

INDIGENOUS ACHIEVEMENT

In Canada, only 11 per cent of Indigenous people aged 25 to 34 have a university degree, compared to 33 per cent of non-Indigenous Canadians in the same age group. As a result, Indigenous peoples on average earn less, occupy fewer managerial and professional jobs, and are more likely to be unemployed.

If increased productivity is a priority for Canada, then enabling Indigenous peoples to pursue post-secondary studies—and encouraging their success—is critical to achieving that goal.

The University of Manitoba supports the federal government’s 2017 commitment to Indigenous students through the following:

- New funding and reallocated resources totaling \$50 million to the Aboriginal Skills and Employment Strategy (ASETS);
- Increased funding to the Post-Secondary Student Support Program by \$90 million over two years, beginning in 2017-18; and
- Bursaries and scholarships worth \$40 million for more than 12,000 First Nations, Inuit, and Métis students—helping many new students come to the University of Manitoba over the next five years.

This is a strong start, but more is needed. The University of Manitoba is doing its part to attract and support Indigenous university students. Through tutoring and mentoring, our programs empower students with academic skills and personal coping strategies to help them succeed. Below is a sample of our programs:

- **Indigenous Business Education Partners (IBEP)** provides academic and financial support to Indigenous students pursuing a Bachelor of Commerce degree at the I.H. Asper School of Business. IBEP graduates hold key positions at major corporations and non-profit organizations, and have started their own businesses across Manitoba, Canada, and the world.
- The **Engineering Access Program (ENGAP)** is the country’s most successful program of its kind, having graduated more than 100 Indigenous engineers.
 - Access programs at the University of Manitoba can provide opportunities for students who do not fully meet the normal entrance requirements.

- Extra support for these students is provided during their studies at the university.
- Most importantly, students do well. This year's gold medal winner in Engineering came through the program – as did the student who placed third overall.
- The **Access program**, in cooperation with the Province of Manitoba, provides academic and personal supports for under-represented groups in Manitoba, with particular focus on First Nation, Métis, and Inuit applicants.
- The **Aboriginal Focus Program** offers certificate and diploma programs in First Nations and northern Manitoba communities.

Although these programs inspire many Indigenous youth to attain a university degree, the cost of attending university remains a significant deterrent. Government awards typically cover only a small portion of tuition and related expenses and cannot assist all those who apply.

Given that Indigenous peoples will represent an estimated 18 per cent of Manitoba's population by 2026—with First Nations, Métis, and Inuit youth the fastest-growing group—ensuring their success is key to our province's competitiveness.

The University of Manitoba recommends:

- Committing to sustained growth in financial assistance for Indigenous students to increase educational achievement and employment;
- Funding Indigenous post-secondary support initiatives, including financial literacy and transition programs, to promote success; and
- Investing in new scholarships to support Indigenous graduate and post-doctoral students, and to build a cohort of Indigenous faculty.

RESEARCH AND DEVELOPMENT

Research funding from the federal government is essential to competing in the global economy. Unfortunately, as cited in the science review, over the last 10 years, federal investment in real per-capita funding for independent or investigator-led research has fallen by 30 percent. Additionally, federal support for research and development in higher education makes up less than 25 percent of total spending.

The University of Manitoba welcomed new initiatives for innovation and skills in Budget 2017. Most notably, the Innovation Super Clusters Initiative will generate new partnerships with the private sector in areas such as agriculture, where we are a global leader and aerospace and advanced manufacturing where we are very strong provincially and major players nationally.

The University of Manitoba is working successfully with industry to address challenges. Below are some examples:

- High-tech clusters in our Smartpark, such as Emergent BioSolutions, Monsanto Canada, and North Forge, are keeping highly skilled students and researchers in Winnipeg.
- Our new Transformational Partnerships Program gives private-sector partners full control of technology, eliminating lengthy negotiations over the control of intellectual property and greatly simplifying royalty payments which are due only when partners starting generating revenue from the intellectual property.
- The new Advanced Satellite Integration Facility (ASIF) at Magellan Aerospace in Winnipeg will bring our experts together to research, develop, and test satellite communication buses and components.

Despite the successes of our university and others across Canada, we need more federal support for research and development, and research partnerships with industry. Increased and sustained research funding will enhance opportunities for early and mid-career researchers, and will advance Canada's efforts to improve gender equity and diversity in science.

The University of Manitoba recommends:

- Enhanced funding to federal granting agencies that enable universities to conduct trailblazing research. Our efforts will help Canadian industry develop new products, systems, and services, creating jobs and increase productivity.
- Implementing recommendations of Fundamental Science Review (FSR), since discovery is fundamental to innovation and commercialization.
- Directly supporting startups, providing tax credits for established businesses, and otherwise encouraging businesses to take risks in developing new technologies and products.
- Expanding the NSERC Engage program to CIHR and SSHRC to encourage more businesses to partner with academic institutions.

Currently, businesses in the health or non-NSERC fields lack access to any program that encourages early interactions with universities.

- Modernizing and streamlining the Scientific Research and Experimental Development program that allows business and researchers to interact, providing tax advantages for business to invest in university research.

INFRASTRUCTURE

Canada's economy depends heavily upon highly educated, skilled, and analytical individuals produced by Canadian universities. At the University of Manitoba, students and researchers are key to driving research and innovation in our province. However, they cannot make discoveries without the proper facilities and equipment.

As recommended in the FSR panel report, a sustained plan to fund state-of-the-art infrastructure through the Canada Foundation for Innovation (CFI) is required. This is crucial to attracting international best researchers to Canada and keeping Canada's best researchers at home, fostering collaboration across disciplines and sectors, supporting business innovation, and promoting long-term planning.

Regular funding will also provide stable support for researchers and their facilities through federally funded mechanisms including the Canada Excellence Research Chairs program, the Canada First Research Excellence fund, and the Post-Secondary Institutions Strategic Investment Fund.

Federal support has helped the University of Manitoba develop the following modern facilities:

Manitoba Institute for Materials

Manufacturers are looking for ways to improve everyday items such as cell phones and frying pans, while the aerospace sector wants to make stronger yet lighter airplane parts. Meanwhile, engineers are exploring better materials for bridges, and dentistry students are investigating ways to make dental coatings and fillings last longer.

Research and development in composites and the aerospace industry is growing across Western Canada. Thanks to a federal investment of \$3.5 million, the University of Manitoba purchased three different high-performance electron scanning microscopes to create the Manitoba Institute for Materials (MIM), a centre of excellence for industry, researchers, and both undergraduate and graduate students.

In the first six months of operation, the Institute has trained more than 60 students (undergraduate and graduate) to use state-of-the-art characterization instruments.

Regenerative Medicine Laboratory

The Regenerative Medicine Laboratory in the Max Rady College of Medicine, funded by the Knowledge Infrastructure Program, attracts researchers from across Canada specializing in stem cell research and technologies.

In 2013, this group made a major breakthrough in describing how, at the molecular level, a frequently mutated gene causes amyotrophic lateral sclerosis (ALS), a progressive degeneration of motor neurons; further study is underway on treatments to slow the disease's progress.

In addition, a graduate student in this lab has found that Vitamin A plays a significant role in reducing complications associated with Fetal Alcohol Spectrum Disorder (FASD), including cranial malformations and neurodevelopmental abnormalities of the brain.

FASD is one of the most common causes of neurodevelopmental disorders in Canada, affecting up to two per cent of the population, and costing \$4 billion annually. The scanning electron microscope in the Manitoba Institute for Materials contributed to this finding.

Active Living and Sport

The University of Manitoba is an important recreational hub in Winnipeg, housing sport facilities for use by the University and close to 200 community groups. Thanks to joint federal and provincial funding of \$20 million under the Provincial-Territorial Base Fund, nearly 3,000 members of the general community use our new Active Living Centre (ALC), and more than 15,000 children and youth participate annually in our Mini U programs.

The Active Living Centre also includes an Applied Research Centre, where scientists from multiple disciplines are examining barriers to exercise—such as chronic disease—and are developing community programs to promote active living and save healthcare costs.

The University of Manitoba recommends:

- Continuing to invest in infrastructure to attract and retain talent that will drive discovery and the economy;
- Continuing to dedicate specific funds to universities for infrastructure projects; and

