



Annual Report 2010–2011

GenomePrairie

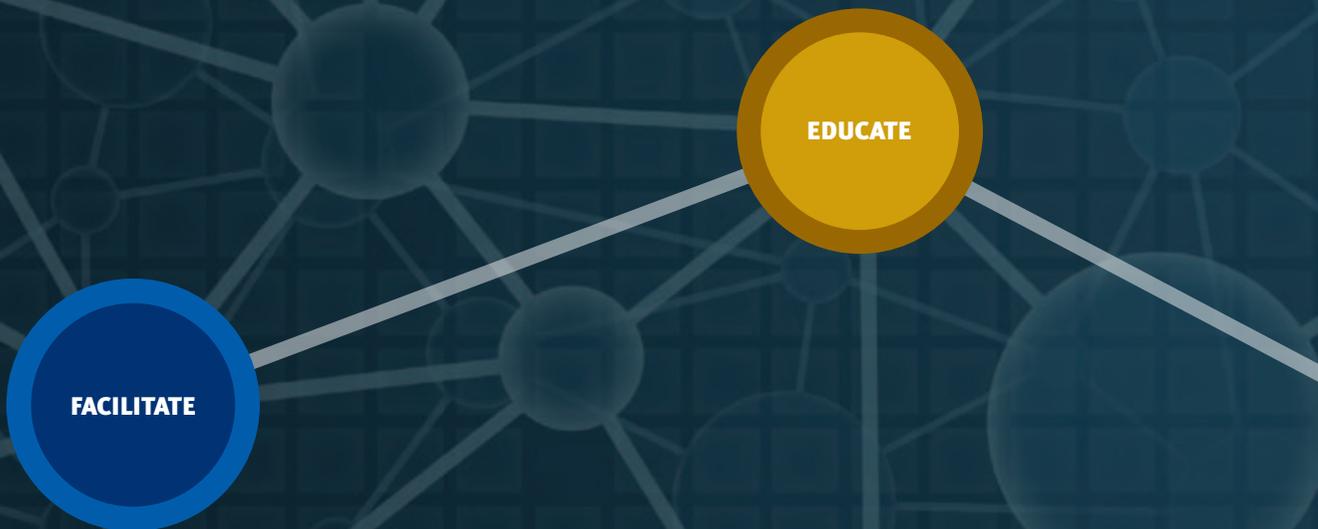


Translating
Innovative Research
to Benefit Society



Genome Prairie will facilitate world-class genomics and bioscience research innovations in Manitoba and Saskatchewan through bold leadership, dynamic partnerships and proactive education.

GENOMICS INNOVATION AND COMMERCIALIZ



ATION

ADVISE

COMMUNICATE

CONNECT

PROMOTE



GenomePrairie

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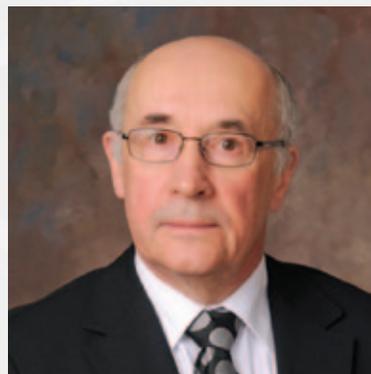


Providing Leadership

Genome Prairie accomplished several milestones over the past year. First, we sponsored a major bi-provincial summit to explore integrating the interests of Saskatchewan and Manitoba in genomics research and economic development. Second, we established Interra Biosciences Inc., a for-profit subsidiary, to begin the long-term process of facilitating the translation of genomics research from bench to commercialization and application in the real world. Third, Genome Prairie has also provided senior administration assistance to Ag-West Bio Inc. during a period of transition, and we acknowledge the company's critical role in the commercialization process. Fourth, working with Genome Canada, we have garnered new projects specific to the Prairie region. Fifth, Genome Prairie's board of directors undertook a self-assessment exercise to advance internal operating procedures. Finally, we welcomed two new members, Dr. Kutty Kartha and Mr. John Cross, to our board.

I am most grateful to the directors and the staff of Genome Prairie for their exemplary service and commitment and to Genome Canada and the universities and governments of Manitoba and Saskatchewan for their ongoing support.

Dr. Arnold Naimark
Chairman of the Board



Translating Innovation

With major projects in crops, bioproducts and health either completed or in advanced stages of development, the Genome Prairie region has developed a strong knowledge and technology base in the genomics sciences. We are now beginning to focus more on applications and commercialization strategies to ensure that society benefits from this investment in innovation. Commercialization of genomics research is a long-term endeavour that requires strategic planning and strategic partnerships. As an innovation intermediary, Genome Prairie is recognized for building strong bridges between academia, governments and industry.

This past year, Genome Prairie was invited to advise a multi-party federal government standing committee on significant issues within the agri-food industry. We also launched Prairie Gold, a new regional project funded through the Western Economic Partnership Agreement (WEPA) that will develop a regulatory framework for industrial oilseed crops. Additionally, through WEPA funding, we have worked with the Government of Saskatchewan and companies in the petroleum sector to evaluate opportunities for employing genomic technologies for enhanced oil recovery from mature oil wells.

With the proven ability to manage large multi-disciplinary projects, attract investment, catalyze development, and provide advice on regulatory processes, Genome Prairie is well positioned to focus on the translation of discovery research into real-world applications.

Dr. Wilf Keller
President and CEO



Transitioning Results

Genome Prairie has achieved exceptional results over the past year. The successful completion of projects has put Canada at the forefront of international research in mouse genomics for the advancement of human health and in identifying genetic factors of cold tolerance in crops. This year, Genome Prairie regional researchers were awarded a wheat genomics project in the Genome Canada 2010 Large-Scale Applied Research Project Competition that solidified Canada's membership in the International Wheat Genome Sequencing Consortium. Regional researchers also completed sequencing of the flax genome—the first complex genome to be sequenced by a Canadian project.

Good partners make good projects. We acknowledge the integral role of our research collaborators across Canada and around the world. On the international level, research in Manitoba and Saskatchewan has led to major partnerships with New Zealand and India, whose federal governments were instrumental in fostering these important relationships and providing opportunities that we intend to build upon in the years ahead. We are also working to strengthen regional ties to ensure that our Prairie partners and communities receive the full benefit of Genome Prairie research and results.

Dr. Reno Pontarollo
Chief Scientific Officer



Promoting Benefits

Education is the foundation on which the acceptance of knowledge and the adoption of innovation is based. Genome Prairie is committed to providing accurate and timely information to stakeholders on the importance and impacts of genomics research for our local, regional and global communities. This past year, we have focused on industry and government stakeholders to ensure that science-based knowledge is considered in planning and policy decisions, while providing insight into the future importance of genomics and bioscience research. We are proud to be viewed as a resource for information by such organizations and look forward to continue building on these relationships.

We realize that a prosperous future depends on the enthusiasm and education of our young people. Genome Prairie continues to support education and outreach events involving local high school students and is honoured to continue as the regional coordinating organization for the Sanofi-Aventis BioTalent Challenge (SABC) – Saskatoon region for a third year. Education and external relations continue to be a priority for Genome Prairie, and we look forward to working with organizations like Ag-West Bio and Life Science Association of Manitoba to strengthen our regional bioscience clusters.

Ms. Carol Reynolds
Director of Communications
and Government Relations

facilitate

Bi-Provincial Genomics Innovation Summit

Research in genomics and biosciences is highly competitive. In viewing national and global trends, Genome Prairie recognized that the potential for continued growth and success requires a new approach to harmonizing the efforts of key stakeholders. In consultation with government agencies and other stakeholders in Manitoba and Saskatchewan, Genome Prairie presented a strategy for the advancement of applied genomics and related research in the Prairie region. At the Bi-Provincial Genomics Innovation Summit held in October 2010, Genome Prairie identified three major areas of regional priority: crop agriculture; bioenergy, bioproducts and environment; and human and animal health.



Summit Results

Attendance at the summit involved 58 participants, including seven representatives from the Government of Saskatchewan, six representatives from the Government of Manitoba, 29 industry and academic participants, and 16 board members and staff of Genome Prairie. Participants provided input on questions concerning funding, social and economic development, areas of applied genomics relevant to the Prairie region, and the establishment of a Prairie bioscience partnership.



NOTABLE OUTCOMES

- Identified existing bioscience research partnerships in Manitoba and Saskatchewan, and key areas of commonality.
- Identified and compiled lists of priorities, research initiatives and capabilities of both provincial governments.
- Discussed strategies to move forward and remove impediments in these key areas.
- Formed a task force with representatives from both provinces to advance strategies and recommendations.
- Drafted and facilitated the signing of a Letter of Intent to Cooperate on Research and Innovation Initiatives in Washington, DC on June 28, 2011.
- Acknowledged Genome Prairie's research and successes in celebration of Genome Prairie's 10th anniversary.



From left to right: Saskatchewan Minister of Enterprise, Jeremy Harrison, Manitoba Minister of Innovation, Energy and Mines, Dave Chomiak, and Saskatchewan Minister Responsible for Innovation, Rob Norris sign a Letter of Intent to Cooperate on Research and Innovation Initiatives at the Biotechnology Industry Organization International Convention in Washington, DC on June 28, 2011.



PHOTO COURTESY: DR. BRIAN FOWLER

Feeding a Hungry World as Climate Changes

To adapt to climate change, crops must be able to survive extreme temperatures. Enhanced cold tolerance can ensure better yields while saving millions of dollars in crop losses for Prairie farmers. In addition, cold-tolerant winter wheat varieties can be planted earlier, resulting in better weed control, reduced herbicide costs and increased production through crop rotation. Regional researchers in the Crop Adaptation Genomics (CAG) project have made significant advances in developing frost hardy cereal crops.

Research Results

Over the course of the four-year project, researchers expanded the genetic map of the winter wheat variety Norstar to include over 2,000 markers. Researchers found unique gene sequences present in Norstar that were either altered or absent in cold-sensitive varieties. In addition, the CAG team identified:

- A cluster of 28 regulatory genes, several of which have a role in cold tolerance and are different in cold-tolerant and cold-sensitive wheat varieties.

- Over 12,000 wheat genes that change their expression pattern in response to exposure to cold. Expression changes for many of these genes are different between tolerant and sensitive varieties.

Combining these results with a highly successful wheat breeding program, CAG researchers developed several new spring wheat lines with improved cold tolerance that are now in the variety development process. In addition, the web-based winter survival model has been refined to provide prairie farmers with more accurate information to help them select the best winter wheat varieties for their region and specific agronomic conditions.

NOTABLE OUTCOMES

- Provided 118 person-years of employment for highly qualified personnel.
- Submitted 35 scientific papers, chapters and books.
- Delivered 23 global presentations.
- Established the foundation for a second project that includes Canada's full participation in an international wheat genome sequencing initiative.

Crop Adaptation Genomics (CAG)

Project Leader: Dr. Brian Fowler, Crop Development Centre, University of Saskatchewan

Project Manager: Chris Barker, Genome Prairie, Saskatoon

Project Value: \$8.1 M

Genome Canada Contribution: \$4.1 M

Other Funding Partners: \$4 M

Project Status: Completed (2006–2010)

Advancing Health Research

The North American Conditional Mouse Mutagenesis (NorCOMM) project realized the made-in-Canada dream of developing a global resource of knockout mouse models to accelerate health research. The largest and most complex Genome Canada project was led by scientists at the University of Manitoba and the Toronto Hospital for Sick Children, and involved research partners across Canada, the US and Europe.

The mouse is a critical model organism because 99 percent of the genes in mice are also present in humans. NorCOMM established a resource of mutant mouse embryonic stem cell lines that allows researchers to study the function of virtually any gene of interest. Ultimately, this will elucidate the role of genetic predisposition in nutrition, development, adverse drug reactions, obesity, diabetes, cancer, and virtually all major diseases. As more industry, academic and government labs use mouse models for health research, the economic and social benefits of NorCOMM will perpetuate well into the future.

Research Results

Together with co-funding partners, the European Conditional Mouse Mutagenesis Program and the National Institutes of Health, NorCOMM has produced a resource of over 8,000 mutated genes. The Canadian Mouse Mutant Repository (CMMR) was established to archive and distribute embryonic stem cell lines and related products. A total of 30 whole mouse lines have been developed and cryopreserved. NorCOMM brought about the establishment of the International Mouse Phenotyping Consortium to study the effects of gene mutation in whole mice, elucidate the role of genes in human disease, and develop new diagnostic and treatment tools. NorCOMM researchers demonstrated the importance of technologies such as bioinformatics to collect, integrate, coordinate, and distribute data. A mouse modelling genetic toolbox was developed to facilitate the use of the cell lines by researchers working on different tissue and disease types.



NOTABLE OUTCOMES

- Over 220 knockout cell lines have been incorporated into external research programs in over 18 countries and to 10 Canadian academic labs.
- Two biopharmaceutical firms have incorporated NorCOMM cell lines into their drug discovery and validation pipelines.
- The National Institutes of Health estimates that any user will save \$20-50K in development costs for each cell line ordered from NorCOMM. That's over \$1.1 million already and counting!
- The NorCOMM embryonic stem cell resource and derived mice are available to users on a cost-recovery basis, with no intellectual property constraints or future royalty reach through entitlements.
- NorCOMM researchers have leveraged over \$30 million in additional funding to enhance the utility and use of the embryonic stem cell resource.

North American Conditional Mouse Mutagenesis (NorCOMM)

Project Leaders: Dr. Geoff Hicks, University of Manitoba
Dr. Janet Rossant, University of Toronto

Project Manager: Dr. Lauryl Nutter, The Hospital for Sick Children

Project Value: \$20.4 M

Genome Canada Contribution: \$8.4 M

Other Funding Partners: \$12 M

Project Status: Completed (2006–2010)



Maximizing the Utility of Flax

Canada is the world's largest producer of flax. Over the past decade, flax has become an important multi-purpose crop, with increasing demand for flax oil, seed and fibre. The Total Utilization of Flax Genomics (TUFGEN) project will ensure that Canada maintains a leading edge in the research and development of this valuable crop.

As a nutrient source, flax oil contains a rich source of Omega-3 fatty acids and plant estrogens, which have been shown to reduce levels of bad cholesterol and mitigate the risk of heart disease and breast, colon and prostate cancer. As an industrial crop, flax has been used for millennia to produce durable fibres and fine linen. Today, flax seeds and fibres are used for an increasing array of industrial products, such as durable linoleum floorings, car panels, industrial oils and solvents, and a myriad of composite materials.

The objective of the TUFGEN project is to increase the benefits and versatility of flax by developing genomics research to assist in crop breeding, to improve field performance, and to enhance seed and fibre traits.

Research Results

With the advance in genomics tools, a main goal of TUFGEN—sequencing the entire flax genome—has been accomplished ahead of schedule and budget. This invaluable contribution to flax research is the largest single contribution to genome sequencing by a Canadian research team.

NOTABLE OUTCOMES

- 280,000 expressed sequence tags have been publically released, nearly tripling the number of accessions available to flax researchers.
- A searchable website has been developed for the flax genome at www.linum.ca.
- A CombiMatrix flax gene chip, which contains all of the 48,000 predicted flax genes, is now available and being used by researchers around the world.
- A novel gene and two mutations responsible for different levels of an Omega-3 essential fatty acid in flax varieties have been identified. This will provide breeders with tools to develop new varieties with specific fatty acid profiles.
- Project investigator Dr. Martin Reaney of the University of Saskatchewan has established a new company, Prairie Tide Chemicals Inc., which is looking for potential applications of TUFGEN-discovered cyclopeptides produced by flax for human and animal health and wellness.

Total Utilization Flax Genomics (TUFGEN)

Project Leader: Dr. Gordon Rowland, University of Saskatchewan
Dr. Sylvie Cloutier, Agriculture and Agri-Food Canada, Winnipeg

Project Manager: Chris Barker, Genome Prairie, Saskatoon

Project Value: \$11.8 M

Genome Canada Contribution: \$5.6 M

Other Funding Partners: \$6.2 M

Project Status: Ongoing (2009–2013)

Garnering Gold

Rising petroleum prices and the increasing demand for environmentally friendly alternatives are driving demand for industrial oil products. Prairie Gold is an innovative \$4.5-million project to develop the emerging industrial oilseed market in the Prairie region. Managed by Genome Prairie and funded federally and provincially through the Canada-Saskatchewan Western Economic Partnership Agreement (WEPA), Prairie Gold research aims to streamline regulatory processes and create a commercial pathway to establish an industrial oilseed market sector.

Genome Prairie is integrating expertise in genomics and plant breeding to develop *Camelina sativa* (false flax) and *Brassica carinata* (Ethiopian mustard) as renewable alternatives for petroleum-based products. Potential uses for industrial oilseeds include jet fuel, hydraulic fluids, plant-based polymers, high-quality animal feed, and bio-pesticides.

Prairie Gold Benefits:

- Provide the bioproducts industry access to high-value markets for fuel and non-fuel petroleum products.
- Create jobs in downstream sectors such as oil processing, product formulations and marketing for environmentally friendly renewable oil products.
- Provide farmers with valuable rotation crops, the ability to grow a high-value crop on marginal land, meal by-products to supplement animal feed, and the ability to maintain farm equipment with products made from agricultural efforts.
- Reduce environmental impacts due to the minimal need for fertilizers and pesticides to grow these crops.

Prairie Gold

Project Leader: Genome Prairie-led consortium

Project Manager: Doug Heath, Ag-West Bio Inc., Saskatoon

Project Value: \$4.5 M

Funding Partner: Canada-Saskatchewan Western Economic Partnership Agreement (WEPA)

Project Status: Ongoing (2010-2013)





Using Microbes to Enhance Oil Recovery

The oil and gas industry is vital to the Prairie region with its vast and rich oil reserves. However, much of the oil in the region occurs in unique geological formations which make long-term oil recovery difficult and costly. The

Microbial Enhanced Oil Recovery (MEOR) research project led by Genome Prairie is using biotechnology and genomics to develop novel tools to increase productivity and oil recovery from existing oil wells. The project will take a genomic fingerprint of an oil well to create a tailor-made nutritional formula that will stimulate the naturally present micro-organisms in the oil well to help release trapped, hard-to-extract oil. The new technology will reduce the risk of lethal sour gas forming in these wells and provide more efficient extraction by reducing water usage.

Research Results

- Initial studies collected down-hole samples from an operational well using a technique that maintained the environmental conditions of the collection point.
- Laboratory experiments confirmed that microbial growth under simulated down-hole conditions can be driven to eliminate the production of sour gas and stimulate desirable metabolic activity.
- Metagenomics—an emerging field in which DNA sequencing is used to identify individual microbes from a complex sample containing a community of microbes—was used to identify several new bacterial species and analyze their response to selected nutritional formulas.

Microbial Enhanced Oil Recovery (MEOR)

Project Leaders: Dr. Prescott Ward, Midwest Research Institute
Mr. Markus Lemke, Dycor Technologies Ltd.

Project Manager: Dr. Reno Pontarollo, Genome Prairie, Saskatoon

Project Value: \$953,944

Funding Partner: Canada – Saskatchewan Western Economic Partnership Agreement (WEPA)

Project Status: Phase 1a Completed (2009-2011)



Microbial Alchemy— Turning Waste into Resource

Microbes are nature's top recyclers. Regional researchers are leading a \$10.4-million international collaboration in the study of bacteria that convert waste materials such as straw, woodchips and paper into biofuels and renewable, biodegradable plastics.

The Microbial Genomics for Biofuels and Co-products from Biorefining Processes (MGCB²) project studies the bacterial metabolism, genes (and their functions) involved in conversion of waste materials and cellulose to usable products. The goal is to select and design populations of bacteria with enhanced biosynthesis, to enable biorefineries to generate products such as ethanol, hydrogen and bioplastics from low-cost agricultural and industrial waste.

Research Results

Together with partners in the US and New Zealand, MGCB² researchers have identified and patented several novel bacteria that could be used to create consortia with enhanced abilities to synthesize waste. Many of these bacteria are thermophiles that live in extreme conditions such as hot springs and thermal vents, and could have important properties for remediation.

NOTABLE OUTCOMES

- Completed metabolic profiling to understand carbon and electron flow in six sequenced bacteria.
- Determined key enzymes for the synthesis of hydrogen and ethanol in 29 sequenced bacteria with biofuels potential.
- Isolated eight novel biopolymer (PHA) synthesizing bacteria, and provisional patents have been submitted for three PHA stains.
- Surveyed and evaluated the economic, legal and environmental issues surrounding biofuels and barriers to industry.

Microbial Genomics for Biofuels and Co-Products from Biorefining Processes (MGCB²)

Project Leaders: Dr. David Levin, University of Manitoba
Dr. Richard Sparling, University of Manitoba

Project Manager: Dr. Jody Dexter, Genome Prairie, Winnipeg

Project Value: \$10.6 M

Genome Canada Contribution: \$4.9 M

Other Funding Partners: \$5.7 M

Project Status: Ongoing (2009–2013)



Capturing the Value of Genomics Research

Genomics research is fundamental to all biosciences and critical to the economic well-being of Canada and the Prairie provinces. The Value Addition Through Genomics and GE³LS (VALGEN) project comprises a diverse team of researchers from across Canada. They are working to positively shape public policy and streamline regulation in order to move innovation from the laboratory to practical application. Key foci include the role of regulation, knowledge management, intellectual property, and technology transfer in moving discoveries into the marketplace.

Research Results

The research team has completed a critical review of how technologies are moved from the laboratory to the marketplace in Canada, validating the need for new technology transfer strategies. The research team has created a variety of methods for evaluating the public's role in policy making and the complexity of the regulatory system.

NOTABLE OUTCOMES

- Advised policy makers on key priorities related to the Genome Canada Competition in Applied Genomics Research in Bioproducts or Crops (ABC).
- Provided collective ABC response to Nuffield Council on Bioethics and the Canadian Expert Panel on Research and Development.
- Provided testimony before the Standing Committee on Agriculture and Agri-Food on three occasions.
- Advised European Union-Canada Free Trade Agreement negotiators.
- Built Canada's research capacity through the establishment of a New Researcher Group and Researcher Mobility program.
- Established research priorities based on input from the ABC community.
- Brought scientists, GE³LS researchers, government, and end-users together at seven workshops and three web seminars.
- Translated research results for government and end-users on the VALGEN website, web seminars, policy briefs, and mailing lists.
- Delivered 47 invited workshop and conference presentations and 9 public presentations, contributing to 10 news stories.
- Participated in planning 10 international events in Canada, France, US, UK, the Netherlands, and Italy.

Value Addition Through Genomics and GE³LS (VALGEN)

Project Leaders: Dr. Peter Phillips, Johnson-Shoyama Graduate School of Public Policy, University of Saskatchewan, Saskatoon
Dr. David Castle, ESRC Innogen Centre for Social and Economic Research on Innovation in Genomics, Edinburgh, Scotland

Project Manager: Kari Doerksen, Genome Prairie, Saskatoon

Project Value: \$5.4 M

Genome Canada Contribution: \$2.6 M

Other Funding Partners: \$2.8 M

Project Status: Ongoing (2009–2013)

Societal Impacts of Genomics

Genome Prairie is committed to advancing innovation into real-world applications to achieve the utmost benefits for society. Each research project contains a framework for investigating the social, legal, economic, environmental, economic, and ethical issues of genomics research and applications.

With respect to agricultural genomics, Genome Prairie works with grower associations, industry and producers to examine issues around market acceptability, environmental impact and socio-economic benefits of novel plants and crops. Land use, land value, farming practices and the ethical questions of new crop developments are all addressed in the societal impacts of genomics.

The examination and discussion of ethical issues such as personalized medicine, reproductive technology and animal testing are a key part of all Genome Prairie health research projects.

Key Initiatives

- Genome Prairie is working with the University of Saskatchewan's Johnson-Shoyama Graduate School of Public Policy to address important issues of genomics and society, such as the social and economic impacts of innovation.
- Genome Prairie projects are creating jobs and directly contributing to the social and economic welfare of the region.
- Genome Prairie is working with industry and government to facilitate regulation and streamline translation of discovery into applications for societal benefit.



Promoting Bioscience and Genomics Research

Through targeted communication, education and outreach programs, Genome Prairie promotes public awareness of how genomics and bioscience research is improving the lives, health, environment, and economy of people in the Prairie region and around the world.

Ongoing external relations activities with industry and government reinforce the profile of Genome Prairie as the go-to organization for research, development, policy advice, planning, and management of genomics and biosciences innovation and commercialization.

Building Enthusiasm for Bioscience

- For the second year in a row, Genome Prairie was the regional coordinating agency for the Sanofi-Aventis BioTalent Challenge (SABC). The national winner for both years was from Saskatoon. This year's winner, Rui Song, a 14-year-old student from Walter Murray Collegiate, was the youngest winner of the prestigious national award. Song's project identified disease markers in lentils to help determine the best plant breeding techniques to eliminate fungus in these crops.
- Miss Song has become an ardent spokesperson for genomics research. She was the only student invited to present a poster at Genomics on the Hill, sponsored by Genome Canada and held on Parliament Hill. She was also a student ambassador at the Grow Canada Conference in Ottawa and has been named one of Youth in Motion's Top 20 Under 20 in Canada.
- Genome Prairie sponsored a public forum featuring Jay Ingram, which was held during the Agricultural Biotechnology International Conference in Saskatoon in September 2010.

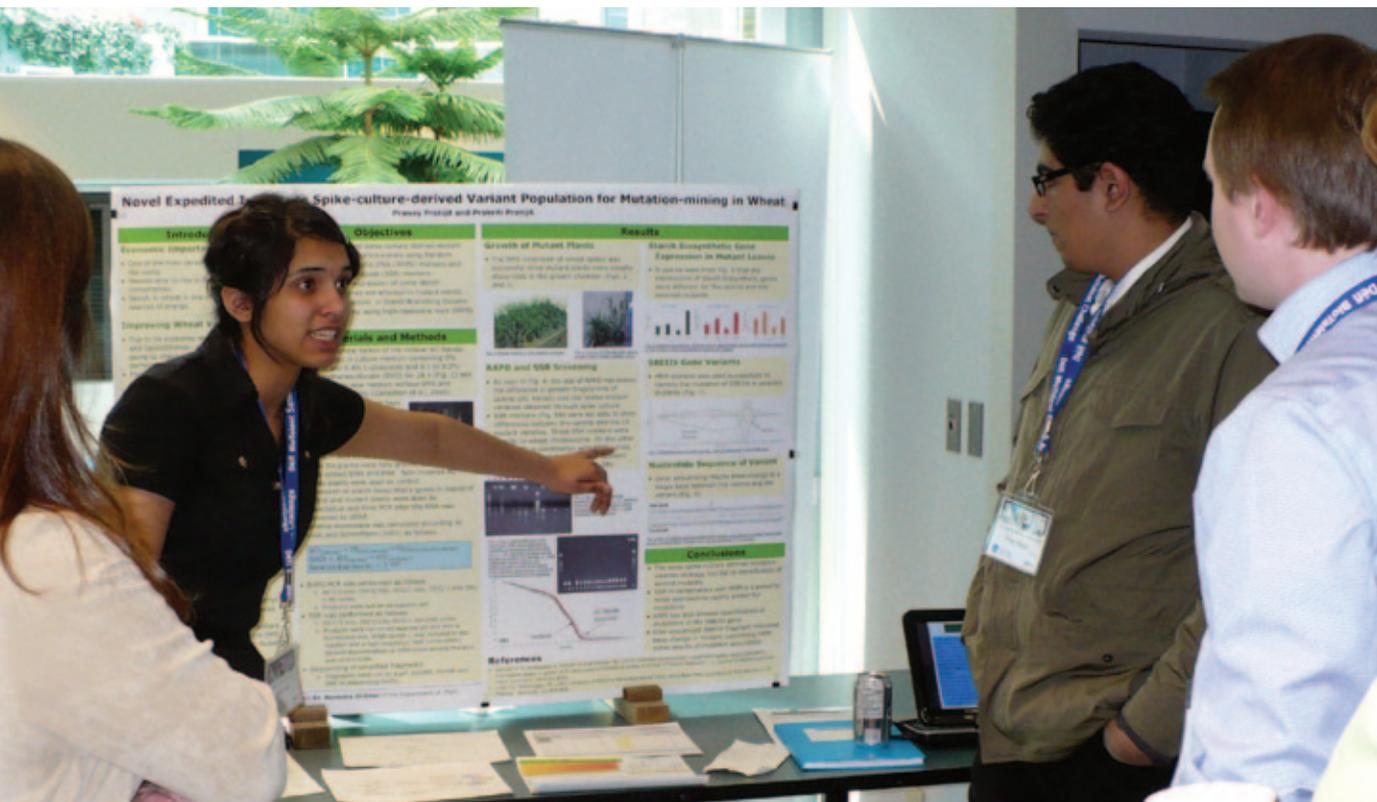
- Genome Prairie contributed articles to industry and producer publications such as *Biotechnology Focus*, to increase the corporate profile.
- Genome Prairie co-chaired the Science City Committee of the Saskatoon Chamber of Commerce to bridge the gap between business and science and to raise awareness of the level and types of research being done in the city.

Forging Strong External Relations

- External relations activities included hosting, chairing and attending numerous meetings and conferences with industry and government officials (civic, provincial and federal) throughout the year. In 2011, from March to May alone, external relations activities involved participation in 25 events.



Rui Song at Genomics on the Hill.



Top: 2011 SABC Saskatoon winners Prakriti and Pranay Pratijit.
 Middle Left: 2011 SABC Saskatoon winners.
 Middle Right: Dr. Lorne Hepworth, President, CropLife Canada.
 Bottom: Dr. Pierre Meulien, President and CEO, Genome Canada.

connect

Dynamic Partnerships

Genome Prairie thanks all of our regional, national and international partners, whose expertise and collaborative efforts are amplifying the benefits of genomics research in Canada and around the world.

Advancing Canadian Agriculture and Agri-Food Saskatchewan

Ag-West Bio Inc.

Agricultural Bioproducts Innovation Program

Agricultural Biotechnology International Conference

Agriculture and Agri-Food Canada

Agriculture Development Fund

Alberta Cancer Board

Alberta Innovates

Alberta Livestock Industry Development Fund

Allen Institute of Brain Science

Bill & Melinda Gates Foundation

Bio Tools Incorporated

BioTalent Canada

Brassica Genome Sequencing Consortium

British Columbia Cancer Agency

Canadian Bioinformatics Resource

Canadian Cystic Fibrosis Foundation

Canadian Foundation for Innovation

Canadian Institutes of Health Research

CancerCare Manitoba

Canola Council of Canada

College of Agriculture, Nagpur India

Core Cryolab Inc.

Crop Development Centre, Saskatoon

Delft University of Technology, Kluver Centre for Genomics of Industrial Fermentation

Department of Biotechnology (India)

Ducks Unlimited

Dycor Technologies Ltd.

Enterprise Saskatchewan

European Conditional Mouse Mutagenesis Program

Flax Canada 2015

Flax Council of Canada

Genome Alberta

Genome Atlantic

Genome British Columbia

Genome Canada

Genome Quebec

GNS Science

Government of Canada

Indian Agricultural Research Institute

Institut fur Entwicklungsgenetik, GSF

Interactive Research School for Health Affairs, India

International Institute for Sustainable Development

International Wheat Genome Sequencing Consortium

Interra Biosciences Inc.

Life Science Association of Manitoba

Manitoba Institute of Cell Biology

Manitoba Rural Infrastructure Fund

Midwest Research Institute

Mount Sinai Hospital

National Agriculture Biotechnology Institute (India)

National Chemical Laboratory (India)

National Institutes of Health

National Renewable Energy Laboratory (US)

National Research Council Canada

Natural Sciences Engineering and
Research Council of Canada
Ontario Genomics Institute
Pan-Provincial Vaccine Enterprise
(PREVENT)
Province of Alberta
Province of Manitoba
Province of Quebec
Province of Saskatchewan
Research Institute of Crop
Production (Czech Republic)
Richardson Centre for Functional
Foods and Nutraceuticals
Ryerson University
Samuel Lunenfeld Research Institute
Sanofi Pasteur Limited
Saskatchewan Flax Development
Commission
Saskatchewan Health Research
Foundation
Saskatchewan Trade and Export
Partnership
SCION Research
St. Boniface General Hospital
Swedish University of Agricultural
Sciences
The Hospital for Sick Children
(SickKids) (Toronto)
The Royal Institute for the
Advancement of Learning/McGill
University
The Wellcome Trust Sanger Institute
Trinity College
United States Department of
Agriculture
University of Adelaide

University of Alberta
University of Auckland
University of British Columbia
University of Calgary
University of California, Davis
University of Edinburgh, The Scottish
Centre for Research in Intellectual
Property and Technologies (SCRIPT)
University of Giessen, Germany
Université Laval
University of Lethbridge
University of Manitoba
University of Ottawa
University of Prince Edward Island
University of Regina
University of Saskatchewan
University of Toronto
Universite de Versailles Saint-
Quentin-en-Yvelines
University of Waterloo
University of Western Ontario
Vaccine and Infectious Disease
Organization-International Vaccine
Centre (VIDO-InterVac)
Varian Incorporated NMR Systems
Virginia Commonwealth University
Western Ag Innovations
Western Grains Research Foundation
Western Economic Diversification

Making Science-Based Decisions

Bioscience research and development is increasingly important to the health and well-being of society in Canada and abroad. Genome Prairie is a world leader in the development of hardy food crop varieties and in health diagnostics tools. These genomic products and tools undergo stringent testing throughout the development process and take years to bring to market.

An integral role of Genome Prairie is to disseminate expert knowledge to government representatives and agencies in order to assist their decision-making process with regard to the highly specialized and technical area of genomics. In this regard, Genome Prairie's management team has worked with governments at all levels to help streamline the regulatory process in order to advance research developments into the marketplace.

Genome Prairie's senior management presented a brief to the House of Commons Standing Committee on Agriculture and Agri-Food regarding Bill C-474 and its potential effects on genomics research and applications. The proposed Bill could result in delays in bringing research benefits to the marketplace.



In order to maintain Canada's agricultural leadership in the production of crops such as canola and flax, Genome Prairie made the following recommendations to the House of Commons Standing Committee:

- Use a science-based approach to new crop development, and throughout the continuum to commercialization, in order to expedite the market entry process.
- Establish and enforce a Canadian policy for low-level presence of genetically modified (GM) crops.
- Take a lead role in adopting and implementing globally acceptable GM levels through collaboration with other nations and affiliated regulatory agencies.



Left: The Honourable Ken Cheveldayoff (Government of Saskatchewan), Dr. Wilf Keller, Dr. John Giesy, and The Honourable Lynne Yelich (Government of Canada).

Centre: The Honourable Jeremy Harrison (Government of Saskatchewan).

Right: Mrs. Kelly Block, Member of Parliament (Government of Canada).

Our Team

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(PREVENT)

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Entrepreneurial Foundation of
Saskatchewan Inc.

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Dr. Kutty Kartha
Director General (Retired)
National Research Council –
Plant Biotechnology Institute

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Business Consultant

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to the President and CEO

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Chief Scientific Officer and
Project Coordinator

Mr. Pat Pitka
Chief Financial Officer

Dr. Reno Pontarollo
Chief Scientific Officer

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promote



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Financial Statements of

GENOME PRAIRIE

Year ended March 31, 2011

Auditor's Report

**To the Directors of
Genome Prairie**

We have audited the accompanying financial statements of Genome Prairie, which comprise the statement of financial position as at March 31, 2011 and the statements of operations, changes in net assets and cash flows for the year then ended, and the related notes including a summary of significant accounting policies.

Management's responsibility for the financial statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian generally accepted accounting principles, and for such internal control as management determines is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditor's responsibility

Our responsibility is to express an opinion on these financial statements based on our audit. We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion

In our opinion, the financial statements present fairly, in all material respects, the financial position of Genome Prairie as at March 31, 2011 and the results of operations and cash flows for the year then ended in accordance with Canadian generally accepted accounting principles.

PricewaterhouseCoopers LLP

Chartered Accountants

GENOME PRAIRIE

Statement of Financial Position

March 31, 2011, with comparative figures for 2010

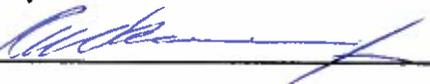
	2011	2010
Assets		
Current assets:		
Cash	\$3,624,804	\$2,116,405
Investment Certificate	1,001,430	-
Receivables	147,417	179,945
GST receivable	50,068	50,684
Project advances	158,795	1,032,084
Prepaid expenses	5,660	11,073
	<u>\$4,988,174</u>	<u>\$3,390,191</u>
	<u>\$4,988,174</u>	<u>\$3,390,191</u>
Liabilities and Net Assets		
Current liabilities:		
Accounts payable and accrued liabilities	\$1,500,697	\$257,816
Deferred contributions:		
Expenses of future periods (note 4)	3,221,991	2,866,889
	<u>\$4,722,688</u>	<u>\$3,124,705</u>
Net assets	265,486	265,486
	<u>\$4,988,174</u>	<u>\$3,390,191</u>

See accompanying notes to financial statements.

On behalf of the Board:



Director



Director

GENOME PRAIRIE

Statement of Operations and Changes in Net Assets

Year ended March 31, 2011, with comparative figures for 2010

	2011	2010
Revenue:		
Project revenues (note 4)	\$6,563,681	\$5,572,461
Administrative support revenues (note 4)	1,214,367	1,505,033
Amortization of deferred capital contributions related to equipment and leasehold improvements	-	3,506
Interest	46,623	26,983
	<u>7,824,671</u>	<u>7,107,983</u>
Expenses:		
Research project expenditures	6,563,681	5,572,461
General and administrative	1,159,504	1,443,911
Project development costs	101,486	88,105
Amortization	-	3,506
	<u>7,824,671</u>	<u>7,107,983</u>
Excess of revenue over expenses	-	-
Net assets, beginning of year	265,486	265,486
Net assets, end of year	<u>\$ 265,486</u>	<u>\$ 265,486</u>

See accompanying notes to financial statements.

GENOME PRAIRIE

Statement of Cash Flows

Year ended March 31, 2011, with comparative figures for 2010

	2011	2010
Cash flows from (used in):		
Operations:		
Excess of revenues over expenses	\$ -	\$ -
Items not involving cash:		
Amortization of deferred capital contributions	-	(3,506)
Amortization	-	3,506
Change in non-cash operating working capital:		
Receivables	32,528	(90,823)
GST receivable	616	(32,883)
Project advances	873,289	(683,711)
Prepaid expense	5,413	5,684
Accounts payable and accrued liabilities	1,242,882	64,654
Net change in deferred contributions	355,101	457,973
	<u>2,509,829</u>	<u>(279,106)</u>
Investing Activities:		
Investment Certificate	(1,001,430)	-
Increase (Decrease) in cash	<u>1,508,399</u>	<u>(279,106)</u>
Cash, beginning of year	2,116,405	2,395,511
Cash, end of year	<u>\$3,624,804</u>	<u>\$2,116,405</u>

See accompanying notes to financial statements.

GENOME PRAIRIE

Notes to Financial Statements

Year ended March 31, 2011

1. Nature of business:

Genome Prairie (the "Corporation") was incorporated in 2000 under the *Canada Corporations Act* as a not-for-profit organization. The Corporation funds organizations and institutions that conduct genomic research and development for the economic benefit of the Prairie Region (Saskatchewan and Manitoba) and Canada.

2. Significant accounting policies:

(a) Basis of presentation:

These financial statements include the accounts of the Corporation and its subsidiary, Interra Biosciences Inc.

(b) Use of estimates:

The preparation of financial statements in conformity with Canadian generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amount of revenue and expenses during the reporting period. Actual results could differ from these estimates.

(c) Revenue recognition:

The Corporation follows the deferral method of accounting for contributions which includes funding from Genome Canada, Provincial Ministries, the Commercial sector and other funding sources.

Deferred contributions related to expenses of future periods represent unspent externally restricted funding and related investment income, which are for the purposes of providing funding to eligible recipients and the payment of operating and capital expenditures in future periods.

Deferred contributions related to capital assets represent the unamortized amount of contributions received for the purpose of capital assets. The amortization of such contributions is recorded as revenue in the statement of operations. Restricted contributions related to the purchase of capital assets are deferred and recognized to revenue using the same methods and rates of the capital assets.

Unrestricted contributions are recognized as revenue when received or receivable if the amount to be received can be reasonably estimated and collection is reasonably assured.

GENOME PRAIRIE

Notes to Financial Statements (continued)

Year ended March 31, 2011

(d) Equipment and leasehold improvements:

Equipment and leasehold improvements are recorded at cost. Amortization is provided for on the straight line basis to amortize the cost of the assets over their remaining estimated useful life which is determined based on committed funding.

(e) Financial Instruments:

Financial assets and financial liabilities are initially recognized at fair value and subsequent measurement is dependent on their classification as described below:

- Cash and short-term investments are classified as financial assets held for trading and are measured at fair value. Fair value fluctuations in these assets including interest earned, interest accrued, gains and losses realized on disposal and unrealized gains and losses are included in investment income.
- Accounts receivable are classified as loans and receivables and are recorded at amortized cost using the effective interest method.
- Accounts payable and accrued liabilities and other liabilities are classified as other liabilities and measured at amortized cost using the effective interest method.

Transaction costs related to held for trading financial assets are expensed as incurred. Transaction costs related to other liabilities and loans and receivables are netted against the carrying value of the asset or liability and are then recognized over the expected life of the instrument using the effective interest method.

(f) Derivative instruments - embedded derivatives:

The Corporation selected January 1, 2003 as the transition date for embedded derivatives, as such only contracts or financial instruments entered into or modified after the transition date were examined for embedded derivatives. As at March 31, 2011, the Corporation does not have any material outstanding contracts or financial instruments with embedded derivatives that require bifurcation.

(g) Income taxes:

The Corporation qualifies as a tax exempt organization under Section 149 of the Income Tax Act.

GENOME PRAIRIE

Notes to Financial Statements (continued)

Year ended March 31, 2011

3. Financial instruments and risk management:

The Corporation, through its financial assets and liabilities, has exposure to the following risks from its use of financial instruments: credit risk and market risk (interest rate risk and other price risk).

Credit Risk

The Corporation's principal financial assets are cash, accounts receivable and investment certificate, which are subject to credit risk. The carrying amounts of financial assets on the statement of financial position represent the Corporation's maximum credit exposure at the balance sheet date.

The Corporation's credit risk related to accounts receivable is virtually non-existent since the amounts have since been paid. The credit risk on cash is limited because the counterparties are chartered banks with high credit ratings assigned by national credit-rating agencies.

Interest Rate Risk

Cash has a limited exposure to interest rate risk due to its short-term maturity.

Fair Values

The fair values of cash, accounts receivable, accounts payable and accrued liabilities approximate their carrying values due to their short-term maturity.

GENOME PRAIRIE

Notes to Financial Statements (continued)

Year ended March 31, 2011

4. Expenses of future periods:

The Corporation receives funding from Genome Canada, Provincial Ministries, Western Economic Diversification Canada and other sources to be held, administered and distributed in accordance with the related funding agreements between Genome Prairie and the other parties. Deferred contributions related to expenses of future periods represent these unspent externally restricted funding and related investment income, which are for the purposes of providing funding to eligible recipients and the payment of operating and capital expenditures in future periods. The changes in the deferred contribution balances for the year are as follows:

	2011	2010
Opening deferred contributions for expenses of future periods	\$ 2,866,889	\$ 2,408,916
Contributions during the year:		
Genome Canada	5,257,038	4,638,846
Province of Saskatchewan	289,300	1,559,300
Enterprise Saskatchewan	1,646,944	800,000
Western Economic Diversification	123,081	176,919
Project Expense Recoveries	136,455	127,751
Province of Manitoba	37,520	50,000
University of Manitoba	20,312	16,500
University of Saskatchewan	51,600	-
Seed Development Symposium	-	33,208
Workshops and Other	51,868	26,385
Manitoba Flax Growers Association Inc.	25,000	25,000
Saskatchewan Flax Development Commission	25,000	25,000
Flax Council of Canada	50,000	-
BioTalent Canada	22,500	18,000
NRC IRAP	148,759	13,500
Sanofi Pasteur Limited	13,000	13,000
Government of Canada	50,803	12,058
Bi-Provincial Summit	63,970	-
Ag-West Bio Inc.	120,000	-
	\$ 8,133,150	\$ 7,535,467
Total contributions available	\$11,000,039	\$ 9,944,383
Less amounts recognized as project revenues	(6,563,681)	(5,572,461)
Less amounts recognized as administrative support revenues	(1,214,367)	(1,505,033)
Transfer to deferred contribution - equipment and leasehold improvements	-	-
Closing deferred contributions for expenses of future periods	\$ 3,221,991	\$ 2,866,889

GENOME PRAIRIE

DRAFT Notes to Financial Statements (continued)

Year ended March 31, 2011

5. Project commitments:

In accordance with an agreement for funding signed with Genome Canada effective April 1, 2009, Genome Prairie has agreed to obtain equivalent funding support from other parties. As specified in the agreement, Genome Canada may provide transition funding to Genome Prairie notwithstanding the fact that formal commitments from other parties have not yet been secured. In such cases, funds provided in advance "in good faith" as part of the transition budget shall not be reimbursable in the event such commitments from other parties have not been secured. Genome Canada may then terminate the agreement or funding for a particular component. Additional funding arrangements are negotiated with Genome Canada to cover administration, program management, and position papers.

6. Comparative figures:

Certain comparative figures have been reclassified to conform with the financial statement presentation adopted in the current year.