

THE MANITOBA INNOVATION STRATEGY



**STEADY GROWTH
GOOD JOBS** 

APRIL 2014

Manitoba 

The Manitoba Innovation Strategy is about creating a dynamic province where innovators, entrepreneurs and skilled workers can pursue their dreams and succeed at home. It's about building an economy in which graduates and young entrepreneurs can create and find the jobs of tomorrow – right here in Manitoba.

What is innovation?

Innovation means doing things in a *new* way, doing things in a *better* way, and sometimes – doing things in a way that defies all odds.

It's hard to believe that, as recently as 1988, the world wide web did not exist, whereas today it is the most powerful means of communication and interaction the human race has ever known.

That innovation was groundbreaking. It broke the mould. But innovation has many levels. Over the past century, only a handful of innovations have truly revolutionized the world.

Many more innovations simply take us to the next step, the next level of understanding, as we continue to pursue newer and better ways of doing things. Small changes in a product's design, or a new use for an existing service, can make the difference between moving forward and standing still.

Taken together, all these smaller innovations add up, helping to build a more productive and dynamic economy that is ready to seize future opportunities.

Commercialization: The bridge to growing businesses and good jobs

While innovation can be the result of years of work by its creator, it does not benefit the rest of us until it can be transformed into something we want or need. This is the commercialization process – an interactive cycle that moves from idea, to research, to technology, to product, to market channel, to satisfied customer, to successful businesses and good jobs. Innovation is not limited to any one stage of the commercialization cycle; it can make as much of a difference at the distribution and marketing stages as it can in early product development. The better we are at commercializing new technologies, products and processes, the more innovation will drive our economy.



An innovative economy is one where researchers, entrepreneurs and skilled workers work together to generate innovative ideas and transform them into growing businesses and good jobs.

Why is innovation important to Manitoba?

Innovation is key to growing a stronger Manitoba economy. It generates new businesses and helps existing companies become more productive and globally competitive. With new and growing businesses, Manitoba researchers, entrepreneurs and skilled workers can find good opportunities at home. And with a more competitive and growing economy, we can attract new investment to create good jobs for Manitobans.

Manitoba's long-term economic prosperity and quality of life depend on maintaining a positive business environment – one that provides the supports needed for investment in innovation at all levels. It is also critical that these supports be available for start-ups, small businesses and the continued innovation of Manitoba's leading firms.



If innovation is important, what are we doing about it?



To build a successful economy, Manitoba is launching a new **innovation strategy**. This new vision will re-align and re-focus our resources to better meet the needs of our entrepreneurial and business communities by:

- providing assistance directly to businesses and entrepreneurs who bring new ideas, processes and products to be commercialized
- targeting that assistance to more effectively meet the needs of the new and existing businesses that most require support to capitalize on their ideas
- ensuring that the resources invested result in measurable economic outcomes and tangible results

How will this make a difference?

It's essential that entrepreneurs, businesses and investors receive the right forms of assistance at the right times. Time to market is critical. As well, government supports must be delivered in the best possible way, at the lowest cost to citizens and government.

The Manitoba Innovation Strategy will help co-ordinate these critical factors. This will allow more researchers and entrepreneurs to successfully take their innovations from idea to market.



Six Priorities OF THE

Manitoba Innovation Strategy

Priority 1

Build on Manitoba's research excellence

Innovative economies are built on a base of well-performing research systems. New scientific and technological discoveries can lead to the creation of new industries, markets and innovations that benefit us all. To maintain and build on this expertise, we need to continue training and supporting our best scientists, technologists and engineers, to meet the demands of Manitoba's globally competitive, innovative firms. We also need to continue addressing issues facing society – health, food production, water, renewable energy and many others.

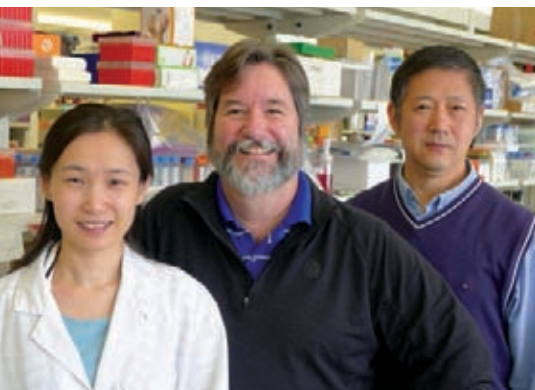
Research Manitoba – A new vision for our province

Currently, the Manitoba government is a strong supporter of basic research at post-secondary and other research institutions. Setting up a central advisory body to oversee major provincial research programs will increase the focus, and effective use of resources, in developing existing and emerging research opportunities in the province.

Research Manitoba will be a research-funding, advisory and administrative body that will:

- bring major, provincial research-funding programs together under one umbrella
- take on an advisory and co-ordination role in many areas of research
- encourage the research community to create partnerships to better leverage funding from national and international programs
- focus on existing strengths and emerging opportunities in the province's research community to help Manitoba strengthen its position as a national and international leader
- ensure research funding is awarded in strategic priority areas under the guidance of business and research expertise

In Budget 2014, the government reaffirmed its strong commitment to local research by announcing the establishment of **Research Manitoba**.



PhD student Yueqin Zhou (lead author on the discovery and supported by a Manitoba Health Research Council studentship) with Dr. Geoff Hicks and Dr. Songyan Liu

ALS > A team of researchers at the University of Manitoba has discovered a mechanism by which a mutated gene called TLS/FUS causes amyotrophic lateral sclerosis (ALS). Also known as Lou Gehrig's disease, ALS is characterized by a progressive degeneration of motor neurons. As many as 80 per cent of people diagnosed with ALS will die within two to five years after diagnosis. A notable exception is astrophysicist Stephen Hawking who has lived into his 70s with it, defying all the odds and every medical explanation.

Dr. Geoff Hicks and a team of graduate students and fellows in the Manitoba Institute of Cell Biology (a joint institute of the University of Manitoba and CancerCare Manitoba) and the Faculty of Medicine Regenerative Medicine Program have found that the mutated gene, TLS/FUS, creates a "runaway train" effect that produces too much protein within cells. The team discovered that when healthy cells make enough TLS protein, some of it travels back into the nucleus to tell the cell to stop making more protein.

This is the first report describing how, at the molecular level, genes such as TLS/FUS cause ALS, and opens up avenues to possible new treatments.

Priority 2

Support collaborative models for the commercialization of research

Innovation thrives where high levels of interaction and collaboration take place. Manitoba has made, and continues to make, major investments in research – but in order to receive the best possible return on our investments, this research must be transformed into commercially viable, innovative products and services that can be brought, in a timely way, to markets around the world.

For this to happen, we need to strengthen Manitoba's commercialization cycle. We can do it by supporting collaborative models that provide our researchers and entrepreneurs with a unified approach to commercialization, an aligned system of support and a stronger collective voice. These new models also pave the way for reduced costs through the use of shared resources.

Collaborating on intellectual property (IP)

Manitoba is committed to working with stakeholders to create a co-operative commercialization effort with Manitoba's leading post-secondary research and health institutions. This initiative will allow us to take an integrated, collaborative and systematic approach to transforming Manitoba's research excellence into industrial innovation, new firm creation, economic growth and jobs. As well, this one-stop shop will provide the industry with better and more convenient access to the best technologies available in Manitoba.

This collaborative initiative will:

- allow all post-secondary institutions to benefit from technical and commercialization expertise
- allow for shared costs and resources among institutions and other stakeholders
- encourage greater commercialization in Manitoba by better enabling companies and entrepreneurs to access and use IP and technologies generated by our leading-edge researchers

In Budget 2014, Manitoba made a commitment to work with post-secondary partners to co-ordinate efforts on intellectual property (IP). This co-ordination will make it easier for Manitoba entrepreneurs to turn innovative ideas into businesses and jobs.



Transformational Partnerships

The University of Manitoba is taking a fresh stance on handling intellectual property (IP) created in collaborative research efforts. The university now allows companies to manage and control any arising IP. This will enable companies to move products to market more quickly.

"The goal of Transformational Partnerships is to encourage and stimulate the creation of new products and services by connecting the university's considerable research expertise with commercial development and innovation in local companies," said Digvir Jayas, Vice-President (Research and International) at the University of Manitoba. "The net result will be an increase in business productivity and overall research enterprise in the province."

The new model appreciates the need for a more flexible and nimble response to industry and will include new agreements and processes to meet those needs. The Transformational Partnerships initiative includes a new portal for industry to connect with partnership experts at www.umanitoba.ca/partnerships.

Other aspects of the new strategy include a more proactive role for the university's Technology Transfer Office. Office staff will be visiting companies to identify opportunities for collaborative research and knocking on researchers' lab doors to get a deeper understanding of the research expertise at the university. The Partnerships team will be the primary point of contact for industry to connect with expertise. Through the support of the Office of Research Services, industry will be matched with available funding programs.





Miraculins > Miraculins is advancing new and innovative screening tests to help improve the overall diagnosis and treatment of diseases. The PreVu® Non-Invasive Skin Cholesterol Test can help assess a person's risk of coronary artery disease by measuring skin cholesterol quickly and non-invasively – without needles or fasting. Similarly, the Scout DS® system uses light to quickly and non-invasively screen for signs of pre-diabetes and type 2 diabetes in a person's skin.

Priority 3

Create a clear path for innovators and entrepreneurs in Manitoba

Manitoba's innovation strategy will create a co-ordinated network of programs, services and partners. This network will support the innovation and commercialization activities of the entire business community. It will provide a clear path for companies and entrepreneurs bringing new products and services to market by:

- ensuring the right balance of supports that work together to effectively meet innovation needs across the entire business cycle
- reducing duplication and increasing alignment across the range of innovation and commercialization services provided in Manitoba
- placing greater focus on economic outcomes, accountability and performance measures to maximize opportunities
- communicating the business supports available to those who want to commercialize new innovations (where to go, for what and when)
- promoting a culture of entrepreneurship and innovation in government economic development policies

Priority 4

Help our graduates and young entrepreneurs find the 'jobs of tomorrow' right here at home

Live, work and STAY in Manitoba

Innovative, knowledge-based industries create high-skill jobs that attract students and young entrepreneurs. For Manitoba to remain competitive, it's critical that the next generation finds opportunities to stay in the province and build their careers here. By helping them find high-skill, well-paying jobs, we can keep our province competitive and position Manitoba for success in the global, knowledge economy.

The Manitoba Innovation Strategy will help our young people find the jobs of tomorrow right here at home by:

- continuing to invest in quality education for Kindergarten to Grade 12, our colleges and universities and the apprenticeship system
- encouraging high-school students to pursue careers in innovative, high-tech industries
- working with partners to ensure post-secondary curricula are relevant to local industry needs
- encouraging Manitoba companies to hire new local graduates by supporting industry training of these employees
- creating new programs to support young entrepreneurs launching innovative, technology-based start-ups



Canadian Tire > Canadian Tire Corporation chose Winnipeg as the home of its new, state-of-the-art, digital content warehouse, application lab, testing lab and high-performance data centre. The Canadian Tire Cloud Computing Centre will be one of the most advanced centres of its kind in North America. This multi-touch collaboration wall will ultimately connect all Canadian Tire offices in a highly interactive and digital environment, allowing real-time collaboration across the country.

Providing more innovative, high-skill jobs for young people is part of the province's commitment to add **75,000 more workers to our labour force by 2020.**

Priority 5

Enable our existing businesses to grow and prosper through innovation

Manitoba is home to a solid foundation of well-established, diversified and globally competitive companies. To maintain our competitive advantage, and create more jobs in the province, Manitoba companies must continue to develop, acquire and use, advanced technologies and processes.

Manitoba's R&D tax credits are among the best in the country. The province will continue to make investments in, and provide support to, strategic initiatives that drive technology transfer and international investment into this province.

Manitoba industries are driving world-class innovations

Manitoba is home to world-class organizations that support industry-driven innovation, such as the Composites Innovation Centre and the Vehicle Technology Centre. These organizations have the resources to help Manitoba companies develop new, innovative products, services and industrial processes.

The Manitoba Innovation Strategy will enable our existing businesses to grow and thrive through innovation by:

- supporting the development and commercialization of new products, new industrial processes and increased productivity
- enabling Manitoba companies to enter new markets and diversify in existing ones, through government's direct support to businesses, and its support of partner organizations, including industry associations and sector councils
- exploring new ways to bridge the pre-commercialization gap – the period in which businesses begin moving their innovations from laboratories and demonstrations to commercialized products that are available on the market

Global Aerospace Centre

The Global Aerospace Centre for Icing and Environmental Research (GLACIER) is an open-air test stand, capable of testing a range of both current and future aerospace gas turbine engines. It incorporates proprietary National Research Council technology to generate and spray super-cooled water mist into aircraft engines. GLACIER supports ice certification, and research and development of new, more efficient and advanced designs for Rolls-Royce Canada and Pratt & Whitney Canada engines.



Winnipeg was ranked as the most cost-competitive city in Western Canada and the U.S. Midwest in KPMG's 2014 Competitive Alternatives report. Winnipeg was ranked first overall in those regions in many industry sectors, including: digital services (ex: software development, video game production); R&D services (ex: biomedical research, clinical trials management); and manufacturing sectors (ex: aerospace, medical devices, telecom equipment).

Priority 6

Create an environment that fosters private sector investment for entrepreneurs and innovators in Manitoba

Access to capital investment remains a key challenge for Manitoba, as it is does for jurisdictions across North America. To address the current gaps, we must make sure that:

- there is access to capital for innovative local companies
- the local demand and supply of capital are well connected
- entrepreneurs and businesses can respond effectively, and successfully, to investor needs

A new innovation strategy will help Manitoba increase investor confidence, drive economic growth and create jobs by:

- improving the Small Business Venture Capital Tax Credit
- streamlining the Commercialization Support for Business (CSB) program for entrepreneurs and businesses
- exploring the potential for new models to leverage social media, such as crowdfunding, to source investment for Manitoba companies
- working with partners to develop new programs that connect investors with investment-ready firms



Invenia > Invenia has developed and deployed the world's first, multi-market *Energy Intelligence System*, which is a cloud-based, machine-learning platform that uses big, high-frequency data to solve complex problems in real time. This forecasting and optimization software is used by electrical utilities to determine the best way to incorporate clean wind and solar power into their grids to reduce greenhouse gas emissions. Wind and solar power providers use the software to improve efficiencies and reduce risk within their operations.

Moving forward with innovation – in all its forms

Whether groundbreaking and revolutionary – or small but noteworthy – innovation continues to be a vital economic driver in the 21st century. It is critical to Manitoba's future economic success because it directly affects our competitiveness, productivity, standard of living and quality of life.

As a result, we are moving forward with the Manitoba Innovation Strategy to ensure our province remains competitive in markets across the globe. Our goal is to build a new and better future for all Manitobans. Innovation is the key.

**For further information on Manitoba's Innovation Strategy,
visit www.gov.mb.ca/jec/ or contact:**

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