to reimagine processes and support student success.

Human Resources – Cultivating human potential

McMaster appoints new director of human rights and accessibility

I'm pleased to report that lawyer and McMaster graduate Patricia Suleiman has been appointed the Director of Human Rights and Accessibility in McMaster's Equity and Inclusion Office.

Patricia comes to McMaster from Humber College, where she was the manager of Human Rights, Equity and Inclusion. Her experience includes managing human rights investigations, early interventions, mediations, workplace restoration, and human rights-related policies and procedures. In addition to having substantial knowledge and work experience with sexual violence policy, sexual violence response and integrating equity, diversity and inclusion principles into her work, Patricia is a trained workplace mediator.

The Director of Human Rights and Accessibility is a critical role in providing expertise and guidance on the development and implementation of equitable policies and processes across McMaster, and I look forward to Patricia's valuable insights and contributions in this area.

McMaster's new Flexible Work Guidelines

As part of the University's commitment to implementing innovative new employee engagement practices, and supporting the well-being of our employees, McMaster has launched a set of [Flexible Work Guidelines](#).

Designed to assist managers and employees in navigating flexible work arrangements, the guidelines establish a standard process for employees and managers to propose and approve a flexible work arrangement, and ensure consistency as these arrangements are made across Faculties and departments.

The guidelines were developed by the Workplace and Employee Experience Committee, which included members from across units and types of work experience. The committee conducted extensive consultations with employees and leadership from across the university and looked at best practices across the sector. Many staff have been working flexibly for some time, and the committee listened to what was working well and identified where there were opportunities and concerns.

The [flexible work webpage](#) includes examples of different flexible work options, a step-by-step proposal process including templates and samples, and many additional resources to help staff and supervisors successfully establish and maintain these arrangements. It also provides an interactive opportunity for employees to share their experiences with flexible work at McMaster. Staff and supervisors are encouraged to review the many helpful tools and templates available.

These guidelines are an excellent example of the innovative ways in which McMaster is promoting employee engagement, enhancing talent attraction and retention, and ultimately advancing our strategic priorities.

Launch of the Inclusive Leadership Series

To ensure McMaster's people managers continue to receive innovative leadership training opportunities, the University has launched the [Inclusive Excellence Leadership Program](#).

Developed by the Equity and Inclusion Office in partnership with Human Resources Services, and McMaster Continuing Education, this program is a professional development series designed to provide both academic and non-academic people managers with the tools they need to integrate EDI priorities into their leadership practice.

The program focuses on training leaders to become aware of their own biases and preferences, to see diverse talent as a source of competitive advantage, actively seek out and consider different views and perspectives to inform their decision-making, and to cultivate and inspire diverse teams. The program seeks to empower and equip people managers with the best practices and resources essential to building a culture of inclusivity, and provide opportunities for people managers to become more knowledgeable about inclusive leadership practices.

This program supports McMaster's ongoing commitment to developing a range of professional development programs, leadership training, and opportunities that promote inclusive learning and employee growth.

CAMPUS UPDATES

INCLUSIVE EXCELLENCE

[Conversation and Connection: The impact of the Black and Racialized Staff Employee Resource Group](#)

The Black and Racialized Staff Employee Resource Group (BIRS), a network supporting the well-being, development and advancement of McMaster staff members who identify as Black, Indigenous and racialized. Established in April 2021 out of a working group within the President’s Advisory Committee on Building an Inclusive Community (PACBIC), BIRS also works to amplify the voices and needs of these staff members at an institutional level.

BIRS provides support to their members through personal development sessions, access to leadership training and hallway chats — biweekly informal gatherings where members can engage in conversations on a wide range of topics.

[“Building powerful connections:” Black Student Success Centre marks one-year anniversary](#)

One year ago, the Black Student Success Centre (BSSC) – the first physical space at McMaster dedicated to supporting and championing the success of Black students – opened its doors. The centre provides a range of services, from mental health supports to mentorship and financial aid to support the academic, personal and professional needs of students. A need for a community gathering space for Black students was identified in the five-point action plan developed after the release of the University’s review of the Black student-athlete experience in October 2020.

[Maintaining the momentum: Black History Month at McMaster launches with a memorable kick-off event](#)

February was Black History Month – a time to celebrate the contributions and achievements of Black and African diasporic peoples. The Black History Month Planning Committee, in partnership with the Equity and Inclusion Office and other partners throughout McMaster, held a range of virtual and in-person events throughout the month, including a kick-off event featuring music, moving speeches and the Black Expo: Maintaining the Momentum

[McMaster Engineering’s equity, diversity and inclusion scholarship winners are poised for impact](#)

McMaster students Robert Ngunjiri and Serena Stoddart have both experienced feelings of being out of place. Now, they are scholarship winners who have discovered a home and a launchpad for impact at McMaster Engineering.

TEACHING AND LEARNING

[External progress review shows MacPherson Institute’s efforts having positive impacts on teaching and learning at McMaster](#)

According to the recent progress review of the MacPherson Institute, “significant and impactful changes” have been made to respond to recommendations from the 2018 External Review of Teaching and Learning and feedback from the McMaster community. A clear mission and mandate, streamlined program offerings, the shift to a Faculty Liaison model of service, and other adjustments have had a positive impact on how teaching and learning support is provided to instructors, students and staff at McMaster.

[Search begins for Wilson College director and endowed chair](#)

A search for an academic director and an endowed chair for McMaster's new Wilson College of Leadership and Civic Engagement is now underway. Both tenured positions begin with a five-year term, projected to start on July 1, 2023. Wilson College, which was established in September 2022 following a \$50-million gift from Lynton "Red" Wilson, will be Canada's most comprehensive leadership college, developing future leaders who will be equipped to address the country's complex challenges. Its programming, administered through the Faculties of Humanities and Social Sciences, will feature a unique curriculum that emphasizes experiential learning, interdisciplinary work, civic engagement and research collaborations.

[McMaster students named finalists for McCall MacBain scholarship](#)

McMaster students Abby Buller and Jessie Meanwell are finalists for the first global cohort of McCall MacBain Scholars at McGill University. The scholarships enable students to pursue a fully funded master's or professional degree while participating in a leadership development program. Buller and Meanwell are among 87 finalists chosen from across Canada and around the world after a first round of regional interviews. They will attend the final round of interviews in Montréal from March 8 to 12, meeting with leaders from academia, business, government, and the social sector.

[Preparing students for the business world: DeGroot wins prestigious case competition](#)

Last month, a team of four McMaster MBA students won the John Molson International MBA International Case Competition. McMaster's team competed against 36 teams from 17 countries. Judged by more than 300 business executives, the competition was an opportunity for participants to take their MBA education beyond the classroom. The experience pushes students to practice the critical thinking, problem solving, time management and presentation skills they will draw on in the next phase of their careers.

RESEARCH AND SCHOLARSHIP

[McMaster researchers receive \\$61M from CIHR to advance health research](#)

Seven McMaster-led research projects have received a total of \$61 million from the Canadian Institutes of Health Research (CIHR) to advance medical research, training and innovation. The announcement was made at McMaster by Filomena Tassi, MP for Hamilton West-Ancaster-Dundas and minister responsible for the Federal Economic Development Agency for Southern Ontario, as part of CIHR's Clinical Trials funding initiative. The Clinical Trials Fund is designed to enhance Canada's clinical trials ecosystem from discovery to implementation.

[New inhaled COVID-19 vaccine receives more than \\$8M for next stage of human trials](#)

Researchers at McMaster University are receiving more than \$8 million in funding from the Canadian Institutes for Health Research (CIHR), enabling them to proceed with Phase 2 human trials for a next-generation, aerosol-borne COVID-19 vaccine. Pre-clinical trials have shown the

inhaled aerosol vaccine is far more effective at inducing protective immune responses than traditional injections, partly because it targets the lungs and upper airways where viruses first enter the body, providing long-lasting protection against respiratory infections.

[Driving change: Rethinking mobility to build the transportation system of the future](#)

McMaster researcher Ali Emadi, a global expert on vehicle electrification and smart mobility, is determined to build a more inclusive transportation system that is safer, more equitable, more reliable and more sustainable. His research group has partnered with Cubic Transportation Systems (CTS), an industry leader in transportation technology and innovation, to create the Centre of Excellence for Artificial Intelligence and Smart Mobility, where a diverse team of scientists, engineers and students are building the transportation system of the future.

**Ali Emadi will be presenting to the Board of Governors at the March 2, 2023 meeting.*

[In the world of cybersecurity, humanities research plays an integral role](#)

A McMaster researcher is bringing a human lens to the perception and mitigation of cyber security risks, which involves looking at digital safety in a whole new way. “We’ve only been looking at the issue through a technology lens – and that’s important,” says Andrea Zeffiro, an assistant professor in the Faculty of Humanities’ department of communication studies and media arts but we’re missing the human factor about how people are being targeted or disproportionately impacted by data breaches and other forms of cyber-crime.”

[Was Pablo Neruda poisoned? New analysis shows covert assassination remains a possibility in Chilean poet-politicians mysterious death](#)

Evolutionary geneticists and forensic experts who have spent years analyzing the remains of Chilean poet and Nobel laureate Pablo Neruda have added important new information to the case regarding a possible covert assassination. The scientists, including McMaster researcher Debi Poinar, evolutionary geneticist Hendrik Poinar and other members of the McMaster Ancient DNA laboratory, along with their collaborators in Denmark, have presented their findings to a Chilean tribunal, concluding with a final presentation to the judge overseeing the hearings.

[Power plant? McMaster teams up with energy industry leaders to tackle sustainable agriculture](#)

McMaster researcher and chemical engineering professor Todd Hoare has teamed up with Suncor, a Canadian integrated energy company, to create a new type of “soft” chemical spray that allows plants to fight their own battles. Hoping to revolutionize the way the agricultural industry cares for its crops, this partnership seeks to reduce the negative environmental impacts of harmful chemical sprays while promoting an approach that emphasizes sustainability and good health.

ENGAGING LOCAL, NATIONAL, INDIGENOUS AND GLOBAL COMMUNITIES

OPERATIONAL EXCELLENCE

[Search for McMaster Vice-President, University Advancement is underway](#)

The Vice-President (University Advancement) provides overall leadership and direction in the areas of development and fundraising, and is responsible for cultivating and soliciting a portfolio of major and principal gift prospects, advancing fundraising and broader revenue-generation activities across the institution, and leading and overseeing the planning and launch of McMaster's next fundraising campaign. Board members Jennifer Rowe, Justin Boye, Susan Galloway and Jasmine Dhaliwal are on the selection committee. The committee is being supported by Julia Robarts and Colleen Keenan of Ogden Berndtson and is aiming to identify a successful candidate to start in the role of Vice-President (University Advancement) this spring.

[Outstanding employees and leaders recognized by TMG Peer-to-Peer Awards](#)

The TMG Peer-to-Peer Recognition Program recognizes employees for outstanding work while demonstrating and reinforcing McMaster's core leadership capabilities. Four employees from McMaster's management group (TMG) are the recipients of this year's awards. Zrinka Granic, Andrianna Kabitsis, Katie Millar and Mary Taws were nominated by colleagues and selected by the awards committee. They received their awards at the TMG Forum on Feb. 9, 2023.

AWARDS AND ACCOLADES

[McMaster alumni named to the Order of Ontario](#)

Two McMaster graduates, Teresa Cascioli, B. Com '83, LLD '19, and Kevin Smith, BA '86, have been recognized with the Order of Ontario, the province's highest civilian honour for outstanding achievements. The Order of Ontario recognizes exceptional leaders from all walks of life and diverse fields of endeavour whose impact and lasting legacy have played an important role in building a stronger province, country and world.

[McMaster graduate student part of winning team at international innovation challenge](#)

Sarah Arsalan, a graduate student in Kinesiology, and her team have placed first in the Universitas 21 and PwC Innovation Challenge, a prestigious global competition that brings together university students from around the world to tackle some of society's biggest challenges. This year, participants were asked to evaluate the extent to which they think governments should support the private sector in addressing environmental and societal concerns.

[Six McMaster graduates named to Order of Canada](#)

Six McMaster graduates, including actor and producer Eugene Levy, are among the 99 Canadian leaders to be appointed to the Order of Canada. One of the country's highest honours, the Order of Canada recognizes the extraordinary contributions of Canadians from all sectors of society.

[Zhou Xing wins prestigious immunology award for research into mucosal vaccines](#)

The Canadian Society for Immunology (CSI) has announced McMaster University's Zhou Xing as the 2023 recipient of its prestigious Hardy Cinader Award, the highest honour bestowed by the CSI. Xing, a professor of medicine and a member of the McMaster Immunology Research Centre and the Michael G. DeGroot Institute for Infectious Disease Research, is being honoured for his renowned immunology research program, which focuses on respiratory mucosal immunity, infectious diseases, and vaccine development. He is also part of the team that developed McMaster's inhaled COVID-19 vaccine.

[Graduate students, faculty earn McMaster top-tier research ranking](#)

McMaster University continues to rank among Canada's top research universities in the annual ranking published by Research Infosource. With a total sponsored research income of \$374.6 million — a 6 per-cent increase from last year — McMaster maintains its third-place position for Research University of the Year among medical/doctoral schools, determined by research income and intensity, as well as the number, intensity and impact of publications in leading journals.

IN MEMORIAM

[Remembering McMaster Chancellor Emeritus John Panabaker](#)

McMaster Chancellor Emeritus and two-time McMaster graduate, John Panabaker, passed away on Feb. 5 at the age of 94. Panabaker earned his BA in 1950 and his MA in 1954. He rose steadily through the ranks at Mutual Life ultimately becoming chairman of the board in 1985. A significant aspect of Panabaker's legacy is his extensive volunteer and community leadership. He served 12 years as a member of the Board of Governors, including two years as chair. He was also chair of the Administrative Board of the McMaster Museum of Art and was the University's chancellor from 1986 to 1992.

Dr. Panabaker was a steadfast, thoughtful and articulate McMaster leader from his days as a student to his time as chair of the Board of Governors, then as chancellor and beyond. His relationship with our University endured for more than three quarters of a century. The impact of his volunteer efforts and philanthropy will extend at least that long again.



Prepared for the Board of
Governors, McMaster University
March 2023

MCMASTER MUSEUM OF ART ANNUAL REPORT

REBOOT, REMAKE, RECONTEXTUALIZE

September 1, 2021 - August 31, 2022

BRIGHTER WORLD | mcmaster.ca



Museum of Art

MCMASTER MUSEUM OF ART

REBOOT, REMAKE, RECONTEXTUALIZE

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“When museums and galleries re-open, their focus may well have changed because the world has changed”
-Paul Williams, Visiting Professor at Manchester School of Architecture

Executive Summary

2021/2022 was a year to *Reboot, Remake and Recontextualize* in the Canadian museum community as we came away from the lessons of the pandemic and the social and political forces and changes that occurred in it/from it. At the MMA, this demanded that we rethink staff and public schedules; recommit to decoloniality; reimagine what can be achieved through a hybrid presentation of exhibitions and programs; and reboot pre-pandemic audiences.

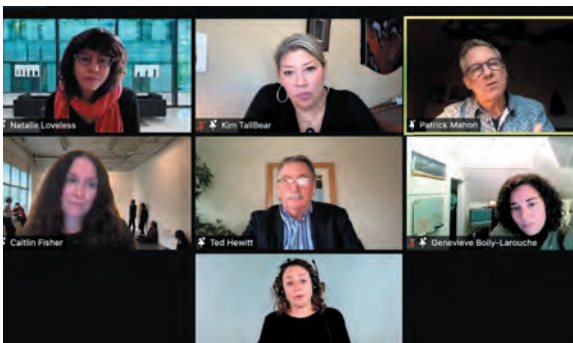
On the ground, this demanded a return to in-person work; the reintegration of staff to hybrid work along with the associated challenges of bringing staff back with compassion and understanding. Within the context of the Museum's services: in research, presentation, interpretation, mentorship, and collections growth, this demanded revitalized and renewed programs, language, and methodologies. Reimagined understandings of outreach, accessibility, and decolonial work, captured the work culture of the Museum throughout the year.

The pandemic affected the exhibition program year in that we opened Fall 2021 with one in-museum exhibition and one exhibition that was presented both on-line and in public spaces throughout Hamilton region. Three in-museum winter exhibitions were interrupted by a provincially legislated closure due to COVID-19. Otherwise, the year rolled out as usual with the added dimension of on-line programming and virtual versions of all exhibitions. The latter, just goals in previous years; a must as we navigated the pandemic; now, the desired

format as we imagine how to be inclusive, accessible, and democratic beyond the pandemic. The added cost of producing for the on-line, not so much in terms of educational and public programs, but certainly in the development and presentation of virtual exhibitions, is a new and significant component of all project budgets.

Administration and collections care and growth were well maintained throughout the reporting period. As in many workplaces, increased staff change-over occurred; in-person attendance figures dropped; and at the MMA, virtual numbers rose significantly while external granting opportunities proliferated. Over the course of the year, our strategy of decoloniality, decentering and anti-racist practices continued and broadened, leaving us in good stead for the present moment. Collections continued to grow, and the Museum maintained its pandemic commitment to artists by purchasing art and funding commissions. Moreover, several works of art in the collection were identified with the potential for restitution. Ongoing work continues in this latter area. Education and public programs throughout the year were presented in both in-person and on-line versions. Renewed and new programs were developed around introducing audiences to the de-colonial museum, the creative process, health & wellbeing through art, and our work to create pathways to education/university access.

The American Alliance of Museums has postulated that we will not see a return to pre-pandemic attendance numbers in museums until 2024. Much recent literature from the sector notes that core audiences will be the slowest to return, that is older visitors, tourists, and school groups. But what does the future hold for museums post-COVID? It is widely believed that museums were, and will be, able to survive the pandemic and post-pandemic eras because of their immediate pivot to the digital, the democratization and access this move provided, as well as because of their physical plants which feature open spaces where distancing can easily occur. Moreover, their relevance has expanded due to their long recognized civic role - especially in art museums because of their important role in presenting the work of living artists – and therefore in



Screenshot of a virtual panel talk presented in association with the *Immune Nations* exhibition, 2021

Executive Summary

providing space and being a forum for brave and courageous conversations around social issues directly affecting visitors. In the future it is suggested, that museums will need to reframe what they do and how they do it. Digital offerings will increase, apps for personal devices will see a rise, the physical need for social distancing will be maintained and matter. In terms of exhibition production, museums will feature more exhibitions of the work of local artists as well as collections; present them outside more frequently; change them over less frequently; present co-partnerships (especially with colleagues outside of the museum sector); and foreground social justice, mental health, and well-being issues.

In 2021/2022, the first fully hybrid year since March 13th, 2020, a post-pandemic view for galleries and museums preoccupied much of the cultural currency of the moment. Not incidentally then, in August 2022, ICOM released its new definition of a museum, the first new definition in over 50 years. It reads as follows: *A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection, and knowledge sharing.* As well, in early September 2022, the Canadian Museums Association announced that in response

to the TRC and its Call to Action #67, the CMA have produced a national review of museum policies in relation to activating UNDRIP in Canadian museums. Around the same time, the Department of Canadian Heritage has announced it is leading the renewal of the Canadian Museum Policy.

As Paul Williams, Visiting Professor at Manchester School of Architecture noted in a recent RIBAJ article entitled, Re-think: The post-pandemic view for galleries and museums, “when museums and galleries re-open, their focus may well have changed because the world has changed.” At the MMA, as we move into 2022/2023 with the hope of a continued fully in-person environment, we are committed to maintaining our high level of digital service provision and information sharing; to cultivating and calling back the student population (current and emerging) as our principal audience; to promoting and enacting our decolonial strategy; and to leaning into collection, exhibition, and education development in responsive, relevant, and respectful terms.

Public art installed at McQuesten Urban Farm as part of the enawendewin/relationships exhibition, 2021. L: Anong Migwans Bean, *Deluge*. R: Ron Benner, *Remains in Association with Cultural Deposits: 10,000 Years Before Present Era* (Detail).



Organizational Overview

Mission & Vision

The McMaster Museum of Art is a meeting space for both the campus and the community situated within the traditional territories of the Mississauga and Haudenosaunee Nations. The Museum engages, educates, and inspires through growing an awareness of the interconnectivity of the past, present and future; advancing de-colonization; engaging in innovative and imaginative research; dismantling institutional and ideological boundaries; partnering and collaborating intentionally; diversifying the collection; and building capacity.

The McMaster Museum of Art will positively disrupt the traditional museological narrative by creating more inclusive, dynamic, and experiential relationships between peoples and artistic practices.

Mandate & Role

As a university-affiliated, public art museum, the McMaster Museum of Art is “a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, the MMA fosters diversity and sustainability. It operates and communicates ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection, and knowledge sharing,” (excerpted from ICOM, August 24, 2022). Within this framework, the role of the MMA is twofold: to support the academic mission of McMaster University and to contribute to the discourse on art in Canada.

The MMA partners with faculty across all disciplines to produce research, exhibitions, publications, and educational programs

“The role of the MMA is twofold: to support the academic mission of McMaster University and to contribute to the discourse on art in Canada.”

that nurture arts-based practices and ways of knowing. As well, the MMA contributes research to the broader Canadian arts milieu through exhibitions, ancillary programs, and publications, that reflect upon issues of concern in contemporary art in Canada. The MMA researches, presents, preserves, cares for and grows the internationally recognized University art collection. The MMA contributes directly to the academic mission of the University by providing arts-based education in formal courses (such as The Art of Seeing), through public and education programs (lectures, workshops, panels, and tours), and through hands-on and experiential learning opportunities for students of all ages.

The MMA provides significant community outreach beyond the walls of the museum through in-community partnerships and learning opportunities. The MMA contributes to the broader Canadian arts community by partnering on projects such as the national Holocaust-era provenance research project as well as on research and exhibitions with colleague institutions, and in actively working towards de-colonizing the museum as a cultural institution. The staff of the MMA regularly participate in various community-based juries, conferences, and events, as well as through the commissioning of new works of public art. The MMA’s on-line presence is significant within the university-affiliated sector.



Hiba Abdallah, *We Remain Profoundly and Infinitely Connected*, 2019.

Organizational Overview

Facility and Collection

The MMA resides in a purpose-renovated building located at the centre of McMaster University's main campus. It comprises 5 galleries, 5 on-site storage vaults, and attendant office and public areas. Specifically, these areas break down as follows: 1,700 net square feet of (non-collection area) public space; 5,000 net square feet of exhibition space; 4,000 net square feet of storage; and 1,200 net square feet of office/administration space. The physical plant of the MMA is maintained by the University proper. The Museum maintains and pays for its own collections insurance coverage as a subset of the University's larger institutional policy. The Museum maintains comprehensive security coverage in collaboration with an independent provider, Campus Security, and the City of Hamilton police force. The Museum has 11 full-time staff: Director, Senior Curator, Curator of Indigenous Art, Collections Administrator, Senior Education Officer, Education Officer, Communications Officer, Installation Officer, and 3 Information Officers. The Curatorial staff is broadened by the addition of an Honorary Curator of Numismatics and Antiquities, a position currently held by Dr. Spencer Pope, Department of Classics, McMaster University. The Museum annually hosts a BIPOC Curatorial Mentorship Program wherein two mentees per year are employed with the intention of building capacity for diverse cultural work, knowledge, and transformation in the Canadian milieu. Various student and community volunteers round out the staff complement at the MMA, helping primarily with educational programming and events.



Preparatory centre at the museum. Photo by Georgia Kirkos, McMaster University.

Of the 40 university-affiliated art galleries/museums nation-wide, the MMA houses one of the top 3 collections in one of the best facilities in the country.

The collection at the MMA numbers 6,000+ works of art and contains important historical, modern and contemporary period works.

Highlights include:

- » The Herman H. Levy Collection of Impressionist, Post-Impressionist and Modern work: including paintings by Caillebotte, Courbet, Derain, Marquet, Monet, Pissaro, Sickert, Soutine and Van Gogh;
- » the Denner Wallace Collection, the most comprehensive collection of German Expressionist and Weimar period prints in Canada, including works by Barlach, Beckmann, Dix, Kirchner and Kollwitz;
- » a significant holding of European Old Master works including 16th to 18th Century paintings and prints from Gosseart to Turner;
- » 20th Century European art including modernist and contemporary artists from Duchamp, Nicholson and Rodchenko to Beuys, Kiefer, Kapoor and Richter;
- » Canadian art including historical works by Thomson, Milne and the Group of Seven and including contemporary works by Andrews, Astman, Goodwin, Keeley, Maggs and Scherman,;
- » modern and contemporary Indigenous Art (Inuit) with a focus on Cape Dorset prints and sculpture including works by Kenojuak, Pitseolak and Tookoome;
- » modern and contemporary Indigenous Art (First Nations, Metis), including works by artists of the Woodland School such as Kakegamic and Morrisseau; the first generation of "modernists" such as Ash Poitras, Beam, and Boyer; photo work by the likes of Thomas, Staats, and McMaster; and contemporary artists such as Sunny Assu, Catherine Blackburn, and Mary Anne Barkhouse.



Museum Storage Vault

Organizational Overview

Exhibitions and Programs

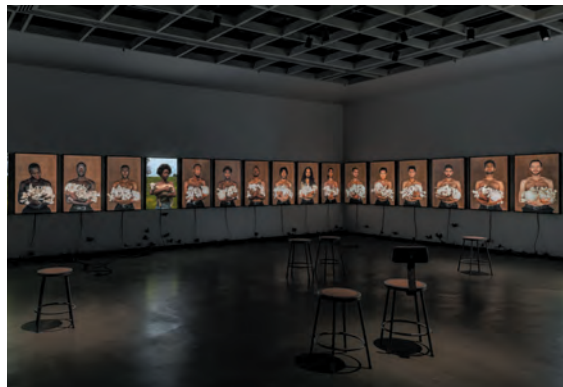
The MMA produces on average 8 - 12 exhibitions annually and augments those exhibitions with research publications and ancillary programs (public and educational) geared to engage both the campus and broader community audience of the region. Throughout its history, the MMA has actively contributed to the dialogue on contemporary art while maintaining an active research program on the objects in the permanent collection. The Museum, from its outset, has maintained a “doors open” policy in terms of collections access.

Context/Milieu

The MMA is one among several cultural institutions in the Hamilton area. The City of Hamilton manages several historic buildings and homes – Dundurn Castle, Military Museum, Museum of Steam & Technology, Whitehern Historic House, and a Children’s Museum; as well the city is home to the Art Gallery of Hamilton and the James Street North artists’ district. The MMA attempts to distinguish its contribution to the arts scene in the area by directing a de-colonial lens on traditional museological practice; disrupting the normative narrative; facilitating the presentation of work by diverse voices; and providing programming that is directed toward scholarly research and inter-disciplinary projects.

The museum contributes to the national and international cultural community in terms of collaborative exhibition projects and the use of its collections by sister institutions. Works of art from the collection are borrowed by international institutions such as the Belvedere Palace, Vienna, Austria; Tate Modern, Tate Britain, Brooklyn Museum, and Kunsthalle Bremen, Denmark, among others. In Canada, MMA works are regularly borrowed by the Art Gallery of Hamilton, Winnipeg Art Gallery, Art Gallery of Ontario, Montreal Museum of Fine Arts, and the National Gallery of Canada, among others.

(Appendix 1: *Institutional Achievements 2007-2022* details on-going developments in (exceptional) funding, organizational competence & development, digital & social media launches, platforms & development, collections management, facility maintenance, awards, and exceptional circumstances).



Installation view of *nicola feldman-kiss: Scapegoat* exhibition at the MMA, 2022. Photo by Toni Hafkenscheid.



Rajni Perera’s *Flood Mask*, a work recently acquired for the MMA’s permanent collection, being set-up for display in the National Gallery of Canada January 2022.

2021/2022 Highlights

Administration

In September 2021, the Museum returned to in-person programming following an 18-month shut down (March 2020 through August 2021) due to the COVID-19 pandemic. The year started off quietly with a roster of staff cohorts manning the building on a rotating basis, different days of the week. Like all our sister institutions across the country, visitor access to in-person visits was reduced compared to pre-pandemic schedules. All on-line programs and virtual exhibitions were maintained throughout the year, in addition to the added in-person services.



The MMA welcomed new Adjunct Senior Curator Betty Julian in 2022. Photo by Sabrina Russo.

Staff

In 2021-2022, like many of our peers, the Museum underwent several staff changes. Senior Curator, Pamela Edmonds, left to take up the position of Director of the Dalhousie University Art Gallery, Halifax, NS. Additionally, one Information Officer resigned for personal health reasons. These positions were filled again by mid-August with Isa Wuol, a recent McMaster

graduate from Political Science, as Information Officer; and on September 1st, 2022, Betty Julian, as Senior Curator. Julian comes to the MMA with a significant history of curatorial work in the Canadian arts community, especially notable is her associations with Prefix Institute of Contemporary Art, the National Film Board of Canada, and fourteen years as Professor of Photography, Film and Video at OCADU. 2022/23 mentees were in place by August/September: Sarah-Tai Black and Alex Jacobs-Blum.

Curatorial staff at the MMA on-goingly expand their reach into the community and contribute to the broader Canadian arts milieu through a variety of opportunities: guest lecturing and teaching, exhibition, publication and research collaborations, arts service organization and institutional governance participation, and conference and workshop presentations. This past year, Pamela Edmonds, Senior Curator, presented talks at Embassy Cultural House, Canadian Art Museum Directors Organization (CAMDO), Concordia University, and the Canada Council for the Arts. She also sat on juries for the Ontario Arts Foundation, Hamilton Artsweek, the City of Hamilton, Public Art Project, and Supercrawl. Important written contributions included being Guest Co-Editor of RACAR's special issue, *Towards the preservation of Black diasporic visual histories*, as well as Guest Writer for *The Routledge Companion to African Diaspora Art History*, edited by E. Chambers (forthcoming Fall 2022). Edmonds sits on the Boards of Cultural Pluralism in the Arts Movement Ontario (CPAMO) and the Black Curators Forum. Rheanne Chartrand, Curator of Indigenous Art, taught at McMaster University and University of Toronto. She is a continuing Board Member of the Shushkitew (Metis) Collective and the Indigenous Curatorial Collective. She has collaborated this past year with colleagues at Minneapolis Institute of Art and Ontario College of Art & Design University. June through November 2022, she was seconded to ImagineNative film festival as Curatorial Advisor. Carol Podedworny, Director and Chief Curator collaborated with colleagues at University of Alberta, Hamilton Cultural Heritage Forum, McMaster Heritage Forum, Waterloo Region Arts Awards, Canadian Art Museum Directors Organization and University/College Art Gallery Association of Canada. She is a member of the latter's Anti-Racist Equity Committee.



Ernest Daetwyler, *The Boat Project / everythingwillbefine*, 2018, permanently installed on McMaster Campus, 2022.

2021/2022 Highlights

Strategy for decoloniality

In 2021/2022, the Museum’s efforts toward decolonial, decentering and anti-racist practices was furthered by staff/ team training; operational/structural review; and mentorship programming. The Museum team participated in six decolonial/ de-centering/anti-racist sessions: three facilitated by in-house leads, three by external cultural sensitivity and cross-cultural consultants. Content included building upon group intentions, anti-black racism, and white privilege. The latter three topics had previously been the focus of internally lead sessions wherein literature research and reviews served the basis for group discussion. Subsequently, the team invited external consultants to broaden this content base with a focus on encouraging practical application in the day-to-day running of a de-colonized museum. Further progress in the Museum’s strategy was made throughout the year with respect to reviewing the institutional Policies & Procedures Manual. This work was overseen by consultants at Cultural Pluralism in the Arts Movement Ontario (CPAMO). CPAMO guided sessions with both the Museum’s management team and with the Advisory Committee. In the up-coming year, with a draft in place, sessions will be held with staff, Advisory Committee, and finally, jointly. Additionally, significant funding received in-year from the Department of Canadian Heritage and supplemented with funds from the Office of the Provost, enabled the Museum to continue to provide paid BIPOC Curatorial Mentorship opportunities. The DCH funding is for two years, March 2022 through February 2024. Finally in 2021/22, as part of the Museum’s decolonial strategy, the founders and funders of the MMA were researched, and statements created regarding their history of work and contributions to the institution.

Physical Plant

In 2021/22 for the first time in many years, and due to up-grades to lighting, fire, HVAC, and security systems over the course of the past several years, the Museum required only regular maintenance to its physical plant. Internal documents, last up-dated in 2019 and earlier, were reviewed and up-dated. Those documents include the Emergency Disaster Response Plan, Fire Procedures, Security and Monitoring Procedures, and Facility Report.

Revenues

In the reporting period, the Museum carried forward several grants from 2020/2021. These grants were received in the previous fiscal and intended for projects in the current. Thus, the Museum expended funds from an Ontario Arts Council/ Project Grant and a NSERC/Project Grant. In addition to a Re-Opening Fund from the Department of Canadian Heritage, the Museum also received new grant money from DCH for our BIPOC Curatorial Mentorship Program. These latter funds will continue into fiscal 2023-2024. The Mentorship Program also continues to be supplemented by funds from the Office of the Provost. The Museum received an A rating from the Ontario Arts Council, ensuring the provision of Operating funds on an annual basis.

Attendance

In-person attendance at the Museum continues to be lower than pre-pandemic numbers as we come back from COVID. Hindered by a partial closure in fall 2021 and a full closure in winter 2022, our numbers fell accordingly. That said, recent data from the sector suggests that in-person attendance numbers will remain low for at least the next two – three years. The American Alliance of Museums noted this past year that they do not expect to see a return to pre-pandemic attendance levels in museums across the nation until at least 2024. That said, numbers for programs versus gate, continue to be strong at the MMA. The latter undoubtedly due to the provision of both in-house and on-line educational and public programs.

In terms of digital attendance, numbers continue to climb. Website, 54,223 views; Youtube, 17,392 views; Instagram, 3,568 followers; Twitter, 3,421 followers; and Facebook, 3,011 followers. These are increases of 57%, 9%, 17%, 2% and 12% respectively. The Museum e-newsletter has 1,800 subscribers and our QR coded campus sculpture and architecture tours logged 441 and 361 views respectively.

Awards

In the community, the Museum was recognized in the Hamilton Spectator’s Readers’ Choice Awards as Best Art Gallery (Platinum) and Best Museum (Shortlist – Top 10).

2021/2022 Highlights

Collections

In 2021/2022, the collection grew by 193 works of art. Thirteen were purchased and 180, donated. Highlights of purchases are works by Rajni Perera, Tim Whiten, Jason Baerg, and Ernest Daetwyler. Highlights from donations include work by Fritz Scholder, Honore Daumier, Arthur Lismer and Pablo Picasso. A significant donation of 124 prints was received from the Walter Gramatte Foundation in Winnipeg, Manitoba, and another thirty-eight from McMaster alumnus John Hansler. In terms of the Foundation accession, the Museum's German Expressionist and Weimar Period collections are nationally recognized and surely inspired this major donation. In terms of the Hansler art works, the donor had previously made a significant contribution to the Museum and these final thirty-eight works represent the remainder of his collection.

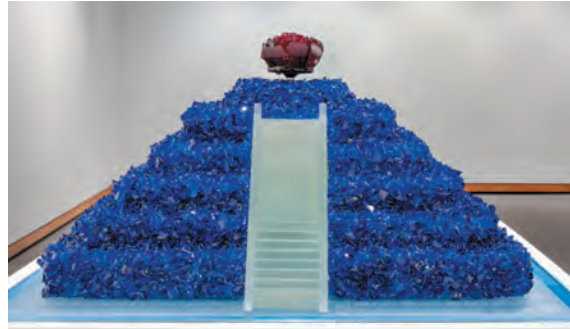
(Appendix 2: Acquisitions to the Permanent Collection)

Works from the Museum's collection were borrowed this past year by five Canadian and international cultural institutions and toured to seven institutions in that context, including the Contemporary Art Gallery, Vancouver; the National Gallery of Canada; and Eastside Projects, London, UK.

(Appendix 3: Permanent Collection Works on Loan)

Finally, in terms of ongoing research into the collections, the Museum has been actively undertaking provenance research of McMaster's collection for many years. This work follows the best practices set out by the *Holocaust-Era Provenance Research in Canadian Art Museums and Galleries* (CHERP) guidelines initiated by the Canadian Art Museum Directors Organization (CAMDO) (and of which the MMA was a partner organization).

All artworks of European origin dated up to 1945 in the Museum's collection have been researched using the numerous references provided by CHERP to assist in identifying lost and looted artwork. In 2017, one painting in particular was discovered on one of the many lost art databases. Further research was carried out over several years to attempt to identify the original owner. The museum consulted dozens of sources such as the National Archives, Ardelia Hall Collection in Washington, D.C. (the so-called "Monuments Men" division),



Tim Whiten, *Arisearose* [detail], 2018. McMaster Museum of Art collection.

the French Ministry of Culture, digitized libraries in Europe and the United States, including hundreds of scanned auction catalogues found at the Heidelberg University Digital Library, in an effort to trace the journey of this painting during WWII.

In 2022, a French notarial firm representing a family claiming ownership of this very same painting contacted the museum. We learned that our painting had been attributed to different artists during its lifetime, which might explain why we had not been able to locate certain documentation. We have now retained an expert in provenance research to direct and assist our investigation of this inquiry. The museum holds firmly to transparency and good faith, and we look forward to resolving this matter in due course.

In terms of our print collection, a German museum collection stamp belonging to the Kunsthalle Hamburg was discovered on the verso of our Ernst Barlach woodcut titled *Kindertod* from 1919. We discovered the print had been confiscated from their permanent collection by the Nazi regime in 1937, as it was considered "degenerate art". The curator from this institution confirmed that the object number inscribed on the back of our print matched their catalogued information. Our offer to return the work was declined, however, and the Kunsthalle Hamburg very kindly allowed McMaster to retain ownership of the print, thanking us for the knowledge of its location.

There are presently some outstanding matters concerning prints from our German Expressionist collection which are marked with stamps indicating questionable provenance. We have contacted the appropriate individuals, scholars and institutions regarding our concerns and these files remain open and active.

2021/2022 Highlights

Exhibitions

In 2021/2022, the Museum produced nine exhibitions: one borrowed, one student-focused, two antiquities/numismatics (collection) focused, one collection-based, and four in-house produced contemporary exhibitions. The borrowed project was a partnered collaboration between faculty at the University of Alberta and the Museum. *Immune Nations* brought to our audiences a compelling, challenging, and engaging consideration of the vaccine question. With works of art collaboratively produced by teams of artists, scientists, health care professionals and global health policy experts, vaccine hesitancy, resistance, efficacy, and distribution were debated through works of art. There was no denying the timeliness of the exhibition and associated public programming. The Museum received an NSERC grant to support the exhibition's presentation in Hamilton and the production of a 200+ page exhibition catalogue. Also, during the summer and into September 2021, the Museum produced the exhibition project, *enawendewin: relationships*, exploring Indigenous gardens and healing. Comprised of both art in public places and virtual exhibitions, the project provided a public hesitant to return to in-museum visits, an opportunity to nevertheless participate in exhibitions at the MMA!

In winter 2022, the Museum opened three exhibitions: *Scapegoat: nichola feldman-kiss*, *Elemental/Ethereal: Tim Whiten*, and *Serial Production: Numismatics and Antiquities* from the Permanent Collection. The latter exhibition was curated by Dr. Spencer Pope, Department of Classics, and augmented with the first catalogue of the numismatic collection, a collection that has grown on campus since the early 1970s.

Challenging the narrative of the public museum, the exhibitions by feldman-kiss and Whiten, asked audiences to take a critical look. nichola feldman-kiss is an artist researching corporeality, identity, and autobiography. Their process-rich practice is a relational exploration of body and embodiment, witness and traumatic memory, statelessness and belonging, empathy and collectivity. feldman-kiss' hybrid media installations – pristine as laboratory craft – critique the colonial paradigm (the violent ingestion of land, resources, peoples, and cultures), and asked us to reconsider difficult questions about what it means to be conscious social bodies in the contemporary moment. The exhibition, which included photography, audio, video, digital and



Immune Nations catalogue.



Dr. Spencer Pope, Department of Classics, installing *Serial Production: Numismatics and Antiquities* at McMaster Museum of Art, 2021.

2021/2022 Highlights

performance interventions, laid bare the entanglements of the globalized order that insist rights onto some, while withholding the same entitlements from others. scapegoat was a provocation and an elegy, attending to generational traumas through dignity and defiance.

Tim Whiten's solo exhibition, *Elemental: Ethereal*, featured a selection of early to recent work – from the late 1970s onward – exploring Whiten's ongoing investigations into the nature of consciousness and its effect on the world. In his over fifty years of creating cultural objects, Whiten has come to understand creativity as an essentially spiritual activity, inspired by ancient mythologies and processes of material transformation. He frequently works with glass, a precarious medium he has used skillfully since the 1980s, highlighting its luminosity and transparency as a key to infinity and divine knowledge. His use of viscerally-charged organic materials (including wood, bone, hair and leather) unite the everyday with the esoteric and extends to two and three-dimensional forms, site specific works, ritual performances and mixed-media installations. *Elemental* was part of an expanded, multi-venue retrospective and collaborative publication of Tim Whiten's career developed between the Art Gallery of Peterborough, Art Gallery of York University, Robert McLaughlin Gallery, and McMaster Museum of Art from 2022 to 2023. This series of curated exhibition projects are thematically united by the classical elements of air, water, earth, and fire – referencing Whiten's interest in alchemical practices. *Elemental: Ethereal* touches on aspects of the air element with its associations to the celestial, ephemeral and intangible. Evocative three-dimensional works mediated transcendence and transformative states of being, marking the passages between life and death towards the eternal. Whiten's profound understanding of relics, sacred symbols, magic, and ancestral knowledge are unbounded by time and space, emphasizing the importance of spiritual illumination and wonder throughout human existence.

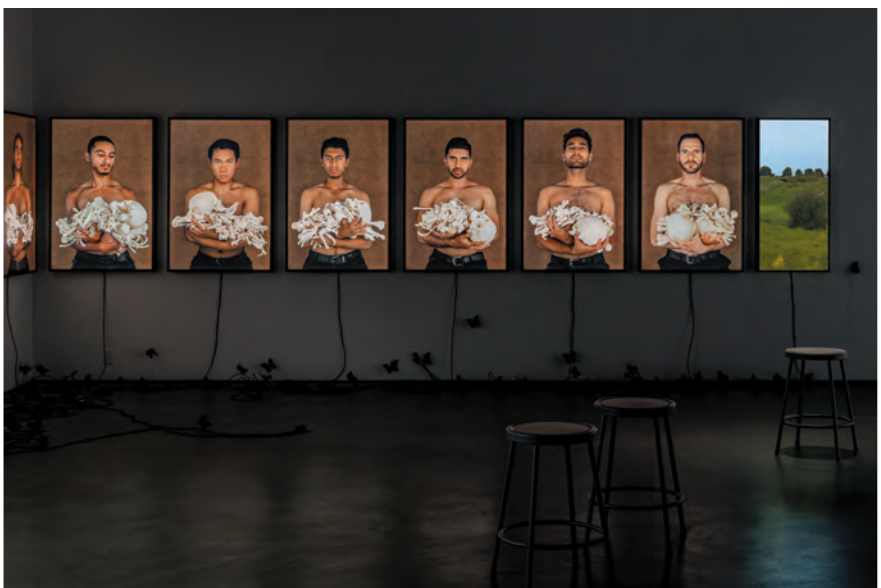
In spring 2022, the Museum collaborated on the production of, and hosted, the annual graduation exhibition for the School of the Arts, Studio program. *Taking Space* was the first in-person student exhibition since 2019. As the guest curator, Sahra Souidi, (contracted by the Museum), noted, "the role of being an artist is wearing what you believe in on your sleeve and risking vulnerability in the face of constant change. To be an artist today suggests that we inspire, create, and form futures worth fighting for. Taking space means daring to be bold, seen, and

heard. The 2022 SUMMA exhibition *Taking Space* does exactly that. Through *Taking Space*, these young visionary artists explore the connections between their craft and their principles, finding innovative ways to share their emerging art practices."

To close out the year, in summer 2022, we opened one collection-based and one contemporary exhibition: *what sustains us* and *NIIPA 20/20*. *what sustains us* celebrated the mutually sustaining relationships Inuit have with sila (weather), nuna (land), imaq (water), piruqtuminiit (plants) and nirjut (animals), with ourselves, and with each other. *NIIPA 20/20* presented over 150 photographic works by fifty alumni photographers of the Native Indian/Inuit Photographers' Association (NIIPA). Created between the early 1980s and the early 2000s, and sourced from NIIPA's permanent collection and past exhibitions, the photographs in *NIIPA 20/20* visualized the diverse interests and concerns of the alumni photographers and promoted a positive, realistic, and contemporary image of Indigenous life on Turtle Island. *NIIPA 20/20* celebrated the individual and collective artistic achievements of the alumni photographers, and the dedicated staff that supported the presentation of their photographic works over the span of NIIPA's 20-year history. The exhibition was the culmination of a five-year archival research project shining light on the Native Indian/Inuit Photographers' Association, an Indigenous arts service organization founded in Hamilton in 1985, which played a critical role in advocating for, supporting, and building a community of emerging and established Indigenous photographers in Canada and the United States. (Appendix 4: 2021-2022 Exhibition Schedule)



The 2022 SOTA graduating class at the opening reception for *Summa 2022: Taking Space*. Photo by Georgia Kirkos, McMaster University.



2021/2022 Highlights

Education & Public Programs

The Museum provides ancillary programming in two areas: education and public programs. Education programs are those programs geared towards groups (campus, community, and school), and are distinguished by offerings at the elementary, middle, high school, and community level as well as, post-secondary offerings. Educational programs take the form of formal courses, tours of exhibitions, hands-on workshops, and so forth. They are broadly content rich in areas related to art, culture and society, museum practices, and health and wellness, as well as reflecting on the thematic and artistic content of the exhibitions in the museum. Public programs are comprised of those events that specifically address the exhibition content in the museum at any given time and are geared towards a general museum-going audience. Programs take the form of receptions, artists' talks, lectures by guest speakers, panel discussions, artists' performances, film and video screenings, music performances and so on. From year-to-year, the variety, breadth, and number of education and public programs produced by the MMA is significant. Most notable in the current period is the on-going commitment to the provision of hybrid programs.



MMA Education Officer Teresa Gregorio guides a school group through the *what sustains us* exhibition.

In 2021/22, the museum provided directed post-secondary (undergraduate, graduate and faculty), and postsecondary professional and adult, programs through a variety of courses and workshops. The Museum and Department of Family Medicine (DFM) program, *The Art of Seeing*, provided sessions for DFM; McMaster Continuing Education, Strategic Leaders; Midwifery, and master's in science, Midwifery; Social Sciences Staff Retreat; and Queen's University Health & Humanities Conference. Post-secondary offerings also included work with McMaster Children & Youth University; McMaster Continuing Education, 55+ Courses. Research collaborations at the post-secondary level took place between Museum education staff and DFM on three projects (visual inquiry, past participants, and Indigenous teaching through art), and with McMaster's iBiomed Program in association with the Health & Engineering, Science and Entrepreneurship Specialization program, as well as through the supervision of a student in the Health Sciences Inquiry course, 3H06.

At the school and community level, the Museum developed and presented two new programs in 2021/22 and developed (continuing and new) programs with the following: Hess Street Elementary School, Westdale High School, Hamilton Wentworth District School Board, and McMaster Employee Health and Well-Being. More broadly, the Museum provided tours to twenty-five campus groups, twelve community groups and fourteen school groups. The Museum continued to deliver its annual programming in support of several local campus and community events, among them Hamilton Winterfest, Hamilton Arts Week, Culture Days and Slow Art Day (national), as well as McMaster Alumni Day, Welcome Week, Take Our Kids to Work Day, and all Summer and March Break Camps.

Also in the community, the education staff of the MMA, Nicole Knibb, Senior Education Officer and Teresa Gregorio, Education Officer, actively participate in leadership roles in sector service organizations such as the Hamilton-Area Museum Educators and the Canadian Art Gallery Educators groups. (Appendix 5: Details regarding specialized programs, general tours, research contributions and community outreach related to the educational programs of the MMA, as well as professional development for museum education staff).



MMA Senior Education Officer Nicole Knibb leads a group from McMaster Social Sciences through the Art Gallery of Hamilton as part of *The Art of Seeing* program.

2021/2022 Highlights

Marketing & Promotion

Communications activities at the Museum include managing the Museum’s website and online/social media presence, promoting exhibitions and events, and conducting media outreach. During the reporting period, the Museum was in a hybrid environment. While some exhibitions and programs took place in person, we also retained a strong virtual presence in order to cater to people’s comfort levels engaging with in-person activities.

Efforts to increase and broaden our social media presence continued, resulting in a significant increase in followers across all social media platforms. We also saw our website presence return to pre-pandemic levels and beyond, with an increase of 57% of page views in comparison to the previous reporting period. This significant increase can be attributed to a fuller exhibition and events schedule bringing more people to the website, as well as the new and accessible design supporting a user-friendly experience. Virtual events were well attended throughout the reporting year, and we continue to see interest in virtual events as viewings of recordings on YouTube rise. In terms of media, there were a range of publications throughout the year, and in comparison to the previous reporting period the M(M)A appeared in approximately 50% more publications and in 70+ news pieces.

In addition to the activities outlined above, several other communications focused projects were completed during the reporting period, including: Completion of a year’s long project of adding/updating closed captioning to all videos on the MMA’s YouTube channel to enhance accessibility; launch of a new online tour on McMaster campus – the architecture audio tour – hosted on izi.tours and promoted via social media and physical postcards distributed at the museum; updating all the wayfinding and signage including plaque posters in the museum to refresh the physical space and complement our online brand; production of outdoor signage for all MMA owned campus sculptures, to offer visitors context and information about art works and to highlight the museum’s physical presence throughout campus; production of virtual exhibition tours using the new online platform ME-TOUR; assisting with creation of a museum website on the McMaster campus bookstore to

facilitate the sale of museum catalogues; and, production of a new MMA tote bag to hand out to students during Clubs Fest and throughout the 2022 year. The bags represent a unique artist collaboration between the museum and artist, Hiba Abdallah whose neon sculpture graces the front façade of the Museum.

Social Media

The objective with respect to social media this year was to enhance the M(M)A’s public presence, engagement and relationship with the McMaster community, the arts community (local, national, international), and the general public. Social media feeds are updated regularly: at least 3x week on Instagram, with daily posts on Instagram stories, 3x week on Facebook, and 2-5x week on Twitter. Content includes information on exhibitions, education, public events, collection, and industry/community. Statistics show that our audience is predominately female across all platforms (over 70%), 25-45 years of age.

In the reporting period we saw increases across all social media platforms, the most significant being on Instagram (17%). Follower increases remain strong on Facebook (12%) and views on YouTube (8.5%). The slowest growing platform, although still rising, is seen on Twitter (1.5%) – an accurate reflection of our audience being predominantly young adults and a signifier of the direction of the social media landscape. (Appendix 6: Communication Report/UserX)

Media Coverage

Print & digital articles about McMaster exhibitions, programs, and activities appeared in more than 70 stories* with local, national, and international publications throughout the period, including the AGO Insider, Border Crossings, Muskrat Magazine, and Education News Canada, among others. (Appendix 7: Media Summary)

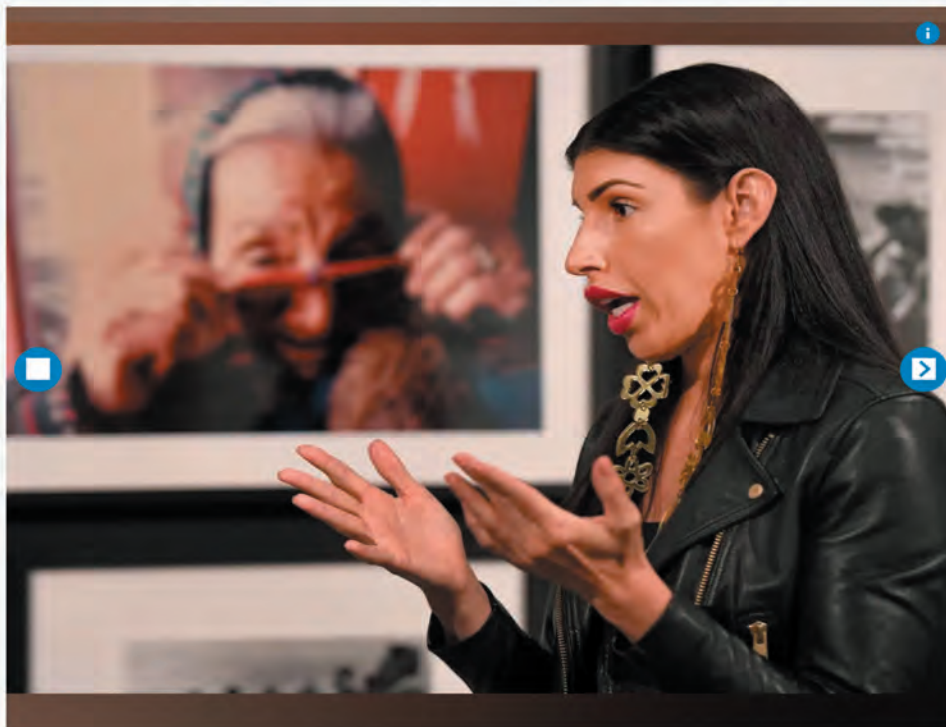
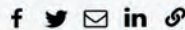
ENTERTAINMENT OPINION

Unveiling 20 years of Indigenous photographic art

New McMaster exhibition presents 160 photos by more than 50 artists



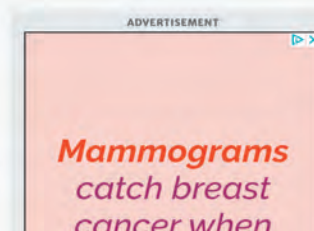
By **Graham Rockingham** Contributing Columnist
Thu., June 9, 2022 3 min. read



The establishment of the Hamilton-based Native Indian/Inuit Photographers Association (NIIPA) in 1985 was a landmark moment in the growth of Indigenous art in Canada and the United States.

For 20 years, NIIPA provided an important national networking tool for Indigenous artists, offering materials, training and encouragement, as well as gallery space and touring exhibitions.

Until its inception, photography had typically portrayed Indigenous life through cliched and negative stereotypes captured through white lenses. Indigenous photographers often worked in isolation on the periphery of the art world.



Review of the *NIIPA 20/20* exhibition in The Hamilton Spectator (Print and Online), front page of the Entertainment section, June 2022



MCMASTER MUSEUM OF ART ANNUAL REPORT APPENDICES

REBOOT, REMAKE, RECONTEXTUALIZE

BRIGHTER WORLD | mcmaster.ca



Museum of Art

Appendix One: Institutional Achievements, 2007 - 2022

OPERATIONS

Including: **FUNDING** (exceptional grants); ORGANIZATIONAL COMPETENCE & DEVELOPMENT; DIGITAL & SOCIAL MEDIA LAUNCHES, PLATFORMS & DEVELOPMENT; COLLECTIONS MANAGEMENT; FACILITIES UP-GRADES; AWARDS; & **exceptional circumstances**.

2007 – 2015 **City of Hamilton**, COMMUNITY PARTNERSHIP GRANT (as of 2016, MMA no longer eligible for City grants.)

2007 FACEBOOK LAUNCHED

2008 LAUNCH OF INTER-DISCIPLINARY, COLLABORATIVE EXHIBITIONS WITH MCMASTER FACULTY (Psychology, Neuroscience & Behavior; Physics & Astronomy; Classics; Theatre & Film Studies; English & Cultural Studies; Indigenous Studies Program; Radiation Sciences; Anthropology; Studio Art; Department of Family Medicine, Psychiatry; History and so on)

2008 ONTARIO ASSOCIATION OF ART GALLERIES, Curatorial Writing Award, Guest Curator Mark Cheetham, for the essay “The Transformative Abstraction of Robert Houle,” in the MMA publication, [Troubling Abstraction: Robert Houle](#).

2009 STRATEGIC PLAN 2009-2014 (First in Museum’s history, funded by a grant from **Department of Canadian Heritage**, facilitated by Lord Cultural Resources)

2009 FACILITY REPORT CREATED (UP-DATED 2022)

2009 BLOG LAUNCHED

2010 ADVISORY COMMITTEE, transition from Administrative Board to Advisory Committee, TERMS OF REFERENCE as per University/ College Art Gallery Association of Canada

2010 EMERGENCY DISASTER RESPONSE PLAN CREATED (UP-DATED 2022)

2010 BUDGET REPORT (7 YRS FORWARD)

2010 **University allocation to the MMA is increased by 60%.**

2010 GEO-CACHE LAUNCHED

2010 DIGITIZATION OF PERMANENT COLLECTION (funded by a matching grant from **Department of Canadian Heritage**, matching component from **private donor**)

2010 TMS/THE MUSEUM SYSTEM COLLECTION DATABASE (acquired state-of-the-art, museum community inventory system and populated, funded by donation from **private donor**)

2010 MMA/DEPT OF FAMILY MEDICINE, VISUAL LITERACY PROGRAM, THE ART OF SEEING, Trade-marked in 2014; (1 of 4) Electives for Family Medicine Residents, CCE leadership course launched in 2016; among several others.

2010 ONTARIO ASSOCIATION OF ART GALLERIES, Design Award, Branka Vidovic, NeoGraphics, Hamilton, for the MMA publication [Leonard Baskin](#).

2010 ONTARIO ASSOCIATION OF ART GALLERIES, Design Award, Underline Studios Inc., Toronto, for the publication [Shelagh Keeley](#), MMA in partnership with the Robert McLaughlin Gallery, Oshawa.

2011- ON-GOING **Ontario Arts Council Annual Operating Grant.**

2011 INSURANCE REVIEW

2011 SECURITY UP-GRADE

Appendix One: Institutional Achievements, 2007 - 2022

- 2011 GO-GREEN, E-INVITES
- 2011 TWITTER LAUNCHED
- 2011- 2014 PAINTING ANALYSIS RESEARCH PROJECT (funded by [McMaster University, Office of Research](#) and through a grant from [Department of Canadian Heritage](#))
- 2011- 2015 ANTIQUITIES & NUMISMATIC RESEARCH PROJECT, Dr. Spencer Pope and the Department of Classics
- 2011 POLICIES & PROCEDURES MANUAL REVISED (UP-DATED IN 2021, decolonial review/CPAMO 2022)
- 2011 SECURITY & MONITORING PROCEDURES REVISED (UP-DATED IN 2019)
- 2012 E-MUSEUM LAUNCHED
- 2013 MMA YOUTUBE CHANNEL LAUNCHED
- 2014 WEB REDESIGN
- 2014 DEMOGRAPHIC/USER SURVEY (conducted by Hill Research Strategies Inc.)
- 2014 FIRE SYSTEM UP-GRADE
- 2014 DE-ACCESSIONING PLAN CREATED
- 2014 MUSEUMS ASSISTANCE PROGRAM, ACCESS TO HERITAGE GRANT, \$189,000, for *The Unvarnished Truth: exploring the material history of paintings.* [Department of Canadian Heritage.](#)
- 2014 STRATEGIC PLAN, 2015-2020 (funded through a Compass Grant from the [Ontario Arts Council](#), facilitated by Good Consulting)
- 2015 PARTNER. CAMDO HOLOCAUST-ERA PROVENANCE RESEARCH & BEST PRACTICES GUIDELINES. Along with Royal Ontario Museum, Montreal Museum of Fine Arts, National Gallery of Canada, Art Gallery of Ontario, Art Gallery of Windsor, University of Lethbridge Art Gallery and Winnipeg Art Gallery. To develop a Holocaust-era provenance research and restitution plan for Canada.
- 2015 *The Unvarnished Truth: exploring the material history of paintings* INTER-ACTIVE WEB SITE (New Motto, Hamilton), launched, active until end of tour, Summer 2017
- 2015 MUSEUMS ASSISTANCE PROGRAM, ACCESS TO HERITAGE GRANT, \$100,000, Living Building Thinking: art and expressionism. [Department of Canadian Heritage.](#)
- 2015 – 2018 Living, Building, Thinking: art & expressionism EXHIBITION TOUR, Venues: Art Gallery of Alberta, Edmonton, AB; Vancouver Art Gallery, Vancouver, BC
- 2015 Launch of MMA IN THE COMMUNITY, public programs off-site with Carnegie Gallery, Super Crawl, Downtown Health Centre, Mills Hardware, b contemporary, and Hamilton Arts Council
- 2015 Launch of the MMA ARTISTS' GARDEN. An on-going garden site for artistic projects in front of the museum proper. New projects every two years.
- 2016 – 2017 *The Unvarnished Truth: exploring the material history of paintings* EXHIBITION TOUR, Venues: Art Gallery of Alberta, Edmonton, AB; Thunder Bay Art Gallery, Thunder Bay, ON; Agnes Etherington Art Centre, Queens University, Kingston, ON
- 2016 MUSEUM PERISCOPE LAUNCHED

Appendix One: Institutional Achievements, 2007 - 2022

- 2016 MUSEUMS ASSISTANCE PROGRAM, ACCESS TO HERITAGE GRANT, \$105,000, Levy Legacy: A Cultivating Journey. [Department of Canadian Heritage](#).
- 2016 LIGHTING RENOVATION, Main Floor, Contemporary Galleries, funded by [McMaster University](#).
- 2016 ABORIGINAL CURATORIAL RESIDENT, Rheanne Chartrand, July 2016 – June 2017, funded by the [Office of the President and Office of the Provost, McMaster University](#).
- 2017 LIGHTING RENOVATION, Fourth Floor Galleries & Lobby, funded by [McMaster University](#).
- 2017 – 2019 A Cultivating Journey: The Levy Legacy EXHIBITON TOUR, Venues: Vancouver Art Gallery, Vancouver, BC; & Kelowna Art Gallery, Kelowna, BC.
- 2017 - 2020 INDIGENOUS CURATOR, July 1, 2017 – June 30, 2019. Funded by the [Office of the Provost, McMaster University](#).
- 2017 COLLECTIONS STORAGE UP-GRADE (\$50,000). Funded by the [Department of Canadian Heritage](#), Museum Assistance Program.
- 2017 LAUNCH OF N. GILLIAN COOPER EDUCATION PROGRAM, funded by [donor N. Gillian Cooper](#).
- 2017/2018 UP-GRADE OF MUSEUM SECURITY SYSTEM/HARDWARE, funded by the [Office of the Provost](#).
- 2018 EDUCATION PROGRAM expansion, from 2 to 5 education program staff.
- 2018 Launch of TAKING STOCK, a de-colonization strategy for the MMA.
- 2019 CURATOR OF INDIGENOUS ART, permanence.
- 2019 [UP-GRADE TO MUSEUM ENVIRONMENTAL SYSTEM](#). Required 5-month facility shut down: March 25 through August 24, 2019.
- 2019 FACILITY REPORT revised
- 2019 SECURITY & MONITORING PROCEDURES revised
- 2019 ART IN THE SCHOOLS - April – August, 2019, taking art education to schools throughout the region: 114 teachers, 24 schools!
- 2019 PUBLIC ART PROJECT - commissioning of a public art work (neon) by Toronto-based artist, Hiba Abdallah, for the façade of Museum.
- 2019 SENIOR CURATOR – HIRE, Pamela Edmonds, with a curatorial practice based in cross-cultural and inclusive curatorial practice, de-colonization, cultural equity and emancipating collections
- 2019 PROJECT GRANT, for the production of the exhibition Peripheral Vision(s): Perspectives on the “Indian” image by 19th century Northern-Plains warrior-artists, Leonard Baskin and Fritz Scholder. \$101,000 CDN. [TERRA Foundation for American Art, USA](#).
- 2019 ONTARIO ASSOCIATION OF ART GALLERIES, 2019 VOLUNTEER OF THE YEAR AWARD, awarded to Dr. Douglas Davidson for over 26 years of work in support of the Museum’s permanent collection.
- 2020 LAUNCH OF MMA STRATEGIC PLAN 2020 – 2025. Facilitated by Carol Good, Good Consulting, Inc. Funded, in part, by the [Office of the Provost](#).
- 2020 [MARCH – DECEMBER – COVID-19 PANDEMIC, Year One – CLOSED to in-person visits](#).
- 2020 INSTITUTIONAL RE-BRAND, M(M)A, led by Underline Studios Inc., Toronto, winner of the Advertising & Design Club of Canada’s 2019 Design Studio of the Year Award.

Appendix One: Institutional Achievements, 2007 - 2022

- 2020 DIGITAL UP-GRADES: Re-designed website and all social media platforms with Underline Studios; development by Pear Interactive; up-graded online database, e-museum, to most current edition with TMS; up-graded hardware requirements through McMaster's RHPCS; initiated Digital Strategies Committee to review potential for digital innovations including virtual exhibitions, augmented reality, open content publications, and digital storytelling, among other possibilities.
- 2020 SECTOR DEVELOPMENT GRANT, for the Museum's BIPOC CURATORIAL MENTORSHIP PROGRAM. The first program of its kind in Canada. Funded by [Canada Council for the Arts](#) and in part by the [Office of the Provost](#).
- 2020 BIPOC CURATORIAL MENTORSHIP PROGRAM is launched with the first two mentees, Stylo Starr and Erin Szikora.
- 2020 COVID-19 EMERGENCY SUPPORT FUND FOR CULTURAL, HERITAGE & SPORT ORGANIZATIONS Grant, \$100,000 for fiscal 2020-21. [Department of Canadian Heritage](#).
 COVID RESPONSE Grant, doubles our operating funds in 2021, \$49,350. [Ontario Arts Council](#).
 ARTS RESPONSE INITIATIVE Grant, 2021, \$15,000. [Ontario Arts Council](#).
 Above enable the move to the purely digital.
- 2021 [JANUARY – AUGUST - COVID-19 PANDEMIC, Year Two – closed to in-person visits](#).
- 2021 PROJECT GRANT, a grant to “encourage vaccine confidence in Canada,” to produce the exhibition Immune Nations: The Vaccine Project. \$45,500. [National Sciences & Engineering Research Council of Canada, \(NSERC\)](#).
- 2021 MUSEUM RE-OPENS to in-person visits with two context-relevant exhibitions: Immune Nations/The Vaccine Project, encouraging vaccine confidence in Canada and enawendewin, Indigenous gardens and healing!
- 2021 LAUNCH OF NEW DIGITAL FACE OF THE MUSEUM, Spring 2021.
- 2022 RE-OPENING FUND FOR CULTURAL, HERITAGE & SPORT ORGANIZATIONS, \$100,000, for April 21 – March 22. [Department of Canadian Heritage](#).
- 2022 COINS IN THE MCMASTER MUSEUM OF ART: THE GREEK AND ROMAN COLLECTIONS. First numismatic publication in the MMA's history, authored by Dr. Spencer Pope, Associate Professor, Department of Classics, McMaster University.
- 2022 Revisions to following institutional documents: Emergency Disaster Response Plan, Fire Procedures, Security & Monitoring Procedures, Facility Report.
- 2022 Research into Donor/Naming history of the McMaster Museum of Art and its galleries.
- 2022 COMMUNITY SUPPORT, MULTICULTURALISM AND ANTI-RACISM INITIATIVES, \$169,000 over two years, March 2022 – March 2024. [Department of Canadian Heritage](#).

Appendix Two: Acquisitions to the Permanent Collection

Rajni Perera (Canadian, b. Sri Lanka 1985)

Flood Mask, 2020
textile on gasmask
27.94 x 30.48 x 20.32 cm
Museum purchase
2021.001.0001

Suzy Lake (American/Canadian, b. 1947)

Reduced Performing: Blinking and Breathing #2, 2008
laminated chromogenic print, edition 2/3
203.2 x 81.28 cm
Gift of Danika Neumann and Sean Caulfield
2021.002.0001

Jamelie Hassan (b. 1948)

(Manuscript page), 2005-2015
Neon on photograph mounted to panel on
wood support
Unique work based on earlier smaller version
in larger format
101.6 x 72.3 x 12.7 cm
Gift of Liz Hassan
2021.003.0001

Fritz Scholder (Luiseño-American, 1937-2005)

Posing Indian #5, 1979
Monotype on handmade paper
76.2 x 56 cm
Gift of Joyce Zemans
2021.004.0001

Karel Appel (Dutch, 1921-2006)

Untitled, 1976 (Advance Man)
Lithograph on paper; artist's proof
50.8 x 45.7 cm
Gift of John Hansler, 2021
2021.005.0001

Untitled, 1976 (Jumping Hex)

Lithograph on paper
47 x 36.8 cm
Gift of John Hansler, 2021
2021.005.0002

Untitled, 1970 (*Flower Head*)

Lithograph on paper; 27/100
59.7 x 71 cm
Gift of John Hansler, 2021
2021.005.0003

Walter Bachinski (Canadian, b. 1939)

Still Life, 1982
Black and white monoprint; edition 1/1
29.3 cm x 29.3cm
Gift of John Hansler, 2021
2021.005.0004

Paul Vanier Beaulieu (Canadian, 1910-1996)

Abstract, 1963
Mixed media on paper
29.2 x 31.7 cm sheet
Gift of John Hansler, 2021
2021.005.0005

Fritz Brandtner (Canadian, born Germany 1896-1969)

City View #48, n.d.
Gouache, water colour and ink
22.2 x 20.3 cm sheet
Gift of John Hansler, 2021
2021.005.0006

Mixed Media, 1936

Mixed media on paper
34.2 x 54.6 cm
Gift of John Hansler, 2021
2021.005.0007

George Casprowitz (Canadian b. United States, 1940)

Split-Pea, 1974
Acrylic on shaped canvas
76.8 x 76.58 cm
Gift of John Hansler, 2021
2021.005.0008

William Henry Chandler (American, 1854-1928)

Cottage, River and Trees in Summer, n.d.
Pastel on heavy paper
51 x 21 cm sheet

Appendix Two: Acquisitions to the Permanent Collection

Gift of John Hansler, 2021
2021.005.0009

Honore Daumier (French, 1808-1879)
Après l'audience, from the series *Les Gens de Justice*, 1845-1848
Lithograph on Arches paper; edition 135/500
31 x 37 cm
Gift of John Hansler, 2021
2021.005.0010

Le Bon Argument, from the series *Les Gens de Justice*, 1850-1855
Lithograph on paper; edition 390/500
29.5 x 36 cm
Gift of John Hansler, 2021
2021.005.0011

Notre retraite s'est opérée dans le plus grand ordre! 1859
Originally featured in the series 'Actualités' from 'Le Charivari', No. 75
Lithograph on paper
26 x 35 cm sheet
Gift of John Hansler, 2021
2021.005.0012

L.L. FitzGerald (Canadian 1890 – 1956)
Abstract, 1953
Coloured pencil drawing
46.3 x 18.4 cm sheet
Gift of John Hansler, 2021
2021.005.0013

William Frampton (Canadian, b. 1946)
June Sundance, 1975
Acrylic on canvas
132 x 114.3 cm
Gift of John Hansler, 2021
2021.005.0014

Frederick Hagan (Canadian, 1918-2003)
Walking and Listening; part IV of XII from *The Ladders*, 1954
Lithograph on paper; edition 28/29
35.6 x 22.8 cm
Gift of John Hansler, 2021

2021.005.0015

Peter Haworth (Canadian b. England, 1889-1986)
Tree Forms in Winter, c. 1957
Oil on board
49.3 x 61 cm
Gift of John Hansler, 2021
2021.005.0016

Tom S. Hodgson (Canadian, 1924-2006)
Cool, 1959
Watercolour and gouache
58.4 x 73.6 cm
Gift of John Hansler, 2021
2021.005.0017

Roy Kiyooka (Canadian, 1926-1994)
Cleft Circle no. 2, 1965
Oil on canvas
58.4 x 58.4 cm
Gift of John Hansler, 2021
2021.005.0018

Harold Klunder (Canadian b. Netherlands, 1943)
Eagle's Nest, 1980-1982
Oil on canvas
91.4 x 61 cm
Gift of John Hansler, 2021
2021.005.0019

Sketch for Everlast, 1979
Mixed media on graph paper
102.8 x 64.7 cm sheet
Gift of John Hansler, 2021
2021.005.0020

Fernand Leduc (Canadian, 1916-2014)
Project #10, 1973
Gouache on board
35.2 x 35.2 cm
Gift of John Hansler, 2021
2021.005.0021

Arthur Lismer (Canadian 1885-1969)

Appendix Two: Acquisitions to the Permanent Collection

Cape Breton Coast, N.S., c. 1946
Crayons on cream coloured paper
48.2 x 67.3 cm sheet
Gift of John Hansler, 2021
2021.005.0022

Kazuo Nakamura (Canadian, 1926-2002)
Spatial Concept 4, 1970
Oil on canvas
58.4 x 43.1 cm
Gift of John Hansler, 2021
2021.005.0023

Pablo Picasso (Spanish, 1881-1973)
May Day Pole Dance, n.d.
Lithograph on paper; prints pulled after signed edition completed
25 ½ x 20" sight
Gift of John Hansler, 2021
2021.005.0024

Pan Playing Pipes, 1959
Lithograph on paper; prints pulled after signed edition completed
64.7 x 34.2 cm
Gift of John Hansler, 2021
2021.005.0025

William Ronald (Canadian, 1926-1998)
Abstract Composition, 1956
Watercolour on paper
43.1 x 48.2 cm
Gift of John Hansler, 2021
2021.005.0026

Homage to Caspar David Friedrich (or Untitled, 1979), 1980
Oil on canvas
71 x 71 cm
Gift of John Hansler, 2021
2021.005.0027

Sundance, 1964
Watercolour on paper
45.7 x 261 cm sheet
Gift of John Hansler, 2021
2021.005.0028

Carl Schaefer (Canadian, 1903-1995)
Fence, 1932
Woodcut on paper; edition 7/50
12 x 12 cm
Gift of John Hansler, 2021
2021.005.0029

Headlands, 1931
Woodcut on paper; edition 9/30
12 x 12.7 cm
Gift of John Hansler, 2021
2021.005.0030

The Plain and Woodlot, Waterloo County, 1957
From the *Doon* series
Watercolour on paper
28 x 37.4 cm
Gift of John Hansler, 2021
2021.005.0031

Arthur Shilling (Ojibway, 1941-1986)
Self-portrait, 1978
Chalk on paper
30 x 22.8 cm
Gift of John Hansler, 2021
2021.005.0032

Self-portrait, 1978
Pencil on paper
38.1 x 31.7 cm
Gift of John Hansler, 2021
2021.005.0033

Self-portrait, 1979
Pencil on paper
40.6 x 33 cm
Gift of John Hansler, 2021
2021.005.0034

Self-portrait, 1979
Pencil on paper
40.6 x 33 cm
Gift of John Hansler, 2021
2021.005.0035

Appendix Two: Acquisitions to the Permanent Collection

Rolf Staude (German/Canadian d. 2011)

Hus-an-Diek (a scene from Northern Germany), 1994

Oil on canvas

60 x 45.7 cm

Gift of John Hansler, 2021

2021.005.0036

Harold Town (Canadian, 1924-1990)

Formal Sunset, 1956

Oil on canvas

37.4 x 38.1 cm

Gift of John Hansler, 2021

2021.005.0037

Michelangelo Looking at his Sculpture by Candlelight, 1959

White and black ink on blue paper

66 x 47 cm sheet

Gift of John Hansler, 2021

2021.005.0038

Margaret Atwood Poetry Book

Illustrated by Charles Pachter (Canadian, b. 1942)

Speeches for Doctor Frankenstein, 1966 (dated 1968)

Edition 3/15

Homemade paper including the illustrator's hair and blue jeans

25.4 x 33 cm

From the Estate of Miss Helen P. Marr

2021.006.0001

Pudlo Pudlat (Inuk, b. Amadjuak, Northwest Territories,

1916 - d. Cape Dorset, 1992)

Proud Hunter, 1987

No. 28 from the 1987 Cape Dorset Print catalogue

Stonecut on paper

55 x 61.5 cm

Gift of Pamela Chackeris

2021.007.0001

Startled Young Loons, 1987

No. 29 from the 1987 Cape Dorset Print catalogue

Stonecut on paper

55 x 68.5 cm

Gift of Pamela Chackeris

2021.007.0002

Tim Whiten (Canadian b. U.S.A., 1941)

Arisearose, 2016-2018

glass, wood, aqua-resin, maple

137.2 x 78.7 x 78.7 cm

Museum of Art Collection Trust

2021.008.0001

Hallelujah II, 2015

Handcrafted crystal-clear glass, lilac branches, brass fittings

152.40 x 213.36 x 48.26 cm; glass portion: 127 x 15.24 x 2.54 cm

Gift of the artist

2022.002.0001

Jason Baerg (Cree-Métis, b. 1970)

Kisik Pimiskanaw | ᐱᐱᐱᐱᐱᐱ | Sky Trail, 2014

Acrylic on laser cut steel (triptych)

335 x 670 cm installed

Museum of Art Collection Trust

2021.009.0001

Kisik Acimowina / Sky Story

Experimental single channel video; Ed. 1 of 4

Running time 6:43 min

Gift of the artist

2021.009.0002

Elizabeth Bradford Holbrook (Canadian, 1913-2009)

Bust of Aileen Peer, 1969

Bronze

35.5 x 27 x 28 cm

Gift of The Aileen (Lannin) & Edgar Peer Family

2022.001.0001

Medallion of Edgar T. Peer, c. 1990s

Plaster

25.3 x 25 x 1.8 cm

Gift of The Aileen (Lannin) & Edgar Peer Family

2022.001.0002

Sean Caulfield (Canadian b. U.S.A., 1975)

with Timothy Caulfield (Canadian b. U.S.A., 1963) and Sue Colberg

Infodemic, artist's book, 2020

relief and inkjet on rag paper

Appendix Two: Acquisitions to the Permanent Collection

58 × 116 cm full sheet
Gift of the artist
2022.003.0001

Norval Morrisseau (Ojibway, 1932-2007)

My Granddaughter, 1979
Serigraph on paper; 58/500
50.8 × 33.7 cm
Gift of McMaster University
2022.004.0001

Jim Johnny (Kwagiulth and Coast Salish First Nations, b. 1942)

Double headed sea serpent, c. 1970s
Serigraph on paper; edition 48/300
36.8 × 58.4 cm
Gift of McMaster University
2022.004.0002

Gordon Rayner (Canadian, 1935-2010)

Two Weavers
Oil on canvas
213.4 × 182.9 cm
Gift of McMaster University
2022.004.0003

Robert Markle (Canadian, 1936-1990)

Abstract painting
Acrylic on canvas
152.4 × 182.9 cm
Gift of McMaster University
2022.004.0004

Leonard Baskin (American, 1922-2000)

Hanged Man, 1955
Woodcut on paper
213.4 × 100.3 cm
Gift of N. Jane Pepino
2022.005.0001

Walter Gramatté (German, 1897-1929)

124 woodcuts on paper:
Ein Puppenspiel (four prints), 1917-1918
Die große Angst, 1917 - 1918
Aufschrei, 1918

Müder Soldat II, 1919
Der große Irre mit der Fahne, 1919
Der Traum von den Fischen, 1919
Träumende, 1919
Mädchen I (2 prints) and *II*, 1919
Novemberporträt, 1919
Frau II (two prints), 1920
Frau, 1920
Selbstporträt mit verschränkten Armen, 1922
Mann vor der Tür, 1922
Das Gesicht (eleven prints), 1922
Kopf im Profil, 1923
Mädchen mit Hand (three prints), 1923
Revolutionär (two prints), 1919
Josef Blatt 1 and 2, 1923
Hinströmen, 1919
Der Beglückte, 1919
Der Lauschende (two prints), 1925
Selbstbildnis, 1925
Till Uilenspiegel (two prints), 1925
Mit dem Selbstmord Spielen (two prints), 1919
Sonia, 1927
Russisches Mädchen mit Halskette (three prints), 1927
Edlef, 1920
Tragische Sendung, 1920
Die Komponistin, 1920
Abschied (two prints), 1920
Lazerett-Speiseraum (three prints), 1916
Der Rebell, 1918
35 prints from the series *Der Mantel*, 1918
Der lebende Leichnam (ten prints), 1919
Für Pina, 1919
Mann, 1919
Mann (Der Mörder), 1919
Qual (three prints), 1920
Lauschende (four prints), 1920-21
Herrenbildnis, 1922
Männerkopf mit Häusern (two prints), 1923
Nächtliche Szene (three prints), 1923
Mädchen auf rechten Arm gestützt (two prints), 1923-1924
Liegender Löwe, 1915
Various dimensions
Gift of The Eckhard-Gramatté Foundation, Winnipeg
2022.006.0001 to 2022.006.0124

Appendix Two: Acquisitions to the Permanent Collection

Simon Frank (Canadian b. Scotland, 1968)

Core, 2003

Bronze tree root
22.9 x 8.9 x 6.4 cm

Gift of the artist
2022.007.0001

Ernest Daetwyler (Swiss/Canadian)

The Boat Project (everythingwillbefine), 2018

Driftwood from the Great Lakes, steel, galvanized steel, hardware
823 x 240 x 355 cm

Museum of Art Collection Trust
2022.008.0001

Sheouak Petaulassie (Inuk, 1923-1961)

Birds and Sea Spirit, c. 1960

graphite on paper
46.4 x 64.8 cm

Gift of John Geoghegan
2022.009.0001

Bidemi Oloyede (Nigerian, b. 1996)

Canada Day, Yonge-Dundas Square, Toronto, 2018

Baryta fine art print; AP 1/3
50.8 x 71.1 cm

Museum of Art Collection Trust
2022.010.0001

Yonge-Dundas Square, Toronto, Canada, 2019

Baryta fine art print
50.8 x 71.1 cm (Edition of 5)
Museum of Art Collection Trust
2022.010.0002

Ed Pien (Canadian, b. Taipei, Taiwan, 1958)

Interstellar, 2018

Ink on black paper
41.9 x 59.1 cm

Museum of Art Collection Trust
2022.011.0001

Wasteland, 2008-2012

Ink on 3M reflective laminate mounted to Shoji paper and ink on
Shoji paper

137.2 x 182.9 cm

Museum of Art Collection Trust
2022.011.0002

Kapwani Kiwanga (Canadian, b. 1978)

Subduction Study #5, 2017

Folded pigment prints on paper
Frame: 52.5 x 76 x 3 cm Edition of 5

Museum of Art Collection Trust
2022.012.0001

Subduction Study #6, 2017

Folded pigment prints
Frame: 61.5 x 74 x 3 cm Edition of 5

Museum of Art Collection Trust
2022.012.0002

Jan Wade (Canadian, b. 1952)

Memory Jug, 2020

Found materials: buttons, marbles, letters, wooden hand
73.7 x 30.5 cm (diameter)

Museum of Art Collection Trust
2022.013.0001

Breathe, 2009-2020

embroidery on linen
53.3 x 83.8 cm
Museum of Art Collection Trust
2022.013.0002

Marissa Y Alexander (Canadian)

The Dancers 2, 2022

handbuilt white stoneware with various glazes, epoxy and enamel
paints

49.5 x 45.7 x 40.6 cm
Museum of Art Collection Trust
2022.014.0001

Appendix Three: Works on Loan from the Permanent Collection

Exhibition Details / Borrowing Institution	Works on loan
<p>A Harlem Nocture: Deanna Bowen Organized by Contemporary Art Gallery, Vancouver</p> <p>Tour schedule: 1. OBORO, Montreal: September 12 - October 14, 2020 2. Walter Phillips Gallery, Banff, AB: April 15 - July 18, 2021 3. Thames Gallery, Chatham, ON: September 3 - November 7, 2021</p>	<p>Deanna Bowen (Canadian, b. U.S.A., 1969) <i>Donna (afterimage)</i>, 2019 Black opaque Plexiglas 73.6 x 180.3 cm Museum of Art Collection Trust, 2020</p>
<p>Plastic Heart: Surface All The Way Through Art Museum at the University of Toronto, University of Toronto Art Centre (UTAC) December 1, 2020 – June 30, 2021</p>	<p>Naum Gabo (Russian 1890-1977) <i>Monument to the Astronauts</i>, 1966 Brass, plastic and stainless steel gauze 54.3 x 54.9 x 45 cm Levy Bequest Purchase, 1994 McMaster Museum of Art</p>
<p>Sobey Art Award Exhibition National Gallery of Canada, Ottawa October 8, 2021 – February 20, 2022</p>	<p>Rajni Perera (Canadian, b. Sri Lanka 1985) <i>Flood Mask</i>, 2020 Textile on gasmask 27.94 x 30.48 x 20.32 cm Museum of Art Collection Trust, 2021</p>
<p>Rajni Perera: Traveller Eastside Projects, London, England June 4 – August 6, 2022</p>	<p>Rajni Perera (Canadian, b. Sri Lanka 1985) <i>Flood Mask</i>, 2020 Textile on gasmask 27.94 x 30.48 x 20.32 cm Museum of Art Collection Trust, 2021</p>
<p>O'NIGŌĒI:YO:H: THINKING IN INDIAN UB Art Galleries State University of New York at Buffalo July 14 – October 2, 2022</p>	<p>Shelley Niro (Mohawk, b. 1954) <i>Untitled</i>, 2000-20001 Oil pastel and liquid correction fluid on tar paper roll Installed: 91.4 x 1524 cm Museum purchase, 2001</p>

Appendix Four: Exhibition Schedule, September 2021 - August 2022

enawendewin: Relationships

August 26th, 2021 – November 28th, 2021

Immune Nations: The Vaccine Project

August 26th, 2021 – December 11th, 2021

nichola feldman-kiss \ scapegoat

February 9th, 2022 – March 18th, 2022

Tim Whiten, Elemental: Ethereal

February 10th, 2022 – May 13th, 2022

SUMMA: Taking Space

March 31st, 2022 – April 29th, 2022

what sustains us

May 12th, 2022 – July 29th, 2022

NIIPA 20/20

May 31st, 2022 – September 2nd, 2022

Appendix Five: Education Report

1) Programs for McMaster **undergraduate, graduate and faculty; postsecondary, professional and adult programs**; Senior Education Officer, Assistant Professor (Adjunct) McMaster Department of Family Medicine

The Art of Seeing Program and Professional Workshops in partnership with the McMaster Department of Family Medicine (facilitated with Dr. Joyce Zazulak and Dr. Tejal Patel)

- McMaster Department of Family Medicine Health Sciences Education Graduate Program Art of Seeing Workshop (offered virtually via Zoom September 2021)
- The Art of Seeing for McMaster University Continuing Education Strategic Leaders program (virtual via Zoom October 2021 and February 2022)
- The Art of Seeing for McMaster University Midwifery: Intersectionality in Healthcare (virtual via Zoom November 2021)
- McMaster University Master of Science in Midwifery Residency Week The Art of Seeing at the McMaster Museum of Art Workshop July 2022.
- McMaster University Social Sciences Staff Retreat The Art of Seeing Workshop at the Art Gallery of Hamilton, May 2022
- Queen's University Jacalyn Duffin Health & Humanities Conference The Art of Seeing Workshop April, 2022 (offered virtually via Zoom)

The Art of Seeing for Virtual Care, in development with McMaster University Health Sciences students Gurinder Multani (Master of Global Health) and Nika Elmi (Doctor of Medicine)

McMaster University Faculty of Health Science Foresight Strategy Retreat, The Future of Work (co-facilitated with Dr. Sean Park, Dr. Ruth Chen, and Jennifer Nash), June 2022.

McMaster Children and Youth University Workshop

- Integrated Role of Arts and Science & Society Mentorship for MCYU student-led children's workshop(s); listed as a community-mentor who will assist students in designing MCYU workshops as part of course credit (ongoing)

McMaster Continuing Education The Learning Continuum and Learning for 55+ Short Courses Program It's Happening Now! Contemporary Art and Visual Literacy 3 session program for adults (virtual via Zoom), May 2022.

Art Gallery of Burlington Staff and Board of Governors workshop It's Happening Now! Contemporary Art & Visual Literacy, March 2022.

Research and Publication

Park, Sean, Nicole Knibb, and Raymond Tolentino. (2022). Convivial Education: An Autoethnography of Integrating Visual Arts and Design Thinking into STEM through Art Museum-Based Education. *The International Journal of Design Education* 16 (2): 155-174. doi:[10.18848/2325-128X/CGP/v16i02/155-174](https://doi.org/10.18848/2325-128X/CGP/v16i02/155-174).

Multani, G, and Knibb, N. Establishing and Strengthening Continuity of Care in Virtual Practice with Visual Art. Poster Presentation, McMaster University, April 2022.

The Art of Seeing Past Participants' Research Project

- Measuring the effectiveness of the program over the long-term via semi-structured interview and qualitative analysis
- Thematic analysis complete, writing final paper (for publication 2023)
- Coding and qualitative thematic analysis underway; Museum staff Kate Hand assisting with coding and thematic analysis, editing final paper
- M(M)A volunteer Gurinder Multani (McMaster University Health Science undergraduate student) assisting with literature review and editing final paper

Appendix Five: Education Report

McMaster Department of Family Medicine Indigenous Teaching Through Art Research Project

- Research team: Dr. Joyce Zazulak, Nicole Knibb (Senior Education Officer) Lorrie Gallant (Haudenosaunee art and history educator), and Dr. Amy Montour (physician DFM Grand Erie Six Nations Brantford site), and Laura Cleghorn (DFM researcher) to do qualitative analysis of focus group transcripts and publication writing to measure the effectiveness of the DFM ITTA program at Woodland Cultural Centre, ongoing.

McMaster iBiomed Program Project with Sean Park (academic supervisor) and iBioMed student Raymond Tolentino

- Published research paper based on findings from the student workshop held at the M(M)A in February 2020 called Subject to Change as part of Health Engineering, Science and Entrepreneurship Specialization program <https://www.eng.mcmaster.ca/ibiomed/programs/degree-options/bhsc-hons/health-engineering-science-and-entrepreneurship-hese>

Academic Supervision

Health Sciences Thesis 4A15

- HTH SCI student Gurinder Multani's investigation into existing virtual care programs and creating the virtual Art of Seeing program/ short course for McMaster University Faculty of Medicine to teach and improve physicians' ability to provide virtual care.

Volunteers and Co-op Students

Hamilton Wentworth District School Board Secondary School Co-Operative Education Program; supervisor for Grade 12 student Maia Venturelli-Golba, Westdale Secondary School

2) Programs, in-gallery and online museum tours and programs, for **preschool, elementary, secondary schools, and public groups.**

Programs for elementary and secondary schools and the general public (pivoted to virtual programming 2020; continued both online and in person from 2021 onwards).

NEW PROGRAMS CREATED 2021-2022

- We are all connected (all ages outdoor program)
- Introduction to Decolonial Museums (all ages, online)
- REWRITE education text on website

NEW Programs being built IN PROGRESS

- remix program with stylo starr
- Connection with Pathways to Education <https://compassch.org/programs-services/pathways-to-education>
- Collaboration with Celeste Licorish, Access Program Manager

Partnerships and Programs Delivered

Hess Street Elementary School (HWDSB) Partnership Program

- Office of Community Engagement Access Grant: High Priority School specialized program over the course of the academic year
- Offered annually, moving to virtual offering from 2020-2021
- News Story: <https://museum.mcmaster.ca/about/news/hess/>
- Received ABACUS "Hamilton Community Foundation Teachers Small Grant" grant 2022

Westdale Secondary School (HWDSB)

- Ongoing partnership in support of their Specialist High Skills Major in the Arts



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Specialist High Skills Major (SHSM) Program in GEDSB, HWDSB

- Specialist programs for the Arts & Culture and Geography streams for secondary school students

Sketching Thursdays

- Developed into full year online course Sept 2020-August 2021; plans to move to in person for 2022-2023

McMaster Employee Health and Well-Being ongoing programs; Healthy Workplace committee

- Architecture and Sculpture Walking Tours of Campus
- Sketching Thursdays

The Creative Process: Well-being through art with the McMaster Museum of Art

- West Campus Eco-Art project in partnership with SOTA, Nature @ McMaster and MCIU
- West Campus Stenciling Event April 2022

Interviews

- Royal Roads Case Competition - Museums and Galleries Inquiry

Momina Qureshi, final year Commerce student at McMaster University; research project is centered around energizing Arts and Culture (February 2022).

- Margo Smith, an MA student in Educational Research at Werklund School of Education; interested in educators teaching children and youth about contemporary art (February 2022).
- Kyle Wyndham-West, Master's student at McMaster University; case study examining is the way that art galleries are managing a transition to digital platforms in the new COVID-19 era (June 2022).

GROUPS

McMaster Groups

- McMaster School of Medicine First-Year Medical Pro Competencies class
- McMaster SOTA class
- McMaster Discovery Program
- MSU Artists at McMaster
- McMaster Alumni @HomewithMac2022 Series (online, synchronous)
- McMaster Continuing Education Strategic Leaders Program
- RHPCS staff tour
- McMaster Creative Expressions Living Learning Residence students
- McMaster CSMT 2BB3
- McMaster English and Cultural Studies
- McMaster Art History 4th Year Activist Art Course
- McMaster Open Circle
- Mac Social Sciences Dept
- Alumni "Rejuvenate" (online, synchronous)
- ConnectME McMaster HR working forum
- McMaster MODEL Program
- McMaster MERGE Program
- McMaster Alumni Class of '72 Luncheon
- Office of the Assistant Vice President and Chief Technology Officer
- University Technology Services (UTS)

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- McMaster University Advancement
- McMaster Grad Studies
- McMaster Graduate Studies Drawing Conclusions (online, synchronous)
- McMaster Student Wellness Centre, Orange Shirt Day Collaboration (online, synchronous) (September 30, 2021)
- MCYU lecture, "Learning with Art at the McMaster Museum of Art" (online, synchronous) (May 28, 2022)

Public Groups

- Slow Art Day (online, synchronous)
- Hamilton Arts Week panel for NIIPA (online, synchronous, awarded grant from HAC)
- Pathways to Education; printmaking
- Art Gallery of Hamilton Docents
- Girl Guides (Nova Scotia) (online, synchronous)
- Girl Guides (Ancaster)
- Embassy Cultural House
- Canadian Association for Conservation conference delegates
- Maple Villa Long Term Care (online, synchronous)
- Good Shepherd Brennan House
- Victoria Place Adult Residence (online, synchronous)
- Oakcrossing Retirement Living (London, ON) (online, synchronous)

School Groups

- A.N. Myer (District School Board of Niagara)
- Dundas Central (HWDSB)
- Hess Street School (HWDSB)
- Columbia International College
- Rockway Mennonite College
- Helen Detwiler (HWDSB)
- River Heights Elementary (GEDSB)
- Colin MacDonald Community School (Montessori)
- Dalewood Elementary (HWDSB)
- Rockway Mennonite Collegiate
- Queensdale Elementary (HWDSB)
- Lyonsgate Montessori
- St. Pius School, Brantford
- Appleby College ESL Students

Education Officer - Professional development

- Masters of Museum Education, University of British Columbia (in progress, estimated completion in Dec 2022)
- Suite of Accessibility Standards courses through McMaster Accessibility
- MacPherson Institute Partnered in Teaching and Learning: Shared Experience series (throughout the year)
- Fostering Indigenous Cultural Practices through Museum Collections, UVic Legacy Galleries (September 9, 2021)
- Voices of Haudenosaunee Women, Six Nations Polytechnic (October-November 2021)
- MuseumNext Digital Learning Summit (October 18, 2021)
- School Programs and COVID-19 with Hamilton Area Museums, Organized by Tourism and Culture, City of Hamilton, (October 21, 2021)

Indigenous Knowledges and Open Education Symposium, UBC, (October 22, 2021) <https://bccampus.ca/event/ubc-indigenous->

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[knowledges-and-open-education-symposium/](#)

- Indigenous Methodologies: Characteristics, Conversations and Contexts, Dr. Margaret Kovach, UBC (October 27, 2021)
- Diverse and Expansive Ways of Knowing, MacPherson Institute (October 28, 2021)
- Trauma-Informed Practices in Museum Settings (November 24, 2021)
- First Aid Recertification (December 8, 2021)
- Critical Technology Practice: Raging Against Whiteness and/as Technology, Dr. Sucheta Ghoshal, UBC (December 8, 2021)
- Innovations in Education Conference 2021 (December 9, 2021)
- Creating Meaningful and Inclusive Museum Practices, FutureLearn, (December 10, 2021)
- 4 Seasons of Reconciliation, First Nations University Canada (December 2021) <https://www.reconciliationeducation-course.ca>
- Creating Meaningful and Inclusive Museum Practices, ICOM (December 2021) <https://icom.museum/en/news/icom-mooc-inclusive-museum-practices/>
- Indigenous Protocols: Pathways of Protection, CARFAC (March 23, 2022) <https://www.indigenousprotocols.art/events/pathways-of-protection>
- HME Research and Evaluation Workshop with Judith Koke (partnership with AGH and City of Hamilton) (May 2022)
- CAGE Conference (June 2022)
- Respect, Sincerity & Responsibility: Land Acknowledgements @ UBC Workshop
- Antiracist Pedagogy, Dr. Esther Ohito, UBC (March 25, 2022)
- Showcase of the Arts event HWDSB (April 2022)
- Rac(e)ing towards inclusion in Academia and Industry, ACGSA (May 23, 2022)
- The Celestial Bear: The Six Nations' Night Sky, McMaster Planetarium (May 2022)
- Six Nations Polytechnic: Learning the Kanonhweratóntshera (Thanksgiving Address) in Kanyen'keha (the Mohawk Language) (June-July 2022) <https://snpolytechnic.com/event/learning-kanonhweratontshera-thanksgiving-address-kanyenkeha-mohawk-language>
- Six Nations Polytechnic Additional Qualifications course: Environmental Education (Spring/Summer 2022) <https://snpolytechnic.com/program/environmental-education>
- Portable Planetarium Opening Event (July 11, 2022)

Education Staff

Professional Community Involvement

Hamilton-Area Museum Educators (HME)

Teresa Gregorio, Coordinator

Canadian Art Gallery Educator (CAGE)

Nicole Knibb, Member at Large

Teresa Gregorio, Social Media & Blog

University Art Gallery Academic Engagement Group (Queen's University Agnes Etherington Art Centre initiative)

Annual Programming

- Hamilton Winterfest
- Alumni Day
- Hamilton Arts Week June 16 NIIPA panel (grant awarded from HAC)
- McMaster Welcome Week
- Culture Days
- Take Our Kids to Work Day
- March Break Camps

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- Summer Camps
- Slow Art Day
- MMA participated in the Okanagan Charter¹ and McMaster-wide Accessibility Report

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TOUR ATTENDANCE, SEPTEMBER 2021 - AUGUST 2022

*Indicate online tour

Note limited group size for in-person tours during the reporting year

September 2021

Date	Organization / Program	Visitors
September 7	McMaster Department of Family Medicine Health Sciences Education Graduate Program Art of Seeing	40
*September 9 - December 16	The Creative Process: Well-being Through Art with the M(M)A	37 bi-weekly
*September 9 - December 9	Sketching Thursdays ONLINE	Entirely asynchronous on Avenue to Learn, weekly with 151 people registered
September 28	McMaster SOTA Class	60
September 29	Art of Seeing	3
*September 30	McMaster Student Wellness Centre	85
Total Attendance		376

October 2021

Date	Organization / Program	Visitors
*October 6	McMaster Continuing Ed Strategic Leaders Program Art of Seeing	15
*October 7	A.N. Myer (District School Board of Niagara)	105
*October 13	Dundas Central (HWDSB)	23
*October 14	A.N. Myer (District School Board of Niagara)	105
*October 15	Dundas Central (HWDSB)	23
*October 16	McMaster Discovery Program	30

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*October 19	Hess Street School	25
*October 19	Hess Street School	25
October 20	MSU Artists at McMaster	15
*October 21	Dundas Central (HWDSB)	23
October 22	MSU Artists at McMaster	15
*October 25	Hess Street School	23
*October 27	Hess Street School	25
October 27	McMaster DFM Residents' Art of Seeing	20
*October 28	Sketching Thursdays ONLINE	13
Total Attendance		494
November 2021		
Date	Organization / Program	Visitors
*November 1	Art of Seeing for McMaster Midwifery	43
*November 3	Columbia International College	22
November 3	McMaster DFM Residents' Art of Seeing	20
*November 4	Hess Street School	23
*November 8	Art of Seeing for McMaster Midwifery	43
*November 9	Rockway Mennonite College	15
*November 10	McMaster DFM Residents' Art of Seeing	20
*November 10	Rockway Mennonite College	15
*November 11	Helen Detwiler	23
*November 15	Hess Street School	24
*November 16	Columbia International College	25
November 17	McMaster DFM Residents' Art of Seeing	20
*November 23	Columbia International College	23

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*November 24	Columbia International College	23
*November 29	Hess Street School	24
*November 30	Dundas Central	24

Total Attendance		387

December 2021

Date	Organization / Program	Visitors
December 6	Pathways to Education; printmaking	7
December 7	Dundas Central	24
December 14	Creative Process program Art of Seeing	

Total Attendance		31

January 2022

Date	Organization / Program	Visitors
*January 4	McMaster School of Medicine First-Year Medical Pro Competencies class	12
*January 13	Creative Process Session 1/8	17
*January 13	Sketching Thursdays ONLINE 1/13	10
*January 17	Hess Street School	23
*January 20	Sketching Thursdays ONLINE 2/13	10
*January 24	Hess Street School	23
*January 26	McMaster Alumni @HomewithMac2022 Series	105
*January 27	Sketching Thursdays ONLINE 3/13	10
*January 27	Creative Process Session 2/8	17
*January 31	Hess Street School	23
January 31	Pathways to Education	12

Total Attendance		293
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February 2022		
Date	Organization / Program	Visitors
*February 3	Sketching Thursdays ONLINE 4/13	10
*February 3	Winterfest	20
*February 10	Creative Process Session 3/8	17
*February 10	Sketching Thursdays ONLINE 5/13	10
February 11	Rheanne's class	40
*February 16	McMaster Continuing Education Strategic Leaders Program	25
February 16	RHPCS staff tour	5
*February 16	Find Your Way Back: Grounding Through Creativity	10
*February 17	Sketching Thursdays ONLINE 6/13	10
*February 23	McMaster Graduate Studies Drawing Conclusions	25
*February 24	Creative Process Session 4/8	17
*February 24	Sketching Thursdays ONLINE 7/13	10
*February 24	Drawing Conclusions Continued 1/6	12
Total Attendance		436
March 2022		
Date	Organization / Program	Visitors
*March 3	Sketching Thursdays ONLINE 8/13	10
*March 3	Drawing Conclusions Continued 2/6	2
March 7	Pathways to Education	12
March 9	McMaster Creative Expressions Living Learning Residence students	5-10
*March 10	Creative Process Session 5/8	17
*March 10	Sketching Thursdays ONLINE 9/13	10

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*March 10	Drawing Conclusions Continued 3/6	2
March 16	McMaster CSMT 2BB3	
March 17	McMaster English and Cultural Studies	10
*March 17	Drawing Conclusions Continued 4/6	2
*March 17	Sketching Thursdays ONLINE 10/13	10
March 17	McMaster Art History 4th Year Activist Art Course	15
*March 24	Drawing Conclusions Continued 5/6	2
*March 24	Sketching Thursdays ONLINE 11/13	10
*March 31	Sketching Thursdays ONLINE 12/14	10
*March 31	Drawings Conclusions Continued 6/6	2
March 31	SUMMA Opening	
Total Attendance		124
April 2022		
Date	Organization / Program	Visitors
*April 2	Slow Art Day	10
*April 7	Creative Process Session 7/8	17
*April 7	Sketching Thursdays ONLINE 13/13	10
April 7	McMaster Open Circle	10
April 9	Creative Process/MCYU West Campus Eco Art Project Stencilling Event	20
*April 9	The Art of Seeing for Jacalyn Duffin Health & Humanities Conference, Queen's University School of Medicine	100
April 13	Campus Architecture Tour for Mac Social Sciences Dept	20
April 19	MMA Planetarium Visit and lunch	
*April 21	Creative Process Session 8/8	10
April 23	Creative Process/MCYU West Campus Eco Art Project Stencilling Event	10

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April 25	Pathways to Education	12
*April 26	McMaster Alumni "Rejuvenate"	97
April 27	Art Gallery of Hamilton Docents	10
April 28	McMaster Research & High Performance Computing Support	3
Total Attendance		309
May 2022		
Date	Organization / Program	Visitors
May 4	Art Gallery of Hamilton Docents	10
*May 5	Creative Process Session 1/8	24
*May 12	Girl Guides (Nova Scotia)	20
May 13	River Heights Elementary School	66
May 26	Colin MacDonald Community School (Montessori)	11
*May 19	Creative Process Session 2/8	24
May 19	Girl Guides	15
May 25	Embassy Cultural House	3
May 27	McMaster Social Sciences staff retreat Art of Seeing	12
May 27	Canadian Association for Conservation conference delegates	10
*May 28	McMaster Children and Youth University (MCYU)	15
Total Attendance		210
June 2022		
Date	Organization / Program	Visitors
June 9	Dalewood Elementary	8
June 2	ConnectME McMaster HR working forum	20
*June 2	Creative Process Session 3/8	24

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June 4	Creative Process/MCYU West Campus Eco Art Project Stencilling Event	20
*June 7	Maple Ville Long Term Care	20
June 8	Rockway Mennonite Collegiate	16
June 10	Queensdale elementary HWDSB	47
*June 14	Maple Villa Long Term Care	20
June 15	Hess Street School	78
*June 16	Creative Process Session 4/8	24
June 16	Lyonsgate Montessori	34
*June 16	NIIPA panel on Zoom	45
June 17	St. Pius School, Brantford	28
*June 20	Hess Street School	25
June 22	Faculty of Medicine Future of Work Conference & Senior Leadership Retreat	
June 22	Advancement; two funders	2
June 22	McMaster MODEL Program	15
June 23	Outdoor tour (topic: architecture)	20
June 23	Pathways to Education	14
June 24	McMaster Alumni Class of 72 Luncheon	36
*June 30	Creative Process Session 5/8	24
Total Attendance		526

July 2022

Date	Organization / Program	Visitors
July 6	Appleby College ESL Students	100
July 11	Good Shepherd Brennan House Printmaking Workshop	10
*July 11	Victoria Place Adult Residence	15
*July 12	Oakcrossing Retirement Living (London, ON)	10
July 13	Office of the Assistant Vice President and Chief Technology Officer University Technology Services UTS)	2
*July 14	Creative Process Session 6/8	24


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* July 28	Creative Process Session 7/8	24
Total Attendance		223
August 2022		
Date	Organization / Program	Visitors
August 11	Ancaster Girl Guides	15
* August 11	Creative Process Session 8/8	24
August 12	MERGE McMaster	30
* August 15	Victoria Place Retirement Community	20
August 17	McMaster University Advancement	15
* August 17	Oakcrossing Retirement Living	20
August 18	Outdoor tour (topic: sculpture)	20
August 18	McMaster Grad Studies	41
* August 22	Victoria Place Retirement Community	20
Total Attendance		205

Appendix Six: Communications Report/User X

WEBSITE - museum.mcmaster.ca

- 54, 223 page views (increase of 57%) by 25,000+ users (increase of 92%)
- 44, 493 unique page views (increase of 55%)

<input type="checkbox"/>	Page [?]	Pageviews [?] ↓	Unique Pageviews [?]
		43.80% ▲ 54,223 vs 37,707	50.75% ▲ 44,493 vs 29,514
<input type="checkbox"/>	1. / 		
	Sep 1, 2021 - Aug 31, 2022	16,089 (29.67%)	11,418 (25.66%)
	Sep 1, 2020 - Aug 31, 2021	10,204 (27.06%)	7,354 (24.92%)
	% Change	57.67%	55.26%

EMAIL/E-NEWSLETTER

- 1800 subscribers
- E-newsletter engagement remains strong - open rate averages above 30%
- Over the last six months, following the production of a new design, average open rate has climbed to over 35%
- 12 newsletters sent out during the period, ~1/month

SOCIAL MEDIA

YouTube

- 17 392 views (increase of 8.5%)
- 730 total hours watched
- 91 new subscribers – 464 in total
- 14 new videos including virtual tours, panel talks, and recorded public programs/events

Instagram

- 3 568 followers (increase of 17%)

Twitter

- 3 421 followers (increase of 1.5%)

Appendix Six: Communications Report/User X

Facebook

- 3 011 followers (increase of 12%)

OTHER

Walking Tour of McMaster Campus Sculpture

- 441 views

Walking Tour of McMaster Campus Architecture

- 361 views

Geocache

- Nearly 100 Art Adventure Geocoins were launched in 2011. Each coin is named for an artist in McMaster's collection and tasked with a mission: to travel to the birthplace of the artist (or the equivalent distance) and then return home to McMaster
- 7 Geocoins are still circulating in 2021/2022
- Approximately 26 logged visits over this period (590 logged visits in lifetime)

MEDIA

AGO Insider

Akimbo

Beyond James

Border Crossings

CBC Arts

Centred.ca

CFMU 99.3

Education News Canada

Feedspot

Hamilton Jewish News

Hamilton Spectator

HWDSB News

International Times

Indigenous Land & Resources Today

In The Hammer

Lab4Living

McMaster Daily News

MuseumNext

Muskrat Magazine

NationTalk

Netflix Canada

The Toronto Star



Museum of Art

Appendix Six: Communications Report/User X

The Heart of Ontario
The Silhouette
Torontoicity
Tourism Hamilton
Travel Owl
University of Alberta Museums
Y File at York University

*Links to articles can be found in Appendix 7, Media Summary

Appendix Seven: Media Summary

IN THE NEWS - McMaster Museum of Art

"Metis artist fosters hope and healing with Almonte art installation" The Star (online – TMC). September 13, 2021. https://www.thestar.com/local-carleton-place-almonte/news/2021/09/13/m-tis-artist-fosters-hope-and-healing-with-almonte-art-installation.html?li_source=LI&li_medium=star_web_ymbii

"Immune Nations: New MMA exhibition highlights the complexities of vaccination" Daily News (online – press release – Immune Nations). September 14, 2021. <https://dailynews.mcmaster.ca/articles/immune-nations-new-mma-exhibition-highlights-complexities-of-vaccination/>

"Immune Nations: New MMA exhibition highlights the complexities of vaccination" Education News Canada (online – press release – Immune Nations). September 15, 2021. <https://educationnewscanada.com/article/education/level/university/1/918323/immune-nations-new-mma-exhibition-highlights-complexities-of-vaccination.html>

Park, Subin. "Hamilton based Metis artist inspires hope and healing on campus this fall" The Silhouette (online - TMC). September 16, 2021. <https://www.thesil.ca/hamilton-based-metis-artist-inspires-hope-and-healing-on-campus-this-fall>

Aaserud, Kara. "Finding the Flow: McMaster begins to reimagine west campus parking lot with art installation" McMaster DailyNews (online). September 24, 2021. <https://dailynews.mcmaster.ca/articles/finding-the-flow-mcmaster-begins-to-reimagine-west-campus-parking-lot-with-art-installation/>

Clinning, Elyse "Tracey-Mae Chambers Brings Hope and Healing to the McMaster Museum of Art" Daily News (online - TMC). September 27, 2021. <https://dailynews.mcmaster.ca/articles/tracey-mae-chambers-brings-hope-and-healing-to-the-mcmaster-museum-of-art/>

"Tracey-Mae Chambers Brings Hope and Healing to the McMaster Museum of Art" NationTalk (online – copy of press release - TMC). September 29, 2021. <https://nationtalk.ca/story/tracey-mae-chambers-brings-hope-and-healing-to-the-mcmaster-museum-of-art-mcmaster-daily-news>

Collins, Leah. "Using thousands of metres of red string, this Métis artist is bringing a message of healing across Canada" CBC Arts (online - TMC). September 29, 2021. <https://www.cbc.ca/arts/using-thousands-of-metres-of-red-string-this-metis-artist-is-bringing-a-message-of-healing-across-canada-1.6194051>

Pope, Amanda. "Canada Marks National Day for Truth and Reconciliation" CHCH News (online). September 30, 2021. <https://www.chch.com/canada-marks-national-day-for-truth-and-reconciliation/>

"Tracey-Mae Chambers Brings Hope and Healing to the McMaster Museum of Art" Indigenous Land & Resources Today (online - TMC). September 30, 2021. <https://ilrtoday.ca/tracey-mae-chambers-brings-hope-and-healing-to-the-mcmaster-museum-of-art-mcmaster-daily-news/>

"How Hamilton Artists and Arts Organizations are Marking the First National Day for Truth and Reconciliation" Beyond James Blog (online – TMC). September 30, 2021. <https://beyondjames.com/trc21/>

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Park, Subin. “Immune Nations: understanding vaccination through an interdisciplinary lens” The Silhouette (online + print – Immune Nations). September 30, 2021. <https://museum.mcmaster.ca/exhibition-highlighting-the-complexities-of-vaccination-opens-at-the-mcmaster-museum-of-art/>

“Research-based exhibit on vaccination features panel discussion with York experts” York U – Y File (online – Immune Nations). October 6, 2021. <https://yfile.news.yorku.ca/2021/10/06/research-based-exhibit-on-vaccination-features-panel-discussions-with-york-experts/>

“Immune Nations” University of Alberta (online – Facebook, Immune Nations interview with Natalie Loveless). October 13, 2021. <https://www.facebook.com/uAlberta/videos/232159382228118/>

“Long Term Exhibits and Events” Tourism Hamilton (online – Immune Nations). October 15, 2021. <https://tourismhamilton.com/event/long-term-exhibits-and-events>

Morse, Jason. “Exploring relationships: Outdoor Art Exhibit” Morse & Associates (online – blog, enawendewin). October 19, 2021. <https://www.morseassociates.ca/post/exploring-relationships-outdoor-art-exhibit>

Urciuoli, Anthony. “Did you know Hamilton is home to Canada’s most powerful nuclear reactor?” InTheHammer (online). October 19, 2021. <https://www.insauga.com/did-you-know-hamilton-is-home-to-canadas-most-powerful-nuclear-research-reactor/>

Laux, Sara. “Reading and remembering land through the work of Mi’kmaq artist Mike MacDonald” DailyNews (online - enawendewin). October 21, 2021. <https://dailynews.mcmaster.ca/articles/reading-and-remembering-land-through-the-work-of-mikmaq-artist-mike-macdonald/>

“Kaisu Koski’s HUG installation on show at Immune Nations exhibition” Lab4Living (online – Immune Nations). October 26, 2021. <https://lab4living.org.uk/news/hug-at-immune-nations-exhibition/>

“MorningFile: McMaster Museum of Art Immune Nations Exhibition” CFMU (radio interview – Immune Nations). October 28, 2021. <https://cfmu.ca/videos/386-morningfile-mcmaster-museum-of-art-immune-nations-exhibition>

Kurd, Nadia. “Art in Focus: “Phlegyas” by Sean Caulfield” University of Alberta Museums (online – Immune Nations). November 17, 2021. <https://www.uAlberta.ca/museums/news/2021/november/uamac-spotlight-sean-caulfield.html>

“New Book: Listen, We All Bleed” International Times (online – mention of AADTS). November 23, 2021. <https://internationaltimes.it/new-book-listen-we-all-bleed/>

“McMaster Museum of Art sponsors new public art installation for Supercrawl 2021” DailyNews (online - enawendewin). November 29, 2021. <https://dailynews.mcmaster.ca/articles/mcmaster-museum-of-art-sponsors-new-public-art-installation-for-supercrawl-2021/>

“Snapshots: The Week of December 10” Beyond James Blog (online – Immune Nations). December 10, 2021. <https://beyondjames.com/snapshots-dec1021/>

Appendix Seven: Media Summary

“Year in Review: McMaster Looks Back at 2021” McMaster Daily News (online - Immune Nations). December 22, 2021. <https://dailynews.mcmaster.ca/articles/year-in-review-mcmaster-looks-back-at-2021/>

“McMaster Children & Youth’s University invites students to ‘Join the Journey’ HWDSB News (online – mention). November 15, 2021. <https://www.hwdsb.on.ca/blog/mcmaster-children-youth-university-join-the-journey/>

“About Blown Away: Christmas” Netflix Canada (online + tv). December 2, 2021. <https://www.netflixinyourneighbourhood.ca/?title=blown-away-christmas>

“Top 60 Canadian Museum Blogs and Websites” Feedspot (Online). December 6, 2021. https://blog.feedspot.com/canadian_museum_blogs/?_src=home

Bosworth, Lori. “Great Hamilton Neighbourhoods to Raise a Family” Torontoicity (Online). December 31, 2021. <https://torontocity.com/2021/12/31/great-hamilton-neighbourhoods-to-raise-a-family/>

Wombell, Rebecca Hardy. “Can digital technology help us to learn to look slowly? MuseumNext (online – Slow Art Day). December 31, 2021. <https://www.museumnext.com/article/can-digital-technology-help-us-to-learn-to-look-slowly/>

Moore, Jennifer. “Eight Things to Do Around Hamilton This Weekend” Hamilton Spectator (Online). February 5, 2022. <https://www.thespec.com/news/hamilton-region/2022/02/04/hamilton-weekend-events.html>

Aziga, Simone. “Transcendental artifacts” AGOInsider (Online – Tim Whiten). February 9, 2022. <https://ago.ca/agoinsider/transcendental-artifacts>

“Following Pandemic Postponement, McMaster Museum of Art Opens New Exhibit” Beyond James Blog (Online). February 15, 2022. <https://beyondjames.com/release-mmoascapegoat/>

Park, Subin. “Grief, reflection and reimagination of the colonial paradigm” The Silhouette (Online). February 17, 2022. <https://www.thesil.ca/grief-reflection-and-reimagination-of-the-colonial-paradigm>

“McMaster Museum Exhibit Featured in Multi-Venue Retrospective” Beyond James Blog (Online). March 17, 2022. https://beyondjames.com/release-mmoaelementalthereal/?fbclid=IwAR0dWi3V7fjAeqt3YoAMgEqioFsGyT8wKCZra9LACIiA5qYGiA_6SGKfRrs

“Bursting with love” AGOInsider (Online – Elemental mention). March 16, 2022. https://ago.ca/agoinsider/bursting-love?utm_source=AGO+email+communications&utm_campaign=4bd286c1b4-AGOinsider_March_16_COPY_01&utm_medium=email&utm_term=0_d4ab708299-4bd286c1b4-248278329

“Things to do this week in the Hamilton area” The Hamilton Spectator (Online – Summa mention). March 31, 2022. <https://www.thespec.com/local-ancaster/entertainment/2022/03/31/things-to-do-this-week-in-the-hamilton-area.html>

“Summa 2022: Taking Space” The Heart of Ontario (Online - Summa). March 31, 2022. <https://theheartofontario.com/experience/summa->

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[2022-taking-space/](#)

Tehfe, Reem. "Student emerging artists display work in McMaster Museum of Art exhibit" DailyNews (Online – Summa). April 4, 2022. <https://dailynews.mcmaster.ca/articles/student-emerging-artists-display-work-in-mcmaster-museum-of-art-exhibit/>

Awad, Jolene. "The 2022 Studio Arts Class is Painting Their Final Picture" The Silhouette (Online – Summa). April 15, 2022. <https://www.thesil.ca/the-2022-studio-art-class-is-painting-their-final-picture>

Schneider, Wendy. "The Herman Levy Legacy" Hamilton Jewish News (Online – Levy Lecture). April 18, 2022. <https://hamiltonjewishnews.com/arts-culture/the-herman-levy-legacy>

"Snapshots: The Week of April 22" Beyond James (Online – Erin Szikora Middlebrook Prize). April 25, 2022. https://beyondjames.com/snapshots-april2222/?utm_source=rss&utm_medium=rss&utm_campaign=snapshots-april2222

Enright, Robert. "bodies of work – an interview with nichola feldman-kiss" Border Crossings (Print – Scapegoat mention). Issue No. 159, June 2022. pp. 82-95.

"Alumni Awards recognize Mac grads' tremendous contributions" Daily News (Online – Kathe Kollwitz exhibition mention). June 1, 2022. <https://dailynews.mcmaster.ca/articles/alumni-awards/>

"McMaster Museum of Art Celebrates Summer with Two New Exhibitions" Beyond James Blog (Online – what sustains us and NIIPA 20/20). June 2, 2022. <https://beyondjames.com/mcmastermuseum-summer22/>

Baleeiro, Beatriz. "Hamilton Arts Week is back from June 9 to 17" Hamilton Spectator (Print + online – Pamela Edmonds mention). June 2, 2022. <https://www.thespec.com/entertainment/art/2022/06/02/hamilton-arts-week-is-back-from-june-9-to-17.html>

"Arts Incoming: 2022 Hamilton Arts Week Lands This Week" Beyond James (Online – NIIPA 20/20 panel mention). June 6, 2022. https://beyondjames.com/release-artsweek2022/?utm_source=rss&utm_medium=rss&utm_campaign=release-artsweek2022

"21 Best Cities to Visit in Canada" Travel Owl (Online – MMA mention). June 6, 2022. <https://travel-owl.net/21-best-cities-to-visit-in-canada/>

Rockingham, Graham. "Unveiling 20 years of Indigenous photographic art" The Hamilton Spectator (Print + Online – NIIPA 20/20). Arts + Life, pp. G1. June 9, 2022. <https://www.thespec.com/entertainment/opinion/2022/06/09/unveiling-20-years-of-indigenous-photographic-art.html>

"Unveiling 20 years of Indigenous photographic art – Hamilton Spectator" Nation Talk (Online – NIIPA 20/20). June 9, 2022. <https://nationtalk.ca/story/unveiling-20-years-of-indigenous-photographic-art-hamilton-spectator>

Rockingham, Graham. "Unveiling 20 years of Indigenous photographic art" The Toronto Star (Online -NIIPA 20/20). June 9, 2022. [thestar.com/entertainment/opinion/2022/06/09/unveiling-20-years-of-indigenous-photographic-art.html](https://www.thestar.com/entertainment/opinion/2022/06/09/unveiling-20-years-of-indigenous-photographic-art.html)

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"MorningFile – June 10, 2022". CFMU (Radio interview with Rhéanne – what sustains us and NIIPA). June 10, 2022. <https://cfmu.ca/episodes/33084-morningfile-episode-for-2022-06-10-38m:38s-60:00m>.

"A Guide to Hamilton Street Art" Tourism Hamilton (Online – MMA/Supercrawl mural mention). June 22, 2022. <https://tourismhamilton.com/street-art-guide>

"Critics picks: 5 events to see this July" Beyond James Blog (Online – outdoor art tour mention). June 30, 2022. https://beyondjames.com/july22picks/?utm_source=rss&utm_medium=rss&utm_campaign=july22picks

"we are made of stardust" The Heart of Ontario (Online – stardust). July 22, 2022. <https://theheartofontario.com/experience/we-are-made-of-stardust/>

Mullin, Morgan. "Dalhousie University Art Gallery announces Pamela Edmonds as new director and curator" The Coast Halifax (Online – PE mention). July 26, 2022. <https://www.thecoast.ca/halifax/dalhousie-university-art-gallery-announces-pamela-edmonds-as-new-director-and-curator/Content?oid=29073691>

"Release: McMaster Museum of Art Appoints New Adjunct Senior Curator" Beyond James (Online – Betty Julian announcement). August 16, 2022. <https://beyondjames.com/release-mmabettyjulian/>

Robinson, Kenna. "NIIPA 20/20 – Celebrating the Collective" Centred.ca (Online - NIIPA 20/20). August 17, 2022. <https://centred.ca/niipa-hamilton-indigenous-photographers/>

"Betty Julian joins the McMaster Museum of Art as adjunct senior curator" McMaster Daily News (Online – link to MMA announcement). August 18, 2022.

"Betty Julian joins the McMaster Museum of Art as adjunct senior curator" Education News Canada (Online – MMA announcement). August 18, 2022. <https://educationnewscanada.com/article/education/level/university/1/974962/betty-julian-joins-the-mcmaster-museum-of-art-as-adjunct-senior-curator.html>

Bernard, Brandon. "Find a quiet moment and new perspectives at the Museum of Art" McMaster Daily News (Online). August 29, 2022. <https://dailynews.mcmaster.ca/articles/marvels-at-mac-a-calming-experience-found-within-art-mcmaster-museum-of-art/>



Installation shot from *Tim Whiten, Elemental: Ethereal*.
Photo by Toni Hafkenschied.



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REPORT TO THE BOARD OF GOVERNORS
from the
AUDIT AND RISK COMMITTEE

FOR INFORMATION

i. Benefits of Decentralization

At its meeting on February 9, 2023, the Audit and Risk Committee received, for information, the attached presentation titled "Achieving our Mission – Coordinated Decentralization at McMaster".

Board of Governors: INFORMATION
March 2, 2023

Achieving our Mission: Coordinated Decentralization at McMaster

February 9,
2023



Early Roots of the McMaster Model

6

McMaster has one of the fewest number of Faculties among Canadian universities.

The six Faculties we have today were established in 1974, each under the leadership of a dean.



Coordinated Decentralization At-A-Glance



Allows leaders to make decisions and be nimble



Decisions are based on the needs of each leader's unique unit, but must advance institutional goals



Considerations include quality of services, efficiencies, transactional vs custom work

McMaster's Model In Context

48%

Of work at McMaster done within Faculties

- Highest of Canadian universities, though others are very close behind.
- Canadian universities are generally more decentralized.

Lowest Cost

Decentralization can be cost effective

- Out of 10 Canadian universities studied, McMaster has lowest normalized cost.
- Good governance, as exists, is key to success.

We Adjust As Needed

More decentralized

81% of teaching administration activities were conducted within departments in 2022.

That's up from 62% in 2018.

Less decentralized

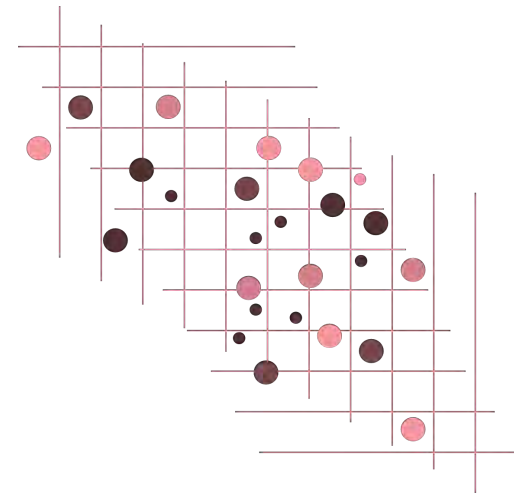
35% of finance activity was conducted within departments in 2022.

That's down from 39% in 2018.

Services where they make sense

Case study

- Task-based work is usually centralized
- Finance2Go – a central team of part-time financial experts – was introduced in the Faculty of Health Sciences in 2019
- They do finance work previously done by non-accounting staff, PhD students, temp-casual roles, and even faculty members
- Financial entry rejection rates went down by more than 50%
- The number of users entering travel and expense claims went down by more than a third



Dual Reporting Structures

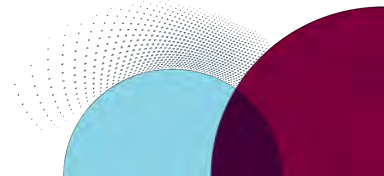
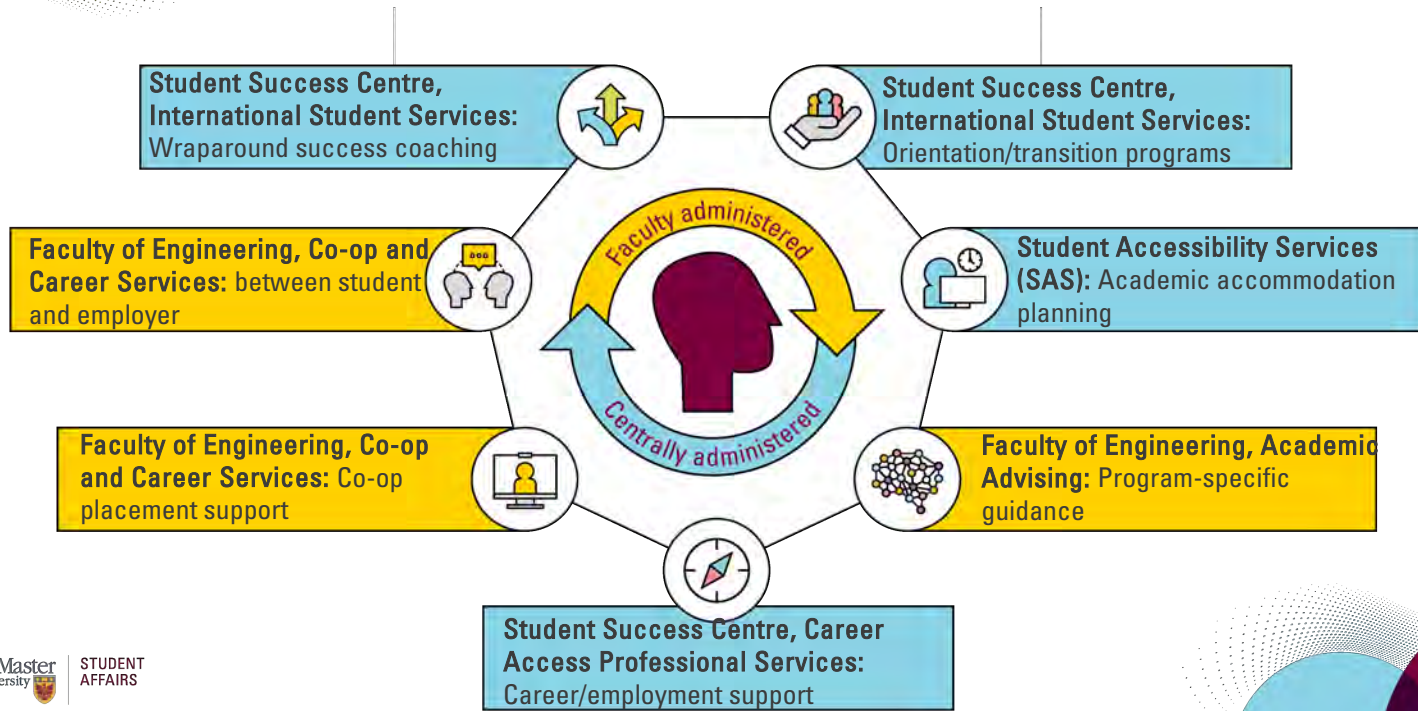
Case study

- Embedded HR Strategic Partners report to both Human Resources and their Faculty or Department
- This model allows for the exchange of information between the Faculty and central administration
- Dual reporting structures exist throughout McMaster, including in communications, advancement and IT



Student Services In Action

Supports delivered where it makes sense: Rani is a fourth-year international student with a disability in the Faculty of Engineering. Throughout their time here, they have accessed programs centrally and through their Faculty.



Continually evaluating and adjusting

Case study



- Currently between 400-600 staff across McMaster are involved in the process of hiring new employees and managing payroll activities
- The hire-to-pay taskforce has been formed to improve service and identify efficiencies in the hiring to onboarding process
- While the hiring and payroll process can be coordinated centrally, some aspects will always be handled locally



Questions