



Guidelines for Funding Large-Scale Genomics Research Projects

May 2010



GenomeCanada

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1 OBJECTIVES OF GENOME CANADA

Genome Canada's mandate is to develop and implement a national strategy in genomics research for the benefit of all Canadians. It is committed to increasing Canada's position among the world leaders in genomics¹ research in key areas such as health, agriculture, environment, forestry, fisheries and technology development. It is also committed to a leadership role on the ethical, environmental, economic, legal and social aspects and potential implications associated with genomics research (GE³LS), and to communicating with Canadians on these and other issues.

Genome Canada will fulfill its mandate through its five national objectives:

- i. the development and establishment of a coordinated national strategy for genomics research to enable Canada to become a world leader in areas such as health, agriculture, environment, forestry and fisheries;
- ii. 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;
- iii. the support of large-scale genomics and proteomics research projects of strategic importance to Canada, by bringing together industry, governments, universities, research hospitals and the public;
- iv. 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 research to the Canadian public; and
- v. the encouragement of investment by other persons in the field of Genomics research.

¹ The term genomics is defined here as the comprehensive study, using high throughput technologies, of the genetic information of a cell or organism, including the function of specific genes, their interactions with each other and the activation and suppression of genes by proteins. For purposes of describing Genome Canada's mandate it also includes related disciplines such as proteomics, metabolomics, transcriptomics, metagenomics and bioinformatics.

2 SUPPORT OF LARGE-SCALE GENOMICS RESEARCH PROJECTS

Genome Canada funds and manages large-scale, milestone-driven research projects across its five strategic sectors (agriculture, environment, health, fisheries and forestry). Its international peer review process, which assesses scientific excellence and benefits for Canada, and its due diligence review of management and financial capabilities, ensures that funding is awarded to only the very best projects – measured by international standards of excellence. The projects must be of a scale and scope such that they cannot readily be funded at internationally competitive levels through other mechanisms in Canada. To pursue the advancement of genomics in Canada and to maximize its effectiveness, Genome Canada encourages research collaboration across Canada and internationally.

Six Genome Centres located across Canada support genomics research at a regional level. They assist applicants in preparing competitive applications, facilitate access to Science and Technology Innovation Centres and other service providers, help projects with aspects of project development and management and, working with the applicants, are responsible for securing necessary co-funding. Eligible applicants must submit all proposals and supporting documentation to Genome Canada through a Genome Centre. The Genome Centres are responsible for selecting which projects to put forward to Genome Canada. Once projects are approved Genome Centres have the lead in ensuring their effective management and monitoring.

3 GENERAL GUIDELINES

3.1 Investigator Eligibility

Genome Canada funds can be awarded to researchers and scholars affiliated with the following institutions and organizations:

- Canadian post-secondary organizations and their affiliated institutions including hospitals and research institutes;
- Canadian non-federal government departments or agencies and not-for-profit organizations (including community or charitable organizations) with an explicit research or knowledge-translation mandate.

Research teams may include as co-applicants international, private sector (for-profit organizations), or federal laboratory scientists. However, Genome Canada funding is restricted to work performed within Genome Canada eligible institutions, i.e., Genome Canada will not support research to be undertaken outside Canada, in for-profit organizations or in federal laboratories, except for costs incurred based on a reasonable fee-for-service arrangement or contract.

3.1.1 Participant Categories

Project Leader

Each project must identify one Project Leader. The Project Leader of a Genome Canada funded project is responsible for the intellectual direction of the proposed research and assumes administrative and financial responsibility for funds which will be paid to his/her institution.

In applications where the responsibility for the intellectual direction of the research is shared more or less equally between two or more individuals the project may also nominate a co-Project Leader.

Although investigators from federal laboratories, the private sector or outside of Canada may share the responsibility for the intellectual direction of the proposed research, they cannot assume the administrative and financial responsibility for the funds and therefore, cannot be the sole Project Leader of a Genome Canada funded project. However, they can be a co-Leader.

Co-Applicant

A Co-applicant is a researcher who makes a substantial intellectual contribution to the proposed research and who will be involved in the day-to-day execution of the project. Co-applicants will likewise be responsible for the funds paid to their institutions.

Collaborator

A Collaborator is an individual who is not involved in the day-to-day execution of the research but whose role is to provide a specific service (e.g., access to equipment, provision of specific reagents, training in a specialized technique, statistical analysis, access to a patient population, etc.).

3.2 Ethical, Environmental, Economic, Legal and Social Aspects of Genomics Research (GE³LS)

All applicants must identify and address key ethical, economic, environmental, legal and/or social (GE³LS) aspects relevant to the genomics research being proposed. Not *all* GE³LS aspects - ethical, economic, environmental, legal *and* social -- will necessarily be relevant in each proposal, but key aspects relevant to the objectives and/or expected outcomes of the proposed project must be identified and addressed.²

The Project Leader is expected to team up with one or more co-applicants with appropriate expertise in GE³LS-related disciplines relevant to their proposal.³ The Project Leader may consult GE³LS programs staff of the regional Genome Centres⁴ or the [CANADAGE³LS Database](#) to assist them in identifying appropriate GE³LS researchers to involve as co-applicants.

As members of a well-integrated team, GE³LS co-applicants should be actively engaged in the early stages of project development to anticipate relevant GE³LS aspects and provide strategic input into the research design and budget planning process accordingly. They should remain

²Summaries of previously-funded integrated GE³LS projects are available online at <http://www.genomecanada.ca/en/ge3ls/research/>. See also, *Frequently Asked Questions*, No.12 on "What are examples of integrated GE³LS research funded by Genome Canada?" at <http://www.genomecanada.ca/en/ge3ls/faq/>. Yet further examples of integrated GE³LS projects are featured in Issue No. 2 of *Impact*, Genome Canada's electronic newsletter on GE³LS research in Canada, see: <http://www.genomecanada.ca/en/ge3ls/newsletters/fall-2009/feature-stories.aspx>

³ This includes, but is not limited to: social sciences, law, philosophy, theology, bioethics, business ethics, commerce, economics, environmental management and conservation sciences, animal welfare, anthropology, communications, political science, public policy or technology assessment, etc.

⁴ See GE³LS contact details at each of the regional Genome Centres: <http://www.genomecanada.ca/en/ge3ls/contact.aspx>

involved throughout the course of the project as integral members of the research team to inform ongoing project implementation and address relevant GE³LS implications and opportunities.

GE³LS co-applicants are expected to develop a scholarly research plan that is aligned with, and complementary to, the proposed milestones of the overall genomics project. The GE³LS research plan should involve a systematic investigation designed to advance generalizable knowledge in relevant academic fields that can be applied to the proposed genomics project, as well as other similar projects or applications.

GE³LS co-applicants are encouraged to coordinate, wherever possible, with other GE³LS researchers working on similar questions in other Genome Canada-funded projects to maximize opportunities for synergies and minimize potential duplication.

In addition to the above requirements, GE³LS expertise could be sought out, as needed, through collaborations with others or through appropriate involvement in the project's proposed governance structure (for example, GE³LS membership on scientific advisory boards or committees).

3.3 Benefits for Canada

All applications must describe, with supporting evidence, the potential benefits for Canada which will be realized or initiated before the end of the project. Potential economic benefits could include one or more of the following: a) job creation and economic growth in Canada, b) development of a product or service, or, c) creation of intellectual property (e.g., filing a patent) leading to potential licenses and/or new start-ups. Other benefits could include: d) an impact on society, quality of life, better health, or the environment, e) knowledge generation and translation, or, f) the creation of new policies and best practices. Applicants must include a plan which explains how they will transfer, disseminate, use, and/or apply the potential deliverables from the research to realize the benefits. Individuals with the appropriate expertise to develop and implement the plan to realize the economic and/or social benefits of the research should be included on the project team as well as the Science Advisory Board. These individuals might include, for example, end-users of the research, entrepreneurs, venture capitalists, economists, market analysts, technology transfer experts, legal advisors, public health administrators, policy experts and sociologists.

Where appropriate, for example when new products and/or services will be developed, a clear commercialization process, which includes intellectual property (IP) management and ownership, technology transfer and benefit sharing, must be described. While eligible costs include those related to the development of the plan to realize benefits for Canada, costs associated with subsequent commercialization are not eligible (e.g., product development, testing, and marketing – see the Eligible Costs section for more details).

3.4 Requirement for Technology Services from Others

Applications for support of a large-scale project must include a detailed description of all outsourced technology services that will be required. It is the obligation of the project team to understand and describe the science that will be outsourced, including work being done at

Genome Canada-supported Science and Technology Innovation Centres (S&T ICs). The leaders of large-scale projects should work with their Genome Centre to determine the technologies required for the proposed research and to decide how best to satisfy these requirements. The request for services from all providers must be described in the research proposal and further detailed in the *Services from Others* section of the budget form. Applications must include letters from service providers, description of the service(s) to be provided, unit costs, number of units required, personnel requirements, data analysis requirements, and other relevant details. Genome Canada-supported S&T ICs have been established to provide technologies and expertise to projects and to avoid duplication of effort across the country.

Project leaders may use Genome Canada- funded S&T ICs or other fee-for-service providers, either Canadian or foreign. Project leaders must include a justification for their choice of fee-for-service providers and, for out of country fee-for-service providers, include the reasons for not using a Genome Canada-funded S&T IC. For information on the Genome Canada-supported S&T ICs, refer to <http://www.genomecanada.ca/en/portfolio/technology.aspx>.

3.5 Handling of Data and Resources

3.5.1 Data and Resource Management

Applications must include clearly defined policies and plans for managing the data and resources to be generated.

3.5.2 Data Analysis

Applications must present a clear plan for the analysis of data. The plan must include: i) a diagram showing the data flow for the information created by all project components; ii) a description of the data flow; iii) a description of the computer analysis strategies for the data; iv) a plan for the long-term preservation (archiving) of the analysis results and, where appropriate, raw data; and v) a description of personnel requirements needed to realize the data analysis.

3.5.3 Data and Resource Sharing

All Genome Canada funded projects must comply with Genome Canada's policy on [Data Release and Resource Sharing](#). Genome Canada expects researchers to share data and resources as rapidly as possible. Where the goal of the project is to produce data or resources for the wider scientific community, the project must follow the data release and resource sharing principles of a "Community Resource Project", defined as "a research project specifically devised and implemented to create a set of data, reagents or other material whose primary utility will be as a resource for the broad scientific community". A project's Data Release and Resource Sharing plan must be approved by Genome Canada and must remain current with internationally accepted standards.

3.5.4 Intellectual Property

Ownership of intellectual property created or acquired as part of projects in which Genome Canada is directly or indirectly involved shall be in accordance with each of the participant's (i.e., Federal or Provincial government departments or Crown Corporations, private sector companies, universities, research hospitals or any other participants) internal intellectual property policy and Provincial and or Federal legislation, if applicable (See Section 1 of

[Genome Canada's Intellectual Property policy](#)) Applicants should also contact their Genome Centre for information on specific Genome Centre guidelines related to intellectual property.

3.5.5 Access to Research Publications

Research publications are an important output of the research funded by Genome Canada and free, online access to these publications is paramount. Genome Canada recommends that peer reviewed publications that have been supported, in whole or in part, by Genome Canada be made freely accessible online, in a central or institutional repository, as soon as possible, and, at the latest, six months after the publication date. Genome Canada encourages the scientists it funds to publish wherever is best for their work. Specific recommendations can be found in the [Genome Canada Policy on Access to Research Publications](#)

3.6 Acknowledgement of the Contribution of the Government of Canada

Projects must commit to acknowledging the contribution of the Government of Canada through Genome Canada and the lead Genome Centre, as well as all other relevant funders, in research publications and all communications including press releases, posters and oral presentations. In addition, visual presentations such as seminars and websites must include the Genome Canada logo in compliance with Genome Canada's [Brand Standards Guide](#).

4 APPLICATION AND EVALUATION PROCEDURES

Eligible applicants must submit proposals at every application stage through a Genome Centre and it is the responsibility of the Centre to determine which projects to put forward.

The application process involves up to three stages – Registration, Pre-Application and Full Application – and the appropriate application forms are to be used without modification of formatting at each stage.

Application requirements may vary from the general guidelines described below depending on the focus of the competition (see the Request for Applications and application forms for specific requirements of a particular competition).

It is the responsibility of the Genome Centre to evaluate the eligibility of each registration, pre-application and full application before submitting it to Genome Canada. The final decisions on eligibility will then be made by Genome Canada. For applications submitted to a targeted competition, relevance to the targeted area will also be evaluated. The Genome Centre must ensure that each proposal satisfies Genome Canada's evaluation criteria as defined in Appendix A.

4.1 Registration

A brief Registration form must be submitted through a Genome Centre and will be used to provide early guidance to Genome Canada on elements such as who is applying, what they are planning to do, research areas, approximate budgets, relevance to targeted areas and suggested reviewers. This will allow for screening for eligibility and facilitate the early selection of reviewers for the peer review process. Applicants will be invited to submit the names of potential reviewers who do not currently reside or work in Canada and with whom the

applicants have no conflict of interest. Only applicants who submit a registration that is deemed eligible will be allowed to submit a Pre-Application. Information from Registrations deemed eligible (i.e., name of project leader(s), lead institution, title of project, research areas and keywords) will be posted on the Genome Canada Website to facilitate the identification of areas of potential synergy between applications from across the country so that applicants could consider engaging with other researchers on a common project. This will also make possible the exchange of required information between project teams and applicants to the Science and Technology Innovation Centre Competition.

4.2 Pre- Application

For the Pre-Application applicants will be asked to submit through a Genome Centre a short description of the proposed research including an integrated GE³LS research plan. Brief benefits to Canada, management and financial (including budget and proposed co-funding) sections will also be required. Applications must address the evaluation criteria established for the competition.

Pre-Application Review Process

Individuals with the appropriate expertise will evaluate the Pre-Application, focusing on the quality of the research plan and the potential for benefits for Canada but also taking into consideration the management and financial plans. (see the evaluation criteria as presented in Appendix A) The review panel will make a recommendation of those projects considered to be competitive, and only the most competitive proposals will be invited to submit full applications. The applications will again be checked for eligibility and, if required, relevance to targeted areas. Information from approved pre-applications (i.e., name of project leader, lead institution, title of project, research areas and keywords) will be posted on the Genome Canada Website to further facilitate the exchange of required information between project teams and applicants to the Science and Technology Innovation Centre Competition.

4.3 Full Application

Those applicants successful at the pre-application stage will be asked to submit a full application. Applications must be submitted through one of the regional Genome Centres for review prior to submission to Genome Canada. Applications must address the evaluation criteria established for the competition and be presented on the appropriate application and budget forms. A final check for eligibility and, if required, relevance to targeted areas will be carried out.

Full Application Review Process

To ensure that the objectives of Genome Canada are met, proposals are assessed against the scientific, benefits for Canada, management and financial criteria, as outlined in Appendix A. For applications submitted to a targeted competition, relevance will also be considered. Proposals must demonstrate overall excellence to be funded

For all competitions a multidisciplinary committee of experts, the International Review Committee (IRC), with expertise in assessing the scientific, benefits for Canada, management and financial criteria is established to review applications. The scientific experts will include members with expertise in GE³LS and Genome Canada's five sectors (agriculture,

environment, fisheries, forestry and human health), as required. The individuals reviewing the benefits to Canada will include Canadians, as appropriate. The committee evaluates all aspects of an application, taking into consideration the evaluation criteria presented in Appendix A. Written reports may be solicited from external peer reviewers to assist the committee and to provide additional expertise. The international review committee then meets with and interviews representatives from each project through a face-to-face meeting.

In the event of Genome Canada receiving a large number of full applications a streamlining process may also be used to assist in reducing the number of applications prior to the face-to-face meeting of applicants with the review committee. This process includes a full review of the complete research plan of each application; however only those deemed to be of the highest merit will remain in the review process and be invited to the face-to-face meeting.

The review committee offers recommendations and advice to Genome Canada on all aspects of applications, including proposed budgets. The Board of Directors makes the final funding decisions. Only those proposals demonstrating the highest degree of overall excellence will be funded. Subsequently, investigators are provided with a written evaluation of the strengths and weaknesses of their application and the Board decision through a Notice of Award. All approved projects are subject to a Status Report Process to ensure that all applicable conditions are met prior to the release of funds.

Genome Canada may adjust its evaluation processes where warranted by the complexity of proposals received or other relevant factors. Any changes will be rapidly communicated through Genome Canada's website and through the Genome Centres.

5 PROJECT MANAGEMENT AND OVERSIGHT

5.1 Project Managers

All approved projects must have a dedicated project manager. Project managers coordinate administrative and reporting requirements and support the project's scientific enterprise.

5.2 Science Advisory Boards

All approved large-scale projects must have a Science Advisory Board (SAB) to provide advice and guidance to the research team to help ensure that the project achieves its stated objectives and milestones. The membership of the SAB must be completely independent from the project, with no real or perceived conflicts of interest and should be composed of experts who will work with the project to maximize its successful outcome.

While projects are not required to submit details of their SAB implementation plan and membership at the time of application, these must be approved by Genome Canada before funds can flow to the project and adhere to the [SAB Terms of Reference](#) set out by Genome Canada.

6 INTERIM REVIEW

Genome Canada undertakes an interim review of each approved project, within approximately

two years from the Notice of Award. The interim review evaluates the progress of the research (meeting of milestones, key decision points, deliverables, etc.), including GE³LS, the implementation plan for the remainder of the project, the changes in research direction (made or proposed), the progress towards ensuring the benefits for Canada are realized, and the financial and management aspects of the project. The results of the Interim Review will determine whether funding should be continued, reduced or terminated.

Project leaders must submit a progress report, including their expenditures to date and forecast, through their Genome Centre. The progress report is reviewed by a Progress Assessment Committee (PAC), made up of individuals with the appropriate expertise. The PAC provides a detailed evaluation of each project's progress and provides feedback and advice to the Project Leader(s), the Genome Centre and to Genome Canada. Generally, as part of the interim review, there is a face-to-face meeting between the PAC and the project's representatives. The review takes into consideration the timeframe during which the research has been ongoing and is used to provide advice regarding alternative approaches to strengthen the project. Requests for additional funds are not considered at the time of the interim review. The results of the review are submitted to the Genome Canada Board of Directors for a final decision on a project's continued funding.

7 FUNDING

Genome Canada will fund up to 50% of approved eligible costs for new research activities that are an integral part of the Genome Canada approved project. Genome Centres, working with the applicants, are responsible for securing the remaining 50% of funding from other sources.

7.1 Eligible Costs

Eligible costs are defined as reasonable costs for items that directly support the objectives of the Genome Canada approved project. Budgets must **NOT** include items for which funding has already been approved from other sources, unless the request for funding of these items was specifically made to support activities in the Genome Canada project and meets all other eligibility criteria, e.g., timing of funding request. Expenses funded through Genome Canada must be incurred after the Notice of Award (NOA) to be considered as eligible costs. However, expenses covered by eligible co-funding incurred up to six (6) months prior to the NOA may be considered eligible costs.

Eligible costs may include the following:

- i. salaries:
 - salaries and benefits for team members (note that salaries of researchers or senior management currently funded by their respective organizations are **not** considered eligible costs);
 - Genome Canada will accept actual benefit rates as charged by the host institution. For institutional benefit rates higher than 20%, supporting documentation (such as a letter from the institutional human resources department) must be provided;

- the actual cost of release time from teaching and clinical duties, if supported by a letter from the host institution;
 - annual inflation for salary expenditures in the second and later years of the project at actual rates as charged by the host institution;
 - for inflationary increases exceeding 1.5% of total salary and benefits, supporting documentation must be provided.
- ii. operating costs;
 - iii. costs related to the general maintenance of research infrastructure (see definition below), used to carry out the proposed project;
 - iv. support for research into the GE³LS aspects of the project;
 - v. costs related to the development of the plan to realize benefits for Canada including patent registration and filing costs and costs associated with advancing development of products and technology to the proof of concept stage (to be included in the Science and Technology Services section of the budget);
 - vi. costs for the project's communications and public outreach activities including publication costs such as fees for open access journals;
 - vii. research infrastructure within Canada. As defined in the Funding Agreement between Genome Canada and the Government of Canada, research infrastructure includes equipment, specimens, scientific collections, computer hardware or software, information databases, communications linkages and intangible property used or to be used primarily to carrying out the project;
 - viii. reasonable and low administrative costs (for example, most travel for project team members unless directly associated with research activities, costs associated with a project's SAB, publication costs, website maintenance, office expenses, costs associated with the preparation for interim review and of final reports); Administrative costs must not exceed five percent (5%) of the non-administrative costs of the budget. Costs associated with patenting are allowed under (v) above and should **not** be included as administrative costs; and,
 - ix. costs incurred based on a reasonable fee-for-service arrangement or contract.

Examples of **ineligible** costs include the following:

- i. payments to foreign persons, for example, investigators' salaries;
- ii. indirect costs to the project, including institutional overhead costs;
- iii. rent, renovation or construction of buildings or facilities, and the opportunity cost of using existing infrastructure;
- iv. costs associated with commercialization beyond the proof of concept stage such as product development, formulation, packaging, testing, marketing and consultants; and,
- v. inflation applied to consumables, equipment, general & administrative costs or services from S&T ICs.

7.2 Co-funding

Genome Canada requires that at least 50% of the requested funding for eligible costs be obtained through co-funding from other sources. Funds will not be released to a project until there is a firm commitment for at least 75% of the co-funding for eligible costs of the project and a well-developed and feasible plan for securing the remaining 25% of co-funding. At the time of application, a well-developed and feasible co-funding plan must be provided (i.e., a plan which demonstrates the extent to which the project is likely to secure at least 75% of the co-funding for eligible costs at time of the release of funds). Genome Canada reserves the right to withdraw its funding for any approved project that does not meet these requirements or if there is a substantial change in project's co-funding status.

7.2.1 Eligible Co-funding

- i. Co-funding must be applied for on or after a specified date, which is determined for each competition and specified in the Request for Applications, and must be for eligible costs specifically requested in the Genome Canada budget (see Eligible Costs, Section 7.1) in order to be considered as an eligible co-funding source. On a case-by-case basis, funding applied for before the specified date may be considered eligible co-funding if these funds are specifically re-directed towards the Genome Canada project. A letter from the funder clearly confirming this will be required.
- ii. Genome Canada considers any of the following possible co-funding sources, which may be Canadian or foreign, as acceptable:
 - Institutional funds, trust funds, or foundations
 - Departments and agencies of the federal government (e.g., Agriculture and Agri-Food Canada, Environment Canada, and the Canada Foundation for Innovation). There are however, several notable exceptions. The following agencies are **NOT** considered as eligible co-funding sources: the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council (NSERC), the Social Sciences and Humanities Research Council (SSHRC), and tri-agency programs (e.g., the Networks of Centres of Excellence, Centers of Excellence for Commercialization and Research, and the Canada Research Chairs)
 - Departments and agencies of provincial and municipal governments
 - Firms and corporations
 - Voluntary organizations
 - Individuals
 - Venture capital or other investment funds.
- iii. Cash contributions as co-funding are preferred. However, in-kind contributions, defined as non-cash eligible budget items, which can be given a cash value, may be considered as co-funding if:
 - the value can be reasonably determined and supported by documentation from the supplier; and

- the expenditure represents an item that would otherwise have to be acquired with cash. However, this excludes the cost of pre-existing facilities or equipment (i.e., budgets cannot include the opportunity cost of space or equipment).
- iv. The value of existing IP transferred to a project is NOT considered eligible co-funding unless it is a contribution by a supplier of IP (e.g., a software license that would otherwise have to be acquired from a third party supplier). Such items must be supported by appropriate documentation from the supplier's head office.
- v. Suppliers' discounts are not considered eligible co-funding.
- vi. Funding to support the indirect costs of a project (including overhead) are not eligible. Co-funding must be used to support eligible costs, which are defined as reasonable costs for items that directly support the objectives of Genome Canada approved projects.

7.2.2 Documentation Required to Support Co-funding

Full applications must include complete documentation to support proposed co-funding. This may be in the form of a letter of commitment or an agreement defining the terms and conditions of proposed co-funding. In addition, the project must provide a description of how the co-funding will directly support the objectives of the Genome Canada project. In general, co-funders must explicitly acknowledge the use of funds to co-fund the Genome Canada projects.

The following provides specific examples of documentation required, depending upon the co-funding source, or type:

- From a funding agency, a copy of the full application, project summary, detailed budget and notice of award (if applicable). Documentation must clearly demonstrate that funding is being used for eligible costs included in the budget of the Genome Canada approved project.
- From a provincial government, confirmation that the province will provide co-funding, the amount anticipated and:
 - a description of past commitments to Genome Canada projects, with dates and amounts contributed;
 - a list of the projects in the competition that the government will support, including the project tracking number, the name of the researcher, the title of the project, and the amount of the request from the government;
 - a description of the process that will take place once Genome Canada announces awards, including timelines for decisions and, if appropriate, confirmation that the government will accept Genome Canada's review process; and
 - a letter signed by a high-ranking provincial government official with appropriate authority.
- Other organizations, including industry, charities, and philanthropic organizations:

- Documentation and supporting information, which clearly demonstrates the organization's level and terms of commitment to the project. Appropriate documentation could include but is not limited to a Board Resolution, and/or, a letter from the organization's CEO, legal counsel or Corporate Secretary.
- Appropriate and reasonable documentation supporting the organization's financial viability and its ability to deliver on the co-funding. Depending on the organization and the level of funding being committed, documentation could include:
 - a full set of the organization's most recent audited financial statements, including the Auditor's Report, a Balance Sheet, Income Statement, Statement of Cash Flows and Notes to the Financial Statements;
 - in the case where the audited statements are more than three months old, a full set of the organization's financial statements (prepared within three months prior to the application) including a Balance Sheet, Income Statement, Statement of Cash Flows and Notes to the Financial Statements.
 - any other information or documentation (e.g., press releases announcing significant new financing, cash flow projections, etc.) which provides credible support to the organization's financial viability and ability to fulfill its co-funding commitments.
- In-kind contributions should include a clear rationale and calculation of how the value of the contribution was determined (including documentation to support all assumptions, price lists, quotes from suppliers, letters supporting same, etc.). All in-kind contributions must be auditable by outside experts and clear explanations are required if there are any discrepancies between the value outlined in the co-funding document and the budget. Examples of supporting documentation to support non-cash co-funding include:
 - Equipment & Software
 - Letter by senior official from vendor that shows the price that the customer would typically have paid for the equipment or software (net of typical discounts including institutional discounts which are not eligible as co-funding)
 - For custom-made or used equipment, a third party valuation will normally be required
 - For previously developed custom-made software or IP, only new costs are eligible.
 - Samples & Other Biological Resources
 - If samples are typically available at no cost then there is no cost of acquiring such samples and as a result no value can be deemed to be co-funding
 - If samples are typically sold, then any proposed contribution would require the same documentation as equipment and software.

8 ADMINISTRATION

8.1 Project Readiness

Leader(s) of approved projects must meet through formally submitted documentation, all relevant conditions that may be specified in the Notification of Award (NOA) received from Genome Canada and be in a position to receive Genome Canada funding no later than three months after the effective date of the NOA. **Genome Canada reserves the right to withdraw funding for any approved project that is not ready to receive funding at that time.**

8.2 Conditions for Release of Genome Canada Funds

Before funds can be disbursed, several conditions for funding must be satisfied and are detailed below.

1. A signed agreement between Genome Canada and the lead Genome Centre.
2. A letter signed by the CEO and legal counsel of the Genome Centre confirming to Genome Canada that: all agreements have been signed between the Genome Centre, the lead organization, the researchers and the co-funding partners; all other conditions for release of funds have been met; and funds will flow to the project upon receipt of funds from Genome Canada. The agreements must clearly demonstrate agreement among the relevant parties, on all significant issues including but not limited to, the nature of financial contributions, IP ownership and management, data release, the commercialization process, project management, ethics and biohazard certification, the role of the SAB, the funding term, a termination policy, financial and administrative policies, and quarterly reporting of expenses and co-funding status, etc. The agreements must be in compliance with the agreement between Genome Canada and the lead Genome Centre.
3. A revised budget must be submitted for each project. The budget must address all recommendations of the review panel and any reductions to the budget as approved by the Genome Canada Board. Consideration must also be given to the following issues:
 - a) *Changes in the Cost of Services.* Given that the cost of services may have changed since the project was submitted for review, projects must provide an updated statement of work (SOW) from service providers, including those funded through Genome Canada, which reflects the current cost of services. The current cost estimates should be used in the revised budget and the budget reduced accordingly.
 - b) *Re-examination of general & administrative costs.* Projects must ensure they include required costs, such as costs associated with the project's Science Advisory Board (travel, honoraria etc.), as well as travel costs for the project team to attend Interim Review and other Genome Canada related activities and remain within the 5% limit.

4. *Revised Objectives and Milestones.* Where significant budget adjustments were made as a result of removal or modification of scientific activities, applicants must submit revised objectives, milestones and a Gantt chart.
5. Secured co-funding (received or firmly committed) amounting to a minimum of 75% of the co-funding for eligible costs and a well-developed and feasible plan for securing the remaining 25% of co-funding.
6. Acknowledgement that appropriate certification for proposals performing research involving human subjects, human stem cells, animals, biohazards, radioactive materials or possible effects on the environment is in place. Certification must be obtained specifically for the research approved for funding by Genome Canada. In order to release funds to an organization, Genome Canada will accept a letter from the appropriate officials at the organization confirming that:
 - i. the organization will ensure that all relevant certifications are obtained in accordance with applicable laws, regulations, standards and guidelines, including but not limited to, the most current versions of the following: Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS); CIHR Guidelines for Human Pluripotent Stem Cell Research; Canadian Council of Animal Care (CCAC) guidelines and policies; Canadian Environmental Assessment Act; Public Health Agency of Canada's Laboratory Biosafety Guidelines; and Canadian Food Inspection Agency Containment Standards for Veterinary Facilities;
 - ii. the organization will not flow funds to an investigator until all relevant certifications are obtained for the research to be undertaken; and,
 - iii. the organization will provide Genome Canada with copies of certifications, upon request.
7. A Science Advisory Board (SAB) membership and implementation plan that complies with Genome Canada's [SAB Terms of Reference](#) and is approved by Genome Canada.
8. The project must have a [Data Release and Resource Sharing](#) plan approved by Genome Canada. The project must remain current with internationally accepted standards for data release and resource sharing.
9. A publication policy which includes a commitment to comply with Genome Canada's policy on [Access to Research Publications](#).
10. A commitment to acknowledge the contribution of the Government of Canada through Genome Canada and the lead Genome Centre, as well as all other relevant funders, in research publications, as well as all communications including press releases, posters and oral presentations. In addition, visual presentations such as seminars and websites must include the Genome Canada logo in compliance with Genome Canada's [Brand Standards Guide](#).

11. Meet specific conditions or recommendations of the International Review Committee as detailed in the Notice of Award.
12. Meet other conditions established by Genome Canada.

8.3 Management of Funding

- i. The agreement between Genome Canada and the Genome Centre will reference financial commitments from other persons as well as other financial requirements.
- ii. As the needs and circumstances of each Centre, the researchers and partner organizations may differ, the contracts between these partners will be negotiated individually and need not be identical, but should apply the same general principles defined in the agreement between Genome Canada and the Genome Centres. Genome Canada's share of the funding for approved projects will flow from Genome Canada to the Centres. The Genome Centres will manage (e.g., disburse, monitor and report on) the funds for the project.
- iii. If co-funding is secured by way of a binding agreement, and funds can be shown to be available to meet the co-funder's obligations, Genome Canada's contributions can be adjusted to accommodate the timing of the expected receipt of funds from co-funding partners. However, where co-funding sources are not secured, Genome Canada's contribution will be based on 50% of the approved quarterly budget up to the maximum amount approved by the Board.
- iv. Genome Canada provides funding up to the approved quarterly contribution, a quarter "in advance", subject to receipt of quarterly reports of expenditures (from both Genome Canada and co-funding sources), including actuals to the previous quarter, estimates for the current quarter, and forecasts for the quarter of the advance. Subsequent quarterly advances may be adjusted to account for any unused funding.
- v. The financial status of co-funding must be reported on a quarterly basis.

8.4 Accountability and Reporting

Funded projects must submit to their lead Genome Centre on a quarterly basis, information and data as prescribed by the Centre in terms of timing, format and content, which will allow for the on-going assessment and monitoring of their performance. It is the responsibility of the lead research institution to ensure that the project leader(s) participate in this process.

Genome Canada expects that all co-funding expenditures (domestic and international) be reported on a quarterly basis.

8.5 Final Reports

Within three (3) months of the completion of the projects, each project will be required to submit to its Genome Centre a final report that includes a description of the accomplishments of the project relative to the approved objectives as well as a detailed financial report in a

format as determined by Genome Canada. A percentage of the final payment will be withheld by the Genome Centres pending approval of the Final Report.

APPENDIX A – EVALUATION CRITERIA

Proposals, which are submitted to Genome Canada, are evaluated through a rigorous independent peer review process to assess their scientific merit and potential for benefits for Canada and to ensure that sound financial and management practices are implemented. Excellence and innovation at the very highest of international standards must be demonstrated for funding to be awarded.

Note that the descriptors which follow the criteria below are not all-inclusive.

Broad Eligibility Criteria

Projects must:

- i. have a genomics focus or study the GE³LS issues associated with one or more of Genome Canada's strategic sectors;
- ii. be of a scale and scope that the research could not readily be funded at internationally competitive levels through other mechanisms; and,
- iii. for Targeted Competitions, address one of the targeted areas as outlined in the description in the request for applications.

Review Criteria

A. Scientific Criteria

1. ***Quality of the Research***

- i. The importance and originality of the proposed investigation(s) and expected results
- ii. The appropriateness of the proposed methods and data analyses
- iii. The feasibility of the proposed methodology and likelihood of achieving the stated milestones and objectives within the proposed timeframe
- iv. The demonstration that the project is coordinated, integrated and inclusive
- v. The quality of the scientific environment in which the research will be undertaken
- vi. The demonstration of how the proposed research compares to research that is being conducted by other groups regionally, nationally and internationally
- vii. The demonstration of how the proposed research fits into the international genomics or proteomics contexts
- viii. The international relevance and impact of anticipated results and the potential for Canada to further develop its capacity for innovation and as a world leader in the area
- ix. The demonstration that the research to be carried out builds on or optimizes existing Canadian strengths and expertise in genomics and/or fits within a unique Canadian niche

2. ***Quality of the Research Team***

- i. The appropriateness of the applicants' expertise to conduct the proposed research
- ii. The quality of the applicants' recent productivity, track records and their contributions to the field of genomics or proteomics

3. Handling of Data and Resources

The quality of the plans for:

- i. Data and resource management
- ii. Data analysis
- iii. Data and resource sharing (including whether it adheres to [Genome Canada's Data Release Policy](#))
- iv. Access to research publications (including whether it adheres to [Genome Canada's Policy on Access to Research Publications](#))

4. Highly Qualified Personnel (HQP)

- i. The quality and appropriateness of the proposed training program and training milieu
- ii. The demonstration that plans are in place to ensure that an adequate number of HQP are available to meet the needs of the proposed research

5. Collaborations and Partnerships

- i. The quality and appropriateness of proposed or existing collaborations
- ii. The effectiveness of the strategy for forming partnerships and collaborations with others

6. Ethical, Environmental, Economic, Legal and Social Aspects - GE³LS

- i. Key GE³LS aspects relevant to the objectives and/or expected outcomes of the proposed project are appropriately identified and addressed
- ii. The GE³LS co-applicants on the team have appropriate expertise, experience, credibility, commitment and resources to effectively address the GE³LS aspects
- iii. The ways in which the Project Leader and GE³LS co-applicant(s) propose to communicate, collaborate and interact with one another throughout the course of the project are meaningful and effective
- iv. The integrated GE³LS research plan is aligned with, and complementary to, the overall project milestones and is sufficiently robust and systematic to advance generalizable knowledge in relevant academic fields
- v. Consideration has been given to coordinating efforts with GE³LS researchers working on similar questions in other Genome Canada-funded projects to maximize opportunities for synergies and minimize potential duplication

7. The use of S&T ICs and other technology service providers:

- i. The appropriateness of the service provider and/or technology chosen;
- ii. The likely effectiveness of proposed arrangements with the S&T IC management or service provider to ensure appropriate and timely collaboration;
- iii. Reasonableness of the request for services from the S&T ICs or other service providers.

B. Benefits for Canada

1. The potential of the research results to benefit the economy, society, quality of life, health or the environment

2. The demonstration of how anticipated results will contribute to job creation, economic growth, development of a product, service, licences or the creation of start-ups
3. The effectiveness of the proposed plans for commercialization, technology transfer and the handling of intellectual property (where applicable) which addresses:
 - i. Relevant management versus ownership issues
 - ii. A plan to share benefits with others
 - iii. The expected outputs in terms patents to be filed
 - iv. The costs of patent filing and protection
 - v. The potential barriers to commercialization, including the capacity and commitment of the applicant's institution to take the project through the commercialization process.
4. The potential for use or commercialization (where appropriate) of the anticipated results and the extent to which the proposed research will further the development of new methods, perspectives and/or technology
5. The appropriateness and adequacy of the plan for knowledge generation and translation and the development of new policies, best practices and other beneficial applications
6. The quality and feasibility of the plan to transfer, disseminate, use, and/or apply the potential deliverables to realize the benefits (including whether there is adequate end user support of the project)
7. The appropriateness of the team members who will develop and implement the plan to realize the social and/or economic benefits of the research (e.g., end-users of the research, entrepreneurs, venture capitalists, economists, market analysts, technology transfer experts, legal advisors, public health administrators, policy experts and sociologists, etc.)

C. Management Criteria

1. The appropriateness and quality of the management plan, including the likely effectiveness of the administrative/organizational structure, which addresses, for example, the following:
 - i. The ability of the management team members to manage a multi-disciplinary, multi institutional, national and/or international team
 - ii. The appropriateness of the management team member accountabilities
 - iii. The mechanism of communicating within the project, with the Genome Centre(s) and collaborators/partners and the strategy to coordinate activities
 - iv. The plan to recruit key personnel
 - v. The role of key personnel and committees
 - vi. The frequency of meetings
 - vii. The method of making the research results accessible to the scientific community

2. The quality and appropriateness of the plan for making critical decisions regarding the overall research direction, for example:
 - i. The mechanism for making go/no-go decisions
 - ii. The evaluation of research progress, including the role of the Science Advisory Board (SAB)
 - iii. The process for making strategic decisions when a consensus cannot be reached
 - iv. The discussion of key challenges and plans to address them
3. The likely effectiveness of the proposed plans to deploy human resources, equipment and infrastructure throughout the duration of the project, including the initial ramp-up period
4. Evidence of consideration of the impact of the ramp-up period on the achievement of proposed milestones
5. The strategies and implementation plan for forming partnerships and coordinating with relevant organizations (industry, governments, universities, hospitals and research institutes) and individuals, regionally, nationally and internationally
6. The likely effectiveness of the proposed communications, outreach and knowledge dissemination strategy

D. Financial Criteria

1. Budget/Control Processes

- i. The budgeted costs meet the definition of Eligible Costs (Section 7.1)
- ii. The budgeted costs are aligned with the proposed research, and the relationship between the proposed costs and potential benefits of the project proposed is evident
- iii. The reasonableness of a project's budgeted costs
- iv. The reasonableness of the rationale and justifications used for budgeted items
- v. The likely effectiveness of financial and budgetary control processes or mechanisms, (e.g., processes for authorizing purchases, payments and budget adjustments)
- vi. The inclusion of a reasonable ramp-up period in relation to recruiting, purchasing and installing new equipment
- vii. The overall quality of the documentation, including the reasonableness of the underlying budget assumptions and the links between budget items and sources of funding
- viii. Evidence that potential difficulties encountered throughout the course of the project have been considered in appropriate depth and contingency plans have been established

2. Co-Funding

- i. The proposed co-funding complies with the Eligible Co-funding guidelines in section 7.2

- ii. The feasibility of the proposed co-funding plan, that is, likelihood of being able to secure at least 75% of the co-funding for eligible costs at time of the release of funds
- iii. The appropriateness of supporting documentation (e.g., letters of commitment, signed agreements from co-funding sources, quotes from suppliers, grant applications to other funding agencies, confirmation of grants received, etc.)
- iv. The demonstration that the proposed co-funding directly supports the objectives of the project