

# ACCESS WEST

WESTERN ECONOMIC DIVERSIFICATION CANADA

January - March 2005

## The Pulse of Western Canada's Health Industry

Western Canada enjoys a clean bill of economic health. And, if you take its pulse, you'll hear a strong heartbeat in the rapidly growing life sciences and health technologies sectors.

Canada annually invests approximately \$2 billion in health research and development and \$120 billion in health care. Life sciences and health technology products and services are being recognized for their potential to improve the quality and speed of care, as well as for their economic benefits in terms of creating new jobs in innovative industries and reducing health care costs.

Biotechnology and nanotechnology, for example, are playing a lead role in transforming the health industry sector in the West. New drug therapies and innovative

medical and imaging technologies are being developed, improvements are being made in diagnostics through remote technologies or telehealth, and more targeted treatments are available.

Partnerships with the research and development community, academia and all levels of government have led to leading-edge research and cutting-edge technologies being developed in the West.

Western Economic Diversification Canada (WD) recognizes that investments in health technologies not only save lives, but leads to new industries and economic opportunities. That's why WD is making key investments to develop the health technologies sector – a few of which are featured in this issue of *Access West*. ♦



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## MESSAGE FROM *The Honourable Stephen Owen*



The Government of Canada has made substantial investments – more than \$13 billion since 1997 – to build a strong foundation in basic science and technology, create leading-edge capabilities across the country and improve the lives of Canadians.

From the development of microchips that can help diagnose cancer, to molecular capsules that deliver medicine directly to infected cells, the potential of health technologies is limitless.

That's why Western Economic Diversification Canada is investing in the development and application of path-breaking health technologies across the West. Partnerships with industry, research institutions and all levels of government are leading to the commercialization of innovative ideas that will improve quality of life for Canadians and people everywhere. In addition, projects undertaken in our universities are creating unique learning experiences and creating high-quality jobs that will meet the ambitions of young Canadians and keep their expertise in this country.

Together we are building a stronger and healthier West, and an even stronger Canada.

*Honourable Stephen Owen, P.C., Q.C., M.P.  
Minister of Western Economic Diversification  
and Minister of State (Sport)*



## International Summit in Winnipeg – Finding the Diversity Within

by Lee Gregg

In 1980, 250 disabled peoples asked for, and were denied, a stronger voice in the decision making process of the World Congress of Rehabilitation International, an organization made up of 3,000 rehabilitation experts and service providers. Later that year, 250 disabled persons met in Winnipeg to form their own organization, later christened **Disabled Peoples' International (DPI)**.

Established in 1981, DPI has grown into a global organization with headquarters in Winnipeg and national assemblies in 135 countries. Founded on the principal of universal inclusion of all persons with disabilities, the organization promotes human rights and the economic and social integration of disabled persons.

In September 2004, Winnipeg hosted DPI's World Summit, which focused on the artistic diversity and entrepreneurship within the global disability community. The event drew over 1,000 participants from 103 countries, including Raymond Simard, MP for St. Boniface (Manitoba) who brought greetings on behalf of the Government of Canada. Sheikha Hessa Khalifa bin Ahmed al-Thani of Qatar, Special Rapporteur on Disability with the United Nations Commission for Social Development, brought greetings on behalf of the United Nations.

*Diversity Within the Disability Movement* was the theme of the summit. Western Economic Diversification Canada provided support for the **Global Diversity Village**, a tradeshow designed to help disabled entrepreneurs find practical solutions to the challenges they face through innovation and technology.

Twenty-seven entrepreneurs from Canada, Africa and the Asia/Pacific region showcased their products and services. A three-hour tradeshow workshop was provided by Uniquely Manitoba, a product development and marketing initiative for artists, crafts persons and specialty food producers. Topics covered included: promotional materials, setting goals and objectives, booth design and tradeshow tips. Participants enjoyed the training as most of them had no international experience and it also presented a unique opportunity for participants to meet, discuss topical issues and share best practices.

DPI operates regional offices in Africa, Asia/Pacific, Europe, Latin America and the Caribbean, with 80 per cent of them located in developing countries. For information on DPI, call (204) 287-8010 or visit their Web site at: [www.dpi.org/](http://www.dpi.org/). ♣



(Left to Right, standing) Winnipeg Mayor Sam Katz, Manitoba Premier Gary Doer and MP Raymond Simard discuss the challenges facing the disabled with Venus M. Ilagan, DPI's Philippines chairperson.

Photo courtesy of Disabled Peoples' International.

## Urban Renewal...A



*World Urban Forum 2004 – (L to R) WD Minister Stephen Owen, UN-HABITAT Executive Director Anna Tabajuka and Labour and Housing Minister Joe Fontana.*

Building sustainable communities is a key priority of Western Economic Diversification Canada (WD). While western Canadian urban centres are concerned about maintaining the necessary infrastructure to support these growing numbers, rural centres are struggling with population decline and youth out-migration. Both cities and towns are key to Canada's social goals and our economic competitiveness, and are the front lines in building a better quality of life for Canadians.

To address key issues like urban renewal in Western Canada, WD is taking a partnership approach. One example of an innovative solution to urban development challenges is the Vancouver Agreement, which recently won the country's highest award in public service innovation at the Institute for Public Administration of Canada's 2004 conference.

Communities around the world are struggling to address urban issues. Since 1950, people have migrated from rural homes in record numbers and today nearly 50 per cent of the world's population lives in urban centres. By 2030, that number is expected to reach 60 per cent. This dramatic shift in population density has created a range of issues from water, sanitation and shelter, to cultural preservation, decentralization of authority and urban governance, to urban poverty and health issues such as HIV/AIDS.

Since the agreement was signed in March 2000, WD has played an integral role in working with all levels of government, local businesses, the private sector, academia, local residents, the First Nations community and non-profit organizations in Vancouver's Downtown Eastside. WD's involvement in this urban development partnership, aimed at revitalizing one of Canada's most impoverished downtown neighbourhoods, has led to innovative projects that are improving the quality of life of residents and businesses in the community.

## A Global Challenge

WD Minister Stephen Owen recently attended World Urban Forum 2004 in Barcelona, Spain. With 5,000 registered participants, the Forum provided an ideal platform to discuss and exchange ideas, learn from the international community and showcase Canada's domestic and international sustainable urbanization policies and programs, such as the Vancouver Agreement.

The World Urban Forum is held every two years to bring together governments, local authorities, non-governmental organizations and other experts in an informal setting to discuss urban issues and the challenges facing communities around the globe. **World Urban Forum 2006** will be held in Vancouver, B.C., June 19-23, 2006.

"World Urban Forum 2006 is an opportunity to discuss and exchange ideas, and to demonstrate Canada's leadership in sustainable development," indicated Minister Owen. "WD's innovative urban partnerships, and our investments in areas such as innovative technologies and research labs, are examples of what Canada can contribute to international efforts on urbanization and human settlements."

Minister Owen emphasized that Canada is developing significant strength in environmental technologies, which promise to provide concrete solutions to challenges faced by all urbanizing nations. At the heart of the environmental technology movement is

the goal to reduce the negative impact of human settlements on the environment through clean energy, sustainable construction, water treatment, brownfield remediation and air quality management.

World Urban Forum 2006 will engage citizens and key stakeholder groups on urban policy issues and start to develop models that can be used to address urbanization issues in cities around the globe. Delegates will be able to learn first hand from those living in some of the most challenging human settlement environments in the world.

The Forum also provides an opportunity for westerners and other Canadians to share best practices and exchange ideas and success stories about projects like the Vancouver Agreement. WD can also share how it is helping to coordinate the Urban Aboriginal Strategy in major cities across the West.

In preparation for the 2006 Forum, WD is involved in the Vancouver Working Group, a diverse group of senior level representatives from the private and public sectors, which is providing input and expert advice to the Government of Canada.

For more information about the work of UN-HABITAT and the World Urban Forum, visit [www.unhabitat.org/](http://www.unhabitat.org/). For information about World Urban Forum 2006, visit [www.wd.gc.ca/ced/wuf/default\\_e.asp](http://www.wd.gc.ca/ced/wuf/default_e.asp). 🍁

In 1976, Canada helped bring urban issues to the forefront of international awareness by hosting HABITAT I — the historic first United Nations (UN) conference on human settlements, held in Vancouver. The conference led to a UN resolution that created the United Nations' Human Settlements Program (UN-HABITAT). The agency, based in Nairobi, Kenya, deals with human settlements issues and established the World Urban Forum initiative.



## Turning Health Spending Into Commercial Success

by Jason Brisbois

*Chief Economist, WD Headquarters, Edmonton*

Every year governments in Canada spend about \$120 billion providing health care services to Canadians and \$2 billion on health research. The result is Canada enjoys one of the best health care systems in the world. But are we really getting the best return on our health care investment? Can our spending on health care and health research also generate new industries, new jobs and economic growth?

In 2001, Western Economic Diversification Canada (WD) supported Dr. Henry Friesen – now chairman of Genome Canada – and a task force consisting of leaders in health research, health care delivery, industry and investment from across the West to find out.

Dr. Friesen's consultations concluded that there is potential for health related research to become an economic driver for Western Canada. As a result, WD invested \$2 million toward the creation of the **Canada West Health Innovation Council (CWHIC)**, which was formed with a mandate to find ways to build a vibrant, Canadian health science industry based on commercializing health discoveries.

CWHIC's first step was to identify areas of health research that hold the best potential for producing commercially viable products and services. Through

extensive research and consultations, three promising areas in Western Canada were identified: medical devices and imaging, functional foods and natural health products, and infectious diseases and immunology.

Next, business plans were developed to guide these sectors to commercial success by turning ideas into marketable products and services. In the process, it became clear that the medical devices and imaging, and functional foods and natural health products sectors are in the best position to generate commercial successes in the near term.

Today, CWHIC and WD are evaluating partnership options for moving forward on a number of ideas and opportunities generated by the work to date. To be effective, participation and financial support will be required from a range of organizations – from health research and health care institutions, to universities, industry, government and communities.

Much remains to be done, but CWHIC's work has put Western Canada in a position to lever WD spending on health research into a legacy of successful commercialization stories.

For more information, visit [www.wd.gc.ca/innovation](http://www.wd.gc.ca/innovation).♣

## Arts and Culture, Say Hello to Science and Technology!

Nestled among the majestic Canadian Rockies in Banff, Alberta, is a facility where artists and scientists share the same spirit of creativity and innovation. **The Banff Centre** strongly believes that the blend of arts and culture with science and technology will produce the new media of the future.

The **Banff New Media Institute (BNMI)**, a program of the Centre, is a world-class research and content innovation facility that has been successfully supporting the new media industry in Canada since 1990. In the Spring 2004, it launched the *Accelerator*, a fast-track incubation program for promising new media content and technologies companies in Western Canada that will help their chances for success.

New media companies excel in entertainment software, web development and Internet advertising. Most companies tend to be micro-sized, consisting of only one to five employees.

As today's wireless industry calls for fast-track development of applications, content and services, new media companies have excellent opportunities for accelerated growth. The BNMI will help creators gain access to the business support, knowledge and networks needed to take their ideas to the next level.

The Accelerator initiative provides fledgling new media companies with creative counselling, production planning, legal support, as well as training in areas such as marketing, budgeting and financing. This new tool will also help develop clusters of small businesses and create alliances that can bid on larger and more complex projects.

Not only will new media companies benefit from access to leading-edge technologies, they will also develop business knowledge and professional networks through



*The Art Research and Technology Visualization Lab at BNMI supports advanced visualization, multi-track audio and movement-based interfaces.*

*Photo courtesy of Donald Lee, The Banff Centre.*

extensive workshops, forums and business incubation/residencies.

The Accelerator supports the creation of products that are a result of research undertaken at BNMI and creates a system where applied research challenges faced by small and medium-sized enterprises can be addressed by new media researchers at the Institute.

Western Economic Diversification Canada provided the Banff New Media Institute with support to establish the Accelerator, which will help position Canada as a leader in new media technologies.

For more information about the BNMI or other programs at The Banff Centre, call (403) 762-6100 or visit [www.banffcentre.ca](http://www.banffcentre.ca). 🍁



## A New Tool for Faster Cancer Detection



*Dr. Pilarski (2nd from left) examines a new microfluidic research tool with a team of colleagues and students in a University of Alberta Electrical Engineering laboratory.*

Anyone who has ever waited for medical test results can relate to the anguish it causes. When the threat of cancer looms, fear and stress not only affect the patient, but also their family.

Through the wonders of science, patients may soon walk into their doctor's office, give a few drops of blood and get a diagnosis within minutes. For the medical world, these quick test results will not only gain precious time for patient treatment, but also offer significant savings as testing can be done at a fraction of the cost of current methods.

Engineers, geneticists, physicians and medical researchers are pooling their leading-edge discoveries in micro/nanotechnology and medicine to develop a miniaturized diagnostic testing device for cancer. The handheld device will use microfluidics chips (glass or plastic chips that are embedded with micron-width channels in which fluids

thousands of times smaller than a droplet can travel) to detect four variations of the disease: multiple myeloma, follicular lymphoma, colorectal cancer and susceptibility to breast cancer. The universities of Alberta and Calgary and the Alberta Cancer Board are providing key researchers and support for this unique collaboration known as the **Alberta Cancer Diagnostic Consortium**.

Dr. Linda Pilarski, oncologist and professor at the University of Alberta, is the scientific leader for this project. She expects this tool will be available to health practitioners within three to five years.

The new device will have the potential to quickly determine the genetic properties of a specific cancer right in the doctor's office at the time of diagnosis. Treatment can be tailored to most effectively target specific characteristics of the disease in each individual patient. It also means that as the disease changes over time, these changes can be identified and the therapy quickly adapted to target more aggressive cancer cells.

"We hope this will lead to customized, more effective treatment options for cancer patients," said Dr. Pilarski.

Western Economic Diversification Canada recently invested \$2.5 million toward the development of the prototype that will eventually lead to commercialization of this innovative device.

For more information, contact Dr. Pilarski at (780) 432-8925. ♦



## Blending Life with Art

by Lee Gregg

It's not everyone who can boast that when they enter a classroom they really shock and surprise the kids. Meet Wendy Smith, certified prosthetist and owner of **LifeArt Prosthetics Inc.** "I would bring in clients to help teach children about amputees," explained Smith. "They brought new meaning to show and tell."

Over the last 20 years, Smith has evaluated, designed, fabricated and fitted artificial limbs. "I'm sure I fit thousands," said Smith, "but I couldn't do much for patients who needed hand and finger prosthetics and it really bothered me."



With 20 years experience, Wendy Smith's custom-built silicone body restorations have put her in demand across Canada.

Undaunted, Smith taught herself how to design and build finger joints and hands, incorporating colour for a more natural look.

In 2002, Smith expanded into making custom breast prostheses and launched her *Breast Dressed Program*. "Companies mass-produce gel-filled bags for about \$400, but they are heavy and do not fit women correctly," noted Smith. Her custom-fit prosthesis costs approximately \$600, is lighter and blends into the body for a more natural look. "There is a prosthetist in Toronto who charges \$4,000 for a breast prosthesis, but I wanted to make it affordable. I'm not going to take advantage of women who have already gone through so much."

The Winnipeg entrepreneur turned to the **Women's Enterprise Centre of Manitoba (WEC)** for assistance in expanding her Breast Dressed Program. "I went down with a skeleton business plan. They helped me pull it all together, apply for the loan and make it all happen. They were very encouraging and provided support all the way along."

Smith credits a big part of her success to her husband. "I could not do what I do without his total support. Balancing my work and family needs is an important and challenging part of my life."

"LifeArt is a research-oriented business," explained Smith. "I think it's important to always be coming up with new and better ways to fit prosthetics." Most school children would agree she has succeeded.

For information on LifeArt Prosthetics, call (204) 334-1206 or visit [www.lifeart.ca](http://www.lifeart.ca).

WEC is financially supported by Western Economic Diversification Canada. For information, visit [www.wecm.ca](http://www.wecm.ca). ♣

## Devices Created to Improve Life for People with Disabilities

by Jillian Glover



*The "Jouse," developed by the Neil Squire Foundation, is a mouth-operated computer mouse that works with sips and puffs instead of clicks to assist people with disabilities to use a computer.*

When Neil Squire became a paraplegic and lost his ability to speak as a result of a car accident, Bill Cameron became determined to improve his relative's life and the lives of others with severe physical disabilities.

Cameron brought a teletype machine into a Vancouver, B.C., hospital room, allowing Squire to find his voice again by converting his sips and puffs through a straw into Morse Code. Those working with Squire were inspired by the potential that technology could harness for people with disabilities. The team of volunteers, including electrical engineers and occupational therapists, continued to grow. When Squire died unexpectedly in 1984, Cameron created the **Neil Squire Foundation**.

The Foundation is now a national non-profit organization committed to providing education, technology and career

development for people with physical disabilities. Its research and development group studies and creates enabling technology – advanced devices, technologies and products – that are improving the quality of life for people with disabilities. To date, more than 5,000 people have benefited from the leading-edge assistive technology and innovative programs and services developed by the Foundation.

One initiative being developed by the Foundation is a brain-to-machine interface. A switch is activated by brain signals measured directly from the scalp, allowing an individual with a severe physical disability to control devices such as assistive appliances, computers and neural prostheses.

"The Brain Interface Project is producing encouraging results from people with high-level spinal cord injuries," says Executive Director Dr. Gary Birch. "We hope to eventually introduce it into the health care system and dramatically enhance the lives of those living with physical disabilities."

Western Economic Diversification Canada recently provided the Foundation with support to develop a strategic business plan for its Centre for Excellence in Enabling Technologies. This support will enhance funding and networking opportunities for the Centre and explore the marketability of enabling technologies.

"We have key science and business community members interested in providing guidance on how to capitalize on our knowledge," says Dr. Birch. "Western Economic Diversification Canada has helped us move forward towards commercializing our technologies."

For more information about the products being development by the Foundation, call (604) 473-9363 or visit [www.neilsquire.ca](http://www.neilsquire.ca).♣



## VIDO's Livestock Vaccines Lead to Healthier Canadians

by Cameron Zimmer

Poultry producers in the Fraser Valley were forced to re-examine food safety when they were ordered to slaughter 19 million chickens, turkeys and ducks last April in an effort to contain an outbreak of avian influenza.

With producers in B.C. and around the world focused more than ever on food safety, Dr. Brenda Allan from the **Vaccine and Infectious Disease Organization (VIDO)** in Saskatoon, Saskatchewan, is working on a vaccine for *Campylobacter jejuni*, another disease-causing pathogen spread by poultry.

Although unrelated to avian flu, the bacteria have the same potential to infect an entire flock without causing any symptoms. This stealth has Dr. Allan and other VIDO researchers asking how to tackle it and other chicken and cattle pathogens before they leave their host.

“There is a great deal to know about how *Campylobacter* interacts with the host,” says Dr. Allan. “Why does it make humans sick while chickens don’t show any signs of infection?”

Dr. Allan’s question reflects the spirit of VIDO’s food safety program, which focuses on protecting people through products for use in animals.

“More and more often we are seeing animal diseases that are easily transmittable to humans,” says VIDO’s Director Dr. Lorne Babiuk. “We have a 30-year history of studying animal diseases, so we are well-prepared to study emerging human diseases that originate in animals.”

According to Dr. Babiuk, every year there are 70 million cases of illness in North America caused by food-and-water-borne pathogens, and there are currently no effective ways to control these in animals.

VIDO made the leap from animal research to human health when Associate Director Dr. Andy Potter worked with a University of British Columbia scientist to develop a vaccine for cattle against a strain of *E. coli*.

VIDO’s efforts were boosted by a \$19 million expansion that received \$3.14 million from Western Economic Diversification Canada. It also received \$4 million from Natural Sciences and Engineering Research Council of Canada and Bioniche Life Sciences Inc. for two new research chairs to increase its food safety research capacity.

With its focus on helping both animals and humans, VIDO is working hard so our immune systems won’t have to.

Contact VIDO at (306) 966-7465 or visit [www.vido.org](http://www.vido.org). 🍁



Dr. Brenda Allan of VIDO’s food and water safety program examines a plate for *Campylobacter* bacteria — a common cause of food poisoning — with technician Carla Reimer.

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## Western Innovators Meet in Calgary

Western Canada enjoys a rich resource base in oil and gas, forests, agriculture, fishing and mining. But looking towards the future, this commodity-based economy and the wealth it has provided are being threatened by common issues – trade barriers, decline in resource production and changing weather patterns, to name just a few.

To stay successful in the global marketplace, the western provinces are moving from commodity-based to innovation-based economies. Understanding the path to this new knowledge intensive and diversified economy brought together over 250 individuals from business, academia and government in Western Canada.

**InnoWest 2004**, the first annual western Canadian innovation conference, was recently held in Calgary. It provided a forum for the West's innovation community to explore how successful innovation can create wealth and long-term business competitiveness, and included



discussion about the importance of collaboration and partnerships in building capacity and transferring and sharing knowledge.

Participants were able to collaborate in small group workshops to tackle real industry problems. Forums allowed for networking, review of the latest developments, discussions on common problems and possible solutions, and specific industry recommendations to take forward for action.

Western Economic Diversification Canada (WD) is a catalyst for the advancement of new technologies in Western Canada that lead to the commercialization of groundbreaking ideas and create new jobs in innovative industries. WD was proud to support InnoWest 2004.

For more information about InnoWest 2004, including summaries of the problems identified during workshops and their proposed solutions, visit [www.innowest.com](http://www.innowest.com). 🍁



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