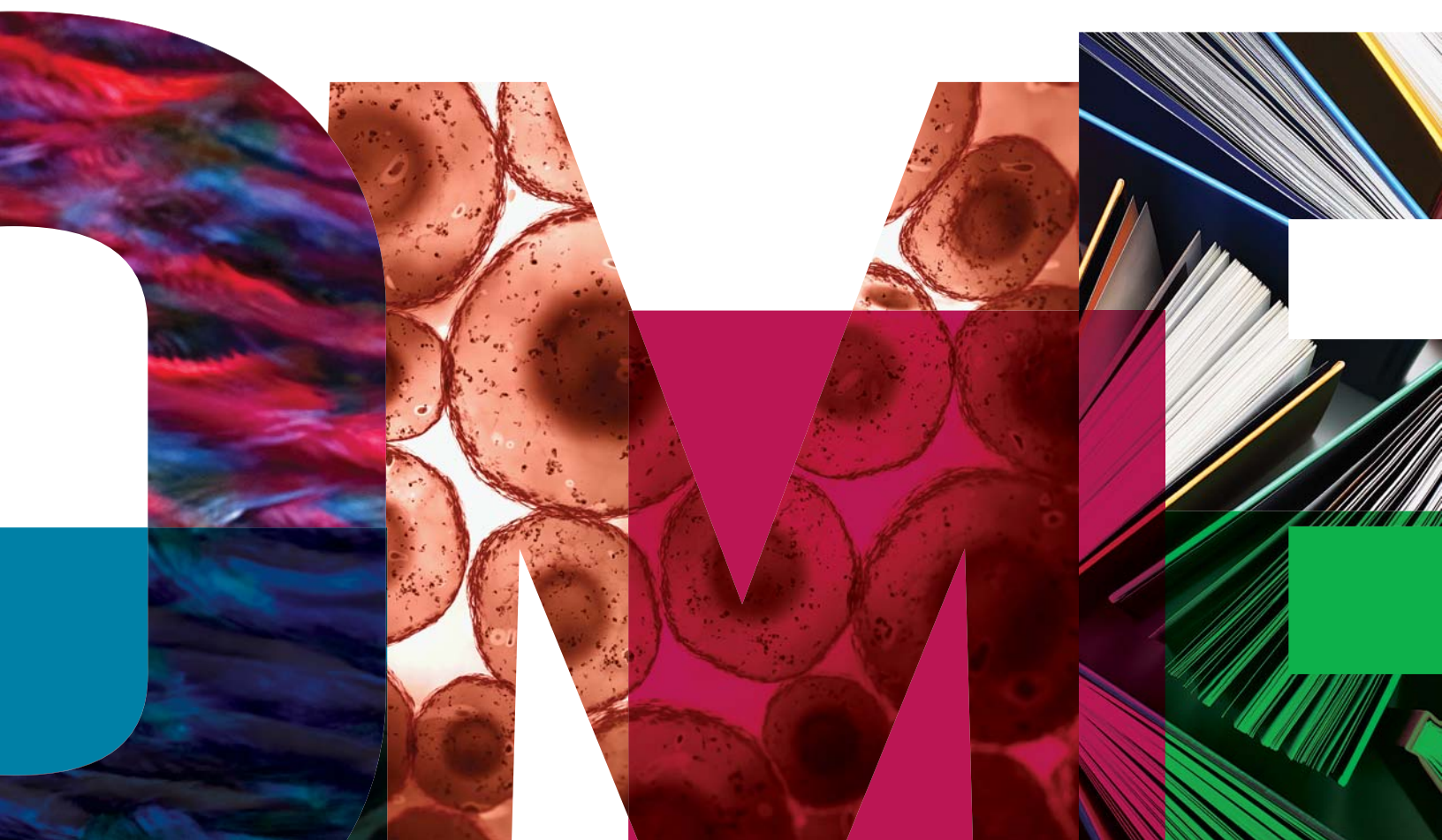




INSIDE GENOME BC

ANNUAL REPORT 2012-13





GROW

Forestry

EXPLORE

Energy & Mining

NOURISH

Agri-Food

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MESSAGE FROM THE CHAIR OF THE BOARD

This year marks our 13th year of operation, and our current strategic plan is serving us well. This plan is our road map: it is, in a sense, our genome, with this annual report serving to map out the ongoing work that makes Genome BC such a powerful catalyst for genomics research. Our DNA also programs how we have evolved and adapted to the environment – in our second decade and third strategic plan, we are at the helm of a significant genomics enterprise.

Genome BC's portfolio represents \$625 million of investment into genomics research including over 300 local, national and international co-funders and collaborators. These partners play a critical role in our success and in moving research from laboratory to application. Our next evolution, the 2015–2020 Strategic Plan, is percolating in our cells and we will continue to work with end-users, co-funders and collaborators to realize the maximum benefits of genomics research for British Columbians.

In our role as a catalyst and leader in genomics we are helping tackle some very significant challenges in healthcare, including the delivery of a sustainable personalized medicine model. We are seeking new tools to address needs in mining and energy. We are working hand in hand with our partners to address environmental concerns around forestry and agri-food. We are taking a lead role in fisheries and aquaculture.

As Board Chair, I wish to thank my fellow Directors who provide oversight and guidance to Genome BC. The commitment and professionalism of the staff and management team are unparalleled and our success to date is a testament to their dedication.

A handwritten signature in black ink, reading 'M. Pelman'.

Dr. Alan Pelman
Chair, Board of Directors



MESSAGE FROM THE PRESIDENT & CEO

We have had a productive and powerful year. In this annual report we invite you to look *inside* Genome BC as we continue our investment to catalyze the world's best strategic, fundamental, applied and translational life sciences research right here in BC. Within our nucleus is a range of programs, projects and platforms that spiral together to form an impressive research capacity.

Our success on the national stage this year was impressive, with strong results in Genome Canada funding competitions. Thirty-four million dollars was awarded to BC researchers through the Genomics and Personalized Health Competition and we punched well above our weight in the Bioinformatics and Computational Biology Competition where BC researchers were awarded \$5.3 million. These successes would not be possible without additional investments from partners and co-funders.

Internationally we are raising our profile with a successful bid to bring the Human Proteome Meeting to Vancouver in 2015. We also hosted workshops for the Organisation for Economic Co-operation and Development (OECD) and the

Pacific Rim Summit on Industrial Biotechnology and Bioenergy. Genome BC has consistently ensured that genomics research remains in the forefront of media and public engagement—and this year was certainly an organizational best, as we reached over 18,000 British Columbians through 14 public events in 23 communities. We were also able to engage with 3,000 students in over 40 schools throughout the province.

I am very proud of Genome BC's dedicated staff and the excellent researchers we fund, who are integral to ensuring we meet our goals. I would also like to formally thank Genome BC's Board of Directors for their strategic vision and direction.

A handwritten signature in dark ink, appearing to read 'Alan Winter'.

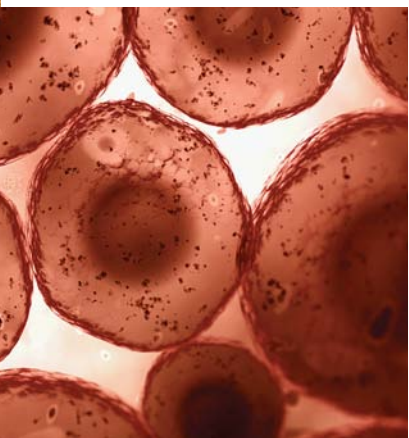
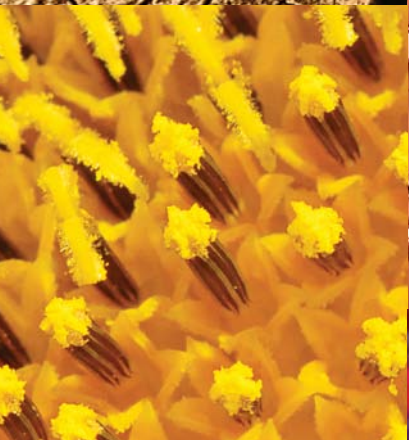
Dr. Alan E. Winter
President and CEO

What is genomics?

In simple terms, genomics is the discipline that studies the structure, function and inheritance of the genome.

Genomics enables the examination of molecular mechanisms and the interplay of genetic and environmental factors in health and disease.

The knowledge and innovations emerging from the field of genomics are finding solutions to complex biological challenges many of which are also raising questions of societal and economic importance.





Dr. Brad Popovich
Chief Scientific Officer

A CONVERSATION WITH THE CHIEF SCIENTIFIC OFFICER

How is Genome BC's programming working with end-users?

Our programs are built around understanding the needs of the five economic sectors in which we work: Health, Agri-Food, Energy & Mining, Forestry and Fisheries & Aquaculture. Within these sectors we are facing significant challenges: forest pests, fluctuating fish stocks, shifting energy sources, maintaining health and ensuring abundant, healthy food supplies. From a scientific perspective we need to have a strong grasp of sector needs before tackling the significant challenges they face. By engaging with healthcare delivery groups like the BC Cancer Agency we can treat cancer "smarter" through genomic stratification; we are working with forestry end-users to ensure that tools being developed to detect invasive species are being implemented in real time; and in the fisheries sector we are working to develop high throughput genomic technologies for improved salmon management in BC—and the list goes on.

We are asking industry experts what challenges applied genomics can help mitigate. Instead of developing technologies with the hope they may one day provide assistance, we are now identifying sector challenges at the outset and aligning researchers to develop solutions in partnership with industry.

Is genomics making scientific advances or are the research models making a difference in genomics?

We are refining the way we look at disease and biological processes and taking a more holistic approach whereby one views the entire genomic ecosystem including the host genome, epigenome, metabolome, proteome and microbiome collectively. Through this approach we are catalyzing the development of applications that will impact fields ranging from mining, where biological prospecting could very well become a reality, to greatly improved wellness programs that will allow us to lead more healthy lives based on our unique genomic profiles, to better forestry practices aimed at the improved

detection of pathogens and climate adapted seedlings.

How do you see genomics funding for basic and applied research evolving?

It is important to note that basic discovery science will remain the engine that drives future developments in the exciting field of genomics. We must therefore remain steadfast in continuing to fund discovery projects in all sectors of economic importance to BC and Canada, and to balance this discovery work with more applied projects. I, for one, am delighted to be at the forefront of discovery, application and translation, and to help work with industry to identify important challenges and develop genomic-based solutions where possible across all social and economic sectors.

The Value of Genomics Research

Genome BC's investment strategy is based on delivering value: our research projects are aligned with the needs of the province's key economic sectors – Forestry, Energy and Mining, Agri-Food, Fisheries and Aquaculture and Health. These projects are providing the scientific foundation for developing solutions in areas essential to life in BC and around the globe.

Over our 13 years of operation, Genome BC has helped to create jobs in Canada and has collaborated with international partners to bring the value of genomics research to British Columbia, Canada and the world.

GENOME CANADA FUNDING

\$236m

Total funding to Genome BC

= 27%

Of available funds

LEVERAGING COLLABORATIONS AND PARTNERS

797

Collaborations

259

Co-funders

\$204m

International, industry and institutional funding contributions to projects

HIGH QUALITY JOBS

932

Researchers trained

1105

Direct jobs created

12

Companies advanced

163

Patent applications

15

Patents issued

17

Licenses, copyrights and MTAs

ACADEMIC RESULTS

820

Scientific publications

PROJECTS AND FUNDING

181 projects **\$570m**

111 Health	\$306.8m
14 Forestry	\$71.9m
13 Tech Development and Platforms	\$69.3m
13 Agriculture	\$32.4m
13 Environment	\$16.5m
10 Fisheries	\$42.0m
5 Bioenergy	\$29.6m
2 Mining	\$1.5m

These figures are cumulative as of March 31, 2013.

FUNDING SUCCESS IN NATIONAL COMPETITIONS 2012 / 2013

Bioinformatics & Computational Biology Competition (BCB)

\$5.3m

Total project value

41%

Of total projects

44%

Of available federal funds

Genomics & Personalized Health Competition (GPH)

\$34m

Total project value

23%

Of total projects

24%

Of available federal funds

PUBLIC EVENTS AND OUTREACH 2012/2013

3rd Annual Don Rix Distinguished Keynote Address with Eric Green

450+ Event registrations (over capacity!)

35+ Minute Q+A session

Around the Dome in 30 Days

16,000+ Audience at our booth

100+ Teachers at Mini Conference

200,000+ Twitter reach

Surviving the 3rd Millennium with Bob McDonald

300+ in attendance (sold out!)

Presentation & interactive demos

Held at Science World

PUBLIC ENGAGEMENT

37 Unique media stories

14 Community events

18,854 People reached

Geneskool

23 Communities visited

43 Schools visited

3,000 Students visited

SOCIAL MEDIA HIGHLIGHTS



Twitter

1300+ Followers @GenomeBC



Facebook

120+ Likes /GenomeBC



YouTube

880+ Subscribers

1m+ Views



LinkedIn

170+ Followers

Forestry

GROW our industries

Forest products in BC account for \$16.9 billion in annual exports, and the scope of the forest industry—timber, forest management, pulp and paper and industrial products—plays a huge role in the livelihood of many BC communities. Over 53,000 jobs in more than 100 communities can be directly attributed to forest activity. Genomics is providing new insights and tools in the battle to keep our forest resources healthy.



Harry H. Kope
Provincial Forest Pathologist

“Using genomics-based applications to facilitate the detection of endemic and invasive forest pests has enormous promise. The BC Ministry of Forests, Lands and Natural Resource Operations is a partner in the development of diagnostic tools to target unique genes, which will aid in the rapid identification of forest fungi and insect pests. The diagnostic tools being developed can also facilitate the forest and nursery industries with product and plant certification, offering Canada’s corporations a competitive edge in international forestry markets.”

FIGHTING BACK AND MAKING AN IMPACT

Invasive species pose a significant threat to Canadian forests, tree farms and nurseries. The evidence is all around us—blighted leaves, spotted needles, bare branches, cankered stems—all proof that an increasing number of both young and mature trees are succumbing to invasive pests. Paramount in efficiently preventing and managing disease is the identification of infectious agents and their origin. Dr. Richard Hamelin from Natural Resources Canada and the University of British Columbia, has developed genomic tools that allow for the identification of pathogens in what appear to be healthy plants and trees.

Traditional techniques used to isolate and identify pathogens take weeks to perform, precious time that forest professionals just don’t have when dangerous pathogens like sudden oak death are detected in a foreign shipment. And, by looking only for known pathogens, unknown ones can slip through. Hamelin’s project,

Genomics Based Forest Health Diagnostics and Monitoring, is providing tools to detect known and novel pathogens in real time, preventing an imported, infectious sapling from finding its way into a Canadian nursery or forest. The project is already making waves in the forest sector and is expected to generate significant economic benefits through the reduction of losses to forest diseases.

Within the first year, the project ran approximately 10,000 tests on samples for several end-users, including the BC Ministry of Forests Lands and Natural Resource Operations (MFL), the Quebec Ministry of Natural Resources, and the cities of Victoria and West Vancouver. These tests detect and map pathogens, and provide risk assessments. Based on the results generated by this project, the MFL is considering how the exotic poplar canker pathogen could be eradicated to protect planted and natural poplars on the West Coast.

GREAT EXPECTATIONS

The **Genomics Research Entrepreneurship to Accelerate Translation (GREAT)** project is aimed at helping BC and Canadian researchers add value to their work and generate viable applications and outputs. This educational program, led by the University of British Columbia’s University Industry Liaison Office, builds on understanding the needs of researchers with projects specifically in natural resources, forestry and the environment. The program is providing more than 210 genomics researchers with a comprehensive approach to entrepreneurship that permeates the entire life cycle of discovery, from planning a research project to implementing the returns.

Energy & Mining

EXPLORE environmental solutions

Canada's Renewable Fuels Strategy aims to significantly reduce greenhouse gas emissions and requires gasoline used for the transportation sector to include an average 5% renewable fuel. At current consumption rates, this translates to a requirement of almost *2 billion litres of renewable fuel* annually for small vehicles alone. This supply simply cannot be met by existing agricultural production. Therefore, we need to look to other ways of producing dedicated bioenergy sources, specifically woody plants and trees.



William Schroeder

Agroforestry Development Centre, Agriculture and Agri-Food Canada

“The project on genetic improvement of poplars for both wood-fibre and bioenergy applications is innovative because it addresses issues not covered previously or by other poplar genomics projects. The research will provide us with opportunity to take advantage of cutting edge molecular tools in identifying parent material of interest for our tree improvement and clonal programs.”



SUNFLOWER POWER

They tower over us in beauty and might. They are also the world's largest plant family, containing 24,000 species, including many crops and medicinal plants, horticulture plants and noxious weeds. Sunflower crops are grown commercially on 22 million hectares around the globe with an annual value of about \$14 billion.

The **Genomics of Sunflower** project, led by Dr. Loren Rieseberg at the University of British Columbia, is creating a reference genome for the sunflower, *Helianthus annuus*, to further scientific research across this diverse plant family.

Intended applications of this sequenced genome range from crop improvement to weed control to the development of wood-producing sunflower strains. The project will also increase the speed and precision of sunflower breeding programs by identifying molecular markers for beneficial genes underlying important agricultural traits such as seed oil content and flowering time. Researchers aim to develop genomic tools and resources necessary to breed sunflower cultivars with woody stalks—a development that may lead to the improvement of dual purpose sunflower crops: oilseed and biofuel.

CLEAN ENERGY FOR BC

Drs. Carl Douglas and Shawn Mansfield, researchers at the University of British Columbia, are using genomics to optimize breeding and selection of fast-growing poplars to improve their potential as a biofuel resource. The team has developed tools to accelerate breeding of poplars with enhanced adaptive and wood quality traits. Uptake of this approach and technology will give poplar breeders and government policy makers tools to improve fast-growing woody biomass feedstocks, including poplar, that are appropriate for renewable energy production in BC.

Agri-Food

NOURISH our food supply

British Columbia's agri-food sector is an important contributor to the provincial economy, generating close to \$10.5 billion in annual revenues and providing more than 61,000 jobs. However, hurdles abound at a fundamental level: animals and crops are susceptible to disease and environmental challenges, parasites and insects; water supplies for humans and animals can be compromised by contaminants. Advances in emerging genome-based technologies are offering new tools and solutions to our most significant agricultural challenges.



Barry Boettger

Provincial Drinking Water Officer, Office of the Provincial Health Officer

“Safe drinking water is a fundamental public health issue. In Canada we often face significant challenges in affording appropriate water treatment for some water sources, particularly for smaller water systems. The tools we currently have at our disposal to assess treatment needs are often inadequate. Through the work of multidisciplinary teams across the country, substantial improvements to current water protection approaches are being realized and these new tools will go a long way towards directing cost-effective decisions for making water quality improvements.”

WATER, WATER EVERYWHERE, BUT NOT A DROP TO DRINK

Just over a decade ago, a small Ontario town was the epicentre of Canada’s most significant drinking water related disaster.

Close to half of Walkerton’s 5,000 residents fell ill and seven people lost their lives due to the highly dangerous strain of *E. coli* bacteria found in their drinking water. A research team led by Drs. Judy Isaac-Renton and Patrick Tang at the British Columbia Public Health Laboratories, located at the BC Centre for Disease Control (BCCDC) are working on a project entitled, **Applied Metagenomics of the Watershed Microbiome** to help prevent another disaster like the one in Walkerton.

Their research aims to develop a better way to identify the presence of fecal pollutants in watersheds (which is indicated by the presence of *E. coli* bacteria) and provide new

tools to track sources of water contamination. Within the next two years their prototype for more effective water testing will fundamentally change the current paradigm of slow and often imprecise culture-based bacterial testing.

Current drinking water testing collects samples from the tap, rather than the watershed source and testing for bacteria contaminants such as *E. coli*, often takes more than two days to complete. If a water supply has been contaminated, this processing time is simply too long, as the water would already have reached people’s homes. Additionally, these tests do not always reflect contamination of water by non-bacterial pathogens such as parasites or viruses. By applying metagenomics, a much more

robust method that can identify many pollutants at once, current analysis methods will become much faster as testing can occur at the watershed level. This simplified testing process will reduce days to hours and provide profiles of all microbes present in a water sample rather than just *E. coli* bacteria.

The BCCDC will be an early adopter of this testing method and the project team is partnering with the Canadian Water Network to pilot the water-testing prototype in watersheds across Canada.



CATTLE VACCINOMICS

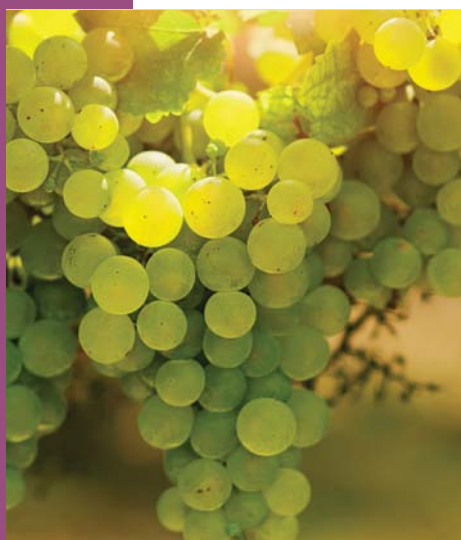
Common infectious diseases continue to pose a significant threat to food production worldwide, and while total monetary losses in the food sector due to infectious disease are difficult to quantify, specific diseases and disease complexes can pose problems of great magnitude. Vaccination of animals and humans has proven to be the single most cost-effective means of mitigating infectious disease losses.

However, there is still no successful vaccine for Johne's Disease, a worldwide contagious chronic progressive bacterial infection that attacks the digestive tracts of cattle, sheep, goats, deer, bison, llamas and alpacas.

Johne's Disease can have a significant financial impact through reduced milk production, increased involuntary

culling, loss of heifer sales, reduced beef production and potential trade barriers. The economic impact of Johne's Disease on the Canadian dairy industry alone is estimated at \$15 million annually. It may also be associated with increased incidences of other chronic diseases.

In an effort to combat this invasive infection, an innovative team led by Dr. Robert Hancock at the University of British Columbia is applying a genomic-based approach to develop potential vaccines for Johne's Disease. Using a 'reverse vaccinology' approach the team has prioritized vaccine candidates and will begin animal testing these novel targets in 2013/2014.



Howard Soon

Master Winemaker – Sandhill Wines

Senior Winemaker Western Canada – Andrew Peller Limited

“Chardonnay is one of the most important grapes in the wine industry in British Columbia. Getting a full picture of the genome of all 15 Chardonnay clones will enable growers and winemakers to make informed choices about which clones to plant – this means better grapes and better wine. Sequence data will also allow us to characterize Chardonnay clones which have not been identified before.”

UNCORKING THE SECRETS OF THE CHARDONNAY GENOME

The grape growing and winemaking sector is a significant contributor to the BC economy. The number of wineries in BC has increased steadily and correspondingly so has output and economic value. The 2011 grape harvest generated 22,722 tonnes, creating 11,555,700 litres of wine, worth over \$48 million. Once produced, BC VQA wine generates sales of over \$200 million annually. Chardonnay is the second most abundant white wine grape variety in the world and the second most planted white variety in British Columbia. Some champagnes, white burgundies and varietal Chardonnays—including a large proportion of the wines considered among the world’s most lauded and expensive—are all produced with Chardonnay grapes.

This economic significance, paired with the flexible aroma and flavour of Chardonnay grapes, has given rise to a number of grapevine selection and breeding programs with the goal of developing new grape characteristics. Winemakers use vegetative propagation or ‘clone’ grapevines by cutting a budding twig off the “mother vine” and then grafting it onto a specific rootstock. Even though these new hybrid vines are a replica of a parent vine, many of these ‘clones’ exhibit remarkable variation in fruit composition, flavour and aroma profile, ripening time, flower morphology, bunch morphology, yield and grape colour.

Vineyard owners can select clones based on flavour profile, berry size, cluster shape, vine yields, vine

vigour, bud break, and tolerances to heat, humidity and drought. Since very little is known about the Chardonnay genome and even less about how the clones differ from the parent plant, knowledge about these differences would help determine how to produce the best wine.

Dr. Hennie van Vuuren at the University of British Columbia is working towards identifying and mapping the genetic markers for Chardonnay grapes in his project, **Sequencing the Chardonnay Genome**. This information will provide the baseline for analyzing the clones, and thus how to replant vineyards and inform breeding programs.

Fisheries & Aquaculture

*OPTIMIZE the health
of our fisheries*

The fisheries and aquaculture sector is an integral part of the social and economic fabric of British Columbia. Many rural and First Nations coastal communities base their livelihoods around coastal activities and some fish species have iconic status. The sector is also one of the economic engines of BC, producing the province's largest agricultural export, farmed salmon, providing significant employment—18,000 full and part-time workers—and contributing \$1.2 billion in direct and indirect revenues annually to the province.



Dr. Brian Riddell

President & CEO, Pacific Salmon Foundation

“Over 90% of juvenile Pacific salmon migrating from freshwater into the ocean will die before returning to freshwater to spawn—there is a belief within the scientific community that this mortality is highest during the first few months in the marine environment and that disease may be a significant factor in this mortality. We still don’t know enough about what pathogens or diseases might be involved. The Salmon Health Initiative project will tell us more.”

SALMON HEALTH: IT’S EVERYBODY’S BUSINESS

The final report of the *Cohen Commission Inquiry Into the Decline of Fraser River Sockeye Salmon* highlighted uncertainty around pathogens and disease. In this report, Justice Bruce Cohen noted that a deeper examination was needed to make accurate assessments about the range of possible impacts of pathogens on wild fish stocks. A new research project, the **Salmon Health Initiative: Inventory and Assessment of Health Risk of Microbes in BC’s Pacific Salmon** is addressing the specific recommendations related to the study of fish pathogens and diseases made in the Cohen Commission final report.

Our current knowledge about salmon comes primarily from observations of cultured fish (both in hatcheries and in aquaculture). Consequently, there is a fair understanding of pathogens and diseases that impact salmon in

freshwater hatcheries and sea-water net pens. However, we know less about pathogens affecting wild Pacific salmon.

The project will generate positive impacts for both industry and society as it addresses one of the main challenges affecting the fisheries sector. The project also builds on over a decade of investments, over \$37.5 million, into genomics resources to establish the tools and knowledge base essential for this work.

Phased over five years, the project will be the largest ever evaluation of the distribution and impact of potential disease agents conducted on BC Pacific salmon (wild and hatchery). While identification of a specific microbe won’t necessarily indicate the presence of disease, it will provide a critical baseline for future monitoring activities. Rigorous analysis and categorization would

determine which microbes have the *potential* to cause disease in salmon.

A public interest panel comprised of government, aquaculture industry, sport fishery, salmon gillnetters and environmental experts also plays an important role in determining disease agent information that is important to them and other end-users. Ongoing engagement with these vested groups will assist in the development of a strategy to effectively communicate research outcomes and help identify applications that may assist in the management of wild and cultured salmon resources.

Health

MOVE research from bench to bedside

Last year \$15.6 billion was spent to meet the health needs of British Columbians and as a province we are doing very well: we have the longest life expectancy, the lowest rates of heart disease and the lowest incidences of cancer with the very best survival rates in Canada. To sustain and surpass this level of health, researchers are delving into a new realm of study—the human microbiome—for more insight into medical conditions including allergies, asthma, bowel disorders and women’s health including preterm delivery.



THE DREAM TEAM

Personalized cancer vaccines as part of standard care are closer to becoming reality thanks to a dedicated group of researchers led by Drs. Brad Nelson and John Webb of the BC Cancer Agency's Deeley Research Centre in Victoria. The researchers are developing new therapies that trigger our own powerful immune response against cancerous cells.

Rather than using traditional prophylactic vaccines, Dr. Webb is pursuing an avenue that triggers CD8⁺ "killer" T-cell responses for therapeutic use in both preventative and diagnostic treatment. Alongside

this, Dr. Nelson is using the inherent genomic instability of cancer as a target for individualized therapy. He's working to develop vaccines that will be given to patients in an effort to enhance the immune system's ability to specifically recognize and destroy cancer cells.

Because they are using the same vaccine approach and sharing research, the outcomes are highly amenable to translation into the clinical setting. There is a target to initiate Phase I clinical trials of a personalized cancer vaccine within the next year.

THE FIX IS IN

Dr. Robin Coope at Canada's Michael Smith Genome Sciences Centre and Dr. Robert Meek at the University of British Columbia Department of Orthopaedic Surgery have developed **Minimally Invasive Curved Intramedullary Pelvic Fixation** with funding through Genome BC's Proof of Concept program. This "fixation" technology offers a new method of stabilizing pelvic fractures using faster and less invasive procedures—basically fixing a pelvic fracture *inside* the bone. Cadaver testing is underway and the technology has already been licensed to a commercial partner.



A DELICATE BALANCE

The human body contains many unique environments which, when studied, offer endless insights into human health.

Known as microbiomes, these ecosystems are defined as the totality of microbes (including bacteria and viruses), their genomes and the environmental interactions in a particular area. The microbiome research approach facilitates study of the *whole* microscopic community, gathering relevant data about changes in an ecosystem and analyzing shifts in bacterial configuration. This information is expected to help with the development of better tools to diagnose and treat major health problems.

Dr. Deborah Money at BC Women's Health Research Institute and the University of British Columbia is leading the **Vaginal Microbiome Project Team** in a niche field where Canada has significant expertise, research capacity and solid research infrastructure to build upon. Conditions associated with an imbalance in vaginal microbiota afflict several million Canadian women each year, most notably its effect on a woman's fertility and reproduction.

Ongoing research identifying bacterial species present over a woman's lifespan continues to offer more understanding of the core vaginal microbiome. This meaningful research also explores the associations between vaginal microbiota and preterm births, urinary tract infections and overall reproductive health.



Dr. B. Brett Finlay

Professor, Michael Smith Laboratories, University of British Columbia

“We see autoimmune diseases like asthma and eczema increasing rapidly in North American children, but we don’t see the same effect in children in the developing world. The ‘hygiene hypothesis’ is the idea that we are killing off good bacteria along with bad bacteria with certain habits—some of these bacteria play a role in preventing autoimmune diseases and by removing them, we are decreasing the chance for our kids to develop strong immune systems later in life.”

The most notable effect of an imbalanced vaginal microbiome is its effect on fertility and reproduction. Evidence points to a role in fertility interruptions, spontaneous abortion and a higher risk of preterm delivery. Preterm birth rates are increasing for Canadian women, now at rates of almost 8%, and are responsible for 70% of newborn deaths and 50% of long-term adverse health consequences for infants. Applying the lens of the microbiome to these issues is resulting in novel diagnostic tools and interventions to restore and retain health.

There is also increasing evidence that the gut microbiome has an impact on immune system development and diseases. Allergic asthma is an ever-increasing problem in developed nations, affecting 20% of all Canadians. Although there are many theories about the potential reasons for this, the actual causes remain undefined. Rising levels of allergic asthma and eczema in North American children now have Canadian scientists wondering if there is such a thing as being “too clean”.

Dr. Brett Finlay’s research project at the University of British Columbia, the **Impact of the Microbiota on Immune Development and Disease**, is studying the gut microbiome and its influence on immune system development and disease, including

asthma and eczema. Until now, no attempt has been made to identify microbial populations affecting asthma. Scientists in this project are exploring how the microorganisms in the gut microbiome react to different antibiotics and the resulting effect on the disease. The project is also partnered with the CHILD study: a multicentre, multidisciplinary, longitudinal, population-based birth-cohort study of 5,000 children enrolled “pre-birth”. Immune analysis will be performed on samples taken from children from birth until one year of age and followed for five years. It is hoped these findings will ultimately be used to develop new ways to treat asthma.

Outreach

EDUCATE our communities

Children are the future and educating them is a priority. Whether the students of today become the researchers, teachers, artists, business leaders, physicians or entrepreneurs of tomorrow, they will all benefit from a greater knowledge of the relevance and impact of science and technology in our everyday lives. Genome BC remains committed to providing BC students, teachers and the public with new and exciting tools to assist in a deeper understanding of and appreciation for the life sciences.



Grahame Rainey

President, BC Science Teachers' Association

“The support, over many years, provided by Genome BC has allowed the BC Science Teachers' Association to offer enhanced keynote speaker and featured speaker offerings at our conferences. These presentations have allowed classroom teachers to become more expert in the field of genomics and pass that knowledge on to their students.

We also acknowledge the significant positive impact that the Genome BC Geneskool program has on teachers and students throughout the province, by providing quality teaching resources, student activities and camps.”

BEST YEAR EVER

Education outreach at Genome BC has never had a better or more inspiring year than our past one. From Geneskool outreach in the most remote corners of our province, to a packed house with Dr. Eric Green who delivered the Don Rix Distinguished Keynote Address, to the inaugural Around the Dome event—audiences were engaged, receptive and interactive.

The always compelling Bob McDonald spoke to a spellbound crowd of over 300 people at Science World in Vancouver. Audiences totaling over 360 people in Cranbrook, Vernon and Victoria heard from stimulating speakers in our Bringing Genomics Home program.

Four hundred and seventy students travelled to full-day Geneskool workshops at Capilano University throughout the year while another 36 students attended week-long

summer camps at Capilano and Vancouver Island Universities. Almost 2,600 students were recipients of hands-on classroom experiments and education through the Geneskool outreach program around the province.

Close to 2,000 students had an opportunity to spend time investigating genomics through our travelling suitcases. Learning was made even more accessible to a group of students and their teacher Paul Hembling from Barriere, BC. The group was sponsored by Genome BC to attend the annual Exceptional Escapades in Science conference hosted by the Michael Smith Labs for high school students. Paul remarked “The students found the day very inspiring, and it made the possibility of pursuing post-secondary education much more real and attainable.”

Since 2006, Genome BC Geneskool has visited communities all across the province.

100 Mile House
Abbotsford
Agassiz
Aldergrove
Alexis Creek
Bella Bella
Burnaby
Burns Lake
Campbell River
Carcross (Yukon)
Castlegar
Chemainus
Chetwynd
Chilliwack
Clearwater
Clinton
Comox
Coquitlam
Cortes Island
Courtenay
Crawford Bay
Dawson Creek
Dease Lake
Duncan
Fort Nelson
Fort St. James
Fort St. John
Fort Ware
Fraser Lake
Galiano Island
Gold River
Grassy Plains
Haines Junction (Yukon)
Invermere
Kamloops
Kaslo
Kelowna
Kitimat
Ladysmith
Langley
Logan Lake
Mackenzie
Maple Ridge
Masset
McBride
Mill Bay
Mission
Nakusp
Nanaimo
Nelson
New Westminster
North Vancouver
Parksville
Port Alberni
Port Edward
Port Hardy
Port McNeill
Port Moody
Prince George
Prince Rupert
Queen Charlotte City
Quesnel
Richmond
Salmo
Sidney
Smithers
South Slokan
Squamish
Surrey
Terrace
Teslin (Yukon)
Vancouver
Vernon
Victoria
West Vancouver
Whitehorse (Yukon)

FINANCIAL REPORT

INDEPENDENT AUDITORS' REPORT

To the Board of Directors of Genome British Columbia

We have audited the accompanying financial statements of Genome British Columbia, which comprise the statements of financial position as at March 31, 2013, March 31, 2012 and April 1, 2011, the statements of operations, changes in net assets and cash flows for the years ended March 31, 2013 and March 31, 2012, and notes, comprising a summary of significant accounting policies and other explanatory information.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with Canadian accounting standards for not-for-profit organizations, 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.

Auditors' Responsibility

Our responsibility is to express an opinion on these financial statements based on our audits. We conducted our audits in accordance with Canadian generally accepted auditing standards. Those standards require that we comply with ethical requirements and plan and perform the audits 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 our 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, we consider 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 in our audits 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 British Columbia as at March 31, 2013, March 31, 2012, and April 1, 2011, and its results of operations and its cash flows for the years ended March 31, 2013 and March 31, 2012 in accordance with Canadian accounting standards for not-for-profit organizations.



Chartered Accountants
June 7, 2013
Vancouver, Canada

Statements of Financial Position (Expressed In Canadian Dollars)

	March 31, 2013	March 31, 2012	April 1, 2011
Assets			
Current assets:			
Cash	\$ 599,888	\$ 1,975,812	\$ 5,849,533
Short-term investments (note 3)	91,664,998	104,472,221	106,169,138
Funding receivable	1,052,021	917,996	429,948
Other receivables (note 4)	490,988	130,657	76,825
Project advances	3,408,450	2,270,787	1,053,606
Prepaid expenses	176,500	155,566	129,246
	97,392,845	109,923,039	113,708,296
Loan receivable (note 5)	165,570	155,465	200,000
Capital assets (note 6)	679,201	490,801	993,958
Other long-term asset (note 7)	204,290	184,152	175,818
	\$ 98,441,906	\$ 110,753,457	\$ 115,078,072
Liabilities and Net Assets			
Current liabilities:			
Accounts payable and accrued liabilities (note 8)	\$ 3,456,952	\$ 5,394,858	\$ 3,193,564
Deferred lease inducement	353,461	37,944	—
Deferred contributions:			
Future expenses (note 9)	93,952,292	104,829,854	110,890,550
Capital assets (note 10)	679,201	490,801	993,958
	\$ 98,441,906	\$ 110,753,457	\$ 115,078,072

Commitments (note 11)

See accompanying notes to financial statements.

Approved on behalf of the Board:



Dr. Alan Pelman
Chair



Mr. Ken Galbraith
Director

Statements of Operations and Changes in Net Assets *(Expressed In Canadian Dollars)*

<i>Years ended March 31</i>	2013	2012
Revenues:		
Amortization of deferred contributions related to future expenses (note 9)	\$ 28,245,216	\$ 31,934,677
Amortization of deferred contributions related to capital assets (note 10)	399,333	605,830
Investment income	2,060,054	2,856,674
	30,704,603	35,397,181
Expenses:		
Corporate programs and management	5,618,119	5,489,033
Project expenditures	24,687,151	29,302,318
Depreciation	399,333	605,830
	30,704,603	35,397,181
Excess of revenues over expenses, being net assets, end of year	\$ —	\$ —

See accompanying notes to financial statements.

Statement of Cash Flows *(Expressed In Canadian Dollars)*

<i>Years ended March 31</i>	2013	2012
Cash provided by (used in)		
Operations:		
Excess of revenues over expenses	\$ —	\$ —
Items not involving cash:		
Depreciation	399,333	605,830
Amortization of deferred contributions related to future expenses (note 9)	(28,245,216)	(31,934,677)
Amortization of deferred contributions related to capital assets (note 10)	(399,333)	(605,830)
Accretion of loan receivable	(10,105)	44,535
Unrealized (gain) loss on short-term investments	322,982	(212,498)
	(27,932,339)	(32,102,640)
Funding (note 9)	17,897,305	25,961,842
Change in operating assets and liabilities:		
Funding receivable	(134,025)	(488,048)
Other receivables	(360,331)	(53,832)
Project advances	(1,137,663)	(1,217,181)
Prepaid expenses	(20,934)	(26,320)
Accounts payable and accrued liabilities	(1,937,906)	2,201,294
Deferred lease inducement	353,461	44,422
	(13,272,432)	(5,680,463)
Investments:		
Proceeds from sale of short-term investments	14,800,000	14,500,000
Purchase of short-term investments	(2,315,759)	(12,590,585)
Purchase of capital assets	(587,733)	(102,673)
	11,896,508	1,806,742
Decrease in cash	(1,375,924)	(3,873,721)
Cash, beginning of year	1,975,812	5,849,533
Cash, end of year	\$ 599,888	\$ 1,975,812

See accompanying notes to financial statements.

NOTES TO FINANCIAL STATEMENTS

(Expressed In Canadian Dollars) Years ended March 31, 2013 and 2012

1. Operations:

Genome British Columbia (the Corporation) was incorporated on July 31, 2000 under the Canada Corporations Act as a not-for-profit organization and is exempt from income and capital taxes. The Corporation has the following objectives:

- a. develop and establish a coordinated approach and integrated strategy in British Columbia to enable British Columbia to become a world leader in selected areas of genomic and proteomic research, including agriculture, aquaculture, environment, forestry and human health, among others, by bringing together universities, research hospitals, other research centres and industry, as well as government and private agencies for the benefit of British Columbia;
- b. participate in national approaches and strategies to strengthen genomics research capabilities in Canada for the benefit of all Canadians;
- c. create a genome centre in British Columbia to ensure that researchers can undertake research and development projects offering significant socio-economic benefits to British Columbia and Canada, to provide access to necessary equipment and facilities, and to provide opportunities for training of scientists and technologies;
- d. establish a contractual relationship with Genome Canada, and contractual and collaborative relationships with others (including private and voluntary sectors and federal and provincial governments) in order to provide financial and personnel resources for the Corporation;
- e. address public concerns about genomics research through the organization of intellectual resources regarding ethical, environmental, legal and societal issues related to genomics; and
- f. increase public awareness of the need for genomics research and of the uses and implications of the results of such research, thereby helping Canadians understand the relative risks and rewards of genomics.

2. Significant accounting policies:

On April 1, 2012, the Corporation adopted Canadian accounting standards for not-for-profit organizations (Accounting Standards for NPOs). These are the first financial statements prepared in accordance with Accounting Standards for NPOs.

In accordance with the transitional provisions in Accounting Standards for NPOs, the Corporation has adopted the changes retrospectively, subject to certain exemptions allowed under these standards. The transition date is April 1, 2011 and all comparative information provided has been presented by applying Accounting Standards for NPOs.

There were no adjustments to net assets as at April 1, 2011 or excess of revenue over expenses for the year ended March 31, 2012 as a result of the transition to Accounting Standards for NPOs.

a. Short-term investments:

Short-term investments are recorded at fair value with gains and losses recorded in the statement of operations and changes in net assets in the period in which they arise. Short-term investments are comprised of a portfolio of funds managed by investment professionals.

b. Project advances:

The advances are comprised of amounts provided by the Corporation to approved research projects and platforms which have not yet been spent.

c. Capital assets:

Capital assets are recorded at cost. Depreciation is provided using the straight-line method as follows:

Asset	Years
Furniture and fixtures	5
Computers and software	3
Telecommunications equipment	5
Project equipment	3–4
Leasehold improvements	remaining lease term

d. Revenue recognition:

The Corporation follows the deferral method of accounting for contributions.

Externally restricted contributions:

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. Externally restricted contributions for expenses of a future period and related investment income are deferred and recognized as revenue in the year in which the related expenses are incurred. Deferred contributions related to capital assets represent the unamortized amount of contributions received for the purpose of purchasing capital assets. The amortization of such contributions is recorded as revenue in the statement of operations and changes in net assets. Restricted contributions related to the purchase of capital assets are deferred and recognized as revenue using the same methods and amortization rates of the related capital assets.

2. Significant accounting policies (continued):

Unrestricted contributions:

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.

e. Use of estimates:

The preparation of financial statements requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities, disclosure of contingent assets and liabilities and the reported amounts of revenues and expenses. Significant areas requiring the use of management's estimates relate to the determination of the useful life of capital assets, accruals for project expenditures and the determination of any impairment of the other long-term asset. Accordingly, actual results could differ from these estimates.

f. Long-term asset:

The Corporation's long-term asset is recorded at cost which represents the determined fair value at the date the instrument is issued.

g. Valuation of long-lived assets:

If management determines that a capital asset no longer has any long-term service potential to the Corporation, such assets and related deferred contribution balances are written down to their fair values.

h. Deferred lease inducement:

Tenant inducement received or receivable associated with leased premises are deferred and amortized on a straight-line basis over the term of the lease.

i. Related Foundation:

The financial information of Genome British Columbia Foundation, a not-for-profit entity that is commonly controlled by the Corporation, is not consolidated but disclosed in these financial statements.

j. Financial Instruments:

Financial instruments are recorded at fair value on initial recognition. All financial instruments are subsequently measured at cost or amortized cost, unless management has elected to carry the instruments at fair value. The Corporation has elected to carry its short-term investments at fair value.

At year-end, the Corporation assesses whether there are any indications that a financial asset measured at cost or amortized cost may be impaired. Financial assets measured at cost include funding receivable, other receivables, loan receivable and long-term asset. If there is an indicator of impairment, the Corporation determines if there is a significant adverse change in the expected amount or timing of future cash flows from the financial asset. If there is a significant adverse change in the expected cash flows, the carrying value of the financial asset is reduced to the highest of the present value of the expected cash flows the amount that could be realized from selling the financial asset or the amount the Corporation expects to realize by exercising its right to any collateral. If events and circumstances reverse in a future period, an impairment loss will be reversed to the extent of the improvement, not exceeding the initial impairment charge.

k. Foreign Exchange:

The Corporation's monetary assets and liabilities denominated in foreign currencies are translated into Canadian dollars using exchange rates in effect at the balance sheet date. Revenue and expense items are translated at the rate of exchange prevailing on the date of the transaction. Foreign exchange gains and losses are included in the statement of operations and changes in net assets.

3. Short-term investments:

The Board of Directors has overall responsibility for the establishment and oversight of the Corporation's short-term investments. The Board has established an Investment Committee, which is responsible for developing and monitoring the Corporation's investment policy. The overall objectives of the Corporation's investment policy are to achieve security of principal that ensures a return of the capital invested, to maintain the liquidity necessary to meet the cash flow requirements of the Corporation and to maximize the rate of return without affecting liquidity or incurring undue risk.

The Corporation's short-term investments are comprised of a portfolio of funds. The portfolio consists of investments in a Canadian money market fund and a bank guaranteed Canadian mortgage fund. The portfolio is managed by independent investment professionals in accordance with the Corporation's investment policy. All short-term investments are measured at fair value. The Corporation's short-term investments are subject to interest rate, market and liquidity risks.

Both the risk of significant changes in interest rates and the risk of significant changes in market prices are mitigated by the Corporation's policy that permits the portfolio manager to change the level of investment in either fund at short notice and the fact that interest earned on the portfolio is reinvested monthly at prevailing rates. The Corporation limits exposure to liquid asset credit risk through maintaining its short-term investments with a high-credit quality financial institution.

3. Short-term investments (continued):

The Corporation's short-term investments are as follows:

	March 31, 2013	March 31, 2012	April 1, 2011
Canadian Money Market Fund	\$ 27,980,865	\$ 40,611,890	\$ 26,851,374
Canadian Mortgage Fund	63,684,133	63,860,331	56,317,260
Term deposit	—	—	23,000,504
	\$ 91,664,998	\$ 104,472,221	\$ 106,169,138

The Canadian Money Market Fund invests in a mixture of Treasury Bills, Bankers' Acceptances, Commercial Paper (minimum R-1 low rating) and bonds (minimum BBB rating) with maturities averaging 60-120 days and a minimum Government of Canada, Provincial or cash holding of 25%.

The Canadian Mortgage Fund invests in first mortgages on Canadian residential real property with loan value ratios of 65% or less. The mortgages are purchased by the fund from a Canadian Chartered Bank and in the event that a mortgage is in default for more than 90 days the bank guarantees both the interest and the principal of the mortgage.

Fair values of the Corporation's portfolio investments are based on quoted bid price at the reporting date.

4. Other receivables:

	March 31, 2013	March 31, 2012	April 1, 2011
Sales tax	\$ 99,829	\$ 60,545	\$ 74,099
Other accounts receivables	391,159	70,112	2,726
	\$ 490,988	\$ 130,657	\$ 76,825

5. Loan receivable:

The Corporation made a loan to a British Columbian academic institution to assist in attracting a senior scientific researcher. The loan is in the amount of \$200,000, bears no interest, and has a term of five years, expiring on May 9, 2016. The loan was measured at fair value on initial recognition, which was estimated using a net present value calculation with a discount rate of 6.50% per annum. The difference between the initial fair value and the principal amount was recorded in the statement of operations as a discount and the loan receivable balance is being accreted over the term of the loan using the effective interest rate method.

6. Capital assets:

March 31, 2013	Cost	Accumulated depreciation	Net book value
Furniture and fixtures	\$ 60,220	\$ 6,637	\$ 53,583
Computers and software	103,606	61,487	42,119
Telecommunications equipment	4,145	2,419	1,726
Project equipment	1,044,009	974,208	69,801
Leasehold improvements	578,199	66,227	511,972
	\$ 1,790,179	\$ 1,110,978	\$ 679,201
March 31, 2012	Cost	Accumulated depreciation	Net book value
Furniture and fixtures	\$ 79,656	\$ 55,622	\$ 24,034
Computers and software	361,409	307,653	53,756
Telecommunications equipment	27,696	25,140	2,556
Project equipment	7,090,281	6,728,897	361,384
Leasehold improvements	351,212	302,141	49,071
	\$ 7,910,254	\$ 7,419,453	\$ 490,801
April 1, 2011	Cost	Accumulated depreciation	Net book value
Furniture and fixtures	\$ 54,977	\$ 50,076	\$ 4,901
Computers and software	340,124	274,760	65,364
Telecommunications equipment	27,696	20,104	7,592
Project equipment	7,596,680	6,681,863	914,817
Leasehold improvements	294,503	293,219	1,284
	\$ 8,313,980	\$ 7,320,022	\$ 993,958

During the year ended March 31, 2013, fully amortized capital assets of \$6,693,038 were removed from the Corporation's accounting records.

7. Other long-term asset:

Other long-term asset includes subscription rights and common shares in an early stage biotechnology company (Investee) issued pursuant to a continuing collaborative research agreement. Each subscription right entitles the Corporation to one common share for no additional consideration and convert to common shares of the Investee upon certain triggering events or three years from issuance. At March 31, 2013, the Corporation held common shares of the Investee:

	Number of subscription rights	Number of common shares	Cost
Balance at April 1, 2011	\$ 68,950	\$ 200,014	\$ 175,818
Additions	8,246	–	8,334
Conversions	(9,782)	9,782	–
Balance at March 31, 2012	67,414	209,796	184,152
Additions	29,679	–	20,138
Conversions	(33,863)	33,863	–
Balance at March 31, 2013	\$ 63,230	\$ 243,659	\$ 204,290

8. Accounts payable and accrued liabilities:

	March 31, 2013	March 31, 2012	April 1, 2011
Accounts payable	\$ 305,254	\$ 135,222	\$ 130,637
Accrued liabilities	3,151,698	5,259,636	3,062,927
	\$ 3,456,952	\$ 5,394,858	\$ 3,193,564

9. Deferred contributions related to future expenses:

The Corporation receives funding from Genome Canada, the Province of British Columbia, Western Economic Diversification Canada and from other sources to be held, administered and distributed in accordance with the related funding agreements between Genome British Columbia and other parties (note 11).

Deferred contributions related to expenses of future periods represent these unspent externally restricted funding, 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 contributions balance for the period are as follows:

	2013	2012
Balance, beginning of year	\$ 104,829,854	\$ 110,890,550
Funding received or receivable during the year:		
Genome Canada	15,507,078	14,867,560
Province of British Columbia	–	10,001,600
Western Economic Diversification Canada	940,672	782,682
International collaboration	1,151,326	–
BC Clinical Research Infrastructure Network partners	178,800	306,500
Service Canada	–	3,500
GBC Foundation	13,429	–
BC Cancer Foundation	50,000	–
Sponsorships	31,000	–
Other	25,000	–
	122,727,159	136,852,392
Lease inducement amortization	37,944	6,478
Other long-term asset	20,138	8,334
	122,785,241	136,867,204
Less:		
Amount amortized to revenue	(28,245,216)	(31,934,677)
Amount transferred to fund capital assets purchased during the year (note 10)	(587,733)	(102,673)
	(28,832,949)	(32,037,350)
Balance, end of year	\$ 93,952,292	\$ 104,829,854

10. Deferred contributions related to capital assets:

Deferred contributions related to capital assets represent the unamortized amount of contributions received for the purchase of capital assets. The amortization of such contributions is recorded as revenue in the statement of operations and changes in net assets. The changes in the deferred contributions related to capital assets balance for the period are as follows:

	2013	2012
Balance, beginning of year	\$ 490,801	\$ 993,958
Allocation of funding for capital asset purchases (note 9)	587,733	102,673
	1,078,534	1,096,631
Less: amount amortized to revenue	(399,333)	(605,830)
Balance, end of year	\$ 679,201	\$ 490,801

11. Commitments:**a. Funding:**

- (i) The Corporation enters into funding agreements with Genome Canada (the agreements). In accordance with these agreements the Corporation agrees to secure on an on-going basis cash or cash equivalent commitments from other parties representing at least 50% of the total costs of the projects covered by the agreements. In addition, Genome Canada agrees to disburse an amount only up to the amount of the formal commitments from other parties. However, Genome Canada may provide funding notwithstanding the fact that formal commitments from other parties have not yet been secured. Genome Canada has also agreed that funds, provided in good faith, where commitments from other parties have not yet been secured, shall not be reimbursable to Genome Canada.

In accordance with an agreement entered into with Genome Canada with regard to a financial support commitment of up to \$11,431,003 related to Applied Genomics Research in Bioproducts or Crops Competition, the Corporation has agreed, among other things, to provide Genome Canada with a co-funding plan for each project. A co-funding plan for each project has been provided to and accepted by Genome Canada.

In accordance with an agreement entered into with Genome Canada with regard to a financial support commitment of up to \$23,043,282 related to Large-Scale Applied Research Project Competition, the Corporation has agreed, among other things, to provide Genome Canada with a co-funding plan for each project. A co-funding plan for each project has been provided to and accepted by Genome Canada.

In accordance with an agreement entered into with Genome Canada with regard to a financial support commitment of up to \$571,178 related to Entrepreneurship Education in Genomics Program, the Corporation has agreed, among other things, to provide Genome Canada with a co-funding plan for each project. A co-funding plan for each project has been provided to and accepted by Genome Canada.

In accordance with an agreement entered into with Genome Canada with regard to a financial support commitment of up to \$34,036,779 related to 2012 Large-Scale Applied Research in Genomics and Personalized Health, the Corporation has agreed, among other things, to provide Genome Canada with a co-funding plan for each project. A co-funding plan for each project has been provided to and accepted by Genome Canada.

In accordance with an agreement entered into with Genome Canada with regard to a financial support commitment of up to \$2,563,577 related to Bioinformatics and Computational Genomics, the Corporation has agreed, among other things, to provide Genome Canada with a co-funding plan for each project. A co-funding plan for each project has been provided to and accepted by Genome Canada.

- (ii) In accordance with an agreement with the Centre for Drug Research and Development (CDRD), the Corporation has agreed to contribute up to \$1,000,000 to jointly fund research and development projects in commercialization of genomics-related drug discoveries at CDRD. At March 31, 2013, the Corporation has contributed \$330,241.

11. Commitments (continued):**b. Project commitments:**

In the normal course of business, the Corporation enters into Collaborative Research Agreements for the completion of milestone-based research projects. Detailed below is the estimated remaining commitment of the Corporation's funds relating to active research programs. The Corporation typically provides co-funding to research projects, whereby its funds are combined with funds from other sources to provide the total project award amount. Funds provided directly to the research institution by third parties are included in the total award amount shown in the table below.

The total award amount and estimated remaining commitment of the Corporation by program as of March 31, 2013 are as follows:

Approved Programs	Total award amount	Estimated remaining Corporation commitment
Current programs:		
2010 Large-Scale Applied Research Project Competition	\$ 56,374,386	\$ 7,785,567
Advancing Technology Innovation through Discovery	5,702,315	228,353
Competition in Applied Genomics Research in Bio-products or Crops	24,346,330	519,291
Entrepreneurship Education in Genomics Program	979,966	206,210
Genomics and Personalized Health	34,036,779	8,438,805
2012 Bioinformatics and Computational Biology	5,276,029	1,140,542
Applied Genomics Consortium Program	31,193,623	838,926
Personalized Medicine Program	8,168,169	2,011,690
Human Microbiome (CIHR)	4,827,122	827,480
Human Epigenome (CIHR)	9,978,992	2,416,313
Centre for Drug Research and Development Fund	1,921,586	411,436
Strategic Opportunities Fund	11,493,963	1,044,868
Strategic Opportunities Fund for Industry	2,009,943	122,370
WED – Proof of Concept	8,436,152	1,124,458
Science and Technology Platforms	10,279,863	200,000
Pilot Programs	1,552,423	306,000
	216,577,641	27,622,309
Closed Programs		
Competition I	42,707,207	–
Competition II	43,502,482	–
Competition III	100,153,663	–
International Competition	12,881,913	–
Applied Genomics and Proteomics in Human Health	44,099,840	–
Applied Genomics Innovation Program	24,437,610	–
Translational Program for Applied Health	17,891,275	–
New Technology Development Projects	5,509,566	–
WED Programs	10,713,337	–
Science and Technology Platforms	47,817,496	–
Technology Development Initiatives Fund	706,536	–
Other Pilot Programs	3,498,633	–
	353,919,558	–
Total	\$ 570,497,199	\$ 27,622,309

11. Commitments (continued):**c. Operating lease and management agreements:**

The Corporation has entered into operating lease agreements for office premises and management contracts which expire at various dates until September 30, 2020. Minimum payments for the next eight fiscal years are as follows:

2014	\$	546,519
2015		493,541
2016		499,291
2017		499,291
2018		505,038
2019		505,038
2020		505,038
2021		252,518
Total	\$	3,806,274

12. Related party transactions:

In the normal course of business, the Corporation enters into Collaborative Research Agreements to fund genomics or proteomics related research projects. During the year ended March 31, 2013, and in accordance with one such agreement, the Corporation paid \$101,219 (2012 – \$148,781) to a company that has a director and shareholder who is also an officer of the Corporation.

13. Genome British Columbia Foundation:

Genome British Columbia Foundation (the Foundation) is a registered charity established to promote and foster life sciences research for the public benefit by coordinating, sponsoring and carrying educational conferences, seminars, workshops and symposiums. The Foundation is exempt from income and capital taxes.

The majority of the Foundation's Board of Directors are also members of the Corporation, and as such, the Corporation is presumed to control the Foundation. In accordance with the CICA Handbook Section 4450, the Corporation has chosen not to consolidate the Foundation but has followed the disclosure requirements. The Corporation has no economic interest in the Foundation.

Financial information of the Foundation as at March 31, 2013, March 31, 2012 and April 1, 2011 and for the years ended March 31, 2013 and 2012 are as follows:

	March 31, 2013	March 31, 2012	April 1, 2011
Cash, term deposits and receivables	\$ 348,284	\$ 1,255,606	\$ 1,717,190
Accounts payable and accrued liabilities	(33,429)	–	–
Deferred contributions	(314,855)	(1,255,606)	(1,717,190)
Net assets	\$ –	\$ –	\$ –
Revenues	\$ 954,435	\$ 497,250	
Expenses	(954,435)	(497,250)	
Excess of revenue over expenses	\$ –	\$ –	
Cash provided by (used in):			
Operations	\$ (917,822)	\$ (461,584)	
Investing	959,701	203,936	
Net change in cash	\$ 41,879	\$ (257,648)	

There are no significant differences in accounting policies between the Foundation and the Corporation. The majority of the assets of the Foundation are restricted by the terms of a memorandum of understanding relating to the funding of a research chair at a British Columbia academic institution.

14. Financial risks:**a. Liquidity risk:**

Liquidity risk is the risk that the Corporation will be unable to fulfill its obligations on a timely basis or at a reasonable cost. The Corporation manages its liquidity risk by monitoring its operating requirements. The Corporation prepares budget and cash forecasts to ensure it has sufficient funds to fulfill its obligations. There has been no change to the risk exposures during the year ended March 31, 2013.

b. Credit risk:

Credit risk refers to the risk that a counterparty may default on its contractual obligations resulting in a financial loss. The Corporation deals with creditworthy counterparties to mitigate the risk of financial loss from defaults. There has been no change to the risk exposures during the year ended March 31, 2013. See further discussion in note 3.

BOARD APPOINTMENT



John Shepherd

Director, Leukemia/Bone Marrow Transplant Program of BC
University of British Columbia

Dr. John Shepherd completed undergraduate studies at the University of British Columbia and then went on to obtain a masters degree in medical sciences at the University of Calgary. Following this, he completed medical school at the University of Calgary and his medical residency at the University of Toronto.

He has been on staff with the Leukemia/BMT Program since 1987. He focused his clinical research efforts at various times on the therapy of elderly patients with acute myeloid leukemia, advances in multiple myeloma, and novel therapy of chronic myeloid leukemia. He has authored or co-authored over 300 publications, abstracts, and reviews.

After serving in progressive medical administration positions with the Vancouver Coastal Health Authority most recently as Vice President, Clinical Quality, Safety and Health Service Networks, Dr. Shepherd became the director of the Leukemia/BMT Program of BC in July, 2010. He is also a clinical professor of medicine at UBC.

CORPORATE INFORMATION

BOARD OF DIRECTORS (FOR FISCAL YEAR ENDED MARCH 31, 2013)

Alan Pelman (Chair)
*Former Vice President,
Technology*
Weyerhaeuser Canada

Ian de la Roche (Vice-Chair)
Adjunct Professor
University of British Columbia

Alan Winter
President & CEO
Genome BC

Don Enns
President
LifeSciences BC

Ken Galbraith
General Partner
Ventures West Capital Ltd.

Ida Goodreau
*Adjunct Professor, Sauder
School of Business and
Director, Strategy, Centre for
Healthcare Management*
University of British Columbia

Janet Halliwell
Principal
J.E. Halliwell Associates Inc.

Victor Ling
President & Scientific Director
Terry Fox Research Institute

Peter J. O'Callaghan
Senior Partner
Blake, Cassels & Graydon LLP

Edward Safarik
Former President & CEO
Ocean Fisheries Ltd.

John Shepherd
*Director, Leukemia/
Bone Marrow Transplant
Program of BC*
University of British Columbia

Michael Stevenson
*Past President &
Vice-Chancellor*
Simon Fraser University

MANAGEMENT

Alan Winter
President & CEO

Tony Brooks
*Chief Financial Officer &
Corporate Secretary*

Suzanne Gill
*Director, Corporate
Development*

Sally Greenwood
*Vice President,
Communications & Education*

Gabe Kalmar
*Vice President,
Sector Development*

Brad Popovich
Chief Scientific Officer

AUDITORS

KPMG LLP
Vancouver, BC

LEGAL COUNSEL

Richards Buell Sutton LLP
Vancouver, BC

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Genome British Columbia

400–575 West 8th Ave.
Vancouver, BC V5Z 0C4
Tel 604.738.8072
Fax 604.738.8597
www.genomebc.ca

Twitter @genomebc
Facebook /GenomeBC
YouTube /genomicseducation

