University of Manitoba Strategic Plan

Environmental Scan January 2023





Traditional Territories Acknowledgement

The University of Manitoba campuses are located on original lands of Anishinaabeg, Cree, Oji-Cree, Dakota, and Dene Peoples, and on the homeland of the Métis Nation.

We respect the Treaties that were made on these territories, we acknowledge the harms and mistakes of the past, and we dedicate ourselves to move forward in partnership with Indigenous communities in a spirit of reconciliations and collaboration.

Purpose of an Environmental Scan

The University of Manitoba will soon be starting consultation to gather insights and identify strategic opportunities for the community moving forward. In the drafting of our next strategic plan, it is important to take into account the context in which the university operates. Internal and external pressures, both favourable and negative, can affect the University of Manitoba's capacity to pursue any particular strategic direction or realize our goals.

To put it simply, any institutional strategic plan needs to take environmental factors into consideration to be relevant, have attainable goals, and reflect the needs and aspirations of both the university's internal and external partners. The environmental scan is not exhaustive. It does not fully explore all the possibilities, ramifications, and implications that could affect the university's future. Instead, it aims to get those participating in future consultation thinking like strategists. It provides context in the broader post-secondary world for planning and aims to help generate more fruitful and informed discussion by our community members whose voices will play a large role in shaping the new plan.



The Poly-Crisis

Interlocking Global Crises

Global events and catastrophes of the last few years have included pandemics, civil crises, inter-state violence or extreme climate-related events (e.g., historic levels of flooding in Pakistan or Germany, historic droughts in Africa, China, and Europe). On balance, these seem likely to escalate and exacerbate one another. In particular, the combination of climate-based and conflict-based interruptions of global food exchange patterns seems likely to cause continued increases in food prices, which themselves are considered the leading indicator for increased civil unrest in many areas of the world. Add to this the prospect of drying aguifers in various parts of the world, increasingly volatile weather patterns globally, and the potential for the creation of large-scale climate refugee populations, and it is easy to see why the next couple of decades are likelier to see higher degrees of economic and social volatility. These are unlikely to affect Canadian higher education institutions directly (except perhaps in the way that Keyano College was affected in the fires of 2016) but coping with these crises will put additional strains both on government funding and on the attention span governments have to deal with important but non-urgent files like higher education. It may also affect the free flow of students between countries, including to and from Canada. In short, increasing volatility is simply a headwind that higher education will need to cope with.















Challenges in Manitoba and Winnipeg

Climate Change: The ongoing effects of climate change are well documented in Manitoba, while several organizations are working to predict and mitigate future impacts. Warming temperatures are affecting Northern communities that rely on ice roads for transportation. Drier summers are putting pressure on farmers and the agricultural industry to continue devising solutions to withstand and mitigate these effects. Increased weather volatility brings increased chances of flooding in many Southern parts of the province, including within Winnipeg.





Urban Sprawl: As Winnipeg continues to lack the public support and political will to revitalize its downtown core, the city is growing at every outskirt with new builds of single-dwelling homes contributing to urban sprawl. Low-density cities have high infrastructure costs and relatively low funds from municipal taxpayers, making it difficult to keep up with repairs and revitalization. Urban sprawl encourages the use of private transportation as people live further from their places of employment or schooling, causing traffic congestion, increased wear on roads and needs for expansions, and lower active and public transportation use.

Healthcare: While healthcare systems have been especially stretched since the Covid-19 pandemic, oscillations in provincial and federal funding and healthcare management strategies over the past decades have been testing Manitobans for years. Frequent news coverage of surgery and treatment backlogs and understaffing at hospitals air alongside discussions of privatizing healthcare, potential closures of several rural urgent care centers, and the challenge of keeping health budgets up to date with inflation. All this occurs within the context of an aging population across Canada.





Indigenization and Decolonization in Manitoba

Universities, including the University of Manitoba, have a powerful role and responsibility to play in advancing truth and Reconciliation and addressing anti-Indigenous racism. There is an opportunity for the university, as part of reconciliation, to educate and contribute to healing after centuries of colonialism. Undoing the legacy of colonialism and advancing Reconciliation is difficult and continuous work. University plans increasingly speak to instances of societal evolution in matters of Indigenization and decolonization. Since the Truth and Reconciliation Commission's (TRC) Call to Actions, the Missing and Murdered Indigenous Women and Girls (MMIWG) Calls for Justice, and the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), Canadian post-secondary institutions have pledged to take tangible steps or to more broadly work towards Indigenization and decolonization.

With Winnipeg being home to the largest Indigenous population in Canada— a population that is continuing to grow— these commitments have specific implications. According to Statistics Canada, the Indigenous population is younger and growing faster than the non-Indigenous population. Within this decade it is estimated that one in five Manitobans will identify as Indigenous. Historically, Indigenous Peoples have been underrepresented in post-secondary education, particularly at the university level, and Indigenous communities continue to face barriers to access to education. As an agent of social mobility and with a responsibility to advance Reconciliation the University of Manitoba has begun meaningful work in this regard, however, participation rates indicate that there remains much work to be done.

Figure 1: Indigenous Population as a Percentage of Total Population by Age Group vs. Enrolment, Manitoba 2021

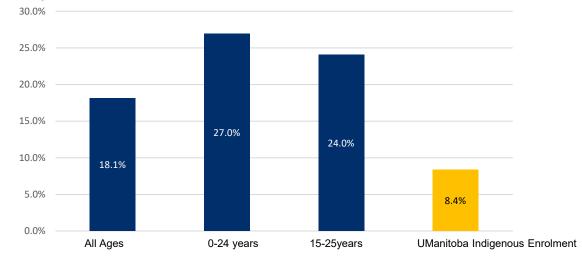
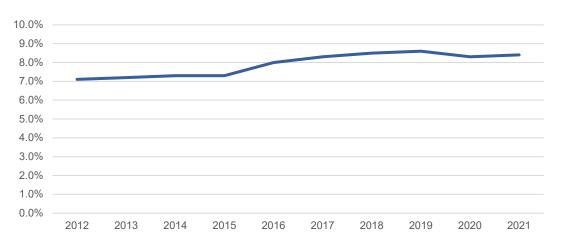


Figure 2: Indigenous Student Enrolment, as a Percentage of Total Student Population 2012-2021





New Delivery Models, New Credentials

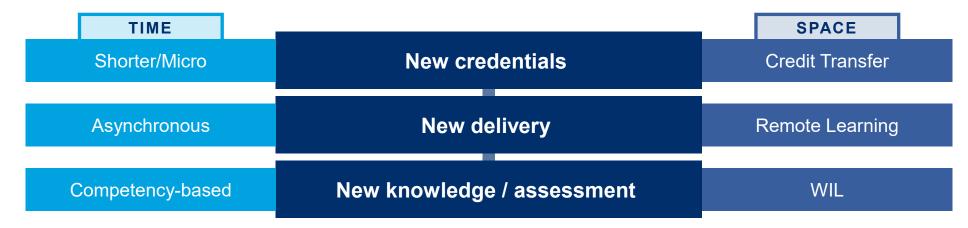
For the past few decades, many of the biggest developments in higher education have been about moving away from education being a solid-block full-time commitment at a single institution, with the classroom/laboratory as the physical locus of knowledge exchange. Part-time studies, credit transfer and more recently micro-credentials have all been chipping away at the notion that higher education requires full-time sequential attendance at a single institution. At the same time, work-integrated learning (WIL) and remote/online education have somewhat moved the classroom away from the centre.

There is no sign that any of these trends are slackening. However, neither is there much sign that any of them are likely to upend traditional undergraduate studies any time soon. Remote/online education in theory makes it possible for institutions to deliver education anywhere in the world, but few international students seem inclined to use it outside of emergencies (in part because institutions seem reluctant to reduce prices for this delivery model).

Micro-credentials have the potential to change the face of life-long learning and in particular Master's Degrees, but the government's inaction on creating strong supportive policy frameworks to support them is slowing their uptake.

The clearest opening for new delivery models is in online professional programs and – just possibly – older students in Bachelor's programs (roughly 20% of undergraduate students preferred the online COVID teaching environment, a figure which skewed towards older and part-time students). But doing well in this space requires significant investments in IT infrastructure, user experience, and instructional design.

The UM community has the opportunity to make choices in light of these trends by determining whether and how it wishes to engage with new credentials and delivery modes.



Provincial Government Funding has Decreased in Over the Last Decade

Nationally, provincial government transfers to institutions have stayed nearly constant in real dollars since 2010. Over the last 5 years, it has increased by about 2% but looking over a little longer period, the average is actually a decrease of 4% over the 2010s. In Manitoba, however, the picture is quite different. Over the past 5 years, Manitoba has experienced the largest decrease in provincial transfers from government, wiping out increases that would have been made in the early 2010s. Coupled with lower than average student fees (only Quebec and Newfoundland have lower fees), the result is a lower expenditure per student. Current funding in the province is not performance-based nor tied to enrolment. Manitoba has indicated that it is interested in developing performance-based funding formula, but events related to COVID-19 have delayed the introduction of any such measure.

Figure 3: Total Income Per Student, By Source and Type of Institution, Canada V. Manitoba, 2020-2021

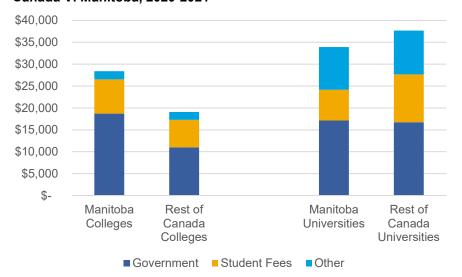
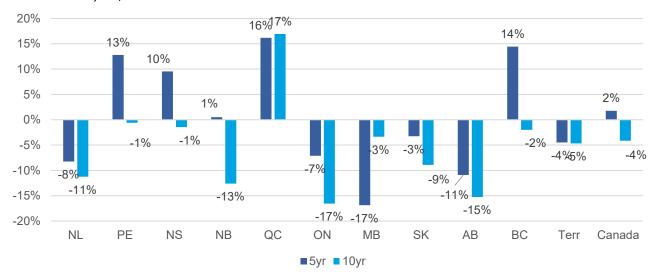


Figure 4: Changes in Provincial Transfers to Institutions by Province over 5 and 10 years, to 2020-2021, in \$2020

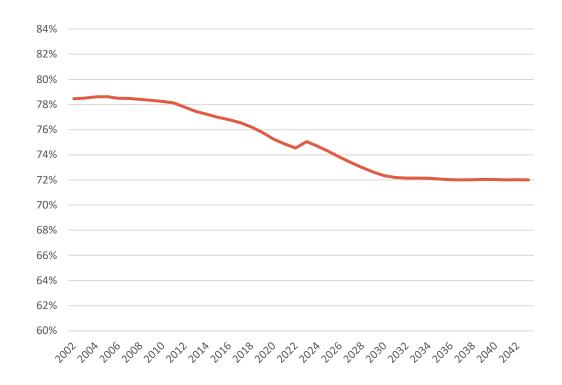


Demographic Change

Labour Market Pressures Will Be with Us for a Long Time to Come

Though much commentary on labour shortages has blamed recent tight markets on COVID-19 and the so-called "Great Resignation," it is in fact the product of a much larger and longer-term process. Simply put, the aging of the population means that the ratio of Canadians of working age to the total population is going down rapidly and will continue to fall through to the mid-2030s before stabilizing. In Manitoba, the population is expected to age, with the proportion of Manitobans aged 65 and over increasing from 16.5% in 2021 to approximately 19.7% by 2043. By 2043, the proportion of dependents (ages under 14 or over 65) will increase to an estimated 58.7% from 54.4% (observed in 2021). The effect of this demographic change will be to create long-term labour shortages across Canada, including in Manitoba. This will influence post-secondary enrolment, as high-wages for low-skilled workers increases the opportunity-cost of attending postsecondary education. The effect will be to put steady downward pressure on enrolments unless universities find better ways to help students mix work and study. It will also probably exert downward pressure on the length of degree and non-degree programs (including greater uptake of microcredentialling). Another consideration here is that tight labour markets will undoubtedly make it more challenging for the university itself to hire and retain staff.

Figure 5: Percentage of all over-25s who are under-65 in Manitoba, 2002-2043



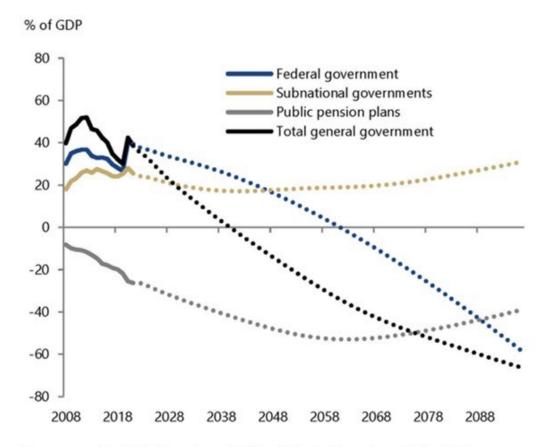


The Changing Dynamics of Fiscal Federalism Will Impact Post-Secondary Financing

The Parliamentary Budget Office monitors the financial sustainability of government expenditure at both the federal and provincial levels. The most recent report suggests that while provincial governments will struggle with the consequences of the demographic transition, federal finances are set for a dramatic improvement over the next few years, simply because its income and expenditure profile is less tied to demographic changes than are those of provinces. Given that the provincial government funds post-secondary operations while the federal government funds research and (to an extent) infrastructure, this may herald big increases in federal transfers.

However, if transfers are not an option, this imbalance may also lead to a very big change in the funding structure of Canadian universities, one in which research plays an ever-greater role simply because that's the only tool the better-off level of government has at its disposal.

Figure 6: Government net debt relative to GDP



Sources: Statistics Canada and Office of the Parliamentary Budget Officer.

Note: The projection period covers 2022 to 2096.



Inflation Will Put Pressure on University Finances

One of the less-anticipated consequences of the COVID-19 pandemic is the return of inflation at levels not seen in nearly thirty years. The current effect of inflation remains unclear: transitory or long-term. The supply-chain snarls in mid-2021 have been followed by inflationary spikes due to rising oil prices and global food price increases, results of Russia's invasion of Ukraine.

For institutions, including the University of Manitoba, inflation has several impacts. First, over 65% of all expenditures across postsecondary institutions is for compensation. If inflation rises, there will be pressure on compensation. Second, the cost of servicing any existing or anticipated debt will increase. In an attempt to curb inflation, the Bank of Canada (BoC) raised interest rates by 400 bp points since a low in 2021. In October, the BoC indicated that inflation was showing signs that it might begin to ease, which could mean that increases to interest rates may cease, but the recent release of the December 2022 job numbers—which were nearly 99,000 higher than projected by the BoC—is leading some analysts to expect that the Bank of Canada could increase rates by another 50 bp in the coming months and maintain higher rates well into 2024.

Finally, the BoC has indicated that to curb inflation, unemployment must rise above the current 5% limit. Historically, higher unemployment has resulted in an increase in interest in attending post-secondary institutions as people seek reskilling and or academic upgrading to prepare them to re-enter the labour market when conditions are more favourable.

Inflation impacts will affect both institutions and the students that attend them.

Inflation Impacts on Students: Housing as a Case Study

Inflation puts pressure on all parts of students' finances. Housing is one of the highest costs affecting student finances.

About 1.5 million university students in Canada were renters in 2021. Approximately 1.3 million of them lived in apartments on the private market. In Winnipeg, most apartment vacancies are among the city's more expensive properties, according to the Canada Mortgage and Housing Corporation's (CMHC) report. According to the CMHC "affordable rent" totals no more than 30 per cent of household income. With that logic, units considered affordable to those making more than \$80,000 per year (a monthly rent of roughly \$2,000 or more) had a vacancy rate of 13.8 per cent. Meanwhile, a survey conducted by conducted by the Unité de travail pour l'implantation de logement étudiant (UTILE) revealed that most students in Canada earn \$20,000 or less annually. In Winnipeg, individuals in the lowest income quintile — those with incomes of less than \$25,000, for whom an "affordable" unit would have monthly rent of \$625 or less — experience the lowest vacancy rates at just 2.9 per cent. The average rent as of December 2022 was \$1187 for a 1-bed, which remains much lower than other parts of the country, but nevertheless, represents a 10.4% year-over-year growth. Nationally, the resulting trend is so that 70% of students spend over 30% of their yearly income on rent. This has the potential of affecting accessibility to the institution as affordability erodes and students struggle to afford basic necessities.

According to the 2020 NSSE Survey results, UM students spend an average of

13.1
HOURS

working for pay per week compared to the U15 average of 10.1 hours per week.

Tuition and Grants in Manitoba vs. Canada

Over the past two decades, tuition rises in Canada have been relatively modest: on average, we consistently see rises of about 1-2% above inflation, with almost no sudden upwards jags (though there was one sudden decrease when the Ford government cut tuition by 10% in Ontario in 2019). This is quite different from the 1990s, when rises of inflation plus 5-6% was the norm and instances of tuition doubling (Quebec, 1990 to 1992) or increasing by over 50% (British Columbia, 2001-2003) were not unknown.

In Manitoba, tuition and fees have been increasing since the mid-2000s and while the gap is closing, at current, they remain among the lowest in Canada. Of note is that Manitoba students have lower levels of borrowing than other provinces, not just because tuition is low, but also because the cost of living is lower and a high percentage of students in Manitoba live with their parents, both factors which tend to reduce need and hence borrowing. Overall aid packages are a smidge over \$10,000 per year, with grants making up about 25% of total aid.

Low tuition offers the potential to promote participation by students from low-incomes families, a category that tends to have more diversity than students from more well-off backgrounds. However, in the absence of increased provincial funding, low tuition also negatively affects an institution's ability to develop new programming and support existing programs. Navigating these imperatives will be challenging for UM.

Figure 7: Domestic University Undergraduate Tuition and Additional Fees, Canada V. Manitoba, 2006-07 to 2021-2022, in real \$2020

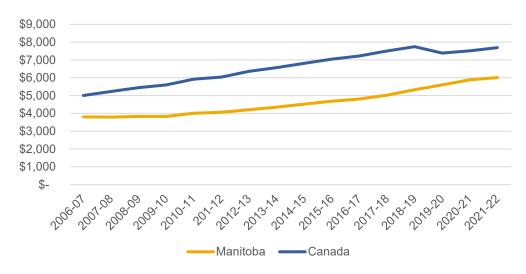
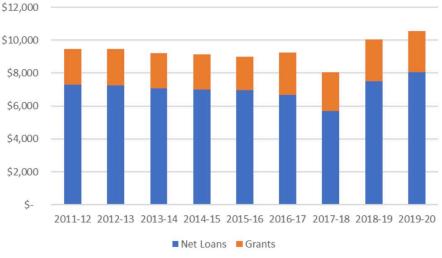


Figure 8: Average Loan Plus Average Grant Disbursed, Manitoba, 2011-12 to 2019-20, in constant \$2019



Undergraduate Student Enrolment

Most of the growth in real numbers at the University of Manitoba in the last ten years has been at the undergraduate level, but graduate students are making up a slightly bigger proportion of the student body than they did a decade ago. As enrolment in part-time students has remained stable over the last decade, the increase in students has been in FT students.

The decline and increase in U1 observed in figure 10, closely accompanied by an almost mirror trend line in science and a slightly more gradual increase in arts, can be explained by the introduction of direct-entry options by the faculties of Arts and Science respectively. Students who would have otherwise enrolled in U1 to subsequently enroll in Arts or Science in some cases went directly into those programs.

Figure 9: Undergraduate and Graduate Enrolment, Full-Time 2012-2021



Figure 10: Undergraduate Enrollment by Top Five Programs, Full-Time 20122021*
6000
4000
2000
2000
2012 2013 2014 2015 2016 2017 2018 2019 2020 2021 2022





^{*} A previous version of this graph had an error in which reporting years from 2017-2021 were reversed for two areas, causing the graph to show erroneous trends during those years. The graph has been corrected, Feb 6.

Graduate Student Enrolment

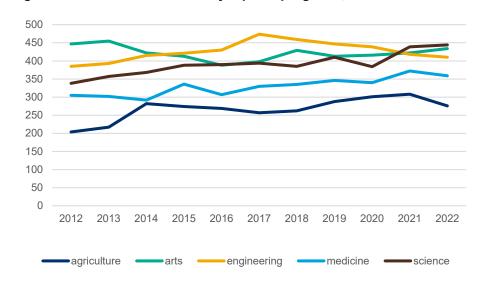
Graduate enrolment has increased by approximately 16.7% in the last decade, which is higher than the overall institutional growth rate, which sits at 8.9%. The graduate enrolment growth rate was highest in agricultural programs, closely followed by science programs.

Table 1: Educational Attainment Rates of Canadians Aged 25-64, Selected Years, 2001-2021

	2001	2006	2011	2016	2021
Less than high school	18%	15%	11%	9%	7%
High School	40%	37%	34%	31%	26%
Short-cycle Tertiary	22%	23%	24%	26%	26%
Bachelor's	14%	17%	18%	20%	24%
Master's or Above	7%	7%	8%	10%	11%

Enrolment in Master's programs across Canada has grown at an average of nearly 3% yearly, according to Statistics Canada, reflecting robust growth in this area. Increasingly across Canada, citizens are pursuing master's degrees, indicating that growth at the graduate level remains strong.

Figure 11: Graduate Enrolment by top five programs, 2012-2022







Student Experience

The student experience is both a result of pedagogical investment on the teaching side, and a result of the learning environment and services provided within the context of their education. The design of the student experience is a function of institutional objectives and educational values. Elements of the student experience differ in how they impact student enrolment and retention. Investments in the student experience, either on the academic side or the service side, are a matter of institutional priorities and values. Increasing services is typically easier to implement, but investments in pedagogy and academic experience yield better reputational dividends.

Universities have increasingly invested in student spaces, which bridge the academic and service sides, from revitalizing lab and library resources to designing appealing study spaces. Ensuring new buildings are accessible and retrofitting old buildings to this end is also increasingly prioritized.

In the 2022 Canadian University Survey Consortium respondents indicated that the top 5 reasons (in order of popularity) they decided to attend university:

- → To prepare for a specific career or job
- → To get a more fulfilling job than I probably would if I didn't go
- → More likely to get a job with a degree
- Apply learnings to make a positive difference in the community
- → Earn money

Universities have tried to provide student experiences that cater to these aspirations by promoting work-integrated learning, service learning, and other forms of experiential learning commonly believed to provide students with workplace marketable skills.

According to the 2020 results from the National Survey on Student engagement (NSSE), UM undergraduate students reported that they are less likely to (in comparison to other U15 students):

- participate in an internship, co-op, field experience, student teaching, or clinical placement (35% v 51%).
- to hold a formal leadership role in a student organization or group (22% v 36%)
- participate in a learning community or some other formal program where groups of students take two or more classes together (12 %v 18%)
- work with a faculty member on a research project (18% v 26%)
- complete a culminating senior experience (capstone course, senior project or thesis, comprehensive exam, portfolio, etc.) (20 v 35%)

Student Experience at the Graduate Level

Graduate students have different expectations of their institution than undergraduates. They are often at the institution for less time (if they are in a Master's program) than their undergraduate counterparts and their experience is largely articulated in terms of how the institution can enable their future success. For example, according to the most recent poll results available from the Canadian Graduate and Professional Student Survey (CGPSS), the following was the reason for which graduate students enrolled in graduate studies:

- To equip me to start a career, or advance an existing career outside of academia (40.2%)
- To equip me to start a career, or advance an existing career in academia (31.9%)
- To satisfy my interest in the field, regardless of career prospects (23.5%)

In the same survey, graduate students were asked about the importance of specific academic activities. Graduate students' responses on these questions do vary according to type of degree, immigration status or disciplinary sector. On aggregate, the top three responses were:

- The opportunity to work or collaborate with other academics or graduate students in other departments or disciplines at the same university
- Collaboration with other academics / graduate students at other research institutions in Canada
- --> International collaboration

External to the survey mentioned above, we note that literature on graduate student experience often also includes discussion on the need for:

- "Alt-ac" career preparation
- --> Funding and living affordability
- Mental health and well-being support

International Student Enrolment

Over the last decade, International student enrolment has increased precipitously and steadily in Canada. Manitoba's International Student population growth follows a similar trajectory to the rest of Canada.

Increasing international enrolments has been touted by universities as a way to diversify the student body and provide students on campus with the opportunity to meet and study alongside people that are different from them. This, the conventional wisdom holds, provides students with transformative experiences and develops their interpersonal skills. Universities will also point to the proportion of international students that attend their school as a means by which they are making strides in advancing diversity, equity, and inclusion.

At the graduate level, increasing international student enrolments is also often a marker of institutional prestige, serving as an illustration of the university's appeal to the best and brightest minds who will congregate on a campus and further efforts of the university to develop knowledge and expertise through its graduate programs .

At the undergraduate level, international student enrolment has also been a way by which institutions have made up the financial gap resulting from decreasing government investments in PSIs. While domestic tuition fees are regulated, international fees are not. International students at the undergraduate level will pay anywhere between two and four times the amount their domestic counterparts pay. Many institutions recruit predominantly from a small cohort of countries (e.g., China, India, and Saudi Arabia). Specialisation in this regard allows for universities to concentrate their recruitment efforts. However, this recruitment strategy has the potential to put the university in a position where access to those international students is used as leverage in political discourse or otherwise suddenly stops. Some countries in the past (e.g., Saudi Arabia) have suddenly cut off international student mobility to Canada in response to a political dispute.

Increasing international enrolment responsibly requires careful planning. International students need social supports for proper integration, which requires significant investment and co-operation and co-ordination between institutions and different levels of government.

Figure 12: International Student Enrolments as a percentage of Total University Enrolments, Canada v. Manitoba, 2000-01 to 2019-20

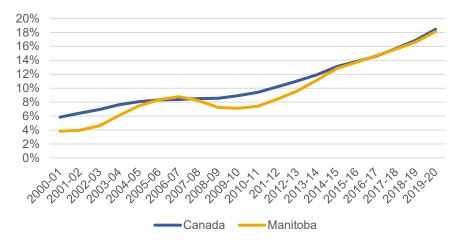
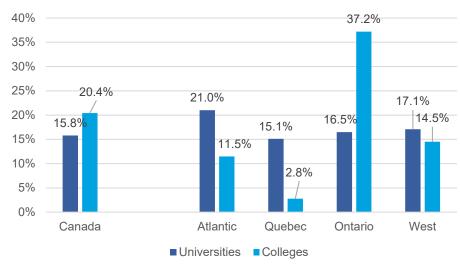


Figure 13: International Students as a Percentage of Total Student Body, 2020-21





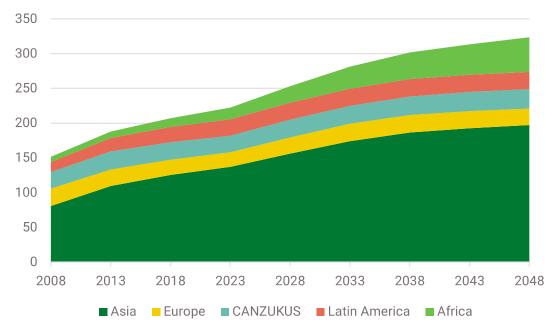
Academic Growth in Asia and Africa

The Shifting Landscape of Global Higher Education

The period between 1998 and 2013 was the fastest period of higher education enrolment growth in world history – a rate of roughly 8% per year. But since then, growth has slowed to about 2% per year, mainly because the global youth population has started to decline. While it will recover slightly in the 2030s, future growth in university enrolments is mostly going to come from increasing participation rates in regions less impacted by the decline. In countries, like Canada, where we see an expected decline in youth population and where higher education is already near-universal there is little new demand for higher education. It is expected that growing demand for higher education will continue to occur in Asia and Africa—through to 2048, about 93% of all global growth is likely to come from these two regions .

With the rise of new institutions or predominance of universities in these regions over the next twenty years, The implication for Canadian universities, like UM, is the potential for not just new demand from international students in these regions, but also opportunities for strengthened international collaboration and research partnerships.

Figure 14: The shifting landscape of global higher education (projected enrolments, 2008-2048, in millions)



Research and Innovation

Universities, particularly large research institutions such as the University of Manitoba are expected to play a large role in discovery and furthering human knowledge through research. There are three main ways in which universities engage in research, each of which have a different impact:

- Fundamental research: The traditional prestige research, advancing new knowledge and disseminating through academic publications, applicable to all disciplines. Key focus of international rankings (which are often biased toward bibliometric measures).
- Commercial research: research is undertaken with an eye toward commercializing discoveries, whether by the PI or research team, the university, or in partnership with external companies. Largely limited to certain areas of research.
- Community research: research that is conducted with a community, responding to their needs or issues by using and applying the tools of the university (people, knowledge, equipment, relationships, etc.) to various ends (solving service gaps, producing policy recommendations, etc.). Can be difficult to quantify its impact.

While each mode of research exists at every university, they also each require different infrastructure, and institutions therefore have an incentive to specialize to an extent. In other words, universities are pressured to to ask themselves what kind of impact do they want to make and what type of research best allows for the chosen type of impact. The answer is a function of institutional identity and values.

Until the 1990s, the university's new role was typically expressed in terms of fueling basic research. Since the 1990s, however, universities have been expected to take on an increasingly direct role in economic development through commercialization activities, among other things. More recently, universities have also strongly emphasized solving problems of local and global societal importance, often articulated as a commitment to acting in the service of the United Nations' Sustainable Development Goals. The figures below position UM in terms of its impact and performance with various funding measures, internal and external. They also show that in general, UM does better on measures of output rather than it does on traditional measures of impact.

Table 2: UM Performance, Whole Institution and by Broad Scientific Field, CWTS Leiden Rankings 2022

ALL DISC	ALL DISCIPLINES BIOMED		L & HEALTH	LIFE & EARTH SCIENCE				
PUBLICATIONS								
12th in Canada	322 nd globally	11th in Canada	248 th globally	9th in Canada	191 st globally			
IMPACT (TOP 5%)								
24th in Canada	620 th globally	17th in Canada	450 th globally	17th in Canada	565 th globally			
MATHEMATICS & C	OMPUTER SCIENCE	PHYSICAL SCIENCES & ENGINEERING		SOCIAL SCIENCES & HUMANITIES				
PUBLICATIONS								
17th in Canada	423 rd globally	17th in Canada	627 th globally	16th in Canada	295 th globally			
IMPACT (TOP 5%)								
20th in Canada	465 th globally	24th in Canada	697thglobally	21st in Canada	417th globally			

Table 3: Research Chairs at the University of Manitoba

Endowed and Sponsored Research Chairs	32
CRCs	47
Canada 150 Research Chair	1
Canada Excellence Research Chairs	2

Research and Innovation (Continued)

One of the main constraints on research output is money. Some of it is through internal resource allocation whereas some of it, particularly in disciplines that require expensive equipment and travel, comes from external funding. Figure 14 shows the change in income from the federal Tri-Councils and the Canada Foundation for Innovation over a 10- and 20-year time horizon (i.e., since 2000-01 and 2010-11) for all U-15 universities. The University of Manitoba performs somewhat lower than its U15 counterparts at both time-scales, but it has improved its rate relative to several of its western competitors over the last decade.

One area in which the University of Manitoba has performed better relatively is in obtaining Non-profit research revenue. Figure 16 ranks the University of Manitoba 7th across the U15. Its non-profit research revenue accounts for 5.8% of all non-profit research revenue across the U15. When the University of Toronto, which alone records over a third of all non-profit revenue across the U15, is removed, the University of Manitoba's performance is even more notable, representing over 9% of all non-profit research funding across the U15 (minus the University of Toronto).

Figure 15: 10- and 20- year change in real income from CFI and Tri-councils U15 universities 2020-21

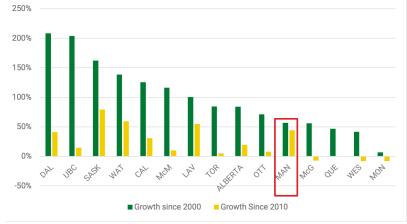


Figure 16: U15 Total Research Revenue, 2020-2021

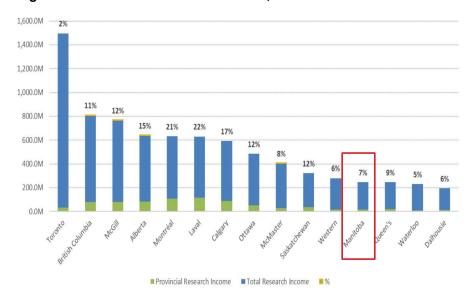


Figure 17: U15 Non-profit Research Revenue, 2020-2021

