



Corporate Plan 2011-12



GenomeCanada

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GenomeCanada

Corporate Plan 2011–12

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SECTION I –

About Genome Canada

Genome Canada is a not-for-profit corporation, established in February 2000 under the *Canada Corporations Act Part II*. Its office is located in Ottawa, Ontario. Genome Canada's relationship to its lead investor, the federal government, is formalized through a funding agreement with Industry Canada. Numerous accountability mechanisms are in place to provide a high level of assurance to the federal government: the submission of annual corporate plans and annual reports, the conduct of independent audit and evaluation studies, and the development of performance, audit and evaluation strategies.

Genome Canada's mandate is to develop and implement a national strategy in genomics¹ research for the benefit of all Canadians in sectors of strategic importance to Canada—agriculture, environment, fisheries, forestry, and human health. Through its own activities and programs and also its coordination and collaborations with federal institutions and other external stakeholders, Genome Canada has established itself as a cornerstone of the strategy for genomics excellence in Canada. In addition, its activities are aligned with the Government of Canada's Science and Technology (S&T) Strategy.

Over the past decade, Genome Canada has established Canada as a recognized world leader in promoting research on the ethical, environmental, economic, legal and social (GE³LS) aspects of genomics research. The unique approach Genome Canada adopted to ensure the GE³LS aspects are considered, integrating GE³LS research into genomics research projects and funding large-scale GE³LS research projects, has helped enable responsible and beneficial applications of genomics science.

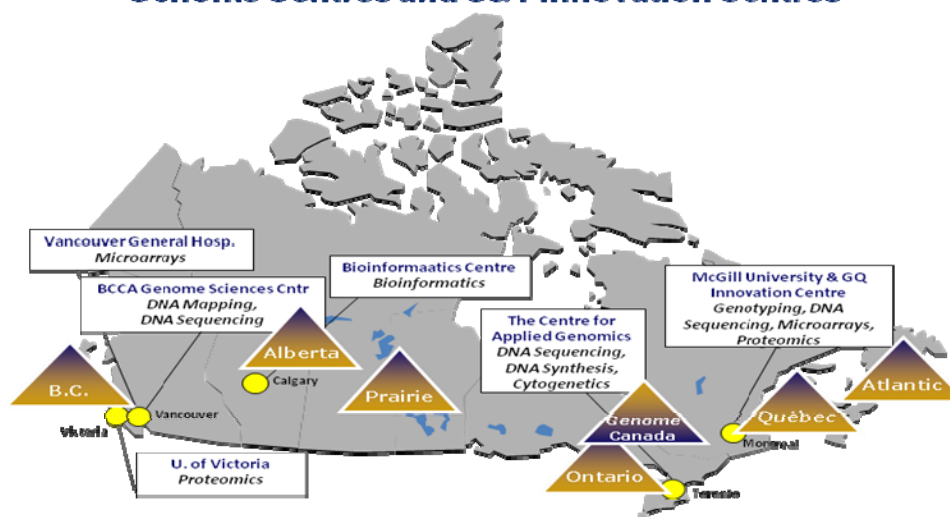
Genome Canada is recognized as a major player in the international genomics arena. By funding internationally competitive research through its bilateral and multilateral collaborations—the Cancer Stem Cell Consortium, the Structural Genomics Consortium, the Public Population Project in Genomics, and the International Barcode of Life Project—Genome Canada is contributing expertise and leadership in international genomics research priorities.

Genome Canada's *modus operandi* is based on the premise of funding and managing large-scale and interdisciplinary, internationally peer-reviewed research projects and Science and Technology (S&T) Innovation Centres. This is achieved by working in close collaboration with its primary partners—the six Genome Centres, located in British Columbia, Alberta, the Prairies, Ontario, Quebec, and the Atlantic. The relationship established between Genome Canada and each of the Genome Centres is defined by means of a funding agreement that not only acknowledges the independence of each Genome Centre, but also specifies the parameters in which each Centre is to operate and contribute to Genome Canada's overall mandate. The Genome Centres are pivotal for fostering regional expertise in genomics research, developing partnerships to strengthen regional leadership and competitiveness, facilitating access to the S&T Innovation Centres, creating unique and innovative public outreach programs, as well as assisting in attracting co-funding for projects from both domestic and international investors.

¹ Genomics means the study of genes and their functions, namely genomics, proteomics, metabolomics, bioinformatics and other related fields of research.

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Genome Centres and S&T Innovation Centres



Genome Canada actively seeks to bring together investors from all sectors, including provincial governments and agencies, international non-governmental organizations and research institutes, industry, universities, and research hospitals in support of large-scale projects of strategic scientific and international importance to Canada. To date, Genome Canada has raised over \$1 billion in co-funding commitments to supplement the \$915 million committed by the Government of Canada over the past decade. This effort has resulted in approximately \$2 billion in funding commitments to support 144 large-scale research projects, S&T Innovation Centres and six regional Genome Centres.

Table 1

Genome Canada Portfolio (2000-2010)

Sectors	B.C.	Alberta	Prairie	Ontario	Quebec	Atlantic	Total
Agriculture	4	1	4	2	1	1	13
Environment	2	2	1	4	2	1	12
Fisheries	2					2	4
Forestry	2			1	2	1	6
GE ³ LS	2	1	2	3	2		10
Health	19	2	2	24	22	2	71
Technology Development	3	1	2	10	2		18
S&T Innovation Centres	4	1	1	2	1	1	10
Total	38	8	12	46	32	8	144

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Table 1 shows the distribution of projects and S&T Innovation Centres across sectors and regions. All of Genome Canada's competitions have supported excellent genomics research projects, which not only has illustrated the enormous potential that exists in Canada to undertake innovative and cutting-edge research in genomics, but also has resulted in outcomes with demonstrable impacts and benefits.

Genome Canada is currently administering the final reviews for two competitions announced in 2010:

- the Large Scale Applied Research Project Competition, with a maximum of \$60 million available for investment in both a targeted competition in the areas of forestry and/or the environment as well as a multi-sector competition addressing Genome Canada's other strategic sectors (agriculture, fisheries and human health); and
- the Science & Technology Innovation Centre Competition for Operations Support, with a maximum of \$24 million available to support innovation centres across Canada that provide genomics technology services to both Genome Canada-funded projects as well as other users.

Genome Canada pursues a mandate to deliver initiatives and programs in genomics research that respond to focused and specific Canadian needs and priorities, provide value for money, and have the potential to strengthen Canada's competitiveness in a global, knowledge-based economy. Furthermore, Genome Canada is committed to applying the highest standards of accountability and transparency to its operations, informing Canadians about the exciting opportunities and promise that genomics holds, and reporting on achievement of results in light of its overall mandate.

Governance

Genome Canada operates within a governance framework that is reflective of its not-for-profit corporation status. It strives to achieve the highest operational and ethical standards and compliance with the laws, regulations, policies and procedures that apply to its operations and activities, as well as to ensure that decisions are based on principles of fairness and integrity that reflect consideration of all its stakeholders. This adherence to modern governance practices is intended to guarantee effective oversight of the corporation.

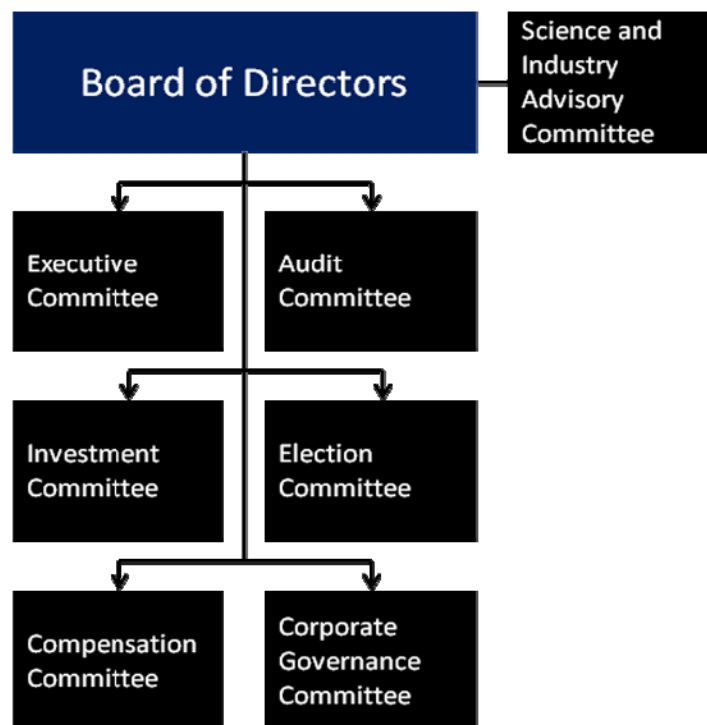
Genome Canada is governed by a Board of Directors comprising up to 16 individuals drawn from the highest levels of the academic, private and public sectors. All have unique skills and attributes as well as strong interests and insights into the transformative potential of genomics research for the benefit of Canada and the world. The presidents of five major federal research funding agencies—the Canada Foundation for Innovation, the Canadian Institutes of Health Research, the National Research Council, the Natural Sciences and Engineering Research Council, and the Social Sciences and Humanities Research Council—are non-voting, *ex-officio* advisors to the Board of Directors.

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The Board of Directors has overall responsibility for the stewardship of the business and affairs of Genome Canada, and to help it discharge these duties has established an Executive Committee as well as Audit, Investment, Election, Corporate Governance and Compensation committees.

The Board of Directors has also created a Science and Industry Advisory Committee with a mandate to provide strategic and visionary advice and expertise on an integrated strategy for research and development in the areas of genomics in Canada.

Genome Canada Governance Structure



The 2010–11 fiscal year saw significant activity occur under its governance portfolio, including:

- the appointment of an interim CEO from March 2010 to October 2010, to take over leadership activities from the Transition Team, which had been overseeing the affairs of the organization as a result of the departure of the founding President and CEO of Genome Canada;
- the undertaking of a six-month recruitment process, which resulted in the appointment of a new President and CEO of Genome Canada in October 2010; and
- the appointment of five new directors of the Board, who bring to the table a wealth of knowledge and expertise, along with a keen interest in the field of genomics and its potential beneficial impacts for society.

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About this document

Genome Canada's Corporate Plan 2011–12 reports on activities and performance for the fiscal year 2010–11 and outlines anticipated plans and activities for 2011–12.

The reporting of plans and activities in this corporate plan is organized around Genome Canada's five objectives:²

1. the development and establishment of a coordinated strategy for genomics research to enable Canada to become a world leader in areas such as health, agriculture, environment, forestry and fisheries;
2. the provision of leading-edge technology to researchers in all genomics-related fields through regional Genome Centres across Canada, of which there are currently six, one each in British Columbia, Alberta, the Prairies, Ontario, Quebec, and the Atlantic;
3. the support of large-scale projects of strategic importance to Canada by bringing together industry, government, universities, research hospitals and the public;
4. the assumption of leadership in the area of ethical, environmental, economic, legal, social and other issues related to genomics research (GE³LS), and the communication of the relative risks, rewards and successes of genomics to the Canadian public; and
5. the encouragement of investment by others in the field of genomics research.

² Source: Genome Canada's Funding Agreement signed March 31, 2008

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Pursuing our Objectives: Performance for 2010-11

Since its creation in 2000, Genome Canada has been committed to encouraging, developing, facilitating and financing the expansion in Canada of genomics research capacity and to affirming Canada's stature on the world's genomics research stage. This section outlines Genome Canada's major activities and accomplishments for 2010–11 in fulfillment of its mandate and objectives.

OBJECTIVE 1

The development and establishment of a coordinated strategy for genomics research to enable Canada to become a world leader in areas such as agriculture, environment, fisheries, forestry, fisheries, and human health.

Strategy

Genome Canada's approach for developing and establishing a coordinated strategy for genomics research to become a world leader in sectors of strategic importance to Canada (i.e., agriculture, environment, fisheries, forestry, fisheries, and human health) is to actively engage in genomics initiatives with relevant Canadian and international groups who have common interests and goals. The approach is often undertaken in two phases: 1) a developmental phase, in which opportunities for Genome Canada involvement are explored via participation and engagement in workshops, conferences, and strategic priority initiatives; and 2) a funding phase, supporting the opportunities (such as international consortium initiatives) that have been assessed and determined to be excellent strategic investments for Genome Canada. This approach actively engages the organization's Science and Industry Advisory Committee for advice on strategic prioritization and environmental scanning; the six Genome Centres for assistance in regional and national consultations; and relevant provincial, federal and international funding agencies for partnership and collaboration in new research opportunities.

What has been achieved?

In 2010–11, Genome Canada continued its involvement in the following initiatives in which it currently has a significant funding investment:

► **Cancer Stem Cell Consortium (CSCC)**—The CSCC was established in 2007, following extensive consultations as part of the Canada–California Strategic Innovation Partnership. The seven current members of the CSCC are the Canadian Institutes of Health Research, the National Research Council of Canada, the Michael Smith Foundation for Health Research, the Canada Foundation for Innovation, the Stem Cell Network, the Ontario Institute for Cancer Research, and Genome Canada. Genome Canada serves as the secretariat for the CSCC. The objective of the CSCC, which is governed by a Board of Directors, is to coordinate an international strategy for cancer stem cell research. Cancer stem cells are considered to be the major culprits at the root of many cancers, accounting for tumour growth and metastases, and their eradication will potentially offer enduring cancer cures.

The CSCC's first strategic initiative was launched in February 2009, as a joint call for applications issued by the CSCC and the California Institute for Regenerative Medicine (CIRM) to support Disease Teams of Canadian and Californian scientists focusing on cancer stem cell research. The goal of the competition is an Investigational New Drug filing at the end of the four-year grant to enable Phase I clinical testing. Two applications led jointly by a Canadian and a Californian scientist were funded through this strategic

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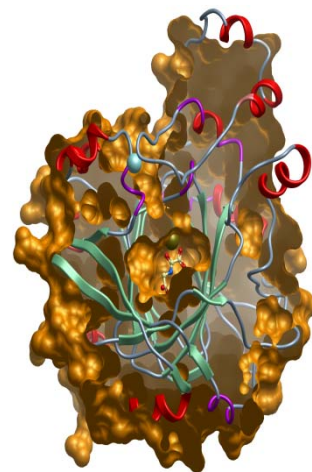
Pursuing our Objectives: Performance for 2010-11

initiative. Genome Canada approved funding, up to a maximum of \$14 million of Genome Canada's initial allocation of \$25 million, to the CSCC to support the genomics research to be undertaken by the Canadian scientists in each of the Disease Team projects. In 2010–11, progress on both projects was monitored through quarterly scientific and financial reports. Furthermore, an external advisory committee composed of international and Canadian scientists provided advice to the projects as well as progress reports to the CSCC.

In 2010–11, the CSCC also developed two new initiatives. One involves the establishment of the Canada–California Network of Resource and Technology Platforms (C4Resources). The objective is to coordinate cancer stem cell research resources and platform technologies more efficiently and effectively. This coordination might include access to new resources and technology platforms; storage and sharing of biological samples and data; and facilitation of knowledge exchange and cross-training of investigators and support staff. A consultation workshop with the cancer stem cell community is planned for spring 2011.

A second initiative is a new partnership with the CIRM through their Disease Team Therapy Development Competition. The objective of this partnership is to support Canadian and Californian research teams in moving stem-cell-based therapies further down the innovation pipeline into pre-clinical development for Phase I and II clinical trials. The competition has two stages of funding: 1) a Planning Award, which will support up to six months of team assembly, planning and proposal development for the Research Award application; and 2) a Research Award, which will support actively managed teams to conduct milestone-driven translational research. Funding contributions from Genome Canada, the Ontario Institute of Cancer Research and the Canadian Institutes of Health Research have been committed, and additional funds are being solicited from other Canadian funding agencies. A joint call for applications for the planning awards was launched in December 2010, with the expectation of decisions on the Planning Awards by May 2011 and for the Research Awards by summer 2012.

► **Structural Genomics Consortium (SGC)**—The SGC is an international consortium initiative that aims to determine the three-dimensional structures of proteins of medical relevance (such as proteins from the parasite that causes malaria) and place them in the public domain without restriction on their use. To date, the project participants have submitted more than 1,000 structures to the public domain. The SGC is a not-for-profit international consortium, governed by a Board of Directors, made up of representatives from each of the funders: the Wellcome Trust, the Canadian Institutes of Health Research, Genome Canada, the Canada Foundation for Innovation, the Ontario Ministry of Research and Innovation, Swedish funding agencies, GlaxoSmithKline, Novartis and Merck. The SGC is an excellent example of a model for a public-private



The SGC's 1000th protein structure –Jmjd2c – involved in epigenetic signaling. (Schematic provided by Dr. Wen Hwa Lee, SGC, University of Oxford)

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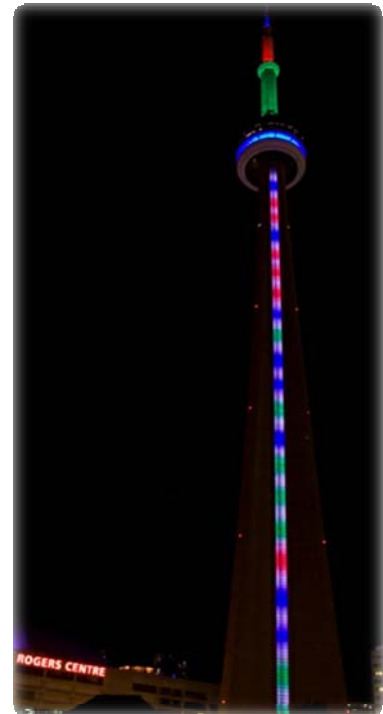
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partnership, with investments by three major pharmaceutical companies and their active participation in the project's governance.

In 2010–11, Genome Canada continued its oversight activities, including membership on the SGC Board of Directors, to ensure that target milestones for the determination of three-dimensional protein structures were on track. Phase II funding of the SGC will end in June 2011. In regards to a potential investment for Phase III funding of the SGC, in June 2010 Genome Canada participated in a peer review process organized by the current funders. The outcomes of the process were positive, both from the perspective of attracting new potential funders for this project, as well as from the achievement of surpassing target milestones for the determination of structures of soluble human proteins and parasite proteins.

► **The International Barcode of Life (iBOL)**—iBOL, a Genome Canada international consortium initiative, is the largest biodiversity genomics initiative ever undertaken. Over 250 researchers from 25 countries, including biodiversity scientists, genomics specialists, technologists and ethicists, are working together to construct a DNA barcode reference library that will be the foundation for a rapid and inexpensive DNA-based identification system for all multi-cellular life. In the first phase of this project (2009–2015), iBOL collaborators will barcode five million specimens representing 500,000 species. Since July 2009 more than 200,000 barcode records have been generated, representing more than 32,000 new barcode clusters or putative species. To date, Genome Canada has committed over \$6 million to what is planned to be a \$100 million multi-partner effort over six years. This investment brings strong Canadian leadership to a large, high-profile, international initiative.

In 2010–11, Genome Canada carried out oversight activities, including membership on the iBOL Board of Directors, to ensure that target milestones were being met. Furthermore, Genome Canada put in place the necessary steps for an interim review of iBOL to be held in March 2011. In September 2010, international DNA barcoding experts gathered in Guelph, Ontario, for the second meeting of the iBOL Scientific Steering Committee, at which was discussed progress to date, as well as the opportunities and challenges ahead in terms of meeting the project's deliverables over the next five years. In October 2010, iBOL signed a memorandum of understanding with the international Secretariat of the Convention on Biological Diversity (SCBD), agreeing to collaborate with the SCBD in its important efforts to safeguard biodiversity.



Official inauguration of iBOL

A highlight of the second meeting of the iBOL Scientific Steering Committee was an event at Toronto's CN Tower to celebrate the official international launch of iBOL. To mark the occasion, the barcode of the Canadian beaver was symbolically projected from the CN Tower.

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► **Public Population Project in Genomics (P³G)**—The P³G is an international consortium with the aim of fostering collaboration between researchers and projects in the field of population genomics. The goal of P³G is to facilitate the harmonization of samples and data collected from different international biobanks. The consortium develops research tools for effective communication and collaboration between biobanks to enable the international research community to share expertise and resources and facilitate knowledge transfer for the health of populations.

In 2010–11, Genome Canada continued its oversight function of assessing progress against research milestones and deliverables. Funding for Phase I of P³G will end March 31, 2011. Genome Canada has initiated bilateral discussions with the Canadian Institutes of Health Research on the need for a national biobank and data harmonization initiative, with a focus on the potential role of P³G.

► **International Knockout Mouse Consortium (IKMC)**—The IKMC consists of three large-scale projects: the European Conditional Mouse Mutagenesis Program, funded by the European Commission; the American-led Knockout Mouse Project, funded by the National Human Genome Research Institute and the Texas Institute of Genomic Medicine; and the Genome Canada-funded and -overseen North American Conditional Mouse Mutagenesis Project. Studying mice with specific genes “knocked out” will provide insight into human biology and disease. The consortium serves as a vehicle for coordinating international collaboration in the area of mouse mutagenesis.

In 2010–11, Genome Canada continued its environmental scanning of opportunities for Canadian involvement in the following large-scale genomics initiatives deemed to be of potential strategic importance or relevance to Canada:

► **International Mouse Phenotyping Consortium (IMPC)**—In an effort to maximize the utility of the knockout mice created in the IKMC, Genome Canada participated in efforts to develop an internationally coordinated approach for phenotyping the mouse mutants being developed. A steering committee was established to coordinate initiatives in countries around the world. A Canadian-led mouse phenotyping project was submitted to the 2010 Large-Scale Project Competition and if successful will represent Canada in the IMPC.

► **International Cancer Genome Consortium (ICGC)**—ICGC was launched in April 2008 with a mandate to produce an atlas of (somatic) genome abnormalities in cancer. It is coordinating large-scale cancer genome studies in tumours from 50 different cancer types that are of clinical and societal importance across the globe. Genome Canada has played an active role in the development of the consortium through the ICGC’s Executive and Science Planning committees; it also currently has observer status on the Steering Committee and participates in relevant meetings in order to keep abreast of developments.

► **International Human Microbiome Project**—Genome Canada has observer status on this project’s Steering Committee and participates in relevant meetings in order to keep abreast of developments.

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What are the benefits?

As a result of its ongoing collaborative work throughout 2010–11, Genome Canada’s partnership with relevant stakeholders affirms the importance of a coordinated, pan-Canadian approach to strategic investments in genomics research. Such an approach can be responsive to national priorities, allows for important economies of scale, and facilitates—through knowledge exchange and collaboration—an acceleration in research activities and thus potential benefits to society.

It provides opportunities to establish Canadian leadership of, or participation in, international research initiatives in areas that address unique scientific questions of importance to Canada and the world.

- Research in cancer stem cells could potentially offer enduring cancer cures and accelerate breakthroughs in cancer prevention, diagnosis and treatment.
- Identification of three-dimensional protein structures could lay the foundations for new drug development. The SGC, with its unique public-private partnership, is uniquely positioned to lead the way in this field.
- Harmonizing samples and data collected from different international biobanks will provide the large sample numbers necessary for studies of genetic and environmental contributions to health and disease and thus help generate new knowledge to improve public health and well-being.
- The DNA barcode library offers the tools to provide solutions for challenges in real-world situations such as conservation, ecosystem monitoring, forensics and control of agricultural pests and invasive species.

OBJECTIVE 2

The provision of leading-edge technology to researchers in all genomics-related fields through regional Genome Centres across Canada, of which there are currently six, one each in British Columbia, Alberta, the Prairies, Ontario, Quebec and the Atlantic.

Strategy

Genome Canada’s approach to providing leading-edge technology to researchers in all genomics-related fields is to develop an effective and synergistic relationship with the six Genome Centres, which facilitate and market access to Genome Canada-funded S&T Innovation Centres for researchers in all genomics-related areas.

What has been achieved?

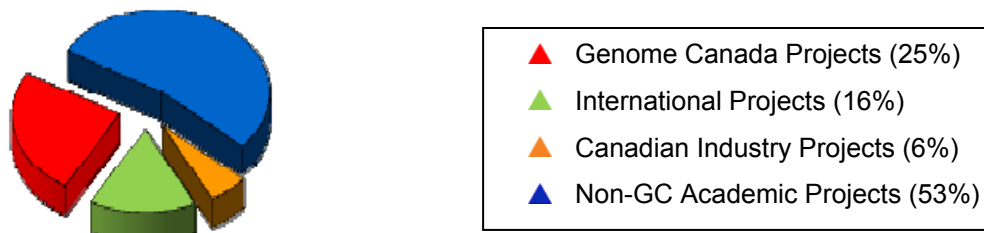
► **S&T Innovation Centres**—Genome Canada provides state-of-the-art technologies, expertise and infrastructure to Genome Canada-funded researchers as well as more than 1500 others from academia and industry through its support of six S&T Innovation Centres across Canada. These Centres provide the entire spectrum of genomics technologies, including DNA sequencing, genotyping, RNA expression, protein identification and quantification (proteomics), metabolomics and the most advanced bioinformatics analyses to manage the vast quantities of complex data produced. The Centres have three main areas of activity: engaging in collaborative research projects, developing technologies and methods, and providing services to Canadian and international researchers. Whether through fee-for-service or collaboration, the Centres provide a critical mass of experts who partner with researchers from project

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development through to data analysis and interpretation. The S&T Innovation Centres are funded at an appropriate level by coordinating the actual demand for technology services from their primary users, the Genome Canada-funded projects, as well as other genomics and proteomics researchers in Canada and abroad.

S&T Innovation Centres: Activity by Client



In 2010–11, Genome Canada, in collaboration with the Genome Centres, continued to ensure maximum access and usage of the services provided by the S&T Innovation Centres. Genome Canada also engaged in bilateral discussions with the Canada Foundation for Innovation to determine potential mechanisms that could result in a more coordinated approach to funding the S&T ICs. Such an approach would not only use federal government investments more effectively, but would also provide the S&T ICs with the optimal combination of funding support.

► Science and Technology Innovation Centre Competition for Operations

Support—The Science and Technology Innovation Centre Competition was launched in May 2010. Genome Canada proposes to invest a maximum of \$24 million for two years of operational support for successful innovation centre applications in genomics technologies. As of January 2011, three new and four existing S&T Innovation Centres had submitted applications. An international review committee will meet in early March 2011 to review the applications and submit its recommendations to the Genome Canada Board for final decision in late March 2011.

► **Technology Development Competition**—Genome Canada invested \$9.5 million in thirteen projects approved for two years of funding in this competition, which was launched in April 2007. The intent of the competition was to solicit proposals that deal with various aspects of technology development, such as incremental improvements to existing processes, new techniques for the latest generation of genomics and proteomics instrumentation, new software for analyzing large datasets, entirely new technologies, and in-lab devices to improve production of large-scale data. In 2010–11, funding for this project ended and final reports are currently being submitted to Genome Canada.

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► **Advancing Technology through Discovery**—2010–11 saw the development of a joint collaborative program between Genome Canada and the Canadian Institutes of Health Research. The intent of this collaboration was for Genome Canada-funded S&T Innovation Centres to join forces with Canadian researchers to focus on applying the latest genomics technologies to identify the genetic causes of childhood diseases. The parameters of the collaboration came about as the result of a one-day planning workshop held in June 2010, which brought together leaders in the genetics of childhood and adolescent diseases and genomics technologies.

The focus of the joint collaborative program is childhood diseases for which genes can be identified in a short time frame and with a small number of subjects. This will ensure the greatest impact with the funds available (initial investment of up to \$2 million each from Genome Canada and the Canadian Institutes of Health Research). The program was officially launched in July 2010. Two consortium applications—one focused on rare pediatric cancers, and the other on rare Mendelian diseases—were approved for 18 months of funding in November 2010. Genome Canada secured funding from Genome British Columbia (up to \$1 million), Genome Quebec (up to \$500,000) and the CIHR Institute of Cancer Research (\$500,000). Additional funding for this initiative is being sought.

What are the benefits?

As a result of the ongoing funding support throughout 2010–11 of the S&T Innovation Centres, Genome Canada's investments provide access to leading-edge technology and expertise to Canadian genomics researchers. These Innovation Centres are catalysts for Canadian science, not only bringing both business and visibility to Canada but also serving a significant and fundamental role in enabling discoveries.

The Centres provide access to new and important knowledge and expertise in the field of genomics and proteomics, allowing researchers and users to design appropriate experimental protocols, receive high-quality, high-throughput genomics data at a competitive price and obtain access to data analysis expertise.

The expected research outputs of the technology development competition will broaden and update, in a rapid and timely fashion, the menu of technologies available to the entire Canadian scientific community and the S&T Innovation Centres across Canada.

The joint collaboration with the Canadian Institutes of Health Research is most timely. It has been 20 years since the official commencement of the Human Genome Project and six years since its completion. With the introduction of massive parallel next-generation sequencing techniques, there are now indications of a paradigm shift, with renewed focus on whole genome sequencing to identify disease-causing genetic mutations. This joint venture is a great opportunity for Canada to be at the leading edge in disease gene discovery.

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OBJECTIVE 3

The support of large-scale projects of strategic importance to Canada, by bringing together industry, government, universities, research hospitals and the public.

Strategy

Genome Canada's approach to ensuring that large-scale genomics research projects of the highest calibre are funded is to issue calls for proposals or applications in sectors of strategic importance to Canada: agriculture, environment, fisheries, forestry, and human health. Projects are selected for funding through a rigorous scientific peer review process involving international experts, as well as a due diligence process that examines the excellence of the proposals' financial and management elements. Central to Genome Canada's strategy is ensuring that the GE³LS implications and potential socio-economic benefits related to genomics research are addressed as an integrated component of each proposal.

What has been achieved?

► **Competition III**—The ongoing management and monitoring of all projects for Competition III continued through 2010–11. A total of 28 projects anticipated that there would be unspent funds forecast at the approved end date (March 31, 2010) and therefore requested no-cost extensions to March 31, 2011. Genome Canada may grant such extensions to allow researchers to complete their approved objectives or propose new or incremental research that directly supports or builds upon a project's approved objectives and will add significant value to its outcomes. As of December 2010, final reports have been received from 25 projects. Genome Canada will undertake the required analyses to determine their accomplishments relative to the project objectives as well as impacts. The remaining eight projects will submit final reports by June 2011.

► **Applied Genomics Research in Bioproducts or Crops Competition**—A strategic competition on applied genomics research in the areas of crops, bioenergy and bioproducts was launched April 1, 2008, and 12 projects received \$53 million in funding support from Genome Canada. In 2010–11, Genome Canada monitored all projects via the quarterly reports submitted through the Genome Centres. Furthermore, Genome Canada put in place the necessary steps for planning an interim review of the projects, to be held in April 2011. The interim review will allow Genome Canada to evaluate the progress of the research; changes in research direction (made or proposed), the implementation plan for the remainder of the project, progress towards ensuring the social and/or economic benefits for Canada are realized, and the financial and management aspects of the project. The results of the interim review will determine whether funding of the projects should be continued, reduced or stopped.

► **Large-Scale Applied Research Project Competition**—A maximum of \$60 million was available from the Government of Canada through Genome Canada for a large-scale applied genomics research competition, which was launched in May 2010. A minimum of \$30 million will be allocated to a targeted competition in the areas of forestry and/or the environment, and a total of up to \$30 million will be allocated to a multi-sector competition addressing one of Genome Canada's other strategic sectors (agriculture,

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fisheries and human health). A particular requirement of this competition is that the genomics research applications have a high potential for benefits for Canada, with an emphasis on economic benefits.

The competition elicited a high level of interest from the scientific community. A total of 181 registrations (expressions of interest) were received, which eventually translated into 128 pre-applications (53 identified for the targeted competition and 75 identified for the multi-sector competition). The pre-applications were subjected to a review process over the summer and 40 pre-applications (20 each in the targeted and multi-sector competitions) were invited to submit full applications. In December 2010, Genome Canada received 39 full applications. The international review committee met in Toronto at the end of January 2011 to review the applications and interview representatives from each project. Applications demonstrating the highest degree of overall excellence will be recommended for funding, with a decision to be taken by Genome Canada's Board of Directors in February 2011.

What are the benefits?

Genome Canada's international peer review process, which assesses excellence and relevance to Canada's health, social and economic needs, together with its due diligence review of management and financial capabilities, ensures that funding goes to only the very best projects, as measured by international standards of excellence.

Furthermore, Genome Canada's support of these large-scale projects has helped to develop a new generation of researchers, who are capable of working in well-integrated, trans-disciplinary teams across geographic boundaries; and who have acquired sophisticated management skills to ensure the success of large, complex, projects on an international scale.

Genome Canada's commitment to supporting world-class research excellence in areas of strategic importance to Canada will not only allow Canada to maintain a leadership position within the international arena, but also accelerate the translation of benefits for Canada. For example, the 2010 Large-Scale Applied Research Project competition has placed a much greater emphasis on the potential ability of the proposed research to lead to benefits for Canada (particularly economic benefits). Potential economic benefits could include one or more of the following:

- job creation and economic growth in Canada;
- development of a product or service;
- creation of intellectual property leading to potential licences and/or new start-ups;
- impacts on society, quality of life, better health, or the environment;
- knowledge generation and translation; or
- creation of new policies and best practices.

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OBJECTIVE 4

The assumption of leadership in the area of ethical, environmental, economic, legal, social and other issues related to genomics research (GE³LS), and the communication of the relative risk, rewards and successes of genomics to the Canadian public.

Strategy (GE³LS Leadership)

To foster Canadian leadership in the areas of ethical, environmental, economic, legal and social issues related to genomics research, Genome Canada continues to build on its National GE³LS Strategy, and its seven elements:

- Enabling a Vibrant GE³LS Research Community
- Strengthening GE³LS Integration
- Bridging the GE³LS Research–Policy Gap
- Translating GE³LS Research Results into Action
- Evaluating GE³LS Successes
- Bringing GE³LS Research "Home" to Canadians
- Showcasing Canadian GE³LS Research around the World

These efforts were closely coordinated with the regional Genome Centres and key federal partners.

What has been achieved?

In 2010–11, efforts focused on the following activities:

► **The GPS series**—The GPS series, *Where Genomics, Public Policy and Society Meet*, launched in 2009, was continued in 2010–11 to promote evidence-based policy-making through focused exchanges between researchers and federal policy-makers.

The first series, on Genetic Information, ended with an event addressing Online Direct-to-Consumer Genetic Testing. Materials from all three events, including the policy briefs and commentaries provided from the perspectives of multiple stakeholders, are publicly available through Genome Canada's GE³LS Policy Portal website, <http://www.genomecanada.ca/en/ge3ls/policy-portal/>

Preliminary planning for the second series on Translational Genomics is underway and will address issues critical across all genomic research sectors and to all stakeholders: intellectual property and resource sharing; genomics entrepreneurialism; and regulatory science.

► **Impact, the GE³LS e-newsletter**—Featuring the work of Genome Canada-funded GE³LS researchers, the biannual newsletter showcases the range of disciplinary perspectives that are brought to bear on the various sectors of genomic research. The Spring 2010 issue addressed capacity-building and the Winter 2011 issue considers emerging issues. See <http://www.genomecanada.ca/en/ge3ls/newsletters/>

► **The CanadaGE³LS research database**—The CanadaGE³LS database was launched as part of efforts to strengthen the integration of GE³LS-related disciplines in genomics research. See <http://www.genomecanada.ca/en/ge3ls/research/compendium.aspx>

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The database provides direct access to summaries of GE³LS research projects funded not only by Genome Canada, but by other major funders as well. It provides all interested parties an opportunity to identify who is working in given areas or on particular issues. For genomics researchers applying to Genome Canada competitions, this often is a first step toward the successful integration of a GE³LS research component into a large-scale project. A first-year update of the CanadaGE³LS research database was completed in 2010. Use of the database continues to be monitored on a quarterly basis.

► **The GE³LS national website**—Though primarily intended to keep the GE³LS community well connected, the GE³LS website also provides information on Genome Canada’s activities that can be useful to interested audiences, including researchers, policy-makers and the general public. Phase II of the GE³LS website aims to attract an even broader range of users and to include more interactive features. As a pilot, modifications are being introduced to the Winter 2011 issue of the *Impact* newsletter. See <http://www.genomecanada.ca/en/ge3ls/>

► **Supporting ongoing GE³LS research**—The launch of the 2010 Large-Scale Applied Research Project Competition, and its requirement that all applications include a research component that strives to identify and address key GE³LS aspects relevant to genomics research, resulted in a wide range of submissions from an array of disciplinary and interdisciplinary perspectives. To identify excellent GE³LS research that is well integrated into the large-scale project, Genome Canada selected external reviewers with disciplinary expertise across all sectors to complement reviews prepared by the smaller group of GE³LS researchers on the review panel.

► **General**—The national GE³LS strategy not only advances the original strategic objectives of Genome Canada, but continues to adapt to current Genome Canada priorities and activities and also guide those of the regional Genome Centres through the network of regional GE³LS representatives.

Genome Canada staff, through participation in federal departmental/agency meetings, speaking engagements or advisory appointments, continue to represent GE³LS to a larger audience and to ensure that the national GE³LS strategy serves the current needs and expectations of all stakeholders.

What are the benefits?

Genome Canada takes seriously the responsibility to consider the vast array of complex issues raised by genomics. This commitment, Genome Canada’s investments in the area of GE³LS, and its national and international leadership, help ensure that a number of disciplinary perspectives are drawn from. By this means the concerns of Canadians can be addressed, their needs and expectations can be met, and the conditions are put in place for genomics and associated technologies to have the optimal impact on Canadian prosperity and quality of life.

Genome Canada-funded GE³LS research continues to expand across all sectors, such that Genome Canada can be viewed as a leading voice in federal public policy debates related to science and technology beyond life sciences and health, into environmental science and technologies, and natural resources and energy.

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Pursuing our Objectives: Performance for 2010-11

Strategy (Communications and Outreach)

Genome Canada's approach to communicating the relative risks, rewards and successes of genomics research to the Canadian public is to develop innovative communication, education and public outreach programs and initiatives aimed at establishing visibility, credibility and awareness.

What has been achieved?

- In 2010–11, Genome Canada, in collaboration with the six Genome Centres, delivered education and public outreach activities which were tailored to specific audiences—the general public, media, parliamentarians, government policy- and decision-makers, researchers, partners and other key stakeholders:

► **News releases and news conference**—Genome Canada issued eight news releases, including:

- the announcement of a partnered program with the Canadian Institutes of Health Research called “Advancing Technology Innovation through Discovery.” This program will link next-generation sequencing technologies within Genome Canada-funded S&T Innovation Centres with gene discovery projects to help speed the translation to clinical medicine and to advance the adoption of new technologies. The focus of the program is on childhood diseases for which genes can be identified in a short time frame and with a small number of subjects to ensure the greatest impact; and
- the announcement of the appointment of Dr. Pierre Meulien as President and CEO of Genome Canada.

► **The GEEE! in Genome**—This exhibition presents the ABCs of genomics and proteomics; examines how the science of genomics is changing our lives; and introduces historical and Canadian researchers in the science of genomics, in particular Nobel Prize winner Dr. Michael Smith. Throughout the exhibition, ethical issues and questions are raised and visitors can record their own opinions and view those of others.

Building upon the success of the innovative genomics display that has entertained thousands in Canada, Genome Canada and the Canadian Museum of Nature continued their partnership in 2010 by promoting and displaying the *GEEE! in Genome* travelling exhibition. The exhibit was on display at the Telus World of Science in Vancouver, British Columbia until January 4, 2010; its next stop was Exploration Place in Prince George, B.C., where it welcomed visitors from May 1 to September 5, 2010. The exhibit then headed eastbound and is being hosted at the Musée régional de Rimouski from October 31, 2010 until May 2, 2011.

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► **Genomics on the Hill**—Genome Canada has organized four *Genomics on the Hill* events, in 2004, 2006, 2007 and 2010. This activity targets parliamentarians and key decision-makers in Ottawa. Its purpose is to showcase some of our innovative projects in genomics and proteomics to enhance understanding of this complex research and, ultimately, increase support for our enterprise.



The Honourable Jim Flaherty, Minister of Finance, meets Drs. Vincent Martin and Dae-Kyun Ro, Genome Canada-funded Project Leaders

On November 22, 2010, Genome Canada showcased some of its key research projects and proposed initiatives. The unique demonstration of Canadian excellence in genomics and proteomics research was an opportunity for Genome Canada-funded researchers to display some of their research and innovations. This special event, held on Parliament Hill, attracted a number of Ministers, MPs, Senators, Government and Embassy officials as well as key stakeholders.

The following projects, presented by a number of project leaders, were highlighted:

- *Autism Genome Project*—Stephen Scherer
- *Atlantic Medical Genetic and Genomics Initiative*—Dr. Terry-Lynn Young
- *Grape and Wine Genomics*—Drs. Steven Lund and Hennie van Vuuren
- *International Barcode of Life Project*—Dr. Paul Hebert
- *Microbial Genomics for Biofuels and Co-products from Biorefining Processes*—Drs. David Levin and Richard Sparling
- *Synthetic Biosystems for the Production of High Value Plant Metabolites*—Drs. Vincent Martin and Dae-Kyun Ro
- *Metagenomics for Greener Production and Extraction of Hydrocarbon Energy: Creating Opportunities for Enhanced Recovery with Reduced Environmental Impact*—Dr. Gerrit Voordouw
- *Atlantic Cod Genomics and Broodstock Development*—Dr. Sharen Bowman
- *Genomics-Enhanced Forecasting Tools to Secure Canada's Near-Term Lignocellulosic Feedstock Supply for Bioenergy using the Mountain Pine Beetle System*—Dr. Richard Hamelin
- *Integrated Proteomics Platforms for High-throughput Biomarker Discovery and Validation*—Dr. Maryam Tabrizian
- *Human Genomic Variation Project*—Ms. Billie-Jo Hardy (graduate student)

Attendees also included end users, those who are currently benefitting or will benefit directly from the research being carried out.

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Pursuing our Objectives: Performance for 2010-11

► **Partnering with youth education programs**—In 2010–11, Genome Canada offered its support to the following youth education programs:

- the Canada-wide Science Fair, which attracts high-school students with the best science projects from across the country; and
- the Sanofi-Aventis BioTalent Challenge, a national, biotechnology-focused science competition that exposes high school and CEGEP students to career possibilities and reveals the breadth of endeavour that makes up the bio-economy

► **Conference support**—In 2010–11, Genome Canada showed its support for or presence at a number of select national and international events:

- Human Genome Organization, Montpellier, France(Spring 2010);
- BioFinance 2010, Toronto, ON (Spring 2010);
- Canadian Student Conference on Biomedical Computing and Engineering, Waterloo, ON (Spring 2010);
- Canadian National Proteomics Network Conference, Montreal, QC (Spring 2010);
- Canada Wide Science Fair, Peterborough, ON (Spring 2010);
- Sanofi Aventis BioTalent Challenge, Ottawa, ON (Spring 2010);
- International Conference on Structural Genomics, Toronto, ON (Spring 2010);
- Regulating Next Generation Genomics: Emerging Agricultural Biotechnology Governance Challenges, Hermance, Switzerland (Summer 2010);
- BioContact, Quebec City, QC (Fall 2010);
- Agricultural Biotechnology International Conference 2010, Saskatoon, SK (Fall 2010);
- Stem Cell Network Annual Scientific Meeting, Calgary, AB (Fall 2010);
- China/Canada Symposium of Systems Biology, Dalian, China (Fall 2010);
- Translational Workshop for Autism Diagnosis and Impact, Toronto, ON (Fall 2010);
- International Cancer Genomics Consortium International Meeting, Brisbane, Australia (Fall 2010).

What are the benefits?

Genome Canada's communication and outreach activities in 2010–11 continue to showcase Genome Canada's partnerships with the Government of Canada and the Canadian scientific community, promote accountability for the investment of taxpayers' dollars, celebrate scientific achievements of Canadian researchers, and educate the Canadian public as to the relative risks, benefits and successes of genomics research.

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Pursuing our Objectives: Performance for 2010-11

OBJECTIVE 5

The encouragement of investment by others in the field of genomics research.

Strategy

Genome Canada's approach is to encourage investment by others in excellent large-scale genomics research projects through development of collaborative relationships with the private, public, and philanthropic sectors, both domestic and international. Genome Canada operates on the general principle that it will fund up to 50% of the eligible costs of research projects, with the remainder secured through co-funding by other organizations.

What has been achieved?

Since 2000, Genome Canada has raised over \$1 billion in co-funding commitments to supplement the \$915 million committed by the Government of Canada over the past decade, resulting in approximately \$2 billion of total funding for genomics research across all sectors.

What are the benefits?

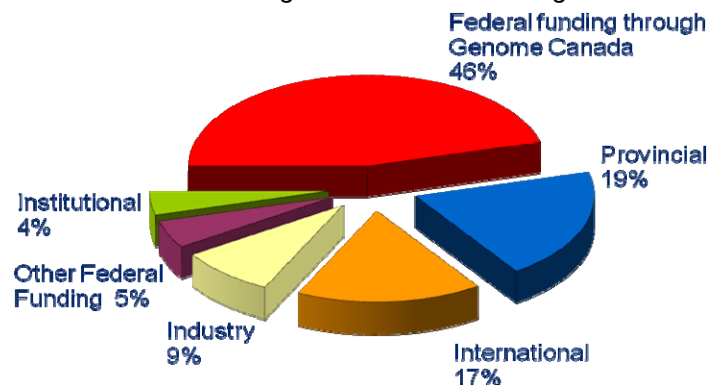
Effective research requires the collective efforts of many people and organizations. Investment by others, through various collaborative mechanisms, facilitates addressing research gaps and priorities and ensures that the investment funds the best research and the translation of that research into results for Canadians. Genome Canada's primary partners, the six regional Genome Centres, have played a central role in this success.

In the past two years the Centres have attracted significant provincial investment, including:

- \$50 million from the Government of British Columbia to Genome BC;
- \$100 million from the Government of Ontario for genomics research operations and infrastructure, including \$5 million to the Ontario Genomics Institute; and
- \$30 million from the Government of Quebec to Genome Quebec

Funding Sources for Genome Canada-Approved Projects

Note: Chart below does not include funding and related co-funding of Genome Centres.



(As at October 2010)

SECTION III – Grant Management for 2010-11

The federal government, through Industry Canada, has committed a total of \$915 million in funding for Genome Canada since 2000–01. All funding has come in the form of conditional grants, formalized through funding agreements between Genome Canada and Industry Canada.

As a not-for-profit organization, Genome Canada has the flexibility to maximize the grants it receives from the federal government through careful and judicious investment. It also has the ability to raise additional co-funding from others, including other levels of the public sector as well as from the private sector.

Investment and Management of Funds

Two Board Committees support the Board of Directors of Genome Canada in fulfilling its fiduciary responsibilities with respect to grant management. The Investment Committee is responsible for overseeing the investment and management of funds received from the federal government according to a Board-approved investment policy that outlines guidelines, standards and procedures for the prudent investment and management of funds. The Audit Committee is responsible for overseeing Genome Canada's policies, processes and activities in the areas of accounting and internal controls, risk management, auditing and financial reporting. Both committees meet quarterly and report to the Board on the outcome of their deliberations.

Source and Use of Funds

Grants received from the federal government in 2000–01 (\$160 million) and 2001–02 (\$140 million) funded the large-scale research projects and S&T Innovation Centres that were approved in Competitions I and II, for up to four years (2002–06). These grants also funded the operations of Genome Canada and the first five Genome Centres.

The grant received from the federal government in 2003–04 (\$75 million) funded projects and associated S&T Innovation Centres that were approved for up to three years (2003–06) in the Applied Genomics Research in Human Health Competition.

The grants received from the federal government in 2004–05 (\$60 million) and in 2005–06 (\$165 million) funded the projects that were successful in Competition III for three years, the operations of Genome Canada and six Genome Centres for three years, and the renewal of six S&T Innovation Centres until the end of fiscal year 2007–08.

The grant approved by the federal government in March 2007 (\$100 million) has funded Competition III projects, the S&T Innovation Centres, Phase II of the Structural Genomics Consortium, and the operations of Genome Canada and the six regional Genome Centres through 2009–10.

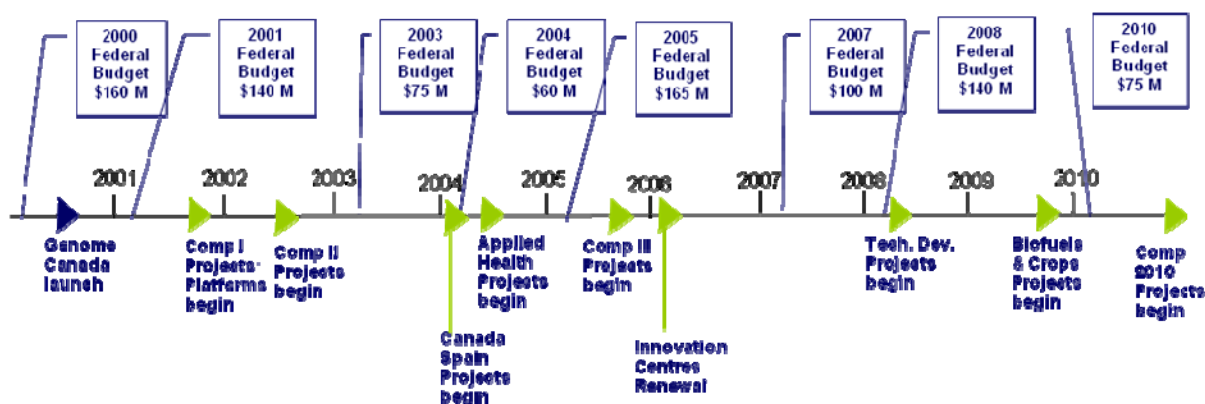
The grant approved by the federal government in February 2008 (\$140 million) funded a competition in Applied Genomics in Bioproducts and Crops, two research projects through the Cancer Stem Cell Consortium, the International Barcode of Life project, the S&T Innovation Centres, the operations of six regional Genome Centres, as well as the operations of Genome Canada through to 2012–13.

SECTION III – Grant Management for 2010-11

The grant approved by the federal government in March 2010 (\$75 million) was used to fund large scale projects in forestry and the environment through a targeted competition; projects in other sectors such as health and agriculture through a multi-sector competition, and a competition for Science and Technology Innovation Centre Operations Support.

Interest income of over \$80M, earned through the federal investment, has allowed Genome Canada to launch other research initiatives over the preceding nine years, such as a bilateral research competition between Genome Canada and Genoma España, the Bovine Genome Sequencing Initiative, funding for two international consortiums (the Structural Genomics Consortium Phase I and the Public Population Project in Genomics), as well as a competition in 2007–08 for New Technology Development projects.

Funding and Investments



Cash Management

Genome Canada disburses funds on a quarterly basis through the six regional Genome Centres for approved research projects and S&T Innovation Centres. On a quarterly basis each Genome Centre is required to review the expenditures to date and estimate cash requirements for each project and innovation centre that it manages. It then submits a “draw request” to Genome Canada indicating the cash needs of the Centre for the subsequent quarter. The Genome Centres assess the project/innovation centre needs against the approved budget, actual expenditures, scientific progress to date and co-funding received from other sources. Genome Canada then conducts its own thorough review of the draw request submission before releasing funds.

Annual Audits

As a not-for-profit, incorporated organization, Genome Canada selects external auditors to undertake an annual audit of its financial statements; the external auditors for 2010–11 are KPMG LLP. Auditors are required to submit an audit plan to Genome Canada’s Audit Committee in February 2011 for review and approval. The audit is conducted within 45 days of each fiscal year-end in accordance with generally accepted Canadian auditing standards. The objective is to express an opinion on whether Genome Canada’s financial statements present fairly, in all material respects, the financial position, results of operations, and cash flow of the corporation. Upon completion of the audit, the financial statements and a summary of audit findings are presented to the Audit Committee and then in June 2011 to the Board of Directors for approval.

SECTION III – Grant Management for 2010-11

Recipient Audits

In 2006–07, Genome Canada developed and implemented a recipient audit framework in consultation with the Genome Centres. As part of this exercise, a risk assessment tool was developed to enable the Centres to identify projects and innovation centres that will undergo a detailed compliance audit. This framework was introduced to bring a common approach to recipient audits across Canada and to improve the management control framework within which genomics research is administered. A total of 12 recipient audits have been completed to date.

SUMMARY OF RECEIPTS AND DISBURSEMENTS *				
Details (In millions of dollars)	Projects Funded	Actuals 2000–01 To 2009-10	Forecast 2010–11	Forecast Cumulative To 2010–11
RECEIPTS				
Government of Canada		719.1	46.9	766.0
Investment Income		85.8	0.6	86.4
		804.9	47.5	852.4
PROGRAM AND OPERATING DISBURSEMENTS				
Research Projects				
Competition I	17	80.6		80.6
Competition II	33	146.2		146.2
Competition III	33	188.1	17.8	205.9
Applied Genomics in Human Health Competition	14	59.9		59.9
Applied Genomics in Bioproducts and Crops	12	6.4	10.3	16.7
Bovine Genome Sequencing Project	1	6.0		6.0
Structural Genomics Consortium	1	27.4	4.0	31.4
Public Population Project in Genomics	1	13.0	2.8	15.8
International Regulome Consortium	1	2.6		2.6
International Barcode of Life	1	1.1	0.2	1.3
Genome Canada–Genoma España Competition	3	7.7		7.7
C. difficile / H1N1	2	0.2	0.2	0.4
New Technology Development	13	8.9	0.7	9.6
Cancer Stem Cells Consortium	2		2.6	2.6
Advanced Technology Innovation Through Discovery	2		0.4	0.4
	136	548.1	39.0	587.1
S&T Innovation Centres	10	91.8	10.6	102.4
Genome Centres Operations		52.4	5.5	57.9
GENOME CANADA OPERATING EXPENDITURES		62.7	8.0	70.7
Total Disbursements	146	755.0	63.1	818.1
Excess (Deficiency) of Receipts over Disbursements		49.9	(15.6)	34.3
Opening Cash Balance			49.9	
Closing Cash Balance		49.9	34.3	34.3

* As at January 2011

SECTION IV – Plans for 2011-12

In 2011–12, Genome Canada will continue to deliver its mandate of implementing a national strategy in genomics research for the benefit of all Canadians in sectors of strategic importance to Canada: agriculture, environment, fisheries, forestry, and human health. It will continue to conduct, as required, ongoing monitoring and interim reviews of its large-scale research projects and S&T Innovation Centres in order to ensure progress against objectives as well as the meeting of agreed-to milestones. Genome Canada will continue to consult and engage its research community and other stakeholders with respect to determining strategic priorities for Canada as well as assessing and staying apprised of international developments in science and research. Genome Canada will continue to seek out opportunities to leverage the Government of Canada’s investment through the development of partnerships and collaborations.

The following section outlines Genome Canada’s planned activities for 2011–12. These plans align with its strategic approach that future investments be reflective of priorities, as determined by the Board of Directors.

OBJECTIVE 1

The development and establishment of a coordinated strategy for genomics research to enable Canada to become a world leader in areas such as health, agriculture, environment, forestry and fisheries.

Planned Activities

- work closely with the six Genome Centres and the Science and Industry Advisory Committee to undertake consultations with respect to genomics research opportunities of strategic relevance and priority to Canada;
- continue oversight and monitoring of the following international consortia:
 - Cancer Stem Cell Consortium—continue management of projects funded in the Disease Team I Partnership Program with CIRM; putting in place appropriate implementation steps subsequent to the consultation workshop in respect of the development of the C4Resources network; and management of the Disease Team Therapy Development Partnership Program with CIRM;
 - Structural Genomics Consortium—assess final report, including outcomes and achievements, in respect of completion of Phase II funding (ends June 2011); assess continued involvement in this consortium through a strategic planning process that will include a focus on programmatic priorities;
 - Public Population Project in Genomics—assess final report, including outcomes and achievements, in respect of completion of funding (ends March 2011); assess continued involvement in this consortium through a strategic planning process which will include a focus on programmatic priorities
- manage and implement the recommendations from the interim review of the International Barcode of Life, including whether to continue, reduce or cancel funding; and explore alternative approaches and avenues to strengthen the project;
- continue to participate as a member of the steering committees of the International Knockout Mouse Consortium and the International Mouse Phenotyping Consortium, as an observer on the Executive Committee of the International Cancer Genome Consortium, and as an observer on the steering committee of the International Human Microbiome Project, in order to gauge future opportunities for Genome Canada

SECTION IV – Plans for 2011-12

OBJECTIVE 2

The provision of leading-edge technology to researchers in all genomics-related areas through regional Genome Centres across Canada, of which there are currently six, one each in British Columbia, Alberta, the Prairies, Ontario, Quebec, and the Atlantic.

Planned Activities

- Science and Technology Innovation Centres—In collaboration with leaders of the Genome and Innovation Centres, Genome Canada will continue to ensure maximum access and usage of the services provided. The hiring of a full-time Director, Genomics Technologies Programs will strengthen the planning and development elements, which will ensure a viable national network of Innovation Centres;
- Technology Development Competition—assess final reports of the 13 projects and determine accomplishments and impacts relative to the project objectives;
- Advancing Technology through Discovery Competition—continue management and monitoring of the two funded consortiums and ongoing efforts to secure additional funding to support all activities approved by peer review.

OBJECTIVE 3

The support of large-scale projects of strategic importance to Canada by bringing together industry, government, universities, research hospitals and the public.

Planned Activities

- Competition III—assess the final reports of 33 projects and determine the accomplishments and impacts relative to the project objectives;
- Applied Genomics Research in Bioproducts or Crops Competition—manage and implement the recommendations from the interim review of 12 projects, including whether to continue, reduce or cancel funding; and explore alternative approaches and avenues to strengthen the projects;
- Large-Scale Applied Research Project Competition—continue monitoring and oversight of all successful projects from this competition.

OBJECTIVE 4

The assumption of leadership in the area of ethical, environmental, economic, legal, social and other issues related to genomics research (GE³LS), and the communication of the relative risks, rewards and successes of genomics to the Canadian public.

Planned Activities

In 2011–12, Genome Canada will continue to build on the established activities of the national GE³LS strategy and will initiate new activities to further fulfill its goals, including:

- continue bridging the research-policy gap; the GPS series will aim to draw a broader range of GE³LS researchers and federal policy-makers through the theme of Translational Genomics and the exploration of issues such as intellectual property rights, and the challenges in getting genomic innovations through the Canadian regulatory regime and bringing them to the marketplace. The launch of the 2011 GPS series is scheduled for mid-April 2011;

SECTION IV – Plans for 2011-12

- attend to the networking needs of the GE³LS research community through
 - the dissemination of GE³LS research through the next issue of the newsletter *Impact*, due early winter 2011, which will address emerging issues. The following issue of this biannual letter will be published late summer, potentially on the theme of genomics and the environment; and
 - an evaluation of the CanadaGE³LS research database and its update, as appropriate;
- strengthen the integration of GE³LS into large-scale project, cross-disciplinary training, accessible via the Internet (e.g. webinars);
- evaluate the impact of integrating GE³LS into large-scale project; measures will be developed to inform ongoing and future research projects; and
- expand communication efforts to give the Canadian public a voice into genomics research and its application.

Communicating the benefits of Genome Canada research funding to the Canadian public showcasing Genome Canada's partnership with the Government of Canada and the Canadian scientific community; promote accountability for the investment of taxpayers' dollars; celebrating scientific achievements of Canadian researchers; and educating the Canadian public as to the relative risks, benefits and successes of genomics research will continue to be priorities in 2011-12.

OBJECTIVE 5

The encouragement of investment by others in the field of genomics research.

Planned Activities

Genome Canada will continue to assess opportunities for future scientific and funding collaborations and will continue to nurture existing relationships to ensure effective completion of approved projects.

SECTION IV – Plans for 2011-12

Planned Receipts and Disbursements for 2011–12 *

The following table provides a preliminary estimate of the receipts and disbursements for 2011–12 and subsequent fiscal years. The estimate is based on statements of cash flow as presented to the Board of Directors at its December 2010 meeting. The operating budget for fiscal year 2011–12 will be presented to the Genome Canada Board of Directors for approval in March 2011.

Details (In millions of dollars)	Forecast Cumulative 2000–01 to 2010–11	Planned 2011–12	Planned 2012–13 to 2013–14	Forecast Cumulative 2000–01 to 2014–15	Estimated Co-funding From 2000–01 to 2014–15	Total Genome Canada & Co-funding	Percent- age %
RECEIPTS							
Government of Canada	766.0	52.2	96.8	915.0		915.0	43.8
Investment Income	86.4	0.5	0.8	87.7		87.7	4.2
Co-Funding					1,085.4	1,085.4	52.0
	852.4	52.7	97.6	1,002.7	1,085.4	2,088.1	100.0
PROGRAM DISBURSEMENTS							
Research Projects							
Competition I	80.6			80.6	74.0	154.6	7.4
Competition II	146.2			146.2	137.6	283.8	13.6
Competition III	205.9			205.9	221.0	426.9	20.5
Multi-Sector Competition		10.0	20.0	30.0	30.0	60.0	2.9
Forestry and Environment		10.0	20.0	30.0	30.0	60.0	2.9
Applied Genomics In Human Health Competition	59.9			59.9	71.4	131.3	6.3
Applied Genomics in Bioproducts and Crops	16.7	15.9	22.4	55.0	59.0	114.0	5.5
Bovine Genome Sequencing Project	6.0			6.0	63.4	69.4	3.3
Structural Genomics Consortium	31.4	0.9		32.3	157.4	189.7	9.1
Public Population Project in Genomics	15.8			15.8	38.9	54.7	2.6
International Regulome Consortium	2.6			2.6	0.4	3.0	0.1
International Barcode of Life	1.3	5.4		6.7	6.7	13.4	0.6
Genome Canada-Genoma Espana Competition	7.7			7.7	7.8	15.5	0.7
C. difficile / H1N1	0.4			0.4	0.4	0.8	0.0
New Technology Development	9.6			9.6	9.7	19.3	0.9
Cancer Stem Cells Consortium	2.6	8.0	14.4	25.0	60.0	85.0	4.1
Advanced Technology Innovation Through Discovery	0.4	1.6		2.0	2.0	2.0	0.1
	587.1	51.8	76.8	715.7	969.7	1,683.4	80.9
S&T Innovation Centres	102.4	12.0	12.0	126.4	47.1	173.5	8.3
Genome Centres Operations	57.9	5.5	4.5	67.9	68.6	136.5	6.6
GENOME CANADA OPERATING EXPENDITURES	70.7	8.0	8.0	86.7		86.7	4.2
Total Disbursements	818.1	77.3	101.3	996.7	1,085.4	2,080.1	100.0
Excess (Deficiency) of Receipts over Disbursements	34.3	(24.6)	(3.7)	6.0			
Opening Cash Balance		34.3	9.7				
Closing Cash Balance	34.3	9.7	6.0	6.0			

* As at January 2011

SECTION V – Performance, Audit and Evaluation

Genome Canada has a wide array of policies, systems and processes that have been developed over time to address issues of performance, audit and evaluation. In 2007–08, the Board of Genome Canada approved a performance, audit and evaluation strategy (PAES) to respond to specific requirements of the 2007 funding agreement with Industry Canada, and to ensure that a comprehensive and integrated approach to these functions was established and maintained. The PAES can be viewed in full on Genome Canada’s website. See <http://www.genomecanada.ca/en/about/accountability/>

Performance Audit

At the request of Industry Canada, a performance audit was carried out on Genome Canada in 2008–09 to ensure the economy, efficiency and effectiveness with which federal funds were used.

The audit concluded that:

- mechanisms are in place to ensure transparency and reduce conflicts of interest in the review and approval of applications for funding, as well as to monitor the progress of funded projects;
- funding themes are identified with input from the scientific community and through widespread consultations;
- international partnership opportunities are guided by documented criteria that include consideration of partners’ ethics and values; and
- performance measurement strategies and frameworks include defined performance measures.

The auditors’ final report may be viewed on Genome Canada’s website.

See <http://www.genomecanada.ca/en/about/accountability/performance-audit.aspx>

The material includes recommendations for improvement in a number of areas, along with management responses, which have been monitored by the Audit Committee. It is expected that all management responses will be fully addressed by the end of fiscal 2010–11.

Evaluation

The terms and conditions of Genome Canada’s funding agreements with Industry Canada specify that every five years it shall carry out an independent third-party evaluation of its grants to eligible projects, including its own activities and projects. It further states that the evaluation will measure overall performance in achieving the objectives identified in the funding agreement. Genome Canada underwent an interim evaluation in 2003–04 that concluded Genome Canada was on track towards meeting its objectives.

In 2008–09, Genome Canada underwent a full third-party summative evaluation to determine to what extent it had achieved its objectives and mandate. The evaluation concluded that overall, the rationale for Genome Canada remains strong and important and that there has been a “transformative” impact of Genome Canada on Canadian genomics research. It also pointed out a number of qualifications and observations;

SECTION V – Performance, Audit and Evaluation

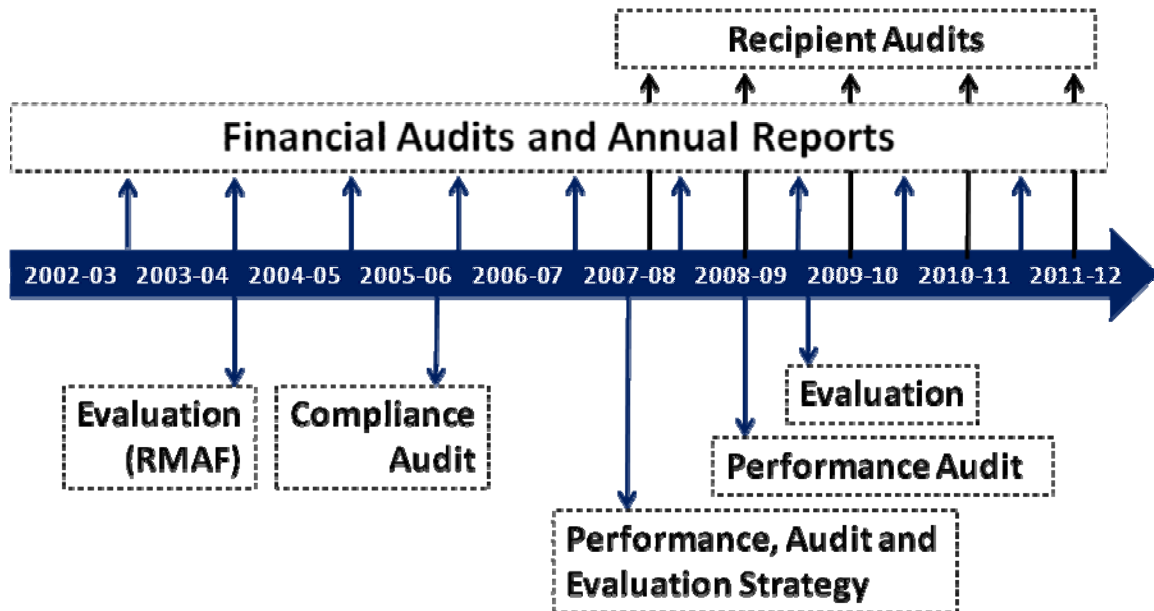
however, the evaluators emphasized that these were not serious issues but rather a reflection of the complex and rapidly changing environment in which Genome Canada operates.

The evaluation report, as well as the details of an extensive bibliometric study on genomics research also conducted in 2008–09, can be viewed on Genome Canada’s website.

See http://www.genomecanada.ca/en/about/accountability/five-year_evaluation.aspx

In fiscal year 2011–12, Genome Canada will focus on ensuring that adequate resources are in place to allow for continued work and development of corporate evaluation initiatives and activities. It is expected that a full-time evaluation officer position will be in place for the beginning of fiscal 2011–12.

Performance Monitoring and Accountability



SECTION VI – Risks and Challenges

Risk Management

Risk management is integrated into all operational, managerial and governance activities of Genome Canada. Strategic risks arising from the external operating environment as well as the internal operational environment are assessed on an ongoing basis.

- At the project selection level, risk is managed and mitigated through a process that restricts funding to only those projects judged to have the greatest probability of success from both a scientific and managerial point of view. The viability of each project's success is further mitigated through ongoing monitoring and interim review.
- At the operational level, officers of Genome Canada identify risks and propose strategies for mitigating and reporting (e.g. due diligence routines for review of draw requests and for interim reviews of funded projects).
- At the managerial level, policies, systems, processes and procedures (administrative, financial, human resource management) are developed, implemented and monitored.
- At the governance level, the Board and its committees are aware of their risk management responsibilities and exercise modern governance practices with respect to policy approval and oversight.
- The Audit Committee regularly reviews Genome Canada's Risk Profile and mitigation strategies.
- The Genome Canada internal working environment culture is one that values honesty, integrity and ethical conduct.

Challenges

Over the past decade, and in concert with our stakeholders, partners and six Genome Centres, Genome Canada has created a strong foundation to take the Canadian genomics enterprise to the next level of research discovery including translating research findings into utility for Canadians and creating a competitive advantage for Canada. This will be achieved with the implementation of a long-term funded strategic plan.

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